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news & views from the IEC

IEC General Meeting

Frankfurt, Germany

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IEC Council

Management meetings

Young Professionals Workshop

Affiliate Forum

The revolutionizing Internet of Things

IEC WORLD

Frankfurt Agreement streamlines

European and IEC Standards

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europa

Kap Europa
Kongresshaus der Messe Frankfurt





Complex systems require large integrated technology solutions

The IEC of the future

Looking back on the past year to better pave the way for the challenges ahead

By Claire Marchand

Traditionally, the last issue of the year provides feedback on the IEC General Meeting (GM), held in 2016 in Frankfurt, Germany,

While all management meetings looked back on what the IEC has achieved in the 12 months since the Minsk GM, in essence the future of the Commission was at the centre of all decisions and discussions. Reiterating the importance of the systems approach, both in standards development and in conformity assessment work was high on

the agenda of the Standardization Management Board (SMB) and the Conformity Assessment Board (CAB). This has never been truer than today with cyber security issues that have the potential to affect all industry sectors. The Internet of Things (IoT) is another area that involves the work of many IEC technical committees and subcommittees (TC/SCs), standardization evaluation groups (SEGs) and obviously systems committees (SyCs). Those are only two examples showing why the IEC is embracing the systems approach but many other fields of activity will certainly benefit from it.



Claire Marchand, Managing Editor e-tech

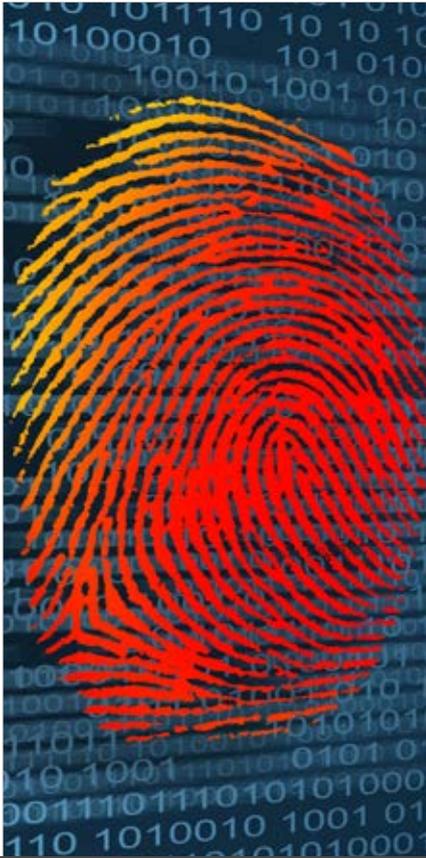
The Council Open Session reviewed activities and presentations in the Reinvention Laboratory, an open platform that presented and discussed a wide range of ideas and concepts, strategies and visions from the world of standardization. The results of these week-long exchanges were summarized in the Frankfurt Agenda which listed recommendations that should help shape the IEC of the future:

- Expansion of our organizational structure
- Evolution of our tools and processes
- Innovation of our portfolio
- Development of our new business model
- Strengthening of our conformity assessment services
- Preservation of our core values

The IEC Masterplan, expected to be available in 2017, will provide further insights into the IEC strategy for the future.



Cooperation is now the rule, not the exception



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IEC *e-tech* talked with James E. Matthews III, IEC Vice-President and Chair of the Standardization Management Board

FOCUS OF THE MONTH - IEC General Meeting in Frankfurt, Germany - Issue 09/2016

Issue 09/2016 of *e-tech* focuses mainly on the proceedings of the IEC General Meeting that took place in Frankfurt, Germany, from 10 to 14 October 2016: management meetings, elections, Young Professionals and Industrializing Country workshops, Affiliate Forum and IEC Awards.

Photo gallery link:

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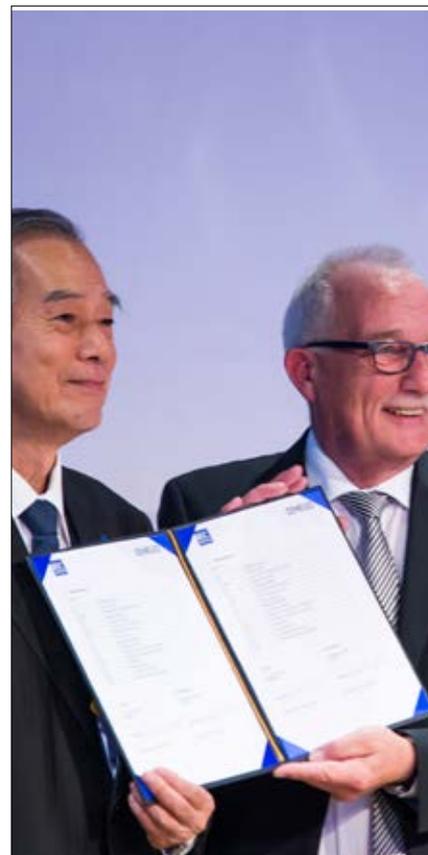
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Building strong relations with industry

IEC President Dr Junji Nomura addresses Council

By Antoinette Price

Manufacturing continues to expand its geographic reach. Electrical and electronic goods now represent 17,7% of global trade and more companies than ever need to be able to collaborate and participate in the value chains that span the globe. IEC work uniquely enables this type of cooperation. Industry is a high priority for IEC, since most experts participating in our work come from it.

