

## FOCUS ON: IEC's **LOST BOYS** – Seldom-Seen Groups, Partnerships, and Issues

This issue highlights a few of the IEC Technical Committees that fly under the radar – that is, they're busy undertaking critical standardization work, but don't get as much attention as some of the trendier technology areas. With the help of many dedicated experts from the USNC, these "lost boys" of the IEC are tackling challenges that support electrotechnologies worldwide.

### NAVIGATING THROUGH A "PERFECT STORM": The U.S. TC 78 TAG Story



By Dr. George Gela, Former Chair, IEC TC 78, Live Working;  
and Jim Phillips, Expert, IEC TC 78, WG 15, Arc Flash Protection

publications related to the utilization of tools, equipment, and devices on and in the vicinity of live parts of electrical installations and systems. The committee was formed in 1975 and was known then as "Tools for Live Working." The USNC has always been an active member of TC 78 – after all, live work (i.e., maintenance of electrical equipment while it is energized) was first developed in the United States. In fact, the International Chairmanship of IEC TC 78 has been held by U.S. experts since 1986. The Secretariat of has been provided by Canada since the committee's inception.

Participation in the IEC is through individual National Committees (NCs), and IEC TC 78 is presently represented by 23 Participant (P-) Members and 19 Observer (O-) Member countries. The USNC, a committee of the American National Standards Institute (ANSI), is the U.S. representative to the IEC. The USNC's

**E**arly 2016 saw a perfect storm develop quickly and unexpectedly in IEC Technical Committee (TC) 78, *Live working*, at both the U.S. Technical Advisory Group (TAG) and committee levels. It took many people working together to successfully navigate through the storm and "save the ship."

#### Calm Before the Storm

As with any story, the stage needs to be set with a bit of background information. IEC TC 78 prepares technical

work is organized through the use of TAGs. Each TAG is a mirror committee of a corresponding IEC Technical Committee or Subcommittee, and must be approved by the USNC.

Each TAG provides many important functions, such as nominating experts to serve on Working Groups (WGs), Project Teams (PTs), and Maintenance Teams (MTs), and appointing the Head of Delegation (HoD) to IEC TC meetings. The TAG also coordinates activities such as voting on technical issues and developing U.S. positions on IEC standards. *(continued)*

#### IN THIS ISSUE

1 Focus On: IEC's Lost Boys  
4 Documents of Interest

7 Laugh Track  
8 USNC News

12 IEC Headlines  
13 Save the Date



IEC symbols for electrical current:



ALTERNATING CURRENT (AC)



DIRECT CURRENT (DC)



AC/DC

### Navigating through a "Perfect Storm": The U.S. TC 78 TAG Story *(continued)*

In any IEC TC in which the USNC is a P-Member, the corresponding USNC TAG is required to have a TAG Administrator that provides administrative and secretarial support for the TAG. Without an administrator, the USNC would not have P-Member status. The TAG Administrator is an organization (not a person), and must be approved by ANSI. The role is typically filled by a larger entity such as a standards developer or industry association. In addition, each USNC TAG is led by a Technical Advisor (TA).

#### A Powerful Concurrence of Factors

The phrase "powerful concurrence of factors" is from the definition of "perfect storm," and, at the time, it even felt like an understatement. No one could have foreseen the sequence of challenging factors that would unfold in close succession this past year in TC 78 and its USNC TAG.

**Storm Factor 1:** Like all "perfect storms," it did not begin that way. The first part was normal. The term of the TC 78 International Chairman was set to expire at the end of April 2016. The Secretariat (Canada) had the task of submitting a nomination for a new International Chairman.

As is the normal procedure, the process began with the IEC CO in Geneva circulating a request for nominations. The request had a closing date of December 18, 2015 – nothing unusual. The USNC submitted to the Secretariat of TC 78 the name and credentials of [Jim Phillips](#) as a nomination for Chairman.

**Storm Factor 2:** Completely unexpectedly, it was then announced that the Canadian NC had decided to relinquish the Secretariat function. With a published closing date of January 31, 2016, TC 78 NCs were asked to consider undertaking the Secretariat duties.

The storm was brewing. On the IEC level, the nomination of the new International Chairman could not be submitted to the IEC Standardization Management Board (SMB) for approval until a new Secretariat of TC 78 was approved by the SMB. Timing was becoming a critical issue.

**Storm Factor 3:** Just when the situation was becoming difficult at the TC level, it also unexpectedly began to approach impossible at the USNC level. The IEEE had been the Administrator of the TC 78 TAG for many years with their support being greatly appreciated.

However, IEEE announced in late August 2015 that it would relinquish its position as TAG Administrator. Unless another entity could be found to assume the function, the USNC would have to terminate its P-member status in TC 78. In order to ensure a smooth transition, IEEE's relinquishing of their TC 78 TAG role had an April/May 2016 time frame.



DR. GEORGE GELA (LEFT) AND JIM PHILLIPS (RIGHT)

#### Captain! This Ship Is Sinking!

So, the Secretariat appoints the International Chairman – and there was no Secretariat. The U.S. was hoping that the nomination of Mr. Phillips would be approved – and the USNC was on track to lose its P-Member Status in the TC. The perfect storm.

#### Fight a Storm with a Storm

When facing an adverse situation, the first step is to assess what is wrong and begin to take steps to solve the problem – or problems in this case. We certainly knew what the problems were. The trick was going to be resolving them all in time and in the correct order.

Now that the perfect storm was upon us, another storm was needed. But this storm was the good kind – a brainstorm. Everyone put their heads together to identify a suitable replacement for the TC 78 TAG Administrator. The names of several technical organizations were floated, and one surfaced as the most likely and able successor: ASTM International. ASTM administers many other U.S. TAGs and is very experienced with the process.

Initial telephone conversations were held with the ASTM F18 Committee on Electrical Protective Equipment for Workers. This committee has parallels with many of the standards *(continued)*



## Navigating through a "Perfect Storm": The U.S. TC 78 TAG Story *(continued)*

developed by IEC TC 78. Although there was interest, there were also many burning questions. What would be ASTM's specific responsibilities? Why was the existing TAG Administrator relinquishing their role – was there some underlying problem that ASTM was unaware of? At this point, communication was critical.

### Face-to-Face

In an era of digital communications, webinars, teleconferences, and a whole host of other modern methods of conducting business, sometimes a good old face-to-face meeting is still necessary – you need to look each other in the eye. To answer questions from the ASTM F18 Executive Committee and hopefully bring this to a successful conclusion, Jim Phillips was requested to attend the F18 Executive Committee meeting on April 10, 2016, in San Antonio, Texas. Mid April! Was timing mentioned?

