USNC CURRENT
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FOCUS ON IECRE & RENEWABLE ENERGIES

The International Energy Outlook projects that renewables will continue as the world's fastest-growing energy source – increasing by 2.6% per year through 2040. Standardization is at the core of these technologies, providing a foundation for certification systems, promoting international trade of uniform high-quality products, and supporting transfer of expertise from traditional energy systems.

Industry Collaboration Accelerates Market Adoption of Renewable Energy Products

By Sunny Rai, Vice President & Global Energy Business Leader, Intertek

The success of any enterprise depends upon individuals and groups working together toward a common goal, and the rapidly evolving renewable energy industry is no exception. Through industry collaborations, Intertek has participated in the development of groundbreaking, state-of-the-art technology, which is revolutionizing the power generation and distribution industry by bringing innovative clean energy products to markets throughout the world.

Research Institutions & Government Organizations

Of the many collaborations fostered to support the advancement of renewable energy, one with a notable impact on research and development – and on education for the next generation of engineers – has been the establishment of the Center for Evaluation of Clean Energy Technology (CECET). An Intertek company, CECET was formed as a partnership between Intertek and the New York State Research and Development Authority (NYSERDA) to assist in funding, R&D, laboratory testing, and advisory services for clean energy technology.

The CECET membership alliance also includes a number of research universities who provide their expertise, research, and testing capabilities for renewable energy products. Some of the partners include New York State's Center of Excellence for Environmental and Energy Systems at Syracuse University (SyracuseCoE), Binghamton University, Clarkson University, and the Rochester Institute of Technology (RIT). Through the formation of this consortium, CECET is able to merge the existing capabilities of its members with the funding resources of NYSERDA to provide essential services to small and mid-size wind turbine and other equipment manufacturers. And beyond its specialization in in wind and photovoltaic (PV) technology, CECET provides research support and commercialization services for inverters and converters for both *(continued)*

IN THIS ISSUE

IEC symbols for electrical current: ALTERNATING CURRENT (AC) DIRECT CURRENT (DC) AC/DC

Industry Collaboration Accelerates Market Adoption of Renewable... *(continued)*

traditional and renewable energy, energy storage and batteries, biomass fuels, and geothermal technology.

The collaboration between CECET and NYSERDA led to the development of the first mobile platform for PV testing in North America. This technology, now being deployed across North America, offers an onsite solution to screen out damaged modules before installation and to identify underperforming modules already installed to improve solar plant performance. When a single damaged or underperforming PV module can lower the energy output of an entire system, the Mobile PV Testcenter can quickly help system installers, owners, and operators identify weak links and restore performance. Without the risks and costs associated with shipping, financiers and insurers now have new tools to quickly assess and improve the efficacy and output of renewable energy investments.

PV module manufacturers, engineering procurement and construction companies (EPCs), system integrators, insurance companies, banks, third-party financial firms, industry, and government staff, project developers, investors, and other PV project stakeholders can all benefit from better understanding the type of testing and assessment that can take place onsite at power generation plants, as opposed to in laboratories and research facilities. Industry collaborations with partners such as MBJ Services equipment manufacturers and Suncycle USA site services work to educate the industry on the benefits of field testing to ensure that installed renewable energy products are delivering top-notch efficiency.

In addition to the collaborative work of CECET, organizations such as the National Renewable Energy Laboratory (NREL) and the Electric Power Research Institute (EPRI) are working to address the evolution of standard qualification testing of PV modules, and to educate the industry on improving PV performance. Testing was historically used to simply identify flaws that could lead to premature product failure, but newly developed testing offers options above and beyond that. Recently, NREL, EPRI, and Intertek partnered to present a public webinar and white paper on how enhanced performance and reliability data can help PV equipment manufacturers and stakeholders better understand potential stressors and their impact on PV performance and structure design.

THE COLLABORATION BETWEEN CECET AND NYSERDA LED TO THE DEVELOPMENT OF THE FIRST MOBILE PLATFORM FOR PV TESTING IN NORTH AMERICA.