With the end of Junji Nomura's presidency in sight, in his address to Council, he praised IEC Officers, membership and Central Office for working hard towards the visions he formulated at the start of his mandate in 2012. He also reiterated, in the following points, why the IEC must continue to strive towards them.

Industry is still the priority

While the IEC needs to broaden its stakeholders to include regulators, academia and other interest groups, building sustainable relationships and delivering the Standards and conformity assessment services to industry remains the core. To do this, IEC must listen closely to the marketplace and seek feedback

from many industry players. Equally, active participation in the IEC is of key strategic importance to companies and economies. During his presidency, Nomura participated in numerous global strategic CEO meetings, workshops and events to drive this message home to industry leaders, regulators and governments.

Enabling innovation

The speed of innovation has accelerated to the point where no company can do everything alone anymore; collaboration has become more important than ever. In order for innovators to choose IEC for all their standardization and certification needs, IEC must continuously pay attention to new technology areas.

Showing how IEC contributes to societal challenges

IEC contributions are not limited to the inner workings of technology. The impact of its work addresses many global challenges, such as universal energy access, sustainable urbanization, energy efficiency and disaster mitigation and recovery. Additionally, IEC International Standards and conformity assessment



services are important for 12 of the 17 United Nations Sustainable Development Goals (SDGs). IEC has been familiarizing larger audiences about the broader implications of its work through events, meetings, as well as White Papers and other promotional materials.

Combining expertise

In a future where broad societal challenges require integrated technology solutions, no single standards organization will be able to deliver all the required standards. IEC is actively reaching out to many consortia and fora, as well as national, regional and international standards organizations, to optimize outcomes, and reduce waste and cost for stakeholders.



IEC President Junji Nomura during his address to Council in Frankfurt, Germany

There is a lot of talk about the smart world we live in. Everything smart



The IEC organized the World Smart City Forum, in partnership with ISO and ITU, in July 2016 in Singapore

is underpinned by electricity and electronics, which allow smart devices and systems to interact, collect data and communicate, all of which depends on IEC work.

This year, the IEC organized the World Smart City Forum, in partnership with the International Organization for Standardization (ISO) and the International Telecommunication Union (ITU) in July in Singapore. Participants included all major standards organizations – ISO, ITU, the Institute of Electrical and Electronics Engineers (IEEE), the European Telecommunications Standards Institute (ETSI), the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization

(CENELEC), as well as observers from around 70 countries.

Establishing structures and tools for the future of the IEC

The IEC continues to optimize how it operates. In the near future, a modern, digital platform will be available for experts to make it much easier for them to participate in IEC work. IEC has successfully put in place a new governance structure for its Conformity Assessment Systems. Finally, the new Masterplan being prepared will help the IEC to focus on the most important and urgent topics of the coming years. Nomura concluded by saying that he is “confident that the IEC is well prepared to face the challenges that lie ahead”.

A year of brand building and increasing visibility

IEC General Secretary addresses Council

By Antoinette Price

During his address to Council, IEC General Secretary and CEO Frans Vreeswijk highlighted the main achievements since Minsk and talked about important ongoing projects.

Protecting the IEC brand

The IEC continues to protect its brand through registration. Currently 73 countries have confirmed registrations. The National Committees (NCs) can use IEC logos on their websites and materials to show their connection with the IEC. This strengthens the brand and makes it easier to explain the relationship with the IEC. It also facilitates entering into relationships with key national stakeholders, who will get involved in international IEC work.

Monitoring Standards through adoptions database

A key role of the IEC is to ensure its International Standards are widely adopted. Our NCs are statutorily obliged to implement IEC publications in a transparent way. In order to monitor this, the IEC Council Board proposes NCs declare national adoptions together with national differences in the IEC



Frans Vreeswijk addressing IEC Council in Frankfurt, Germany

adoptions database, which will be modernized. Additionally, technical committees could include some of these differences in later editions of Standards, making them more broadly relevant. Industry also stands to benefit. Manufacturers wanting to sell electric and electronic products widely

and if possible without modifications, could plan ahead and use this information at the design stage.

The next Masterplan

The IEC President described the Masterplan he launched in January

2016, as “the most extensive and comprehensive consultation process the IEC has ever engaged in”. During 2016, IEC met with 19 NCs and 80-plus companies and organizations and invited all NC Presidents to share their core priorities for the future Masterplan. Input was gathered at key meetings – Council Board (CB), Market Strategy Board (MSB) – and during the IEC General Meeting (GM) in Frankfurt – Conformity Assessment Board (CAB), Standardization

be established, to ensure our long-term relevance.

Enhancing ways to be seen

One Masterplan objective is to engage more broadly with industry and new audiences to improve our visibility and raise our market profile.

Over the past year we have collected direct market feedback by organizing strategic CEO roundtables, industry

international organizations, such as the International Energy Agency (IEA), World Energy Council, and the Global Standards Collaboration.