All it took was a meeting of the minds and some candid conversation about the situation. At the end of the meeting, the concerns were all addressed, questions answered, and an agreement in principal was reached.

### The Storm Is Over, the Pieces Are back in Place

Navigating the storm took a lot of teamwork, perseverance, and a bit of luck. Through the efforts of Jim Phillips, Kevin Shanahan (ASTM), Tony Zertuche (ANSI), George Gela, and many others, ASTM came forward and was endorsed by ANSI as the Administrator for the U.S. TC 78 TAG on May 16, 2016. As the new TAG Administrator, ASTM assigned Sam Stonerock as the Secretary for the U.S. TC 78 TAG. The USNC could now retain its P-Member status and approve the TA for the U.S. TC 78 TAG appointed by the new Administrator.

On the IEC level, SMB allocated the Secretariat of TC 78 to France, which in turn appointed Sophie Sabin as the new Secretary. Now that the Secretariat



was in place, the nomination for the new International Chairman of could be submitted to the SMB, and the nomination of Mr. Phillips was approved, with a term beginning on June 1, 2016.

With the efforts of so many people navigating the perfect storm, all of the pieces fell into place and now IEC TC 78 and the U.S. TAG are ready to move on to the next chapter. ☺

### DOCUMENTS OF INTEREST

Stay up on the latest policies, documents, and other resources from the USNC and IEC by clicking the links below.



- **Factory of the Future:**  
<http://www.iec.ch/whitepaper/futurefactory/?ref=extfooter>
- **IEC Participation: What's in It for You?**  
[http://www.iec.ch/perspectives/industry/whats\\_in\\_it.htm](http://www.iec.ch/perspectives/industry/whats_in_it.htm)
- **OFAC Issues Further Confirmation of Its Guidance on U.S. Participation in ISO and IEC Standards Development:**  
[https://www.ansi.org/news\\_publications/news\\_story.aspx?menuid=7&articleid=f87b29c5-a39a-4c5b-8c06-87b71183301e](https://www.ansi.org/news_publications/news_story.aspx?menuid=7&articleid=f87b29c5-a39a-4c5b-8c06-87b71183301e)



## The Work of the U.S. TAG to IEC TC 10 on Insulating Fluids

By Kevin J. Rapp, Technical Advisor, U.S. TC 10 TAG

As you turn on a light switch to see or an electrical appliance to function during your daily life, you probably don't think about all the technology, infrastructure, equipment, processes, and standards working to enable this to happen. The electrical system is, for the most part, invisible and easily forgotten. That is, until it does not function! No lights, no computers, no job, and none of life's conveniences.

And particularly invisible to most users are the critical insulating fluids that allow temperature management of electrical equipment. Nearly all of the equipment that generates, transmits, and distributes electricity to homes and businesses relies upon insulating fluid of some type to function. Transformers, for example – the most important piece of equipment on the electrical grid – are largely insulated with liquids. Carrying out the critical standardization work of the known performance characteristics and test methods for the different insulating fluids is IEC Technical Committee (TC) 10, *Insulating fluids* – or liquids and gases that function to cool and/or electrically insulate.

The engineers and scientists that serve on the USNC-approved Technical Advisory Group (TAG) of IEC TC 10 are supported by electrical equipment manufacturers, insulating liquids producers, oil refineries, and laboratories. End users such as utilities, are unfortunately not represented in



the TC 10 TAG. The TAG members are considered experts in the field of electrical insulating materials and have a good knowledge of past practices and a vision for the future.

### Insulation Foundations

We don't have to think too far back to understand that polychlorinated biphenyls liquids (PCBs), or Aroclors, insulated much of our electrical equipment around the world and still exist and function in many areas. TC 10 is one of the oldest committees of the IEC, and held its first meeting at St. Louis's Grand Central Station in 1906.

Petroleum-based mineral oil (MO), the oldest and most prevalent insulating liquid, is standardized in IEC 60296. This standard is being revised to include a type of recycled oil known as re-refined MO as a greener alternative.

As utilities and commercial customers use MO in their transformers and other equipment, they perform diagnostic and maintenance procedures that include dissolved gas analysis, furanic compounds analysis, and oil testing to assess the health of the equipment. Each liquid performance property must meet standards for electrical, chemical, and

physical criteria. If not, the liquid is reprocessed, recycled, or replaced. Equipment manufacturers rely on the professionals in TC 10 to properly qualify and standardize the important properties of insulating liquids.

The same can be said for an insulating gas, such as sulfur hexafluoride (SF<sub>6</sub>), which is utilized

in high-voltage circuit breakers and switchgear that need to interrupt large amounts of arc current. Even though SF<sub>6</sub> is a potent greenhouse gas, it is unmatched in its ability to extinguish a high energy arc. SF<sub>6</sub> can be mixed with nitrogen or CF<sub>4</sub> to function at very low temperatures – below -40°C. The pure SF<sub>6</sub> or mixtures are each standardized and managed separately.

### Important Advancements

Today, alternative insulating liquids such as natural ester (NE) and synthetic ester (SE) liquids have gained popularity with end customers due to improvements in performance characteristics compared to MO. These areas of improvement include fire safety, environmental friendliness, and life extension of equipment.

NE liquids were invented as transformer insulating liquids in the United States in 1995 and standardized in IEC 62770 in 2013. They are defined as vegetable oils obtained from seeds and oils obtained from other suitable biological materials and comprised of triglycerides. Synthetic ester liquids were standardized prior to NE liquids and are mainly a reaction product of petroleum-

(continued)

## The Work of the U.S. TAG to IEC TC 10 on Insulating Fluids *(continued)*



Environmental performance is also a sought-after benefit of NE liquid use in transformers because it has the highest biodegradability rate of any electrical insulating liquid. The IEC standard was developed to require NE liquid to be readily biodegradable and non-toxic to fish and other aquatic organisms. Accidental spills and releases are an important consideration in all countries.



KEVIN RAPP

based alcohols with acids from both petroleum and some select natural plant sources. SE liquids differ from NE in some performance related aspects due to their chemistry, and most are non-sustainable, less biodegradable, and generally have a higher cost structure than NE liquids. Thus, there are less established field installations in most countries.

There are over one-million established NE liquid-filled transformers worldwide, and their use is growing rapidly. NE liquids are also used in voltage regulators, instrument transformers, reactors and switchgear. The USNC TAG proposed and IEC established a new project team in 2015 to standardize the use and maintenance of NE liquids in equipment. The benefits of NE liquid in equipment has very important implications in tight urban spaces. Fire safety is unmatched when compared to all other liquids with a fire point of 360°C compared to 315°C for SE and 165°C for MO. NE and SE liquids are considered less-flammable and must maintain a fire point above 300°C, which is defined in the standards. FM Global, a worldwide insurance organization, acknowledges the fire safety of some NE liquids in equipment through favorable insurance rates. There have been no known transformer fires associated with less-flammable liquids to date.

