

**FOCUS ON: Highlighting the IEC SMB Strategic Groups**

The IEC Standardization Management Board (SMB) is responsible for the overall management and supervision of IEC standards development. A key aspect of that responsibility is the oversight and assignment of work in horizontal standards – standards that are relevant to a number of technical committees – to ensure the coherence of IEC standardization and avoid duplication of work or contradictory requirements. Under the guidance of the SMB, that critical coordination work is done by topical Strategic Groups (SGs) and Strategic Evaluation Groups (SEGs).

**IEC Guidance for Strategic Groups: Work Outside Technical Committees**

By Ken Gettman, Director, International Standards, NEMA

**M**ost people who are aware of the IEC are most familiar with the technical work that goes on in the development of international standards for the electrical industry. This work is accomplished primarily in Technical Committees (TCs) and Subcommittees (SCs) that report to the IEC Standardization Management Board (SMB), the technical management committee of the IEC (see organizational chart, page 2). But in a critical support and guidance role for subjects that cross the scopes of multiple committees, there are a number of Strategic Groups and Technical Advisory Committees, also reporting to the SMB, that advise, guide, and coordinate the work. (Information about the Technical



Advisory Committees is available at [www.iec.ch](http://www.iec.ch) under "About the IEC.")

**Strategic Group Basics**

IEC Strategic Groups (SGs) were developed to evaluate specific topics, analyze the market, identify opportunities

for standardization, and provide guidance (roadmaps, possibly) to help fill openings in the suite of standards available for the electrotechnical community. Currently, there are five SGs reporting to the SMB: SG 3 – *Smart Grid*; SG 4 – *VDC Distribution Systems up to 1500V DC*; SG 5 – *Ambient Assisted Living*; SG 6 – *Electrotechnology for Mobility*; and SG 7 – *Electrotechnical Applications of Robot Technologies*. When the SG program was initiated, the following were established, but have since been converted to other mechanisms: SG 1 – *Energy Efficiency and Renewable Resources*, and SG 2 – *Standardization of Ultra High Voltage Technologies (UHV)*. (continued)

**IN THIS ISSUE**

- |   |                          |                              |
|---|--------------------------|------------------------------|
| 1 Focus On: Highlighting the IEC SMB Strategic Groups | 11 USNC News             | 13 Latest Literature         |
| 7 Laugh Track   | 12 IEC Headlines         | 14 The Standardization World |
|   | 13 Conformity Assessment | 15 Save the Date             |

IEC symbols for **electrical current**:

ALTERNATING CURRENT (AC)



DIRECT CURRENT (DC)



AC/DC

### IEC Guidance for Strategic Groups: Work Outside the Technical Committees (continued)

The formative document providing guidelines related to Strategic Groups is SMB/4382/DC, issued in December 2010. The document identified the following specific goals and processes for SGs:

- Analyze the status quo in the field of energy efficiency and renewable energy sources (existing IEC standards, ongoing projects)
- Identify "white spots"/gaps/opportunities, and find new ways of achieving energy efficiency in the electrotechnical domain
- Set objectives for electrical energy efficiency in products and systems
- Formulate recommendations for further actions

Membership in SGs is limited to a convenor, a Secretary from the IEC Central Office, and a primary member (with one alternate, if nominated) from a

limited number of IEC member countries deciding to participate (as determined by the SMB). Guest experts may also participate, as invited by the convenor, to assist the group's activities. When established, each SG was initially tasked with developing a specific scope defining its intended activity and a potential list of deliverables. These were submitted for approval by the SMB, and each SG was granted a limited time frame for its work.

#### SG Activities and Impact

Once established, the SG begins its work, meeting at various intervals in venues appropriate for its membership to accomplish the tasks within its charter. While documents such as white papers or a roadmap identifying what is needed to address the SG's domain may be developed within the group, the SG also provides suggestions or guidance to the

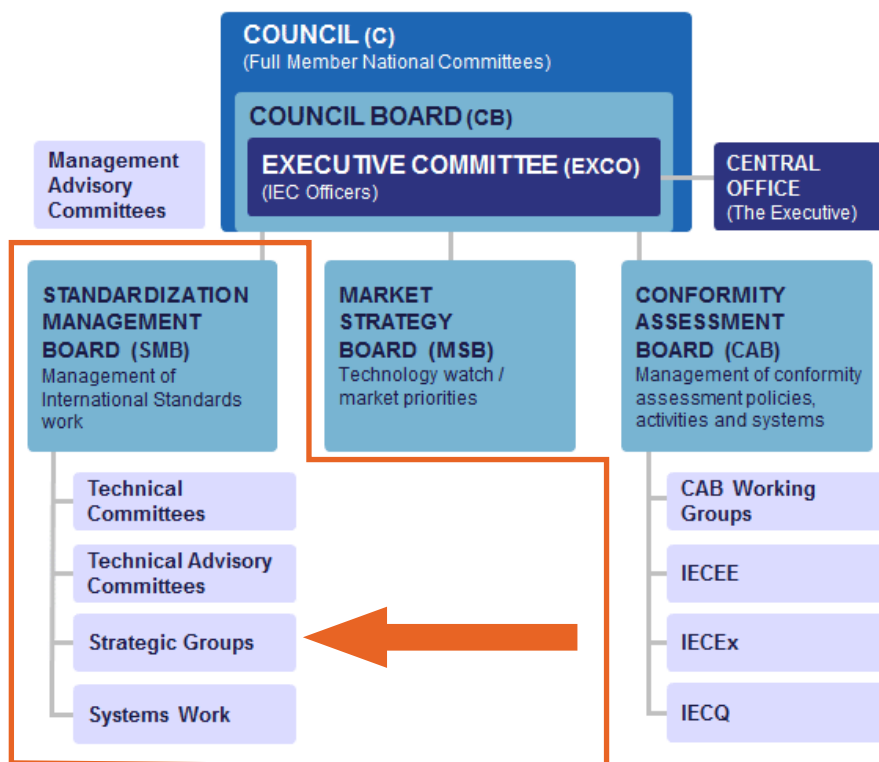
IEC TCs and SCs on what standards are needed to fulfill gaps in the IEC library.

Strategic Group participants have the opportunity to be on the cutting edge of technologies being developed or just being deployed in response to market demands or in pursuit of improvements slated to address existing or potential problems, often at a systemic level.