IEC Ambassadors actively promote IEC

IEC International Standards and CA Systems services are important to society. They improve safety and efficiency in terms of making cities smarter, enhancing the resilience of infrastructure during disasters and growing electricity access for those who go without. They enable more energy efficient technologies and improve digital security. They also directly impact 12 of the 17 United Nations Sustainable Development Goals (SDGs).

Increasingly, non-technical audiences discuss and influence standardization work on societal issues. Given the highly technical nature of our Standards and the very broad scope, the IEC Executive Committee (ExCo) has appointed four Ambassadors to explain IEC work and its impact on societal challenges or technologies to stakeholders in industry, government or academia.

Making it easier to find our work

We are also taking measures to make it easier for non-specialist audiences to find our work.

For example, some European manufacturing standards are actually IEC International Standards. Thus, we are requesting that all adoptions (regional and national) of our Standards be correctly referenced according to ISO/IEC Guide 21. (EN IEC 60704-2-1 not EN 60704-2-1).

If our work, for example, on Smart Cities, cybersecurity or energy efficiency can't be found, it will not be recognized, nor will we be included in key discussions. We are enhancing

Management Board (SMB), NC Presidents and NC Secretaries. The CB report to Council contains four proposed core themes to be approved at the Vladivostok GM next year. The new Masterplan will zoom in on core goals to ultimately help determine activities, structures and processes to

dialogues and visits to many of our NCs.

We have also participated in important industry meetings, including for energy generation/distribution, medical devices and we continue to collaborate with many





Vreeswijk reminded the audience that the IEC, together with ISO and ITU, organized the first World Smart City Forum in July 2016

our standards library with key words for searches and improving titles and abstracts to make the link between technology and larger topics.

Our new Systems Evaluation Groups are addressing clear industry and societal needs, such as Smart Cities. In July, we organized the first World Smart City Forum, together with ISO and ITU, to explore pain points in energy, mobility, water and cybersecurity, which hinder Smart City development. It was an opportunity to encourage closer collaboration in standardization, to avoid duplication and improve efficiency. Participants included major standards organizations (ISO, ITU, IEEE, CEN, CENELEC and ETSI) and observers from national standards organizations.

The IEC Market Strategy Board identifies principal technological trends and market needs in our fields of activity and publishes recommendations in the form of White Papers. In 2016, it prepared two new ones: *IoT 2020: Smart and secure IoT platform* and *Global Energy Interconnection*, which are distributed at events, to academia and other organizations.

Supporting our NCs

We ran training courses at our Central Geneva office and on almost all continents for around 600 experts in 2016. E-learning tools, brochures, articles and communications materials as well as free IT tools are also available to NCs.

Conformity Assessment Systems grow

Following the approval of the new Conformity Assessment (CA) governance structure, the CAB Special Task Force submitted recommendations for the fast introduction of new CA services when market needs are identified.

CAB and SMB have established two joint ad hoc Groups, one to make recommendations to IEC standards developers on feedback received from the CA Systems; and the second to develop a guidance document on CA in Standards.

IECRE, the IEC System for Certification to Standards Relating

to Equipment for Use in Renewable Energy Applications, has 15 Members in Africa, Asia, Europe and North America, with all three sectors in place (wind, solar PV and marine). IECRE participated in the International Renewable Energy Agency (IRENA) Innovation Week in May and presented its System, highlighting its benefits to the RE sector.

IECEE, the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components, IECEX, the IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres, and IECQ, the IEC Quality Assessment System for Electronic Components, are all financially sound and developing rapidly, offering new services and gaining visibility and recognition worldwide.

The IECEE Global Motor Energy Efficiency programme (GMEE) is now well established, with task forces to cover functional safety and cybersecurity.

IECEX celebrated 20 years in 2016 and issued the first certificates for non-electrical equipment used in explosive atmospheres.

The IECQ Scheme for LED Lighting, launched in 2015, met with immediate success and presented its first certificate.

Regional Centres

Equally our regional centres continue to promote and raise awareness of IEC. The Directors of the IEC Regional Centre for Africa (IEC-AFRC), established in 2015, visited over 20 countries and made first contact with a large number of regional organizations this year. The Asia-Pacific Regional Centre (IEC-APRC) and the Latin America Regional Centre (IEC-LARC) also paid visits

to IEC Member and Affiliates in their respective regions and participated in a number of conferences, seminars and workshops to promote IEC activities. Both IEC-APRC and the Regional Centre for North America (IEC-ReCNA) provided support to IEC technical committees and held TC meetings and TC officer training in their premises.

Affiliate Country Programme

The Affiliate Country Programme is thriving and now counts 85 countries, with Uzbekistan and Syria joining since Minsk. Its Conformity Assessment Status e-learning modules are available for IECEE, IECEX, IECRE and IECQ will follow in 2017.

In September, the Affiliate Country Programme signed an important MoU with PTB, the national metrology institute of Germany, to establish a framework for technical cooperation in standardization and quality infrastructure, and for the promotion of related international best practice. The PTB provides practical aid to developing countries, and organized

this year's workshop for industrializing countries with the IEC.

Cooperation agreements

Two Memorandums of Understanding were signed on 9 October 2016 in Frankfurt, between the IEC and GSO, the Standardization Organization for the Gulf Cooperation Council, and between the IEC and SARSO, the South Asian Regional Standards Organization. The overall objective of these agreements is to promote IEC standardization and conformity assessment work and activities in the Arab States of the Gulf and in South Asia.