### Modern Solutions

The financial life cycle of liquid-filled transformers, especially large power transformers, is extremely important. Recently, ester liquids have been the subject of an important standard from IEC TC 14, *Power Transformers*. IEC 60076-14, *Power transformers - Part 14, Liquid-immersed power transformers using high-temperature insulation materials*, uses TC 10 ester liquid technology combined with solid insulations, such as thermally upgraded cellulose paper.

The chemistry of NE liquid combined with cellulose-based paper and pressboard was proven to extend the life of the insulation system by two to eight times, according to various studies. Put another way, the insulation system maintains integrity to a higher temperature limit of the transformer. Thus, the transformer can be run hotter by reducing the size and quantity of materials of construction, or is able to handle overloads encountered during peak summer conditions and still maintain the expected solid insulation life. Note that the life of a transformer is measured by the life of the solid insulation system. Much of this knowledge is summarized in IEC 60074-14 (Annex C), which was the result of many years of work by the

USNC experts of TC 10.

Several other new IEC TC 10 Project Teams formed in the past year rely upon USNC experts. One is focused on developing a standard for new low-viscosity modified ester liquids and blends made synthetically for use in large power transformers that improve the liquid cooling efficiency, but at the expense of fire safety. Another is developing a standard test method of measuring methanol and other light alcohols in insulating liquids that are formed during cellulose aging to monitor the solid insulation life of transformers. This test method was proposed to complement an already-established test method of measuring furanic compounds in the liquid due to cellulose aging degradation. The ability to measure aging degradation markers, such as alcohols and furans in the liquid that can correlate to the life of the solid insulation of the transformer, is beneficial to end users.

The next time you flip a light switch or turn on your electrical appliance, you may give some thought to the USNC TC 10 experts who are working to improve the standards, reliability, and test methods of insulating fluids that provide better fire safety, sustainability, life-cycle cost, and environmental performance of electrical equipment. ☺



### TC 21 Work Underpins Mobile and Stationary Energy Storage

By Morand Fachot, reprinted with permission from [IEC e-tech](#)

#### Batteries are driving growth in mobile devices, e-mobility, and stationary energy storage

**E**CCC Corp. (ECCC) is a not-for-profit corporation that is the secretariat for the USNC IEC Quality Assessment System for Electronic Components (IECQ). A decade ago, ECCC developed the very successful health services policy and management (HSPM) program IECQ QC 080000, which has been the basis of conformity assessment audits to more than 5,000 companies around the globe.

In recent years consumers have benefited from the introduction of countless mobile and wearable IT and consumer electronics (CE) devices and systems. Meanwhile, public and individual means of transportation

everywhere are increasingly relying on electric drives and storage for part or all of their propulsion systems. Large stationary energy storage is another area where batteries are playing a growing role. Standardization work by IEC Technical Committee (TC) 21, *Secondary cells and batteries*, is central to future advances in all energy storage domains.



8 MW LI-ION BATTERY GRID STORAGE SYSTEM IN NEW YORK STATE (PHOTO: AES CORPORATION)

ELECTRIC SUPERCHARGERS USED IN 48V MILD HYBRID VEHICLES CUT EMISSIONS AND FUEL CONSUMPTION  
(PHOTO, TOP: VALEO)



#### Different Applications, Similar Restricting Issues

As IT and CE mobile and wearable devices employ ever more advanced processors, displays, and audio systems – and offer connectivity to an ever growing range of wireless networks and other devices – they are becoming more and more power hungry.

Likewise, the wider adoption of full or hybrid electric drives in electric vehicles (EVs) is seen as hinging on the availability of more advanced batteries (and charging systems), which will allow them to overcome the limitations of range and charge they currently face.

#### Different Chemistries for Different Applications

Today's batteries for mobile applications are based mainly on lithium-ion (Li-ion) chemistry, which offers the key advantage of being able to store large amounts of energy in comparatively light, compact, and purpose-made packages. However, while these batteries may provide a reliable power supply, they can no longer keep up with the growing demands placed on them in their current form.

#### New trends in automotive applications

Although attention has been focusing on storage for mobile applications for a few years, trends in the automotive sector are no less interesting.

EVs rely extensively, too, on Li-ion batteries, but may use also nickel-metal hydride batteries. As for vehicles powered by internal combustion engines (ICEs), they depend on rechargeable sealed lead-acid starter batteries, increasingly of the valve-regulated type (VRLA).

International Standards for batteries used in automotive applications, including “for the propulsion of electric road vehicles,” are developed by IEC TC 21, *Secondary cells and batteries*, and its Subcommittee (SC) 21A, *Secondary cells and batteries containing alkaline or other non-acid electrolytes*.

As car manufacturers are striving to develop cars that will meet tighter emission laws in many countries and regions from 2025 to 2030, some are now prioritizing so-called 48V mild hybrids as an interim solution before achieving pure electrification of vehicles. Mild hybridization relies on lithium-ion batteries and consists in adapting 48V devices and interconnects to (continued)

### TC 21 Work Underpins Mobile and Stationary Energy Storage *(continued)*

existing ICE powertrains. This technology has already been tested for a number of years and offers, among many others, the following benefits, according to IDTechEx Research and manufacturers' data:

- CO<sub>2</sub> emissions reduced by 10-20%, depending on test cycles.
- Cheaper (50-70%) than full hybrids, according to automotive equipment manufacturer Valeo.
- Unlike existing 12V and 24V vehicles, they can accept charging from regenerative braking and other regeneration (thermoelectric, exhaust heat, suspension, etc.), and they can drive the wheels electrically and provide additional power.

#### Stationary Applications Matter, Too

Batteries are not just central to mobile and automotive applications, but increasingly also to stationary energy storage. Electricity being consumed as

it is produced there must be sufficient supply to meet variations in demand. At times of peak demand extra capacity must be available to respond rapidly.

If demand cannot be met, the stability and quality of the power supply suffer and may result in brownouts or worse. To balance demand and supply additional generation a certain amount of storage may also be necessary. It currently mainly takes the form of pumped hydro, which makes up the bulk of electricity storage.

Advanced batteries are set to play a major role in the future global electrical energy storage landscape and in grid management, in particular as the share of renewable energies (REs) grows.

A new generation of advanced safe, low-cost, and efficient enough batteries to allow for storage on the grid has paved the way to the first instances of large-scale energy storage for the electric distribution network. The next-generation advanced

batteries include Li-ion, sodium metal halide, sodium sulphur (NaS), advanced lead-acid, and flow batteries. To prepare International Standards for rechargeable batteries used in RE storage, TC 21 and TC 82, *Solar photovoltaic energy systems*, set up Joint Working Group (JWG) 82, *Secondary cells and batteries for renewable energy storage*.