Ken Gettman,  
Director, International  
Standards, NEMA

### IEC ORGANIZATIONAL CHART: HIGHLIGHTING THE SMB



#### Case in Point: SG 4

IEC SG 4 – Low Voltage Direct Current (LVDC), was established in 2009 to address electrical systems up to 1,500 volts (V) DC. SG 4 is responsible for:

- Gathering information on the market need for use of and expansion of implementation of DC circuits in various applications external to individual products
- Determination of how the use of DC circuits has complimented efforts to improve energy efficiency – for example, in green data centers, commercial buildings, and electricity storage for fixed and mobile applications (including for electric vehicles)
- Identification of IEC committees where requirements for products, systems, and installation relevant to LVDC were already addressed in published standards, where published information needed updating or expansion, and where there was no published documentation

(continued)

### IEC Guidance for Strategic Groups: Work Outside the Technical Committees (continued)

- Providing reports and a roadmap for how to facilitate the standards development needed to enable the safe and effective implementation of LVDC usage where appropriate

SG 4 gained participation by having liaison representatives from a number of affected IEC committees help with the work. Time was directed toward achieving the objectives as much as possible, and a timeline for LVDC standardization was published. Activities within SG 4 also needed to address:

- The potential architectures of LVDC systems as independent or integrated with AC systems
- Equipment operational considerations
- Lifecycle considerations for equipment, both specifically rated for LVDC and general use devices
- Special measures to ensure protection of any particular hazards related to LVDC systems, including fire hazards (from insulation faults, making and breaking of current, etc.), electric shock, under and overvoltage occurrences, and more

It was also necessary for consideration to be given to any unique impact of



**WITHOUT STANDARDIZED LVDC VALUES, MANUFACTURERS WOULD HAVE DIFFICULTY COMMITTING RESOURCES TOWARD SPECIFIC EQUIPMENT DESIGNS.**

DC on corrosion, aging of insulation material, and any other properties that make DC different from AC.

One of the major concerns in the ultimate implementation of LVDC, particularly at distribution voltage levels (similar to those used for distributing AC voltage within residences and commercial and industrial buildings), was to establish standardized values. Without these vital

criteria, equipment manufacturers would have difficulty committing valuable resources toward specific designs of switches, control equipment, accessories, and protective devices.

After discussions with various potential users, particularly those in data centers where there has been more extensive LVDC implementation due to the natural application for supplying the servers and other equipment, a recommendation on setting 380 V DC was made. The final adoption of this recommendation, and of the other proposals and reports from SG 4, has fostered continuing efforts to address this evolving market.

Since their establishment, each of the IEC Strategic Groups has made significant contributions to standardization in its area. The SGs' reports to the IEC SMB have resulted in the development of new standards projects, as well as work to update existing documents, so that gaps are filled with specifications to ensure safety and performance in the ever-changing landscape of electrotechnology.

#### MORE INFORMATION

Visit the [SG 4 section of www.iec.ch](http://www.iec.ch). 

### IEC STANDARDIZATION BOARD: STRUCTURE AND RESPONSIBILITIES

The IEC Council delegates to the Standardization Management Board (SMB) the management and supervision of IEC standards work. The SMB is a decision-making body that meets three times per year and reports to the Council Board. The SMB comprises:

- A chairman, who is an IEC Vice-President – currently the USNC's James E. Matthews III
- Fifteen members elected by the Council and their alternates appointed by the National Committee (NC)
- The IEC General Secretary as an ex officio member, without vote

The SMB is responsible for the setting-up and disbanding of TCs (technical committees) and SCs (subcommittees), approval of their scopes; appointment of TC/SC, chairmen

and allocation of secretariats; allocation of standards work, timeliness of standards production; approval and maintenance of the Directives; reviewing the need for, and planning for, IEC work in new fields of technology; and maintenance of liaisons with other international organizations.

The SMB has set up the following sub-groups:

- Advisory Committees, to advise, guide and coordinate IEC work under the auspices of SMB with the aim of ensuring consistency
- Strategic Groups, to provide strategic guidance and roadmaps on specific areas of technical activity that require coordination both for new initiatives and ongoing work



## Report from IEC Strategic Group 3 – Smart Grid

By Ken Caird, Senior T&D Systems Engineer, EED Services Engineering, GE Energy

Has the smart grid lived up to its hype? I think the vast majority would say NO! I believe the smart grid has not lived up to its billing because of “system complexity.” People underestimated the complexity inherent in getting all of the components and sub-systems of the smart grid to interoperate. And the cause of this complexity has been the deployment of many proprietary systems over the last 50 years.

Until the advent of the smart grid, there was very little effort or initiative to push for “system standards.” Before smart grid technologies can be broadly deployed in an economic manner, a clearly defined set of system interoperability standards has to be defined and adopted by both smart grid vendors and their customers. The good news is that we do not have to start from scratch. There are a lot of existing standards that are applicable to the smart grid. We can definitely leverage work already done. The bad news is that a lot of these standards were developed with a single-product or component focus, not with a system or interoperability focus.

In 2007, the IEC Standardization Management Board (SMB) recognized that more focus was required in developing “system standards” and established Strategic Group (SG) 3 – *Smart Grid* to oversee smart grid systems standards development and make recommendations to the various Technical Committees (TCs) on how to drive and coordinate system and interoperability requirements into their various standards.