As an accredited third-party certification body, Intertek and other nationally recognized testing laboratories (NRTLs) participate in the development and ongoing discussions of industry standards with

SUNNY RAI

organizations such as the IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE). Serving on such committees allows industry leaders to stay abreast of standards and regulations updates and communicate those to their stakeholders.

Organizations such as CECET, NREL, and EPRI demonstrate the commitment of both government and non-governmental agencies to be engaged with the private sector to foster innovation and product development, as well as safety compliance and commercialization, of clean energy technology.

Manufacturers & Testing Agencies

The partnership between manufacturers and third-party testing agencies allows for those producing renewable energy products to have the insight necessary to bring the best versions of their products to the market. A third-party testing agency brings its expertise to the design, manufacture, testing, inspection, certification, and total quality assurance of renewable energy technologies, as well as insight on all global regulations that may apply to a product in development. This assists manufacturers in creating a customized testing and compliance plan, which balances their performance targets with industry standards. Beyond required compliance, a *(continued)*

Industry Collaboration Accelerates Market Adoption of Renewable... *(continued)*

third-party testing agency works with manufacturers in the earliest phases of R&D to conduct competitive benchmark testing, assess supply chains, analyze the chemical content of components, design for qualification for tax incentives, and determine environmental impact. This provides quality assurance across a product's life cycle to achieve a manufacturer's goals while satisfying the product's end users.

Collaboration between a third-party testing agency and SolarEdge Technologies led to SolarEdge's single-phase inverters being one of the first in the marketplace to meet the UL 1741 SA draft requirements for classification as "smart inverters" or "grid support utility interactive inverters." SolarEdge is just one example of a manufacturer whose optimized inverters will enable utilities to build in higher levels of PV solar generation.

The benefits of the testing agency – manufacturer collaboration were again demonstrated through a multi-year partnership between Intertek and with Ogin Energy in the U.S. and Denmark. This collaboration led to the certification and commercialization of Ogin's OE20 wind turbines, an innovative turbine technology platform aimed at accelerating the adoption of distributed wind. By partnering with Intertek, Ogin was provided with a comprehensive assessment of its wind turbine design, an assessment of manufacturability, third-party supplier audits, a determination of field testing requirements, guidance in ISO quality system development, certification to IEC 61400 and quantifying power performance. Through this sustained innovation partnership, Ogin's product and products like them are enabling growth in rural electrification, as well as distributed, and onsite power generation.

Power Plant Owners, Operators, and Insurers

Once installed, renewable energy products and systems require continuous observation, evaluation, and maintenance in order to ensure optimal performance. To help meet the needs of owners, operators, financiers, and insurers of renewable energy installations, industry collaborations have led to the development of state-of-the-art technology for on-site evaluation of a number of renewable energy products. Through technology like the mobile PV test center, in-situ electroluminescence inspection and UAV-based PV plant inspection, renewable energy installations can monitor and ensure that their systems are operating at peak efficiency.

Now and in the Future

Through each of these partnerships, organizations throughout the renewable energy industry are able to collaborate with stakeholders at every stage of the value chain and contribute expertise and resources to the common goal of growth in the commercialization of clean energy products. Now and into the future, these types of collaborations will strengthen the renewable energy industry by providing the funding, development, production, and evaluation services needed to develop, manufacture, and maintain renewable energy technologies in markets throughout the world.

More Information

To learn more about Intertek's power-generation-related testing, certification, and inspection activities, visit www.intertek.com/power-generation/.

DOCUMENTS OF INTEREST

Stay up on the latest policies, documents, and other resources from the USNC, IEC, ANSI, and partners.