#### Finding the Right Chemistry

IEC TC 21 lists the key areas of battery standardization as starting, lighting, ignition (SLI) also named "starter" batteries, which supply electric energy to motor vehicles; automobile hybrid/electric vehicle cells; traction batteries; and the stationary batteries of the VRLA type.

TC 21 has broadened its scope to include technology and chemistry for flow batteries, which are starting to be deployed in the market and, as such need international standardization regarding performance, performance tests and safety.

Flow batteries are rechargeable batteries in which electroactive chemical components dissolved in liquids (electrolytes) stored externally in tanks and pumped through a membrane convert chemical energy into electricity.

To develop standards for flow batteries that cover safety, performances, installation, terminology and other necessary requirements, TC 21 set up JWG 17, *Flow battery systems for stationary applications*, with IEC TC 105, *Fuel cell technologies*, as flow batteries and fuel cells share certain characteristics. TC 21 was created in 1931 and currently brings together 25 Participating countries and 17 Member countries. Around 215 experts are active in its standardization work.

In view of the fast expanding energy storage needs from mobile, e-mobility, and stationary applications, IEC TC 21 and IEC SC 21A are unlikely to see any reduction in their workload in the foreseeable future. ☹

#### LAUGH TRACK



### Employee Recognition Program

## Raise Your Standards: Get Involved with the USNC's Newest Initiative!

With the emergence of new technologies and the constantly evolving nature of standards work, there is always a need to get more people involved in the standards and conformity assessment field. In response to this need, the USNC is pleased to announce the creation of the Young and Emerging Professionals Program.

This new program will be overseen by a committee of previous and new IEC Young Professionals with the primary focus of getting interested young and emerging professionals involved in standards work. This committee is co-chaired by Christopher Dorr (2015 Young Professional) and Carin Stuart (2014 Young Professional).

The IEC Young Professionals Program has been instrumental in boosting the participation of young professionals within their National Committees (including the USNC), as well as growing the careers of those selected. However,

### USNC Young and Emerging Professionals Program



due to the limited number of participants that can be selected to attend the IEC YP workshop, opportunities have been limited for those who were not selected to participate in the program, or for those who were not otherwise able to apply. The goal of this new program is to ensure that all the applicants, whether selected for the IEC Workshop or not, continue with active participation either at the national (USNC, Technical Advisory Group [TAG]) or international (IEC) level.

It is also important to bring emerging professionals of any age and/or career stage into the fold, recognizing that not everyone may become involved in standardization early in their careers and therefore be eligible for the IEC Young Professionals Program.

The new committee will look to engage with young and emerging professionals through a number of proposed methods, which may include hosting networking events to meet other young and emerging professionals, hosting training workshops on how the USNC and the IEC work, and hosting workshops and events on effective TAG and

IEC participation.

The committee will also act as a resource to help put young and emerging professionals in contact with the leadership of the TAGs that interest them the most, and to identify other participation or mentoring opportunities for the young and emerging professionals. Additionally, the program will encourage succession planning within committees and companies that already participate, working with the USNC Communication and Continuing Education Committee (C&CEC) to

identify USNC members that would be good mentoring candidates and pairing them with young professionals with similar interests/expertise.

As one of its first acts, the Young and Emerging Professionals Committee is conducting a survey of all previous YP participants and applicants on what type of standards involvement they are most interested in and what their (and their companies') goals are. The aim is to gather further information that should help to refine the committee's activities going forward.

However, fostering participation of young professionals is not just the job of the Young and Emerging Professionals Committee. Every USNC member can – and should – help out. Please encourage young and emerging professionals at your company to get involved in the work of the USNC, and stay tuned for more information from the Young and Emerging Professionals Committee.

If you or anyone you know is interested in participating on this new committee, please contact one of the co-chairs at [crdorr@ra.rockwell.com](mailto:crdorr@ra.rockwell.com) or [CarinA.Stuart@Energizer.com](mailto:CarinA.Stuart@Energizer.com). ☺



USNC YOUNG AND EMERGING PROFESSIONALS PROGRAM  
COMMITTEE CO-CHAIRS CHRISTOPHER DORR AND CARIN STUART



## USNC Names Participants for 2016 IEC Young Professionals Workshop



**T**he USNC/IEC congratulates the U.S. winners of its 2016 Young Professionals Workshop Competition. Recipients will attend the international workshop on October 10–14, 2016, in Frankfurt, Germany, in conjunction with the 80th IEC General Meeting (GM).

The USNC represents U.S. interests in IEC standards and conformance activities, and is an integrated committee of the American National Standards Institute (ANSI). The Young Professionals Workshop, in its seventh year, unites professionals from around the world who are at the start of their careers in the fields of electrotechnical standardization and conformance. The workshop is intended to cultivate long-term national involvement in the international arena, strengthen technology transfer, and encourage the participation of emerging professionals in shaping the future of these areas.

This year, the USNC received a record number of applications reflecting well-qualified candidates, resulting in the most competitive selection process to date. As with previous years, the 2016 winners were selected based on their demonstrated leadership and dedication in connection with standardization and/

“EVERY ONE OF THE CANDIDATES WAS SIMPLY OUTSTANDING THIS YEAR, AND THE DECISION PROCESS WAS EXTRAORDINARILY TOUGH.”

—TONY ZERTUCHE, USNC/IEC GENERAL SECRETARY

or conformity assessment activities, as well as their vision of the larger commercial and strategic impact of standards and conformance work, and their accomplishments in their chosen field of activity.

The following three 2016 IEC Young Professionals have been selected by the USNC:



### EDWARD HONG

Edward Hong is a senior product certification design engineer at Solar Turbines Incorporated, where he has worked since 2012. He leads development, implementation, and maintenance of certification strategies for compliance with applicable international and national standards, as well as conformity assessments for new and existing products to support a global market. Much of his work focuses on the IEC 60079 series of standards pertaining to equipment design and installation in explosive atmospheres.

Mr. Hong is a graduate of the University of California, San Diego, where he earned a bachelor of science

in aerospace engineering. His training and certifications include: Certification Management Limited IECEx Unit Ex 001 Training; FM Approvals Hazardous Locations Training; and Caterpillar 6 Sigma DMAIC Green Belt Training. He was also recognized by the California Board for Professional Engineers and Land Surveyors as an “Engineer-in Training” in December 2011. Prior to his position at Solar Turbine, Mr. Hong served as an executive intern for the California State Senate from 2011 to 2012.