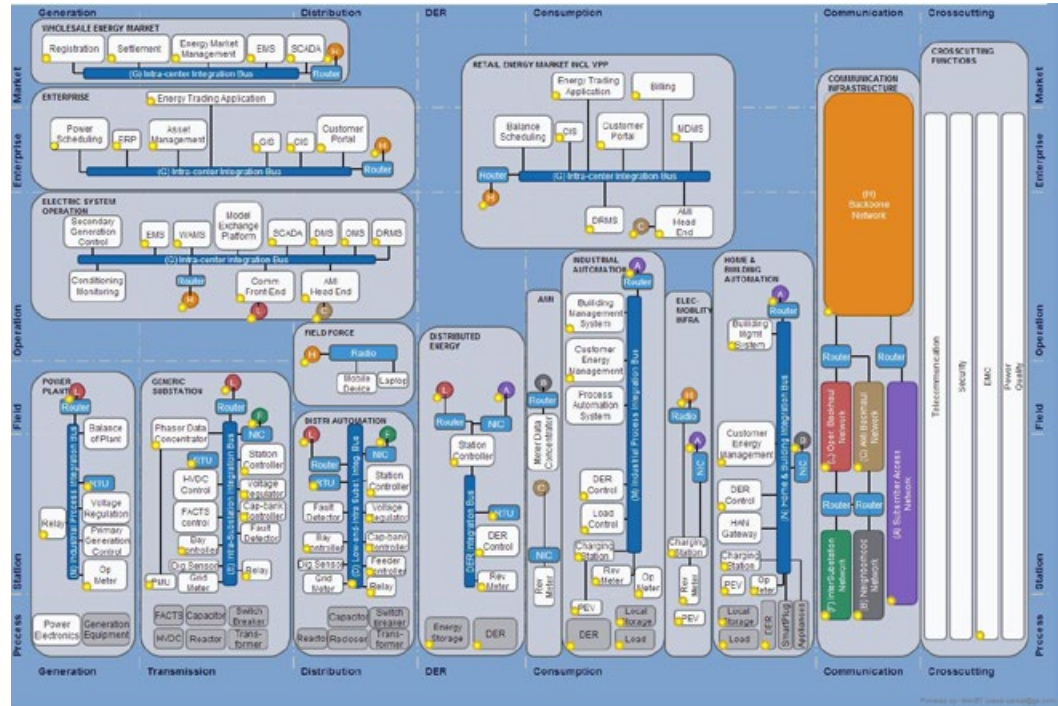


FIGURE 1: COMPONENT, SUBSYSTEM, AND NETWORK MAPPING OF SMART GRID SYSTEM

### A Foundation of Knowledge

The first task of SG 3 was to determine how many existing IEC standards were relevant to the development of the smart grid. During its work on a smart grid standards roadmap ([www.iec.ch/smartgrid/roadmap/](http://www.iec.ch/smartgrid/roadmap/)), SG 3 discovered more than 100 standards relative to the smart grid. Unfortunately, a broad set of standards does not guarantee interoperability among all smart grid components, subsystems, and systems. Since the smart grid has been defined as a “System of Systems,” interoperability requirements became the main focus of SG 3.

A special Technology Team was established to address system interoperability issues. The SG 3 Technology Team first identified all the components and subsystems that make up a smart grid. It then identified

all interfaces and networks required to integrate all of these components and subsystems together into a “smart grid system.” The SG 3 Technology Team leverages a lot of work already done by the National Institute of Standards and Technology (NIST, U.S.) and CENELEC (Europe). The next step was to take the IEC smart grid roadmap and map the identified 600+ standards to the 70+ components, subsystems, and networks of the mapping chart (Figure 1).

Now that we had existing smart grid standards mapped to components, subsystems, and networks, we could begin the task of identifying interoperability requirements. In turn, we could then identify the standards that needed updating, or new standards that would have to be developed.

But how do we find or develop all of these interoperability (continued)

## Report from IEC Strategic Group 3 – Smart Grid (continued)

requirements? Again, the Technology Team leveraged work and processes developed by the CENELEC M/490 architecture team. They broke interoperability requirements into five distinct layers:

1. Component Layer
2. Communication Layer
3. Information Layer
4. Function Layer
5. Business Layer

Even with the help of M/490, it is still a daunting task to identify and develop the massive amount of interoperability requirements needed to make the smart grid truly interoperable. Luckily, IEC TC 8, *Systems aspects for electrical energy supply*, has volunteered to help develop smart grid interoperability use cases.

We also know that a lot of smart grid high-level system requirements, use cases, protocols, and data models have already been developed by DNV KEMA, the Electric Power Research Institute (EPRI), NIST, and other organizations. But the key question is: How do we find and process all of this information and then map these requirements to the smart grid mapping chart?

**An Innovative Tool**

The mapping of more than 600 standards, 70+ components, and hundreds of use cases manually became an impossible task. To solve this problem, the SG 3 Technology Team built the Smart Grid Standards Mapping Tool (<http://smartgridstandardsmap.com/>), a web-based mechanism that incorporates the information contained in the mapping chart shown in Figure 1.

The tool works via a “web mapping engine” and database that totally automate the mapping process. The complexity of mapping all this data is hidden from the user; the user simply clicks his/her mouse on any component, subsystem, or network on the mapping chart. The tool then provides the associated standards and all requirements for each of the five M/490 layers, including a broad set of use cases. This should greatly help standards developers and other users find the information they need to develop true system interoperable standards for the smart grid.

The mapping tool was introduced to the world at the IEC Smart Grid Forum in Berlin in September 2013. Since its release, SG 3 has been contacted by

numerous standards developers looking to learn how they can leverage the tool to include their standards as part of the smart grid. The incorporation of other developers’

standards will further enhance the interoperability of the smart grid. The SG 3 also encourages other related industries (e.g., smart cities) to take a look at the tool and consider utilizing the technology for their purposes.

By leveraging a lot of work done by others, and developing an interactive tool to accelerate the process, SG 3 believes that smart grid interoperability and networking can become a reality in the near future.



Ken Caird, Senior T&D Systems Engineer, EED Services Engineering, GE Energy

**MORE INFORMATION**

[www.iec.ch/smartgrid/development/](http://www.iec.ch/smartgrid/development/) 



THE SMART GRID STANDARDS MAPPING TOOL, DEVELOPED BY THE SG 3 TECHNOLOGY TEAM, DEFINES RELATIONSHIPS BETWEEN COMPONENTS AND STANDARDS OF THE SMART GRID. IT OFFERS MULTIPLE PATHS OR VIEWS FOR FINDING THE SMART GRID STANDARD NEEDED.



## IEC Strategic Group 5 – Ambient Assisted Living: Facing a Future Development

By Joe Musso, Standards Program Manager, UL (Underwriters Laboratories)

**"You know you're getting old when all the names in your black book have M. D. after them."**

**– Harrison Ford**

It is a fact that one of the most serious challenges society will be faced with is "demographic development"—which is a nice way of saying that the world's population is getting increasingly older. With advancing age, the probability of becoming in need of assistance or care will increase as well. It follows logically that a growing demand for orientation aids and support-related services can also be expected. This demand also exists for disabled individuals, who may or may not be elderly but are in an environment where assistance is needed nonetheless.

Compounding the issue is the fact that increasing numbers of older people are living alone. They often don't have their families close by, and they need to find ways to cope: they might forget to take their medicine or turn off the stove, or suffer an accident at home. They are in a risk zone that can be addressed by information and communication technologies (ICT), such as developing direct links with hospitals, doctors, and other health support organizations. This can give older people the support

they need to maintain their health, deal with safety issues, and feel more comfortable and independent.

### What Is SG 5?

IEC Strategic Group (SG) 5 was established in 2011 to manage and coordinate ambient assisted living (AAL) standardization work in IEC Technical Committees (TCs), and to establish and achieve interoperability and interconnectivity of AAL systems and accessible design of their user interface. AAL systems encompass products, services, environments, and facilities used to support those whose independence, safety, well-being, and autonomy are compromised by their physical or mental status. Eleven countries are currently represented on SG 5.