- **Office of the United States Trade Representative (USTR) Foreign Trade Barriers Report**
  https://ustr.gov/about-us/policy-offices/press-office/reports-and-publications/2016/2016-national-trade-estimate
- **IEC White Paper: "Global Energy Interconnection"**
  http://www.iec.ch/whitepaper/pdf/iecWP-globalenergyinterconnection.pdfe
- **IoT 2020: Smart and Secure IoT Platform**
  http://www.iec.ch/whitepaper/pdf/iecWP-IoT2020-LR.pdf

Critical Step towards a Commercial Marine Energy Industry: The IECRE System Takes Shape

By Jonathan Colby of Verdant Power, ME-OMC Chair; Gabriel Alsenas of FAU Southeast National Marine Renewable Energy Center, USNC/IECRE Treasurer; and Bill Staby of Resolute Marine, ME-OMC WG 306 Convener

The growth of renewable energy globally, including the emerging marine renewable energy sector, is dependent upon the development of international standards and the verification of compliance to those standards. Third-party verification to consensus-based standards, or conformity assessment, reduces marine energy equipment and project risk and improves safety, performance, and reliability, thereby increasing confidence in the marketplace. While private certification is available, if an industry can collectively establish technical standards and standardize certification via global consensus, not only can international markets evaluate technology viability fairly, but they can more efficiently and confidently adopt renewables.

IECRE System Structure

The IEC is a leading organization for the preparation and publication of international standards for all electrical, electronic, and related technologies. Nearly 20,000 experts participate in the development of IEC standards across a broad range of technologies, including renewable technologies such as wind, solar photovoltaic, and marine energy. In order to facilitate international trade in equipment and services for use in renewable energy sectors while maintaining the required level of safety, the IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE) was established. The IECRE System currently includes three renewable energy sectors: marine energy (ME), solar photovoltaic energy (PV), and wind energy (WE). There are fifteen countries (national Member Bodies) participating

globally. Officially formed in September 2014, the IECRE has been fully organized, is reviewing and approving applications for IECRE Test Laboratories (RETLs) and IECRE Certification Bodies (RECBs), and will soon be offering conformity assessment products for all three sectors.

The IECRE System's Basic Rules (IECRE 01) and Rules of Procedure (IECRE 02) have been approved (Edition 1.0) and are available for download on the IECRE Documents page (www.iecre.org/documents/refdocs/). These documents outline the rules for participation, membership, and voting, and establish the structure and operation of the IECRE, including: a system-level IECRE Management Committee (REMC); sector-level Operational Management Committees (OMCs); and Working Groups, Stakeholder Groups, and Task Forces that develop and operate the system. The individual sectors have approved or are finalizing sector-level Rules of Procedure and the associated Operational Documents to organize and direct their respective certification schemes.

THE FIRST IECRE TYPE CERTIFICATE WAS ISSUED FOR A WIND TURBINE IN OCTOBER 2016 – a MAJOR MILESTONE FOR THE WIND ENERGY INDUSTRY AND THE IECRE.

A fundamental tenant of the IECRE System is Peer Assessment – the process by which the competency of the organizations that operate within one or more of the three IECRE System sectors is periodically reviewed. The Rules, Assessment Report Templates, Application Forms, and Fees have been approved for the Peer Assessment process, and assessments have begun in the WE sector for RECBs and RETLs. Following a successful assessment and REMC approval, RECBs, RETLs, and IECRE Inspection Bodies (REIBs) can begin issuing System deliverables including Test Reports, Type Certificates, Project Certificates, and more.

Sectoral Objectives

The specific deliverables of the IECRE System are determined by the respective sector OMCs. Each sector is tasked with operating conformity assessment (CA) schemes that support their industry. The PV sector is primarily focused on system-level certification of the "PV power plant" life cycle and improved performance metrics. The WE sector is primarily focused on type certification *(continued)*