New perspectives through the Young Professionals programme

The Young Professionals (YP) programme attracts and motivates young experts and future leaders to participate in IEC work on a long-term basis. The 400 plus participants from 49 countries help IEC address issues now and how standards should be written in the future. Their insights were also sought for the Masterplan.



In his address, Vreeswijk updated Council members on the next IEC Masterplan

SMB meeting in Frankfurt

SMB Chair shares key decisions and developments

By Gabriela Ehrlich

IEC e-tech talked with James E. Matthews III, IEC Vice-President and Chair of the Standardization Management Board (SMB) during the General Meeting in Frankfurt, Germany. Matthews shared key decisions and their expected impact on IEC efficiency and effectiveness. Matthews will hand over to Ralph Sporer in January 2017. (see also his reflexions in this e-tech issue)

A systematic approach

Systems work is vital to the future of the IEC and to the industry, which has to collaborate more than ever before to develop the technical solutions for increasingly complex systems. Strategic groups, advisory committees and Market Strategy Board (MSB) recommendations have led to the creation of Systems Evaluation Groups (SEGs) but some work continues to be brought into existing Technical Committees (TCs).

The newly founded Systems Resource Group (SRG) has started to develop many of the tools and processes that are needed by SEGs and Systems Committees (SyCs) in their work. The SRG also shares best practices including architecture models, road maps and use cases, and also guides

the development of specialized software applications for Systems.

A new SyC

SEG 4: Low voltage direct current (LVDC) applications, distribution and safety for use in developed and developing economies, presented an excellent report to the SMB. The group brought together great people to contribute to its work on low voltage direct current, many of whom had never been involved in the IEC before. SEG 4 did significant work in analyzing the challenges and opportunities of this important technology, which offers a unique opportunity for universal electricity access and increased energy efficiency in developed and developing countries. As a result, a formal ballot will now be circulated to National Committees to approve the setting up of a new SyC on LVDC and LVDC for electricity access.

A TC for Wearable Smart Devices

Over the past years, wearable devices have brought computing and the internet closer to the human body. Such devices come in many shapes, are always on, and share and collect data with an aim to improve how we interact with our environment. This emerging field is seen as an important

area in which the IEC will need to serve. For this reason, the SMB agreed to the set-up of a new TC with the provisional title “Wearable smart devices”. The proposal for the new TC will also be balloted to the National Committees for formal approval of the new TC. This TC will become the focal point for the broad activity that spans many committees.

Managing power network assets

Asset management for power networks is an important underserved market. The SMB took note of a report prepared by ad hoc Group (ahG) 65 and the favourable vote by the National Committees. The SMB approved the set-up of new TC 123: Standardization of the management of assets in power systems, and assigned the Secretariat to Japan.

Horizontal or not?

What is a horizontal Standard? What is it suppose to accomplish? Are there too many, too few, any missing? Are they still relevant to guide other TCs in their work? The SMB set up ahG 72 to evaluate this and a whole range of other Standards; including normative and informative guides to determine if they are accomplishing what they are set out to do. The aim is to identify

those who are relevant from those that have lost their usefulness.

Faster, more market driven

As mentioned previously, the SMB encourages TCs to manage projects in line with market driven deadlines. In this context, groups will make their own plans that respond to clear market needs and closely held accountable for outcomes. To increase project management capabilities, IEC and ISO held a joint workshop to provide training on project management. A new web-based IEC TC/SC dashboard will help reduce the workload on secretaries by decreasing the need for filling

and submitting forms. This should help increase project speed. It will also ensure that the exact status and actions for active projects are known by all.

Applied Standards

Two important developments will help improve how TC/SCs and IEC Conformity Assessment (CA) Systems interact.

While in the past TC/SCs were not allowed to establish formal liaisons with an IEC CA System, this is now formally encouraged.

The SMB, following feedback and recommendation by a joint SMB/

CAB ahG has provided clarification regarding the interpretation of Standards by TC/SCs with regard to conformity assessment. While there is sometimes a need for interpretation of some aspects of a published Standard, the SMB has confirmed that such interpretation must follow a formal process, including a formal decision by the TC/SC or a group designated for this purpose.

Translation yes, but

Translations are widely used in many countries as a way to ensure stakeholder involvement, encourage commenting and the adoption and use of Standards. Such translations



James E. Matthews III, IEC Vice-President and Chair of the SMB, at the SMB meeting in Frankfurt during the IEC General Meeting

generally required two months (subsequently shortened by the SMB to six weeks) and most countries handle them between the CD and CDV stage. However, when translations are done at the very end of the standardization process, they can result in the publication of the Standard being delayed.

At the last SMB meeting in June, the decision was taken to eliminate time for translation of documents between the Committee Draft for Vote (CDV) and Final Draft International Standard (FDIS) stage. This would result in the French FDIS version following the English FDIS version. However, the request of the French National Committee in implementing this decision has been deferred to March 2017 to let the IEC Central Office explore solutions that would potentially allow for parallel voting. The SMB also agreed to look at the possibility of formally eliminating parallel translations from the standards production process. In other words, if a translation has not been completed before the CDV stage, the Standard would be published without it and translation would follow thereafter. The SMB has set up ahG 73 to explore the potential risks and benefits of such an approach and will report back to the SMB in February 2017.