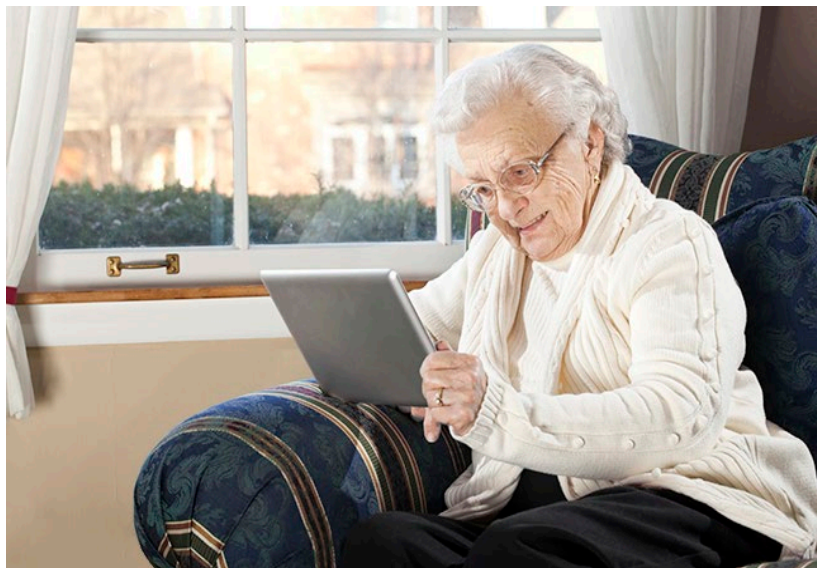
While it is not within the scope of SG 5 to write standards, the following actions have been defined under its scope:

- Summarize the status of standardization in this field (inside and outside IEC)
- Make an inventory of existing standards and standardization projects in progress
- Engage key stakeholders interested in AAL standardization work in IEC
- Define a structure for the coordination of cross TC/SC work, where required
- Monitor TC/SC work to highlight any overlap of work or potential inconsistencies
- Liaise with ISO, the International Telecommunication Union (ITU), and other organizations
- Take into consideration the economic aspects of AAL, e.g., by identifying international market potential, identifying market drivers
- Consequently, describe the state of the art and identify potential gaps in IEC standardization for AAL
- Fill these gaps by drawing a roadmap with a timeline that includes a reference architecture and prospective standardization projects

### An Active Group

SG 5 has met five times since its formation in 2011, including a March 2013 workshop focused on products, people, and infrastructure. During the course of its work, SG 5 established three teams to investigate different aspects of its tasks:

- The Status Team is collecting information about existing AAL standards, (continued)



**AMBIENT ASSISTED LIVING (AAL) TECHNOLOGIES CAN GIVE OLDER PEOPLE THE SUPPORT THEY NEED TO HELP MAINTAIN HEALTH, SAFETY, COMFORT, AND INDEPENDENCE.**

### Report from IEC Strategic Group 5 – Ambient Assisted Living (continued)

while identifying groups to liaison with, both inside and outside the IEC

- The Security Team is addressing data security, safety, and reliability
- The Modeling Team is responsible for developing a use-case model based on existing models in the IEC, including how-to instructions

#### Interoperability and Data Security Are Key

Interoperability is critical to help ensure the success of AAL solutions on the market. AAL systems can include a broad chain of products, services, and infrastructure; therefore, it is important that a standardization approach be developed to ensure the interoperability of devices and systems. For example, AAL solutions may use sensors, actuators, and smart software as part of an ambient intelligent environment that communicates with users and caregivers via alarms, TV (monitors), computers, or mobile devices. These systems need to allow for bundles of applications to

be easily installed and tailored to an individual user's needs, overcoming the interoperability, customization, and scalability issues that might hamper the roll out of AAL systems.

Data security and privacy are issues that also need to be closely analyzed. SG 5 work has stressed that collaboration with ISO is required, and that starting with a global or overview approach will lead to AAL specifics later. The SG 5 Security Team is fully considering different international views on the aspects of data security, safety, and reliability. While safety and reliability are covered in detail in the IEC, data security and privacy are not easily determined using ISO/IEC standards. Therefore, SG 5 is considering a recommendation for a guide that would advise committees on how to address private data.

#### An Emerging Sector

An indicator that the sector is growing is that ICT and consumer electronics companies have recently entered the

AAL market. In addition, several large companies formerly operating in the entertainment sector have turned their business toward the AAL and medical-care market. AAL applications for tablets and smartphones have also emerged.

AAL is expanding from the usage of equipment for healthcare or wellness purposes to the application

of equipment for medical care, in accordance with applicable regulations. AAL moves from a healthcare product to a medical product when the product is intended to be used for diagnostics, therapeutic treatments, or monitoring. There are clear differences in risk level between a product intended for wellness purposes versus medical purposes that need to be addressed when considering standardization.



Joe Musso, Standards Program Manager, UL (Underwriters Laboratories)

#### U.S. Involvement in SG 5

Representing the on SG 5 is Kim Delort, globalstrategic planning manager at UL. Ms. Delort also serves as Technical Advisor (TA) for the virtual Technical Advisory Group (TAG), or eTAG, that has been established as the U.S. mirror committee for SG 5. (Note – Anyone interested in participating as a member of the eTAG for SG 5 is invited to contact Joe Musso, secretary of the eTAG for SG 5, at [joseph.r.musso@ul.com](mailto:joseph.r.musso@ul.com).)

#### What's Next for SG 5?

The next meeting of SG 5 is scheduled for 11-12 March, 2014, in Belgium. Following the meeting, in June 2014 it is anticipated that SG 5 will make a formal proposal to transition SG 5 into a Systems Evaluation Group (SEG).

#### MORE INFORMATION

Visit the [SG 5 section of www.iec.ch](http://www.iec.ch). ☺

#### LAUGH TRACK



"This really is an innovative approach, but I'm afraid we can't consider it. It's never been done before."

## IEC Strategic Group 6 – eMobility: A Brief History and Update

By Kevin J. Lippert, Manager, Codes & Standards, Eaton Corporation

The IEC's Strategic Management Board (SMB) established Strategic Group (SG) 6 to provide recommendations for an IEC plan addressing the complete domain of automotive electrotechnics and electromobility. The overall goal was to manage and coordinate eMobility standardization work within IEC, establishing interoperability and interconnectivity.