### JESSE S. JUR, PH.D.

Jesse S. Jur, Ph.D., assistant professor at North Carolina State University, serves on the faculty of the department of textile engineering, chemistry, and science and leads a research team on textile electronics design strategies.

In 2013 Dr. Jur was appointed as an Advanced Self-powered Systems of Integrated Sensor Technologies (ASSIST) thrust leader on wearability and data – which focuses on fundamental understanding of the human interface with wearable devices. *(continued)*

## USNC Names Participants for 2016 IEC Young Professionals Workshop *(continued)*

ASSIST is a National Science Foundation (NSF)-funded Nanosystems Engineering Research Center (NERC) and operates as a multi-institutional team led by North Carolina State.

Dr. Jur has also been actively involved in IEC Strategic Group (SG)

10 on Wearable Smart Devices and was a contributor to Ad Hoc Group 56 on the topic. He has a bachelor's of science in chemical engineering from the University of South Carolina, Columbia, a master's of science in chemical engineering from the Johns Hopkins University, and a Ph.D.



in materials science and engineering from North Carolina State.

### ANDREW NORTHUP

Andrew Northup is the director of global affairs at Medical Imaging & Technology Alliance (MITA), a division of the National Electrical Manufacturers

Association (NEMA). Mr. Northup engages with regulatory agencies in the U.S. and abroad in multi- and bilateral fora to promote regulatory convergence, standards adoption, and trade liberalization in topics of interest to the medical imaging, radiation therapy,

and healthcare IT industry. He has assumed numerous leadership positions with DITTA (the Global Diagnostic Imaging, Healthcare IT, and Radiation Therapy Trade Association), including managing several Working Groups, serving as MITA's staff liaison to DITTA, and serving as interim Secretariat to the Board of Directors.

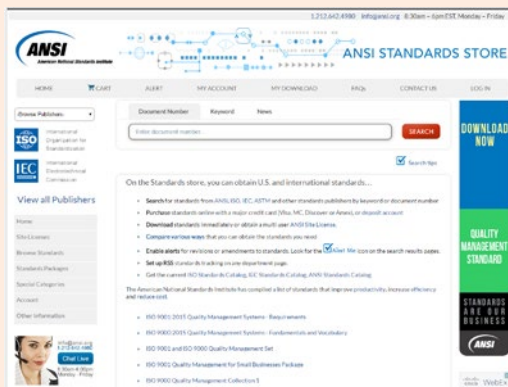
Mr. Northup organized two DITTA conferences promoting standards in global medical device regulations in tandem with the International Medical Device Regulators Forum (IMDRF). He also coordinated global medical imaging industry input to revisions of ISO 13485 and IEC 60601 and planned a major standards-based initiative to strengthen the market for refurbished medical imaging equipment. ☺

## ANSI Launches Enhanced Standards Store; Purchases Support USNC

The American National Standards Institute (ANSI) has launched a redesigned and enhanced online standards store at [webstore.ansi.org](http://webstore.ansi.org), featuring a modern interface with faster load times and an easy-to-navigate experience. And as USNC members, you gain added benefits from dollars spent by purchasing IEC standards directly from ANSI's webstore, since that revenue supports the activities and initiatives of the USNC.

The USNC is a totally integrated committee of ANSI. As such, ANSI provides administrative support to the USNC and its nearly 1,500 participants. ANSI also provides the fiduciary framework by which the USNC's financial obligations are met, including the payment of annual dues to IEC.

When you purchase IEC standards



from ANSI, you are making a commitment to bolster U.S. leadership at the IEC table. And purchasing standards directly from ANSI's webstore offers the additional benefits of cost savings for ANSI members, personal service, and the convenience of one-stop shopping for more than 230,000 standards available for immediate download.

The newly enhanced webstore

is mobile-friendly and offers a vast catalog of IEC as well as U.S. and other national, regional, and international standards from over 120 publishers. The site also allows you to browse cost-effective standards packages, and search through a multitude of special categories, including energy, workplace safety, manufacturing and production, product design, electronics, automotive and aerospace, and much more.

Through the user-friendly interface, you can also search for standards by keyword or document number. And the webstore's Site License option is a powerful standards management solution that simplifies searching, monitoring, collaborating on, purchasing, and accessing standards.

Visit [webstore.ansi.org](http://webstore.ansi.org).

### Call for Nominations: USNC Council & TMC

In accordance with the current USNC Statutes, we are now inviting nominations for membership positions on the USNC Council and Technical Management Committee (TMC) for the 2017-19 term.

Those interested in joining should review the qualification criteria below and inform the USNC General Secretary as soon as possible of your intent to apply. A submission package will be requested and reviewed by the USNC Nominations Committee.

Candidates must be from entities that are ANSI members and funding contributors to the USNC. Council candidates should be from U.S. national interested parties with management backgrounds that reflect a demonstrated interest in international business and standardization, preferably of an electrotechnical nature. TMC candidates should have significant experience in technical management positions.

All must be able to think and act in a manner to advance U.S. electrotechnical interests and be able to state their organization's view on IEC issues. The candidate should also be prepared to attend their respective Council or TMC meetings within the U.S. at a normal frequency of about 3 meetings per year.

**Nominations for all new individuals must be submitted by August 21, 2016, and include a nomination statement, a statement of support from the candidate's employer, and a brief CV/biographical sketch.** The USNC Nominations Committee will review all the proposed candidates' credentials and develop a slate of recommended nominees.

Anyone interested in submitting a nomination should contact USNC General Secretary Tony Zertuche as soon as possible at [tzertuche@ansi.org](mailto:tzertuche@ansi.org) or 212.642.4892. ☺

### USNC Experts among Distinguished Group Named as ANSI 2016 Leadership and Service Award Winners

The American National Standards Institute (ANSI) announced the recipients of its 2016 Leadership and Service Awards, and among the winners are eight experts nominated by the USNC (below, in blue). ANSI will honor the following 18 distinguished award recipients for their outstanding contributions to national and international standardization activities during a ceremony held in conjunction with World Standards Week 2016 in Washington, DC.

- **Wayne Morris**, vice president of technical operations and standards, Association of Home Appliance Manufacturers (AHAM), has been awarded the **Astin-Polk International Standards Medal**.
- **Colin Church**, voluntary standards coordinator (retired), U.S. Consumer Product Safety Commission, will receive the **Howard Coonley Medal**.
- **Kenneth Gettman**, director of international standards, National Electrical Manufacturers Association (NEMA), will receive the **Finegan Standards Metal**.
- **Jennifer Garner**, director of INCITS Standards Programs, InterNational Committee for Information Technology Standards (INCITS), Information Technology Industry Council (ITI), will receive the **Edward Lohse Information Technology Medal**.
- **Timothy Duffy**, manager of conformity assessment, Rockwell Automation, will receive the **Gerald H. Rittersbusch Conformity Assessment Medal**.
- **Alec McMillan**, Rockwell Automation, will receive the **Elihu Thomson Electrotechnology Medal**.
- **James Pauley**, president and CEO, National Fire Protection Association



(NFPA), will receive the **George S. Wham Leadership Medal**.