Better identify fundamental change

The term "disruptive technology" describes innovations that have the potential to create new markets, thereby fundamentally changing how things were done until then. They are often brought on by new market players that often displace established market leaders.

Over the past couple of years, such technologies had been the focus of the Market Strategy Board ongoing technology watch function. However, the MSB was not really structured to

carry out such ongoing review and research. For this reason, the SMB members requested that this issue should be included as a strategic item in the IEC Masterplan.

While SMB members have been encouraged to look out for potentially disruptive technologies, the SMB also decided to establish ahG 70. The group will explore how to broaden the function of the Systems Evaluation Group (SEG) by including technology evaluation in its scope. The SEG could even possibly be renamed "Standardization Evaluation Group".

Faster, more efficient reporting

In business, the fast often wins over the slow. In February 2016, a group of Young Professionals (YPs) were invited for the very first time to present a policy recommendation to the SMB. Their proposal aimed to improve the speed and efficiency for reporting

minutes of meetings. The group initiated the project and participated in the development of all elements.

Following recommendations by ahG 67 which was set up as a result of the YP recommendation, the SMB decided to approve a one-year test trial. The goal is to get reports out within one week from the actual TC/SC, SyC, SEG or other SMB group meeting. The SMB expects the report to the SMB (RSMB) to be received four weeks instead of 12 weeks after the meeting.

The SMB also decided to apply some of the same principles for itself. The current SMB report to Council Board with the decision lists and a list of actions was judged to be sufficient to report on SMB activities, eliminating the need for longer and more complex reports that didn't really add significant value. The aim of this initiative is to work faster but not harder.



LVDC offers a unique opportunity for universal electricity access - here a remote microgrid in Zambia (Photo: Microgrid Knowledge)

Looking to the future

New IEC White Papers highlight technology trends and industry needs

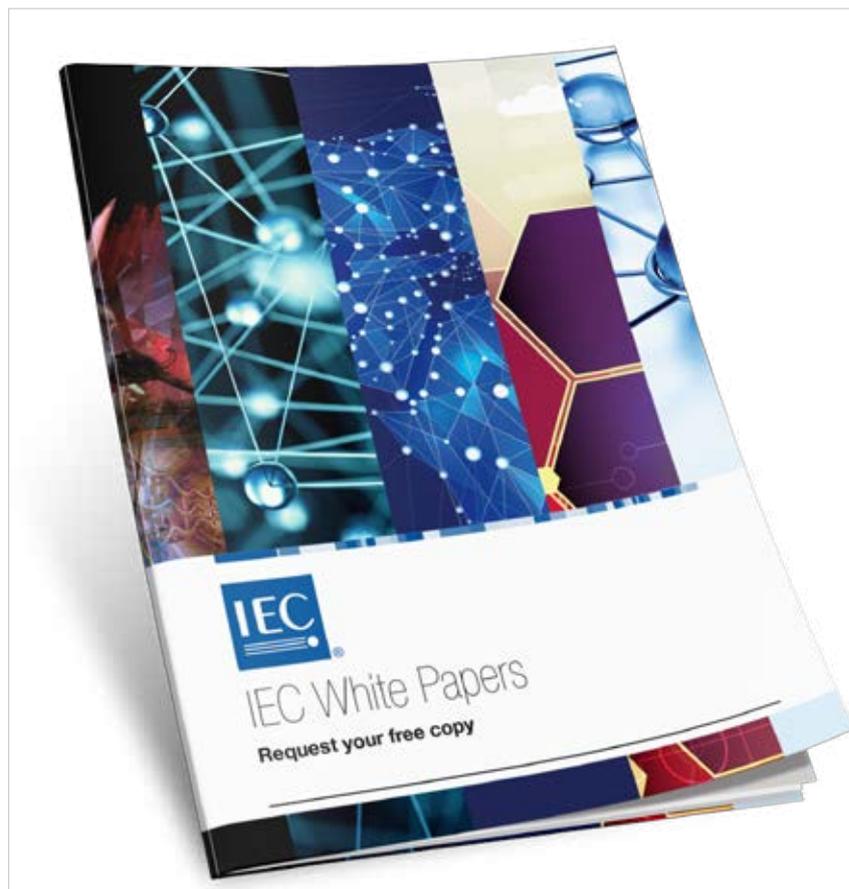
By Janice Blondeau

Two new IEC White Papers have recently been published, covering global energy interconnection and a smart and secure Internet of Things platform. In the IEC Market Strategy Board (MSB), CTOs of major global technology companies meet every year to identify and discuss important technology trends and industry needs for the coming 10 to 15 years. The IEC White Papers summarize the MSB recommendations regarding these technology trends to the IEC community and also to regulators, governments and academia. They are developed by the MSB together with renowned research organizations.

Global energy interconnection

Sustainable energy and climate change are major global concerns. Between 1965 and 2014 world energy consumption rose from 5,4 billion tons of coal equivalent to 18,5 billion tons. Energy consumption worldwide will maintain a growing future trend, as it is difficult to reverse long-established patterns of intensive energy consumption.