### SG 6 Objectives

A stated priority was to investigate interaction between plug-in electric vehicle and the electrical supply infrastructure in order to:

- analyze market and industry developments;
- identify gaps and overlaps in the standards;
- ensure the timely delivery of appropriate standards;
- define a means for coordination of cross TC/SCs activities;
- define a means for collaboration between IEC and other standardization organizations (notably ISO and regional standardization bodies); and
- monitor the practical application of collaborations already in place, in particular the ISO/IEC Agreement.

When trying to address an entire EV standardization strategy, it quickly became apparent that a "systems approach" must be used. This created a challenge in itself because this is a relatively new concept within IEC, and its implementation is not yet widely nor entirely understood. Fortunately, members of SG 6 represent a broad range of industries, including certifiers, electrical equipment manufacturers, and automobile manufacturers, and are able to bring expertise for the diverse



topics to be addressed. This was critical, as identified issues sometimes overlap areas of standardization responsibility. Where is the defining line for what must be addressed "on-board" the automobile, versus what must be addressed "off-board?"

In many cases it was clear that ISO was the lead organization already developing the associated technical standards (ISO Technical Committees [TC] 22, *Road Vehicles*, for on-board), and other times IEC was clearly the lead developer (TC 69, *Electric road vehicles and electric industrial trucks*, for off-board). However, in some cases it is not entirely clear who the lead organization is...or who it should be.

An example of this is the communications that must take place between the charging equipment and the automobile. Is this on-board or off-board? There are even instances within IEC itself, where more than one TC feels they have jurisdiction over an area. For example, is IEC TC 17, *Switchgear and controlgear*, proposed a standard

(IEC 61439-7) to cover "Low Voltage Switchgear and Controlgear Assemblies for specific applications such as... electric vehicle charging stations." IEC TC 64, *Electrical installations and protection against electric shock*, objected, as they are creating a standard (IEC 60364-7-722) to cover "Low-voltage electrical installations... supply of electric vehicles."

### Status Report

SG 6 has been meeting regularly since 2012 to clarify these situations and identify the key challenges for IEC. At the October 2013 SMB meeting in India, the SMB received a status report from SG 6. To date the group has focused on the following areas:

- Technology and market trends assessment
- Use scenarios, to identify domains of future standardization
- Identify and map IEC TCs and standards applicable to EV, plus standards from other developers (especially ISO)

(continued)



### IEC Strategic Group 6 – eMobility: A Brief History and Update

- Create ideas for a future Advisory Committee on Safety (ACOS) workshop
- Make recommendations back to IEC

A draft high-level road map, based on real-life use scenarios, has been created and used by SG 6 to share priorities with various stakeholders. The initial analysis of the associated IEC TCs' roles has already been shared with some TCs. This has gained support for the SG 6 work, and increased recognition of the importance of establishing an EV systems approach.

#### Further Recommendations

While significant progress has been made, SG 6 advises that more work is still needed. There must be additional outreach to stakeholders outside of IEC (e.g., ISO, industry, research institute, academia). Even within the IEC, additional stakeholder input and coordination would be helpful (inter TC/SC relationships). If SG 6 is going to properly include the truck industry in its work, the correct contacts from that segment must be

identified and engaged. Future eMobility standardization work will require building additional competency with the IEC's systems approach. The draft EV Roadmap needs to be expanded with identification of where urgent standardization work is required, versus what will be needed later to address evolving markets.

SG 6 will be concluding its work in 2014, and it will likely include a recommendation that future work be moved to a systems committee. Regardless, the core of the continuing work will need to remain with the TCs.

Additional U.S. input to SG-6 is welcomed through participation in the associated U.S. Technical Advisory Group (TAG). Anyone interested in joining the USNC e-TAG for SG 6 is invited to contact Sonya Bird, e-TAG Secretary, at [sonya.m.bird@ul.com](mailto:sonya.m.bird@ul.com).

My appointment to represent the U.S. on SG 6 was a natural fit for my employer Eaton, a manufacturer of electric vehicle supply equipment (EVSE). Eaton offers a full family of electric vehicle chargers

for residential applications, as well as Level 2 charging stations and a DC Quick charger. Eaton's industrial business is a global leader in the development and manufacturing of complete

hybrid power systems for commercial vehicles. These hybrid systems help cities and businesses to run cleaner, greener, more responsible commercial fleets by significantly reducing the amount of fuel they consume and emissions they produce, while also reducing their operating costs.



Kevin J. Lippert,  
Manager of Codes  
& Standards, Eaton  
Corporation

#### MORE INFORMATION

Visit the [SG 6 section of www.iec.ch](http://www.iec.ch). ☺

### USNC Wins Big with IEC 1906 Awards



In the announcement of the USNC winners of the IEC 1906 Awards that appeared in the Fall 2013 issue of

*News & Notes*, a number of names were inadvertently omitted. The editors regret this error. Below is the complete list of USNC 1906 Award winners – congratulations to all.

**Sprague Ackley**, ISO/IEC JTC 1

**David Arnett**, CISPR

**David Blevins**, TC 80

**Dan Brake**, TC 88

**Edward M. Briesch**, TC 31

**Lynn Davis**, TC 113

**Edward Dobrowolski**, TC 57

**Jeff Eby**, TC 18

**Jeff Eggleston**, TC 62

**Antonio Faraone**, TC 106

**Elaina Finger**, TC 86

**Margaret Goodrich**, TC 57

**Ernst Grunewald**, TC 59

**Antony H. Hardaway**, TC 59

**Philip Hopkinson**, TC 14

**Kurt Hunter**, TC 57

**Dieter Jundt**, TC 49

**Sriraman Kannan**, TC 86

**Jamshed Namdar Khan**, TC 47

**Mark King**, TC 77

**John R. Kovacik**, TC 17

**Milena Krasich**, TC 56

**John Leach**, TC 32

**Ian McDonald**, TC 23

**John Morelli**, TC 46

**Robert Nachtrieb**, TC 34

**Victor Nedzelitsky**, TC 29

**Jay Parkinson**, TC 76

**Vincent Pascucci**, TC 48

**Leticia Pibida**, TC 45

**Stan Piorek**, TC 111

**Jeffrey Silberberg**, TC 62

**Frank Straka**, TC 46

**James Waight**, TC 57

**Peter Walthers**, TC 94

**Eike Walz**, TC 48

**Sheldon Zimmerman**, TC 76

**Marvin C. Ziskin**, TC 87

## The Era of IEC Systems Standardization Begins: SEG 1 on Smart Cities

By Tony Zertuche, Deputy General Secretary, USNC/IEC; SMB Alternate; SEG 1 Member

At its June 2013 meeting in Geneva, the IEC Standardization Management Board (SMB) agreed to set up Systems Evaluation Groups (SEGs) on smart cities (SEG 1, a totally new group) and on smart grid (SEG 2, to be transitioned from Strategic Group 3 – *Smart Grid*). At the SMB's behest, the three National Committee (NC) proposers, Germany, China, and Japan, chose Fumio Ueno of Toshiba as SEG 1 Convenor.