- The **ASTM International** team responsible for *Standardization News* will receive the **President's Award for Journalism**.

Two individuals will receive the **Next Generation Award**:

- **Marianna Kramarikova**, manager, technology and standards, Telecommunications Industry Association (TIA)
- **Joseph Sposse**, technical manager, global wind team, Intertek Energy Services

And the following eight individuals will receive the **Meritorious Service Award**:

- **Elaina Finger**, global standard process coordinator, Corning Incorporated
- **Megan Hayes**, director, regulatory and standards strategy, NEMA/MITA
- **Judd Hesselroth**, anti-corruption program director, office of legal compliance, CELA, Microsoft
- **Sheronda Jeffries**, TL 9000 program manager, Cisco Systems, Inc.
- **John Mitchell**, coordinator, cookstoves and clean indoor air, U.S. Environmental Protection Agency
- **Glenn Sexton**, president and CEO, Northwest Information Services, Inc.
- **Joan Sterling**, vice president of government affairs, Intertek
- **Trudie Williams**, program analyst, U.S. Department of Defense

The 18 winners will be honored at a banquet to be held on Wednesday evening, October 26, at the Fairmont Hotel in Washington, DC. For more information, visit [www.ansi.org/awards](http://www.ansi.org/awards) and [www.ansi.org/wsweek](http://www.ansi.org/wsweek). ☺



## IEC Formally Adopts USB Type-C™, USB Power Delivery and USB 3.1 Specifications

### U.S.-Chaired TC 100 Approves Inclusion in IEC Standards

The IEC and the USB Implementers Forum (USB-IF) recently announced that the IEC has formally adopted USB Type-C™, USB Power Delivery, and USB 3.1 specifications. The specifications define a truly single-cable solution for audio/video, data, and power delivery. The USB-IF specifications were submitted to IEC Technical Committee (TC) 100, *Audio, video and multimedia systems and equipment*, and were approved for inclusion in the IEC 62680 series, *Universal Serial Bus interfaces for data and power*.

The standards are expected to enhance global action with a goal of reducing e-waste and improving re-usability of power supplies with a range of electronic devices. The IEC reports that its approach for ongoing standardization work in this space is driven by the ultimate goals

of increasing external power supply re-usability, supporting consumer convenience, maintaining product reliability and safety, and providing for future technology innovations.

Widespread adoption of the resulting international standards will help to reduce the encroachment of poorly designed or manufactured aftermarket substitutes, which may affect the operation of electronic devices in compliance with regulatory requirements. The IEC specification numbers are the following:

- IEC 62680-1-3 (USB Type-C)
- IEC 62680-1-2 (USB PD)
- IEC 62680-3-1 (USB 3.1)

"IEC is dedicated to promoting specifications that reduce e-waste and increase device interoperability," said Frans Vreeswijk, General Secretary and CEO of the IEC. "The longstanding relationship between IEC and USB-IF



is a testament to our goal of aligning with influential global organizations that benefit consumers and drive a thriving ecosystem."

The U.S.'s David Carlton Feland of the Society of Motion Picture and Television Engineers (SMPTE), an ANSI member and accredited standards developer, serves as a chairperson to IEC TC 100. ANSI member and accredited standards developer the Consumer Electronics Association (CEA) serves as the USNC-approved U.S. TAG Administrator to IEC TC 100.

To learn more about USB-IF and USB specifications, visit [www.usb.org](http://www.usb.org). ☺

## Sponsor the USNC's Hosting of the IEC 2022 General Meeting in the USA!

For only the seventh time since 1904, the United States is gearing up to host the IEC General Meeting, in October 2022. Organizations with a stake in all areas of electrotechnology are invited to demonstrate their commitment to international standardization and conformity assessment through sponsorship of the ten-day event.

For more information, see the attached [Sponsorship Brochure](#) at the end of this newsletter, or contact USNC/IEC Secretary General Tony Zertuche at [tzertuche@ansi.org](mailto:tzertuche@ansi.org) or 212-642-4892.



# 2022

HOSTED IN THE USA BY THE U.S. NATIONAL COMMITTEE

### SPONSORSHIP OPPORTUNITIES



2022 General Meeting of the International Electrotechnical Commission

## SAVE THE DATE

### ABOUT THIS PUBLICATION

The USNC Current newsletter is distributed to the constituency of the U.S. National Committee (USNC) of the International Electrotechnical Commission (IEC). It provides updates on technical activities and other information of interest to members of the electrotechnical community. Some articles are reprinted with permission from the IEC News log.

### DISCLAIMER

The opinions expressed by the authors are theirs alone and do not necessarily reflect the opinions of the USNC/IEC nor of ANSI.

### HOW TO CONTRIBUTE

Contributions are gladly accepted for review and possible publication, subject to revision by the editors. Submit proposed news items to: Tony Zertuche, USNC/IEC General Secretary, ANSI  
212.642.4892  
[tzertuche@ansi.org](mailto:tzertuche@ansi.org)

### Published in ANSI's NYC Office

25 West 43rd Street  
Fourth Floor  
New York, NY 10036  
[www.ansi.org](http://www.ansi.org)



## Mark Your Calendar for Upcoming Meetings & Events

### 2016

**30 August – 1 September**

**CAPCC/TMC/Council Meetings**

**Dell Inc., Round Rock, TX**

**29 – 30 September**

**FINCA Meeting**

**Buenos Aires, Argentina**

**10 – 14 October**

**80<sup>th</sup> IEC General Meeting**

**Frankfurt, Germany**

Monday 10: SMB/CAB

Wednesday 12: CB

Friday 14: Council

**24 – 28 October**

**World Standards Week**

**Washington, DC**



### 2017

**24 – 26 January**

**CAPCC/TMC/Council Meetings**

**UL Offices, Freemont, CA**

**9 – 13 October**

**81<sup>st</sup> IEC General Meeting**

**Vladivostok, Russia**

Monday 9: SMB/CAB

Wednesday 11: CB

Friday 13: Council

### 2022

**October**

**86<sup>th</sup> IEC General Meeting**

**USA**

For additional event info, visit [www.ansi.org/calendar](http://www.ansi.org/calendar)  
and search for "USNC" or "IEC."