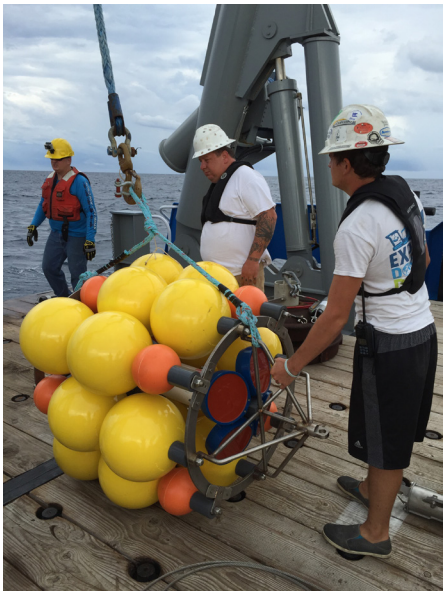
Critical Step towards a Commercial Marine Energy Industry... *(continued)*

(evaluation of a manufacturing organization and a single unit of a product to avoid evaluation of each product sold) at present, including the transition of activities previously covered under IEC 61400-22, *Wind turbines - Part 22: Conformity testing and certification* (the WE sector's preliminary certification guidance) into the new IECRE System. The first IECRE type certificate was issued for a wind turbine in October 2016 – a major milestone for the wind energy industry and the IECRE.

The ME Sector is considering a suite of certification deliverables, including certificates based on test reports and conformity statements, with an initial focus on certification to the Technical Specifications published by IEC TC IEC Technical Committee (TC) 114, *Marine energy – Wave, tidal and other water current converters,* to date (which include equipment as well as project site resource assessments). Like the WE sector, the ME-OMC is actively developing a type certificate for the ME industry.

Relevant Standards

The basis of all certification activities are the underlying standards, against which conformity is assessed. The goal of the ME industry is to target sector-specific needs not previously developed for other industries. In the marine energy industry, IEC TC 114 has been developing consensus-based Technical Specifications (TSs) since 2008. These Technical Specifications are pre-cursors to international standards and can be used in conformity assessment. At present, IEC TC 114 has published eight TSs that are directly applicable for use in the IECRE. Seven Project Teams (PTs) are actively developing new TSs, and TC 114 at large is considering the next TSs to be developed, as outlined in its Strategic Business Plan, available at www.iec.ch/tc114.



TC 114 TSs 62600-100, 62600-102, and 62600-200 address in situ power performance assessment of electricity producing wave and tidal energy converters, which are critical tests for the industry and a key element of the certification process. The recently published design TS, 62600-2, and the moorings TS, 62600-10, are essential for the design verification portion of prototype or type certification, while resource assessment methodologies provided in 62600-101 and 62600-201 for wave and tidal energy support project certification and associated detailed site analyses. Ongoing work in river energy, OTEC, acoustics, and power quality under TC 114 will further support the certification activities in the marine energy industry. The published TSs can be purchased from the IEC or from the American National Standards Institute (ANSI) in the United States.

(L TO R): JONATHAN COLBY, GABRIEL ALSENAS, BILL STABY

Experts and Organizational Support

Standards development is conducted primarily by "volunteers," at least in the sense that no pool of funds is available to support expert participation. Some forward-thinking organizations do provide support for their personnel to participate, but globally, the vast majority of experts donate their time and knowledge. Conformity Assessment development, on the other hand, is a "pay-to-play" model, where representatives are put forward by organizations that either plan to offer CA products (such as a test laboratory or certification body) or by companies who offer products that are assessed by CA schemes (such as marine energy converter equipment manufacturers or project developers). For the latter group, it is imperative that they participate in the development, management, and adoption of CA schemes that will significantly affect the competitiveness of their products and projects in markets where the schemes will be adopted and enforced by local authorities.

In the United States, the National Renewable Energy Laboratory (NREL) provides administrative and technical support for the activities *(continued)*

Critical Steps... *(continued)*

of the U.S. delegation to IEC TC 114. In addition, the U.S. Department of Energy (DOE) provides significant financial and technical support for standards writing activities in multiple renewable energy sectors, including wind, solar, and marine, as well as for the development of conformity assessment products. The U.S. has established, and will maintain, a leadership role in international standards and certification organizations, but more experts and marine energy industry participation is needed. With greater participation, efforts to build a strong foundation of standards and conformity assessment will keep pace with industry growth and provide timely market assistance in both the U.S. and globally.