Today a fifth of the world population still lacks access to energy and 3 billion people rely on wood, coal or animal waste for cooking and heating.



The IEC White Papers, developed by the Market Strategy Board together with renowned research organizations, summarize the MSB recommendations regarding these technology trends to the IEC community, regulators, governments and academia

Greater interconnection of power systems

Global energy interconnection (GEI) can be described as the ultimate evolution of the trend towards greater interconnection of power systems. It

encompasses high-level integration of the flow of energy, the flow of information and the flow of business as an intelligent, automated and networked-based system for ensuring energy security on a universal scale.

The interconnection of energy grids promises to open up an unprecedented opportunity to globally share the resources of the whole planet, bringing clean energy to everybody, everywhere in the world. However, technically global energy interconnection remains highly complex. International Standards inherently contain solutions that will help pre-address this complexity.

Paving the way for GEI

This White Paper assesses worldwide needs, benefits, policies and preconditions for GEI. It examines the readiness of potential markets and identifies technical and business trends as well as hurdles. Also, the White Paper analyzes and compares several global transmission scenarios and evaluates their impact on energy supply, the environment, technologies, policies as well as Standards development. Recommendations deal with how standardization for such a large system of systems will need to be conducted and which stakeholders need to be involved.

The IEC White Paper *Global energy interconnection* was developed by the IEC Market Strategy Board (MSB) with major contributions from the

International Energy Agency (IEA) and State Grid Corporation of China (SGCC).

IoT 2020: Smart and secure IoT platform

The Internet of Things (IoT), an infrastructure of interconnected objects, people or systems that processes and reacts to physical and virtual information, is rapidly expanding. IoT collectively uses today's Internet backbone to connect things using sensors and other technologies. It significantly impacts the global economy and is expected to grow exponentially over the coming years, transforming society as a whole.

The IEC White Paper IoT 2020: Smart and secure IoT platform provides an overview of today's Internet of Things, 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. Next generation platform-level technologies in the field of connectivity, processing and security are also discussed.

Developing the IoT platform

This IEC White Paper provides an outlook on what could be the next big step in IoT – the development of smart and secure IoT platforms. These platforms offer significant capability improvements in security and they can bridge the gaps between different existing IoT platforms, which often consist of legacy systems that aren't designed for IoT purposes.

Key role of standardization

IoT 2020: Smart and secure IoT platform gives important recommendations to IoT stakeholders and for IoT standardization work. To bring the ambitious visions connected with the Internet of Things to fruition significant efforts in standardization are needed, for example, development of initiatives to enable interoperability.

This White Paper presents a desired future IoT standardization ecosystem environment to address those needs.

This White Paper was developed by the IEC Market Strategy Board (MSB) with major contributions from SAP and Fraunhofer AISEC, the Fraunhofer Institute for Applied and Integrated Security.



The new IEC White Paper "Global energy interconnection (GEI)" starts to identify and address the standardization needs for large-scale, transcontinental and global energy interconnection



Next generation platform-level technologies in the field of connectivity, processing and security for the Internet of Things are discussed in the new IEC White Paper "IoT 2020: Smart and secure IoT platform"

2016 Council Statutory Session

Report on elections, appointments and other statutory issues

By Claire Marchand

Council, the supreme governing body of the IEC, held its meeting on Friday 14 October 2016 during the IEC General Meeting in Frankfurt, Germany.

Statutory issues concerning the election/appointment of

- the Chair of the Standardization Management Board (SMB) and IEC Vice-President
- five Members of the Council Board (CB)
- nine Members of the SMB
- four Members of the Conformity Assessment Board (CAB)

Other principal items on the agenda

- The General Secretary's report (see separate e-tech article)
- The President's address (see separate e-tech article)
- Financial matters
- Reports from the Council Board, including reports from the IEC Vice-Presidents on CAB, Market Strategy Board (MSB) and SMB activities (see separate e-tech articles on CAB, SMB and MSB)
- Forthcoming GMs (General Meetings)



The Council Statutory Session took place in the Frankfurt Congress Center



IEC Officers - from right: IEC Vice-President and MSB Convenor Yinbiao Shu, IEC Treasurer Åke Danemar, IEC General Secretary & CEO Frans Vreeswijk, IEC President Junji Nomura, IEC President-Elect James M. Shannon, IEC Vice-President and SMB Chair James E. Matthews III and IEC Vice-President and CAB Chair Ulrich Spindler

Election results

Chair of the SMB and IEC Vice-President

Council elected Dr Ralph Sporer from Germany as Chair of the SMB and IEC Vice-President for a three-year term of office (2017-2019).

Council Board

Council elected five financial Group A CB members for a three-year term of office (2017-2019):

- Mr Patrick Bernard (France)
- Dr Keiji Kimura (Japan)
- Mr Markus Reigl (Germany)
- Mr John M. Thompson (United States)
- Mr Rodney C.J. Turtle (United Kingdom)

Standardization Management Board

Council appointed/re-appointed six Automatically Appointed Members of the SMB for a three-year term of office (2017-2019):

- Mr Emmanuel Petit (France)
- Mr Michael Teigeler (Germany)
- Mr Ivano Visintainer (Italy)
- Mr Tadashi Ezaki (Japan)
- Ms Anne Humberstone (United Kingdom)
- Ms Sonya Bird (United States)

Council elected/re-elected:

- Mr Carlos Perez Munguia (Mexico)
- Mr Jos R. Remy (The Netherlands)
- Mr Thomas Korssell (Sweden)

as members of the SMB for a three-year term of office (2017-2019).