### UPCOMING ISSUES OF THE USNC CURRENT

[www.ansi.org/usnc](http://www.ansi.org/usnc)

**Q III** Encouraging Leadership / Succession Planning

**Q IV** IECRE & Renewable Energies



# 2022

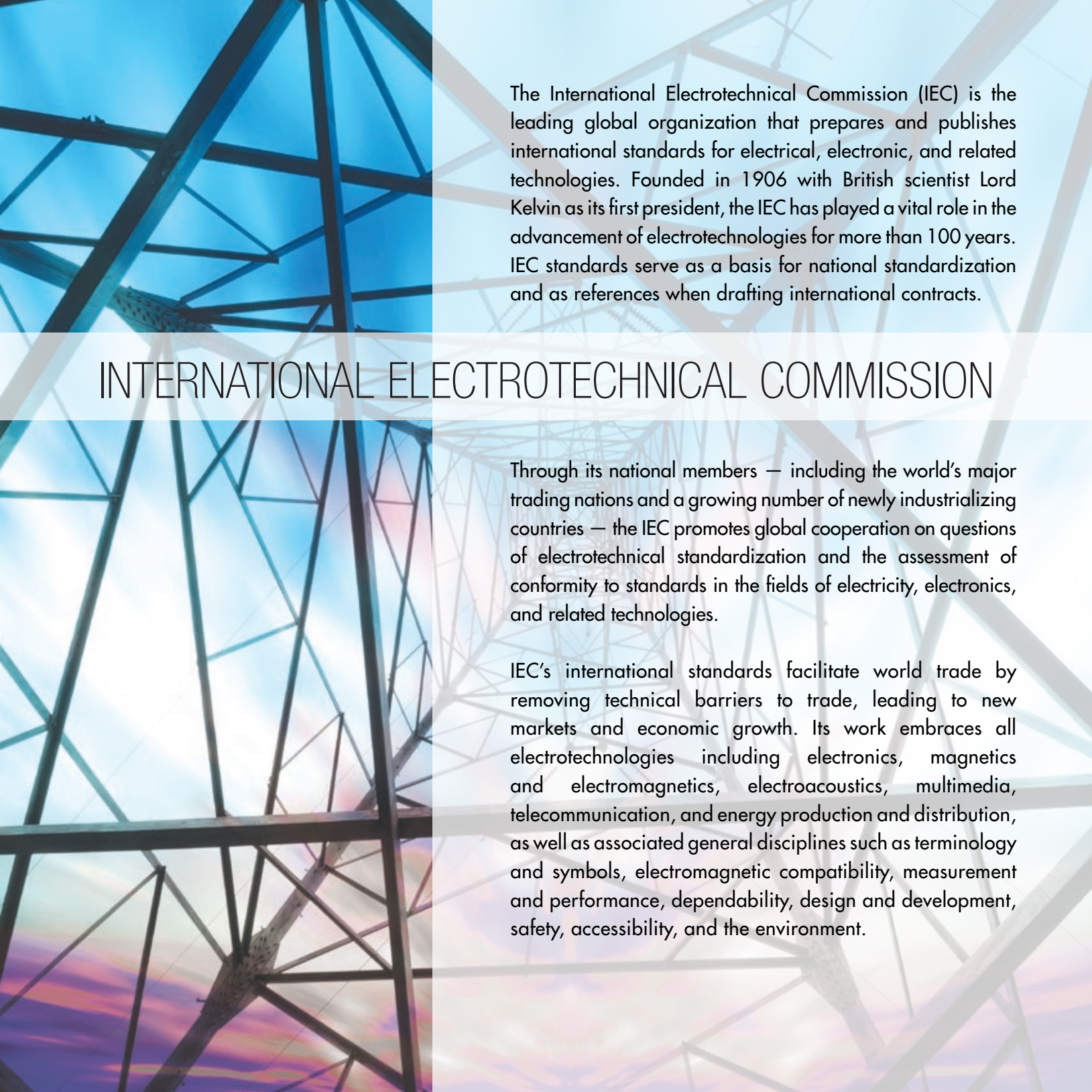
HOSTED IN THE USA BY THE U.S. NATIONAL COMMITTEE

## SPONSORSHIP OPPORTUNITIES



2022 General Meeting of the International Electrotechnical Commission





The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes international standards for electrical, electronic, and related technologies. Founded in 1906 with British scientist Lord Kelvin as its first president, the IEC has played a vital role in the advancement of electrotechnologies for more than 100 years. IEC standards serve as a basis for national standardization and as references when drafting international contracts.

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

Through its national members — including the world's major trading nations and a growing number of newly industrializing countries — the IEC promotes global cooperation on questions of electrotechnical standardization and the assessment of conformity to standards in the fields of electricity, electronics, and related technologies.

IEC's international standards facilitate world trade by removing technical barriers to trade, leading to new markets and economic growth. Its work embraces all electrotechnologies including electronics, magnetics and electromagnetics, electroacoustics, multimedia, telecommunication, and energy production and distribution, as well as associated general disciplines such as terminology and symbols, electromagnetic compatibility, measurement and performance, dependability, design and development, safety, accessibility, and the environment.



## United States National Committee of the IEC

---

FOR ONLY THE SEVENTH TIME SINCE 1904, THE UNITED STATES IS GEARING UP TO HOST THE IEC GENERAL MEETING IN OCTOBER 2022. MORE THAN 1,500 DELEGATES, ELECTROTECHNOLOGY AND STANDARDIZATION EXPERTS, AND ACCOMPANYING PERSONS FROM AROUND THE GLOBE ARE EXPECTED TO ATTEND.

ORGANIZATIONS WITH A STAKE IN ALL AREAS OF ELECTROTECHNOLOGY ARE INVITED TO DEMONSTRATE THEIR COMMITMENT TO INTERNATIONAL STANDARDIZATION AND CONFORMITY ASSESSMENT THROUGH SPONSORSHIP OF THE TEN-DAY EVENT.

## WHY THE UNITED STATES IS HOSTING IEC 2022

- To reaffirm U.S. commitment to international standardization and demonstrate U.S. leadership in the electrotechnical sector markets of the world.
- To raise the level of understanding within U.S. industry and governmental agencies of the impact and importance of conformity assessment activities.
- To facilitate U.S. participation by reducing travel costs by having the IEC General Meeting and its related management and technical meetings within the United States.
- To create opportunities for U.S. businesses and industry to participate in establishing industry standards that lead to greater global market access.
- To help the U.S. electrotechnical industry compete in the global marketplace through participation and use of an open, balanced, and transparent standards development process.
- To demonstrate the USNC's leadership position in the management structure of the IEC at all levels.
- To provide evidence to the world market that the IEC international standardization activities are significant components of U.S. electrotechnical standardization activities.