More Information

For further details on ME standards development and U.S. IEC activities, visit www.tc114.us. For more on the IECRE System, visit www.iecre.org. To learn more about U.S. renewable energy activities and how individuals and companies can help support standardization, visit www.aresca.us.

Thank You 2017 USNC Premier Members

The USNC would like to express its sincere thanks to our Premier Members, without whose support our activities would not be possible.

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DECISION DEPOT

This new quarterly column provides easy access to recent decisions that have been made regarding IEC and USNC policies and procedures that directly affect our members.

Click the links below to access the recent decisions:

- SMB Decisions Document (SMB 5970 DL)
- DMT Decisions Document (SMB 6034 R)
- CAB Decisions Document (CAB 1580 DL)

Wind Energy's Long Successful Relationship with Standards and Certification

By USNC/IEC TC 88's Sandy Butterfield, Boulder Wind Consulting, and Bob Sherwin, EAPC Wind Energy Services

It's no secret that wind energy has become very successful in many parts of the world over the past ten years. It was not an immediate success though. In the "early days," back in the '80s, wind turbines were small and unreliable, and they were not considered seriously by any utility. Wind engineers struggled, using aerospace design tools and a variety of improvised design approaches, to achieve their goals. What they didn't initially realize was that they faced a much larger challenge than most well-developed technologies.

Designing a wind turbine is like designing an inexpensive car to be driven by a blind driver over 300,000 miles (~7,000 hours) of rough road each year with no maintenance. Estimating 20 years of random turbulence–induced fatigue loads alone is unprecedented compared to any technology. In addition, engineers were lacking critical aerodynamic design principles from their core reference technology, helicopter theory. Yet, this was their task – and they accomplished it! Today, most utilities recognize wind energy as their lowest cost option for new energy installation. So how did they do it?

DESIGNING A WIND TURBINE IS LIKE DESIGNING AN INEXPENSIVE CAR TO BE DRIVEN BY A BLIND DRIVER OVER 300,000 MILES OF ROUGH ROAD EVERY YEAR WITH NO MAINTENANCE.

Emergence of Standards Work

Engineers embarked on comparing extensive field test data with their predictions to understand what they had missed. They found many short comings in their analytical tools and design process. It wasn't even clear how to measure power performance curves with consistent results, which is critical for design verification.

But perhaps the most important missing part was a verifiable coherent design process and common agreement of critical design conditions. These began to emerge in the late '80s and early '90s, as international experts convened to write international testing standards and design requirement standards. IEC Technical Committee (TC) 88, *Wind energy generation systems* (www.iec.ch/tc88), was formed and given the task of writing wind energy standards that would be used internationally.

Once this stadnardization work began, research became more focused, analytical tools evolved to suit the design process, and component test procedures evolved which supported the integrated system design process implied by the standard. Ultimately, the testing and design requirements standards gave engineers the common framework they needed to refine their designs into the lower cost, more reliable machines that we see today.

Unique Conformance Needs

But verification that a turbine met these standards requires a unique certification process. Wind turbines are so large that they cannot be placed in a test chamber to validate that each design meets the specified design criteria or 20 years of stochastic fatigue loading.

The standards had to support a design verification process that relied on design documentation review, much like ship verification and offshore oil rig design verification. Thus, it was natural that ship classification societies were the certification bodies (CBs) to certify wind turbines. But each CB had its own approach and interpretation of the standards. Even with a growing number of technical standards available to them for verification, the independent nature of the separate companies lead to inconsistent certification results.