Conformity Assessment Board

Council re-appointed Mr Didier Bourgès (France) and Mr Tim Duffy (United States) as Automatically Appointed Members of the CAB for a three-year term of office (2017-2019).

Council elected/re-elected:

- Mr Ian Forte (Australia)
- Mr Rafael Nava (Mexico)

as members of the CAB for a three-year term of office (2017-2019).

Financial matters

Dr Åke Danemar, IEC Treasurer, reported on the financial situation of the IEC.

Council approved the audited accounts of the Commission for the financial year 2015 as well as the 2017 budget and the distribution of national dues for 2017.

Future General Meetings

81st General Meeting

Vladivostok, Russian Federation, from 9 to 13 October 2017.

82nd General Meeting

Busan, Republic of Korea, from 22 to 26 October 2018.

83rd General Meeting

Council formally accepted the invitation of the Chinese National Committee (NC) to host the 83rd General Meeting in Shanghai from 21 to 25 October 2019.

Although Council can only officially accept invitations from National Committees up to three years in advance, many Members have already declared their intention to invite the IEC to host a future IEC GM:

84th General Meeting

The Swedish National Committee has stated its intention to invite the IEC for the 2020 GM in Stockholm.

The National Committees of the United Arab Emirates, the United States and Egypt have expressed an interest in hosting the GM in the years 2021, 2022 and 2023 respectively.

In conclusion, Council expressed its warm appreciation to all members of the Organizing Committee and the IEC National Committee of Germany for their excellent organization of the 80th IEC General Meeting and for the generous hospitality extended to IEC delegates in Frankfurt.

2016 Council Open Session

What future for standardization?

By Janice Blondeau

One aim of the Council Open Session, held on the Friday afternoon during the IEC General Meeting in Frankfurt, was to summarize and conclude the week-long activities and presentations in the Reinvention Laboratory.

Today's perspectives and a look at the future

The Open Session was officially opened by IEC President Dr Junji

Nomura, followed by Roland Bent, President of DKE, the German Commission for Electrical, Electronic & Information Technologies of DIN and VDE, who introduced some of the challenges of digitization in relation to standardization and conformity assessment.

Keynotes give regulators' perspectives

The next segment of the Open Session saw keynote speeches from representatives of two important

regulators who shared their expectations in terms of international standardization. They were Kerstin Jorna, Director, single market policy, regulation and implementation, European Commission, and Marion Stoldt, Chair WP.6 (Working Party 6), United Nations Economic Commission for Europe (UNECE).

Cooperative efforts are needed

Jorna's presentation addressed the "Current situation and expectations for the future" and it focused on 30 years of public/private cooperation on standards and regulation for a single market, emphasizing that global value chains require global standards. She presented the Joint Initiative on Standardization, which aims to speed up, prioritize and modernize work and leverage it for public policy purposes. Jorna concluded by highlighting the role of and challenges for regulators in view of accelerating technology cycles, global value chains and blurring borders between ICT and products (the Internet of Things).

We need many cooks

"We need standards to build the digital trust chain – without trust there would be no investments, there would be no new business and no consumer buy-



The Council Open session, which attracted a full house, consisted of presentations on how regulators and standards organizations can work more closely together, followed by a panel discussion

in. And to use a kitchen imagery, it's a complex dish, one cook cannot do it alone. We need many cooks to cook together, even to experiment together," she said.

Invitation to actively participate in UN discussions

In her keynote address, Stoldt addressed how regulators are struggling to maintain credibility, relevance and independence in a crowded environment with big players. She spoke of the need to protect companies from unfair competition and sensational news-making.

Stoldt concluded that regulators need to form closer partnerships with the standards community and she also pointed out a number of hurdles that are holding this back. Firstly, a lack of resources for regulator participation in standard-setting activities can lead to their voice not being heard and standards not fitting needs. She also underlined that some regulators simply don't

understand the value of standards or of conformity assessment schemes in making regulatory goals attainable. Stoldt invited standards organizations to participate more actively in UN discussions.

Forward-looking focus

"We focus on five areas: 5G communications, Cloud computing, the Internet of Things, Big Data technologies and cybersecurity. These five are instrumental for companies to start investing, and by that, laying foundations for jobs and markets of the future...and they also work across sectors and will serve many different areas," said Mrs Stoldt.

Imagine the future

Michael Teigeler, CEO of DKE, then introduced the second part of the Open Session on the theme "Imagine the future". It was chaired by Uwe Kampet. The audience in the auditorium was invited to ask questions through the IECGM16 digital app. Questions were pooled and

put in front of the panel of experts. The range of topics was broad and included:

- Digitization
- Industry 4.0
- New electronic tools
- New electronic deliverables
- Enhanced cooperation between sectors

Panel members for this session were:

- Kerstin Jorna (European Commission)
- Marion Stoldt (UNECE)
- John Thompson (President Elect, USNC)
- Dr Bronwyn Evans (Secretary, Australian NC)
- Dr Sadvir Bisson (President, South African NC)
- Dr. Bernhard Thies (CENELEC President)
- Juan Rosales (IEC Young Professional Leader, Mexico)

Following the Open Session, the Frankfurt Agreement was officially signed.