The inaugural meeting of SEG 1 was held 9-10 December 2013 at the German Institute for Standardization (DIN) offices in Berlin. Much of the structure and processes of SEG 1 was established, including Terms of Reference, which will define the scope, term definitions, membership, and other specifics. SEG 1 will have an initial lifespan of 24 months (from June 2013), at which point a recommendation will be made to the SMB as to whether an IEC Systems Committee (SyC)\* should be created to address the standardization needs in this rapidly evolving area (\*for more information, [click here](#)).

There were over 50 participants from around the standards world, which highlighted the complex issue of membership. Although SEG participants can be nominated by their Technical Committee (TC) or NC, it was agreed that SEG 1 should be made up of individual members from both inside and outside the IEC who represent their own expertise, much in the same way ISO/IEC Working Groups (WGs) operate.

This "open" structure was on full display at the meeting, with very active participation from ITU, ISO TC 268, *Sustainable development in communities*, and the ISO/IEC JTC 1 Study Group on Smart Cities (see

related article, page 12), in addition to the IEC members. However, this kind of inclusive assembly poses a challenge, as different groups focused on this topic all pull from the same pool of experts.

SEG 1 sought to clarify the working relationships with related standards bodies both within and outside the IEC. Numerous standards organizations in attendance gave presentations on their activities underway in countries around the world. The following are some of the organizations currently working on smart cities/communities standardization:

- IEC Market Strategy Board (MSB)
- ISO
- ANSI (see related article, page 14)
- DKE/DIN (Germany)
- BSI (UK)
- KATS (Korea)
- CEN/CENELEC (Europe)
- U.S. Government

An ambitious schedule was outlined for developing generic use cases, a possible reference architecture model, and a standardization roadmap, among other deliverables. This goal-oriented approach will be used to define whether

a SyC on smart cities will be necessary. SEG 1 will focus on only those issues, proposed by members, that fall within the realm of standardization for smart cities and are submitted with justifications that include: a) city challenges/issues; b) possible approaches to solve them; and c) an explanation of how the approach is relevant to IEC electrotechnical standardization and the systems approach.


SEG 1 will initially be composed of a Convenor Advisory Group (CAG) and three Task Groups (TGs). Working Groups (WGs) will also be established based on specific city challenges. The WGs' results will become the core part of SEG 1's final report to SMB, because the future proposal of SyC on Smart Cities will consist of WG results; TG activities will support it. The WGs are responsible for preparing inputs to the CAG, which will review all new recommendations and proposals. Any proposals for new WGs must be submitted to the Convenor by an SEG member, reviewed by the CAG, and approved at a Plenary meeting; the new SEG 1 WG Proposal form was introduced. When the meeting was adjourned, the members had established the structure, workflow process, a detailed timeline, and, most importantly, SEG 1's goals.

Along with first meeting of SEG 2 on Smart Grid (held 19 – 21 November in Seoul, Korea), the SEG 1 meeting launched the IEC's first operational endeavor in systems standardization work. The next SEG 1 meeting will be held 26 – 28 February 2014 at the DKE offices in Frankfurt, Germany.

### PARTICIPANTS AT INAUGURAL SEG 1 MEETING IN BERLIN



### MORE INFORMATION

Visit the [SEG 1 section of www.iec.ch](#). 

## USNC Scores a Hat Trick! Third Straight Year for a U.S. Young Professional Leader

Ethan Biery, one of the three USNC representatives to the IEC Young Professionals (YP) Workshop (with Diana Bull and Chelsey Schweikert), was voted as a YP Leader during the IEC 78th General Meeting in New Delhi, India. Along with two other designees (Hamilton Adam from South Africa and Ladas Dimitrios of France), Mr. Biery will work on special projects designed to maximize the effectiveness of the YP program.

Mr. Biery's honor marks the third year in a row that a USNC YP has been voted as a YP Leader. Leaders act as ambassadors for the YP program within the IEC family, and help to shape future activities.

During the 2013 YP workshop in New Delhi, attendees were introduced to many facets of IEC's work from IEC Officers,



"BEING ABLE TO MEET WITH OTHERS IN THE GLOBAL CONTEXT OF THE IEC GENERAL MEETING WILL HELP PROVIDE ME THE NECESSARY UNDERSTANDING AND PERSONAL CONNECTIONS WITHIN THE OVERALL ORGANIZATION OF IEC COMMITTEES, SUBCOMMITTEES, AND WORKING GROUPS."

— ETHAN BIERY

key staff members, and other high-level presenters. They attended a technical meeting and met with their National Committee Presidents and Secretaries, among other information-exchange and networking opportunities. Two breakout sessions showed them the strategic importance of the IEC's work, how the IEC can communicate more widely about new technical work, best practices in national YP programs, and next steps for the IEC's program.

The Young Professionals also had the opportunity to attend sessions on ultrasonics, conformity assessment for explosive atmospheres, and IEC standard developing processes. An Open Space session allowed participants to raise and discuss topical issues of their choice, and one afternoon was dedicated to an industry visit. Participants expressed the consensus view that work in international standards and conformity assessment is a key part of career development,

and that their employers can greatly benefit from their involvement.

### Call for 2014 YP Nominees

Following IEC General Secretary Frans Vreeswijk's official launch of the 2014 IEC YP Program, the USNC invites all members and stakeholders to submit nominations for U.S. participants. The YP Workshop will be held in conjunction with the 78th IEC General Meeting in Tokyo in November 2014.

Alongside selectees from other nations, the U.S. YPs will learn more about the IEC, standardization strategies, and conformity assessment. In addition to the dedicated workshop, they will have the opportunity to attend technical meetings, observe a Standardization Management Board (SMB) meeting, benefit from the guidance of a mentor, visit local industry, and network.

Up to three recipients will be financially supported for travel and up to three nights of accommodation. U.S. stakeholders are encouraged to nominate young professionals from any entity within the U.S. voluntary standards and conformity assessment community that uses, benefits from, or contributes to the IEC's work. The program is targeted toward outstanding individuals who are in the early years of their professional career, post university. Further details on how to submit nominations are forthcoming.