Differences among national certification systems also added further to inconsistencies and, as a result, lack of investor confidence. International developers, investors, and *(continued)*

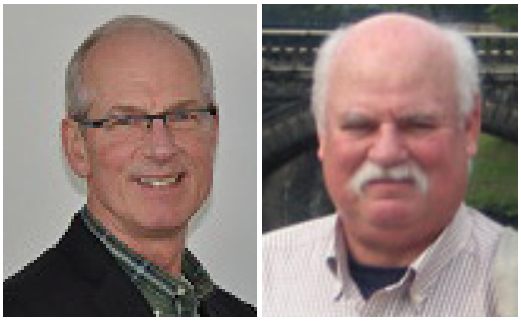
Wind Energy's Long Successful Relationship with Standards and Certification *(continued)*

IECRE - RENEWABLE ENERGY
IEC SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN RENEWABLE ENERGY APPLICATIONS

Member Bodies (MBs)

Country	Member Body Name	ME-OMC Marine	PV-OMC Solar	WE-OMC Wind
Austria	IEC National Committee of Austria			
Canada	CANC/IEC		✓	
China	Certification and Accreditation Administration of the People's Republic of China (CNCA)		✓	✓
Denmark	IEC National Committee of Denmark			✓
Egypt	New & Renewable Energy Authority (NREA)		✓	✓
France	LCIE by Delegation from the IEC NATIONAL COMMITTEE OF FRANCE	✓		✓
Germany	IEC National Committee of Germany	✓	✓	✓
Hungary	TÜV Rheinland InterCert kft.		✓	✓
India	Bureau of Indian Standards		✓	✓
Japan	IEC National Committee of Japan	✓	✓	✓
Korea, Republic of	IEC National Committee of Korea, Republic of		✓	✓
Netherlands	IEC National Committee of Netherlands	✓	✓	✓
Spain	IEC National Committee of Spain	✓	✓	✓
United Kingdom	UK Committee for IECRE	✓		✓
USA	USNC/IECRE	✓	✓	✓

IECRE PARTICIPATING MEMBER BODIES FOR ME, PV, AND WIND SECTORS



(L TO R): SANDY BUTTERFIELD AND BOB SHERWIN

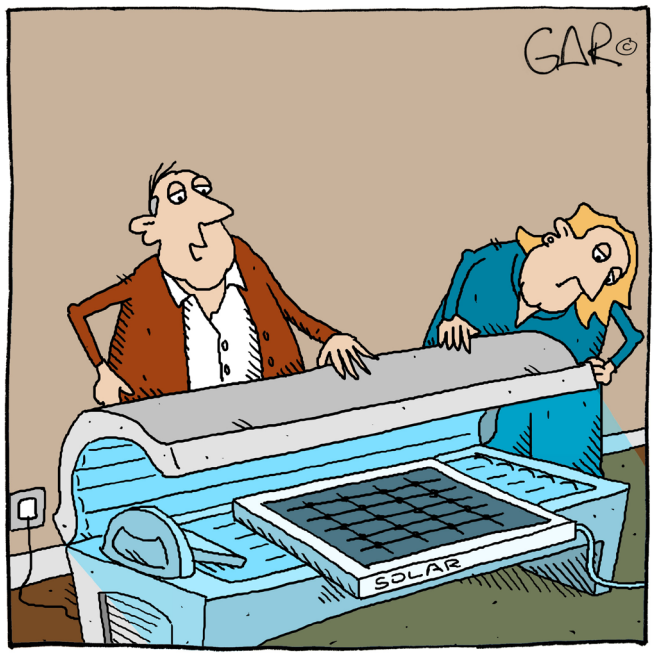
insurance companies generally were not confident enough in certification to assess the risk of their investment nor the dependability of the productivity of wind plants. So even though turbines had become far more reliable and cost effective, there was still a need for a harmonized transparent certification process that would be recognized throughout the world and allow new products and certification companies to enter the market on a level commercial playing field.

IECRE Formation

Enter the IECRE, the IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications. A broad collection of stakeholders from across the wind industry assembled to form a certification system for renewable energy that worked for all of them. At the same time, megawatt-scale photovoltaic (PV) systems were becoming commercially viable, and marine energy also aspired to enter the renewables market. IEC recognized the similarities in system certification requirements among these technologies and suggested grouping them into one common renewable energy conformity assessment system, IECRE (www.IECRE.org).