# SPONSORSHIP OPPORTUNITIES

## DIAMOND SPONSOR

\$100,000 contribution

- Recognition and speaking opportunities at opening and closing sessions
- Sponsorship of specific meeting events and activities
- Invitation to attend the President's and Secretaries' dinner, the Council luncheon and the Host Committee's reception for IEC Officers and staff
- Participation in General Meeting press conference and inclusion of company logo on event press releases
- Tabletop or sponsor promenade at registration and Internet Café
- Prominent on-site exposure via logos, banners and signage
- Distribution of company logo conference souvenir
- Inclusion of gifts and printed materials in attendee welcome kits
- Inclusion of corporate logo and link on meeting website
- Use of IEC 2022 meeting logo on "Official Sponsor" letterhead
- Plaque for recognition as Diamond sponsor

## PLATINUM SPONSOR

\$50,000 contribution

- Recognition at opening and closing sessions
- Sponsorship of specific meeting events and activities
- Invitation to attend the President's and Secretaries' dinner and Council luncheon
- Participation in General Meeting press conference and inclusion of company logo on event press releases
- Tabletop or sponsor promenade at registration and Internet Café
- Prominent on-site exposure via logos, banners and signage
- Distribution of company logo conference souvenir
- Inclusion of gifts and printed materials in attendee welcome kits
- Inclusion of corporate logo and link on meeting website
- Use of IEC 2022 meeting logo on "Official Sponsor" letterhead
- Plaque for recognition as Platinum sponsor

## GOLD SPONSOR

\$25,000 contribution

- Recognition at opening and closing sessions
- Sponsorship of specific meeting events and activities

## GOLD SPONSOR (continued)

- Invitation to attend the President's and Secretaries' dinner and Council luncheon
- Inclusion of company logo on event press releases
- Tabletop or sponsor promenade at registration and Internet Café
- Prominent on-site exposure via logos, banners and signage
- Inclusion of gifts and printed materials in attendee welcome kits
- Inclusion of corporate logo and link on meeting website
- Use of IEC 2022 meeting logo on "Official Sponsor" letterhead
- Plaque for recognition as Gold sponsor

## SILVER SPONSOR

\$15,000 contribution

- Recognition at opening and closing sessions
- Sponsorship of specific meeting events and activities
- Invitation to attend the Council luncheon
- Inclusion of printed materials in attendee welcome kits
- Inclusion of corporate logo and link on meeting website
- Use of IEC 2022 meeting logo on "Official Sponsor" letterhead
- Prominent on-site exposure via logos, banners and signage
- Plaque for recognition as Silver sponsor

## BRONZE SPONSOR

\$10,000 contribution

- Recognition at opening and closing sessions
- Prominent on-site exposure via logos, banners and signage
- Inclusion of printed materials in attendee welcome kits
- Inclusion of corporate logo and link on meeting website
- Use of IEC 2022 meeting logo on "Official Sponsor" letterhead
- Plaque for recognition as Bronze sponsor

## GENERAL SPONSOR

\$5,000 contribution

- Recognition at opening and closing sessions
- Prominent on-site exposure via logos, banners and signage
- Inclusion of corporate logo and link on meeting website
- Use of IEC 2022 meeting logo on "Official Sponsor" letterhead
- Plaque for recognition as General sponsor

*Size, prominence, and placement of logos will be a function of sponsorship level. All gift items and materials for delegates will require approval of the USNC 2022 Steering Committee.*



## SPONSORSHIP COMMITMENT

Sponsor: \_\_\_\_\_

Point of  
Contact: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

E-mail: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

SPONSOR COMMITMENT: \$ \_\_\_\_\_

- ☐ Please bill us immediately.
- ☐ Please contact us to discuss a customized payment schedule.

Note: Multiple-year payment plans are possible and should be considered.

SPONSOR LEVEL*	ONE-TIME PAYMENT
----------------	------------------

- |   |            |
|---|------------|
| <input type="checkbox"/> DIAMOND SPONSOR  | \$ 100,000 |
| <input type="checkbox"/> PLATINUM SPONSOR | 50,000     |
| <input type="checkbox"/> GOLD SPONSOR     | 25,000     |
| <input type="checkbox"/> SILVER SPONSOR   | 15,000     |
| <input type="checkbox"/> BRONZE SPONSOR   | 10,000     |
| <input type="checkbox"/> GENERAL SPONSOR  | 5,000      |

\*All sponsorships are tax deductible under the fullest extent of the law.

### PLEASE COMPLETE AND RETURN TO

IEC 2022 Sponsorship Coordinator  
c/o American National Standards Institute  
25 W 43rd St, Fourth Floor  
New York, NY 10036

E: [tzertuche@ansi.org](mailto:tzertuche@ansi.org)

T: 212.642.4892

F: 212.398.0023

If responding via e-mail, please be certain to provide all requested information.

All contributions will support the U.S. National Committee of the IEC and its hosting of IEC 2022 in the United States, and other international IEC policy, management, and technical meetings, as appropriate.

### SPONSORSHIP OF SPECIFIC EVENTS/MEETINGS

- Silver, Gold, Platinum, and Diamond Sponsors have the option of sponsoring specific events (e.g., coffee breaks, receptions, luncheons, dinners, business center, IT and/or audio visual equipment, delegate welcome kits, etc.).
- It is also customary for IEC General Meetings to host several industry-related Technical Committee (TC) and Subcommittee (SC) meetings. Pending sponsor support, approximately 60 IEC TCs and SCs are expected to be invited to the IEC 2022 event. Sponsorship of these individual meetings is possible as well.

### FOR ADDITIONAL INFORMATION

Contact the IEC 2022 Sponsorship Team

Tony Zertuche

T: 212.642.4892

F: 212.398.0023

E: [tzertuche@ansi.org](mailto:tzertuche@ansi.org)



[www.ansi.org/usnc](http://www.ansi.org/usnc)

## United States National Committee of the IEC

---

IEC 2022 Sponsorship Coordinator  
c/o American National Standards Institute  
25 West 43rd Street, Fourth Floor  
New York, NY 10036  
T: 212.642.4892  
F: 212.398.0023  
E: [tzertuche@ansi.org](mailto:tzertuche@ansi.org)

### IEC 2022: USA

THE IEC GENERAL MEETING, HOSTED ANNUALLY BY A DIFFERENT IEC MEMBER NATION, BRINGS TOGETHER INTERNATIONAL STAKEHOLDERS FOR DISCUSSION OF CURRENT ISSUES AND FUTURE DIRECTIONS AND STRATEGIES FOR THE IEC. THE GENERAL MEETING HAS A UNIQUE FORMAT, COMBINING MANAGEMENT AND TECHNICAL MEETINGS, AND BRINGING ALL THE KEY PLAYERS TOGETHER ON ONE STAGE.