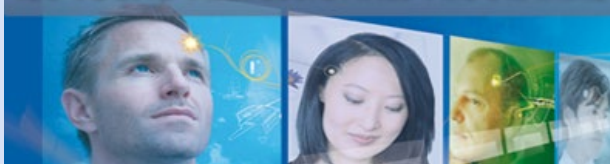
### MORE INFORMATION

[www.iec.ch/members\\_experts/yp/](http://www.iec.ch/members_experts/yp/) 

## THE USNC CONGRATULATES ETHAN!

Ethan Biery is a design and development leader for Lutron Electronics in Coopersburg, PA. He was nominated by Mark Duffy of GE Lighting, Technical Advisor for the USNC TAG for IEC TC 34. At Lutron, Mr. Biery's works to identify, manage, and nurture Lutron's strategic alliances regarding LED lighting. He has been active in standards development activities with the Zhaga Consortium, which focuses on LED light engine interoperability, and NEMA. His previous product design and leadership experience with large-scale commercial lighting control systems resulted in the granting of 9 design and 3 utility patents (others pending). Early in his career he was selected to chair a Zhaga task force that joined NEMA in developing the *Phase Cut Dimming for Solid State Lighting: Basic Compatibility* (SSL-7) standard. He earned his bachelor's and masters degrees in computer engineering from Lehigh University.

### IEC YOUNG PROFESSIONALS PROGRAMME





## ISO/IEC JTC 1 Holds 28th Plenary Meeting in France

On 4–9 November, 2013, the ISO/IEC Joint Technical Committee (JTC) 1 on *Information Technology* held its 28th plenary meeting in Perros-Guirec, France. Created in 1987, JTC 1 works to address the diverse and complex standardization needs of the global information and communications technology (ICT) industry, speeding the developmental process and the wide deployment of relevant standards.

During the meeting, JTC 1 members voted unanimously to create a Study Group on Smart Cities, in response to significant and growing interest in standardization activities in this area. China's Yuan Yuan was chosen to serve as the Study Group's Convenor and a call for participation is underway, with JTC 1 National Bodies and Liaisons, invited standards setting organizations, and other groups among the expected participants.

The study group is expected to:

- Establish a definition of Smart Cities, outline related terminology, and describe key Smart cities concepts
- Investigate Smart Cities–related societal, market, and technological needs for ICT standardization
- Examine current technologies in use in connection with smart cities activities
- Develop a proposal for how JTC 1 should address ICT standardization needs in connection with Smart Cities
- Deliver a report with recommendations on these subjects at the 2014 JTC 1 Plenary meeting

JTC 1 voted to establish a new Subcommittee focused on IT service management and IT governance. ISO/



JTC 1 PROVIDES THE STANDARDS APPROVAL ENVIRONMENT FOR INTEGRATING DIVERSE AND COMPLEX ICT TECHNOLOGIES. THESE STANDARDS RELY UPON THE CORE INFRASTRUCTURE TECHNOLOGIES DEVELOPED BY JTC 1 CENTERS OF EXPERTISE, COMPLEMENTED BY SPECIFICATIONS DEVELOPED IN OTHER ORGANIZATIONS.

IEC JTC 1 Subcommittee (SC) 40, *IT Service Management and IT Governance*, replaced JTC 1 Working Group (WG) 8, *Governance of IT*, and JTC 1 SC 7, *Software and systems engineering*, WGs 25, *IT Service management*, and 27, *IT enabled services/BPO (ITES/BPO)*, as of December 1, 2013. The new Subcommittee is expected to develop standards and other documents connected to digital forensics, audits, risk management, governance, and service maintenance, among other related IT topics. Australia was selected to hold the Subcommittee's Secretariat and Australia's John Sheridan will serve as its first Chair.

In addition, JTC 1 members

unanimously voted to create a Study Group on Big Data, where collections of data are so large and complicated that special organizational tools and approaches are required for their effective management. The new group will look at relevant standards and other documents from ISO, IEC, JTC 1, and other standards developing bodies in connection with big data. It is also expected to assess current standardization requirements for big data, define related definitions and key terms, and submit a report containing recommendations in these areas at the 2014 JTC 1 plenary meeting. The U.S.'s Wo Chang, digital data advisor for the National Institute of Standards and Technology (NIST) Information Technology Library, will serve as the study group's convenor.

JTC 1 also approved a new document, JTC 1 N11798, *About ISO/IEC JTC 1*, to replace three existing documents providing information about JTC 1's mission, operating principles, and the value of its activities. The new document

will be posted on JTC 1's website and is expected to be widely disseminated by JTC 1 members and other related entities as part of an effort to improve awareness about JTC 1 and its important work.

The U.S. plays a leading role in JTC 1, with the American National Standards Institute (ANSI) holding the secretariat and Karen Higginbottom, director of standards initiatives at Hewlett-Packard, serving as JTC 1's chair. The next JTC 1 Plenary meeting will be held in Abu Dhabi, United Arab Emirates, on 15–20 November 2014.

**More Information**

Visit [www.jtc1.org](http://www.jtc1.org). ☺

## Testing and Certifying: IECEE PSC Working Group 2A on Smart Grid

By Aliyah Esmail, IEC Communications Officer • Originally printed in IEC e-tech

IECEE has a working group that is trying to satisfy the needs of industry in terms of smart grid. It is looking to help industry ensure that its products are safe, of high quality and interoperable.

### Smarter and More Efficient

Consumers and industries throughout the world are preparing for the smart grid by developing devices and pieces of equipment that consume much less energy than ever before and that can be integrated into the system. IECEE, the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components, has been testing and certifying electric and electronic equipment for many years. It focuses on product safety and, when the standards require it, it also provides services that help to ensure efficient performance. Now, in response to industry demand, IECEE is working on the smart grid.

"I think everyone sees the need to move to smart technologies, but the word smart means so many things to so many people so it's hard to align it to a single definition," said Steven Margis from UL, the Convenor of the IEC Policy and Strategy Committee (PSC) Working Group (WG) 2A on smart grid.

### Conformity Assessment on the Smart Grid

WG 2A was created in 2011 to explore the potential and practicality of conformity assessment applications in the fields of the smart home, smart building, and smart industry (factory). The group started out by trying to leverage the work of the IEC and others around the world on Smart Grid, including IEC Strategic Group (SG) 3 on smart grid (which has now become Systems Evaluation Group [SEG] 2). WG 2A went through the IEC Smart Grid

Standardization Roadmap, and analyzed the Standards it contained to see which could be included in the IECEE System. An updated version of the roadmap will be published in 2014.