Today, this new IECRE system is operational with three industry sectors – wind energy, PV, and marine energy (ME). There are currently 15 countries participating (see chart above), with more than 25 test laboratories and 5 certification bodies. The wind energy sector has four stakeholder groups that help guide the rules and operating practice to meet the broad industry needs (see "IECRE System Structure" on page 4). The success of this approach has led to a transparent harmonized system with international mutual recognition and much greater trust by all stakeholders.

LAUGH TRACK



"I've worked out how to keep our solar panels generating electricity during winter."

Sponsor the IEC 2022 General Meeting Hosted 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 IEC 2022 Sponsorship Brochure or contact USNC/IEC Secretary General Tony Zertuche at tzertuche@ansi.org or 212-642-4892.

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Nominations Now Open for Emerging U.S. Professionals Workshop at IEC 2017

United States National Committee of the IEC

The USNC is currently seeking nominations of emerging electrotechnology professionals to participate in the upcoming IEC Young Professionals 2017 Workshop, which will be held on October 9–13, 2017, in Vladivostok, Russia, in conjunction with the 81st IEC General Meeting (GM). Nominations can be submitted using the USNC Young Professionals (YP) Workshop Nomination Form until May 1, 2017.

YP Program Background

Each year, the IEC Young Professionals Workshop assembles international candidates at the beginning of their careers in electrotechnical standardization who have been chosen by IEC National Committees around the world. The program supports the increased involvement of young professionals in international electrotechnical standards and conformity assessment work, bolstering the future of technology transfer and long-term national involvement in the international standardization arena.

Alongside recipients from other nations, the USNC-selected young professionals will take part in a dedicated workshop covering information about the IEC and relevant strategies for international standardization and/or conformity assessment work. Networking opportunities will help cultivate long-term involvement of young people from all over the world in international standardization. Participants will also be given the opportunity to visit local industry, receive guidance from a mentor, and observe a meeting of the IEC Standardization Management Board (SMB) and Conformity Assessment Board (CAB). Individuals chosen to take part in the 2017 Young Professionals Workshop will be financially supported for their travel to Vladivostok and for up to three nights of accommodations.

Nomination and Selection Process

The USNC will select up to three young professionals to represent the United States at the 2017 workshop. The selectees may be employed by industry, the government, academic bodies, consumer organizations, or any other member of the U.S. standards and conformance community that uses, benefits from, or contributes to the IEC's work in electrotechnical standardization and conformity assessment. The program is intended for individuals who have completed their undergraduate education and are in the early stages of their profession—graduate engineers or managers, for example.

Candidates may be nominated by any interested stakeholder who is not a member of the program's selection panel; letters of support from members of the standardization community testifying to the candidate's appropriateness for the workshop and significant achievements to date are highly encouraged. Prospective candidates may also nominate themselves, but must provide at least one letter of professional recommendation and written assurance that their employers have agreed to allow them to attend the 2017 IEC GM if selected.

Candidates will be judged based on their demonstrated leadership and dedication in connection with standardization and/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. Nominated individuals will be assessed by a selection panel made up of USNC officers, standing committee officers, former U.S. Young Professionals Workshop participants, and a pool of USNC Honorary Life Members. All individuals chosen to take part in the 2016 Young Professionals Workshop will be notified in May 2016.

Don't Miss the Deadline!

To nominate yourself or another individual, complete the USNC Young Professionals Workshop Nomination Form and submit it to Kendall Szulewski-Francis at ksfrancis@ansi.org **by Monday May 1, 2017.** For more information about the IEC YP Program, visit www.iec.ch/members_experts/ypp/.