### Standardization Acting as the Focus

Of the 296 IEC International Standards identified in the roadmap, 91 have been incorporated into the IECEE and 54 were already in use. They include standards for electric vehicle inductive charging systems, secondary batteries for the propulsion of electric road vehicles, and electricity metering equipment.

"Thanks to the work of SEG 2, we had an excellent foundation to work from," said Mr. Margis. "We look forward to continuing to collaborate and leverage the outcome of work from SEG 2 to advance on the additional needs of the marketplace."



PARTICULARLY IN DEVELOPING THE SMART GRID, THERE IS A CRITICAL NEED FOR TECHNOLOGIES THAT CAN BE TESTED AND CERTIFIED.

Mr. Margis explained that when it comes to smart grids, the Working Group is allowing standardization to continue to lay the technical direction and foundation for conformity assessment. This will allow conformity assessment to deliver a toolkit of services that aligns with industries' conformity assessment needs. ☺

### LATEST LITERATURE

Stay up on the latest brochures, documents, and other offerings from the USNC and IEC by clicking on the titles below.



[The IEC Administrative Circular on Its Systems Activities](#)

[The Energy Challenge: Enabling Real Solutions Globally](#)

[ANSI Response to Request for Comments on Notice of Proposed Rulemaking, Incorporation by Reference](#)

## ANSI Releases Workshop Report on Standardization Priorities for Smart Cities



The American National Standards Institute (ANSI) convened a workshop on November 21, 2013, in Washington, DC, to examine the role of standardization in achieving the promise of smart and sustainable cities. The full workshop report is now available online.

The inspiration for both the workshop and the larger smart cities movement is the ongoing growth of urban communities, particularly in developing countries, along with the proliferation of information and communications technologies (ICTs), such as sensors, smart phones, intelligent transport systems, building energy management systems, etc., that can assist cities in making their operations more efficient, more sustainable, and more resilient. Countries in Europe and Asia, with support from their national governments, have undertaken strategic initiatives to explore this area. Likewise, a number of new standardization roadmapping activities have emerged at the national, regional, and international levels to assess what standards and conformance programs already exist and what additional activity may be needed (see related articles, pages 10 and 12).

As administrator and coordinator of the U.S. private sector-led/public sector-supported voluntary system of standardization, ANSI convened the

workshop to dialogue on U.S. national standardization priorities in this area and the need for a coordinated U.S. approach internationally. Topics of discussion included a number of initiatives of private industry, government, academia, standardization bodies, and multi-stakeholder groups, addressing both the application of ICTs and the development of standards and best practices to achieve smart and sustainable cities.

The workshop identified a number of priority areas where standardization can contribute to smart and sustainable cities. These include:

- a standardized set of definitions/lexicon for smart cities applicable across sectors
- interoperability for systems of systems, including common data formats and communication protocols to enable sharing of data between systems
- key performance indicators so that measurements are consistent and comparable

- a baseline guidance document which can be adapted to address the specific needs of sectors
- best practices
- resiliency for disaster preparedness and recovery

As a result of the workshop, ANSI will develop a proposal for a collaborative to further define standardization needs, particularly through outreach and engagement of public-sector stakeholders. The Institute has a track record of serving as a neutral facilitator to address national and global priorities in areas as diverse as electric vehicles, energy efficiency, and homeland security. Standards panels and collaboratives do not write standards; rather, they bring together affected stakeholders from the private and public sectors to discuss standardization needs.

### More Information

The full workshop report is available for [download online](#). ☺

## ANSI Site Licenses Support USNC Activities



When buying IEC standards, USNC members' organizations can obtain the greatest value and convenience by purchasing a site license from the American National Standards Institute (ANSI). ANSI site licenses enable standards to be shared within a

network. They provide real-time access to standards data and offer automatic notification of updates and revisions. And the revenue ANSI receives directly supports the activities and initiatives of the USNC.

The USNC/IEC is a totally integrated committee of ANSI. When you purchase a site license from ANSI, you are making a commitment to bolster U.S. leadership at the IEC table – and gaining the benefits of easy accessibility, total customization, and affordable pricing for all of your organization's standards needs.

### More Information

Visit [webstore.ansi.org/SiteLicense](http://webstore.ansi.org/SiteLicense) or email [sitelicenses@ansi.org](mailto:sitelicenses@ansi.org). ☺



## SAVE THE DATE

## Mark Your Calendar for Upcoming Meetings & Events

### ABOUT THIS PUBLICATION

The USNC Current newsletter is distributed to the constituency of the 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.

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### HOW TO CONTRIBUTE

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### Tuesday 18 February 2014

**SMB Meeting**, Geneva

### Thursday – Friday

**13 – 14 March 2014**

**IEC Advisory Committee on Electricity Transmission and Distribution (ACTAD)**

ANSI New York Office

### Wednesday – Thursday

**26 – 27 March 2014**

**USNC Meeting with German National Committee**, Frankfurt, Germany

### Sunday – Thursday

**20 – 24 April 2014**

**COPANT General Assembly**

Havana, Cuba

Tuesday 22: Workshop – Education about Standardization (am);

Workshop – Young Professionals Programs (pm)

Thursday 24 – Workshop – Conformity Assessment (SCC)

### Friday – Sunday

**25 – 27 April 2014**

**U.S. Science/Engineering Festival (Exhibit)**

Washington, DC

### Tuesday – Thursday

**29 – 30 April, 1 May 2014**

**CAPCC/TMC/Council Meetings**

Rockwell Automation,  
Mayfield Heights, OH

### Monday – Friday

**5 – 9 May 2014**

**PASC Meeting**

Malaysia

### Monday 16

**June 2014**

**CAB**, Geneva

### Tuesday

**17 June 2014**

**SMB Meeting**, Frankfurt

### Wednesday 18 June 2014

**CB**, Geneva

### Tuesday – Thursday

**30 September, 1 – 2 October 2014**

**CAPCC/TMC/Council Meetings**

TIA, Arlington, VA

### Monday – Friday

**10 – 14 November 2014**

**78th IEC General Meeting**

Tokyo, Japan

Monday 10: SMB (proposed)

Tuesday 11: CAB

Wednesday 12: CB

Friday 14: Council

### Tuesday – Wednesday

**18 – 19 Nov 2014**

**IEC Advisory Committee on**

**Electromagnetic Compatibility (ACEC)**

IEEE Piscataway, NJ

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

**Q I** Legal Issues

**Q II** Emerging Professionals  
and Other Value-  
Added Programs

**Q III** Smart Cities and  
the New IEC  
Systems Groups

**Q IV** Conformity  
Assessment