New IEC White Paper: IoT 2020 – Smart and Secure IoT Platform

Adapted with permission from IEC *e-tech*

The Internet of Things (IoT) significantly impacts the global economy and is expected to grow exponentially over the coming years, transforming society as a whole. In order to develop a smart and secure IoT platform, certain critical issues must be addressed in detail to ensure security, interoperability, and scalability of the platform. The topic attracts a lot of interest among a very large and diverse community of stakeholders, and the refined solutions will be key to the success of this technology now and for generations to come.

The IoT is an infrastructure of interconnected objects, people or systems that processes and reacts to physical and virtual information. IoT collectively uses today's Internet backbone to connect things using sensors and other technologies. Through data collection and analysis, it achieves a multitude of outcomes that generally aim to improve user experience or the performance of devices and systems.

How data is collected and implemented will determine how transformational IoT can become. Security grows exponentially in importance as devices that where once isolated become interconnected and more and more information is collected. As with most disruptive technologies, solutions are developed by a wide range of providers promoting their proprietary approaches, which can also impact interconnectivity. Bringing the ambitious visions expressed by IoT to reality will require significant efforts in standardization.

SECURITY GROWS EXPONENTIALLY IN IMPORTANCE AS DEVICES THAT WHERE ONCE ISOLATED BECOME INTERCONNECTED AND MORE AND MORE INFORMATION IS COLLECTED.

A new white paper from the IEC, "IoT 2020: Smart and Secure IoT Platform," aims to provide an overview of today's IoT, including its limitations and deficiencies in the area of security, interoperability and scalability. It includes several use cases from industry, public, and customer domains that point to requirements for a smart and secure IoT platform. It also discusses next-generation platform-level technologies in the field of connectivity, processing, and security.

Developed by the IEC Market Strategy Board (MSB) with major contributions from SAP and Fraunhofer AISEC, the white paper provides important recommendations to IoT stakeholders and for IoT standardization work. Timo Kubach, Ph.D., vice president, cloud platform strategy, SAP, said, "IoT is an important topic that requires careful consideration by standards organizations and others if we are to realize its true benefits. Recognizing this, we aimed at identifying the future state of IoT and providing recommendations on what actions IEC, and the broader standards community, could take to support the anticipated dynamic growth of IoT solutions."

"IoT 2020: Smart and Secure IoT Platform" can be downloaded at www.iec.ch/whitepaper/pdf/iecWP-IoT2020-LR.pdf. Printed copies can be ordered at www.iec.ch/whitepaper/iotplatform/.

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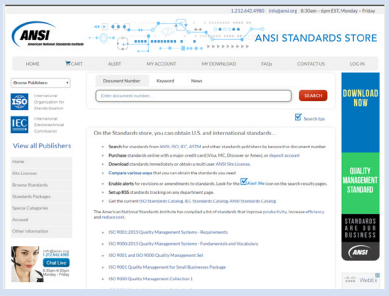

ABOUT THIS PUBLICATION
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Mark Your Calendar for Upcoming Meetings & Events

2017

1 – 5 May
COPANT/PASC
Vancouver, Canada

5 June
TAG Leadership Workshop
Eaton, Pittsburgh, PA

6 June
IEC Procedures & Process Training
Eaton, Pittsburgh, PA

6 – 8 June
CAPCC/TMC/Council Meetings
Eaton, Pittsburgh, PA

12 June 2017
SMB Meeting
Geneva, Switzerland

13 June 2017
CAB Meeting
Geneva, Switzerland

7 – 8 September (tentative)
FINCA
Location TBD

12 – 14 September
CAPCC/TMC/Council Meetings
Corning, Corning, NY

9 – 13 October
81st IEC General Meeting
Vladivostok, Russia
Monday 9: SMB/CAB
Wednesday 11: CB
Friday 13: Council

2022

October
86th IEC General Meeting
USA

For additional event info, visit
www.ansi.org/calendar
and search for "USNC" or "IEC."

UPCOMING 2017 ISSUES OF THE *USNC CURRENT*

www.ansi.org/usnc

Q I Lithium Batteries and Safety

Q II National Adoptions

Q III Membership Issue / SBB (Standards Boost Business)

Q IV Standards in Trade