Director for single market policy, regulation and implementation at the EU Commission, Kerstin Jorna spoke about 30 years of public/private cooperation on standards and regulation for a single market and also the Joint Initiative on Standardization

IEC Lord Kelvin Award 2016

Uwe Kampet of BSH Home Appliances receives highest global prize in electrotechnology

By Janice Blondeau

The IEC Lord Kelvin Award, the highest global prize in electrotechnology honours Uwe Kampet's outstanding commitment to the mission of the IEC and long-term contribution to increasing safety as well as enabling the technical harmonization that underpins global trade

Honouring pioneering vision

The prestigious IEC Lord Kelvin Award takes its name from Lord Kelvin, the first IEC President, who was a distinguished scientist and prolific inventor. He contributed significantly to the advancement of modern physics and the practical applications of electrotechnology. Lord Kelvin, together with Charles Le Maistre,

the first IEC General Secretary, can be considered the true fathers of standardization. They put in place the processes and methodologies that allow companies to spread new technologies broadly, and enable countries to build more sustainable infrastructure.

Today the Lord Kelvin Award honours their vision and drive to understand



Today, the Lord Kelvin Award honours the vision and drive of Lord Kelvin and Charles Le Maistre, to understand and improve the practical applications of the millions of electrical and electronic devices and systems that are part of our daily lives

and improve the practical applications of the millions of electrical and electronic devices and systems that are part of our daily lives.

Uwe Kampet, 2016 Lord Kelvin laureate

In presenting Uwe Kampet with the 35th Lord Kelvin Award at the IEC General Meeting in Frankfurt, Junji Nomura, IEC President, said, “The IEC Lord Kelvin Award is the highest global distinction in electrotechnology. With this Award we recognize Uwe Kampet’s valued leadership and tireless support of the IEC, global trade and a safer world.”

Helping to facilitate global trade

Uwe Kampet is currently Senior Expert Technical Regulation and Standardization at BSH Home Appliances and he has been active in the IEC for nearly 20 years. Under his leadership as Chair of CIS/F: Interference relating to household appliances tools, lighting equipment

and similar apparatus, from 2004 to 2015, he helped shape EMC International Standards covering the broad range of lighting products, household appliances, power tools, etc. Thanks to his tireless leadership efforts, CIS/F Standards have been nationally and regionally implemented without modifications. CISPR F is a good example for how IEC work facilitates global trade with an ultimate goal of “one Standard accepted everywhere”.

Extensive contribution to CISPR work

Such Standards are of increasing importance due to the proliferation of electric and electronic systems and devices all around us. All electrical or electronic equipment generates signals that can potentially interfere with the normal operation of other nearby pieces of equipment. They can degrade their performance, introduce errors, operational faults or even cause complete failure.

The work of CISPR: International special committee on radio interference, is essential in protecting sensitive equipment in medical environments, manufacturing, on board planes, etc. and to contain the interference that is generated, for example, by large batteries of electric vehicles.

Role in the CAB

Kampet was also instrumental in establishing broad cooperation between his Committee and other important organizations, like the International Telecommunication Union (ITU) and the International Amateur Radio Union (IARU). As the German CAB member, Uwe Kampet contributes extensively to the IEC Conformity Assessment Board (CAB).

He initiated the conformity assessment systems approach and is now the convener for the CAB working group on developing new business for the IEC Conformity Assessment Systems.



Uwe Kampet was presented with the 35th Lord Kelvin Award at the IEC General Meeting in Frankfurt, by Junji Nomura, IEC President



Kampet has helped shape EMC International Standards covering the broad range of lighting products, household appliances and power tools



Eight technology leaders recognized for outstanding contributions

2016 Thomas A. Edison Awards for exceptional achievement

By Janice Blondeau

Each year with the Thomas Edison Award, the IEC pays tribute to members of the IEC Family for their distinguished work and commitment to improving the safety, compatibility and energy efficiency of electrical products and systems. The Thomas Edison Award is in the spirit of Thomas Alva Edison, one of the greatest inventors in history. He developed a system of electric power generation and distribution which was a major development in the modern industrialized world.

Recognizing outstanding talent

Eight people were recognized with the 2016 Thomas A. Edison Award – six nominated by the IEC Standardization Board (SMB) and two by the IEC Conformity Assessment Board (CAB).

- Robert Arseneault, Secretary, IEC TC 4
- Giovanni Cassinelli, Secretary, IEC SC 23E
- Marie-Elisabeth d'Ornano, Chair, IECQ
- Geoffrey S. Ibbott, Past Chair, IEC SC 62C
- Yoshiaki Ichikawa, Chair, IEC TC 111
- Maurice Montavon, Secretary,



The Thomas A. Edison Award silver medal

IEC TC 5

- Heribert Schorn, IEC Coordinator, ISO CASCO WGs
- Bernd Sisoletsky, Past Chair, CISPR CIS/B

Seven experts received the IEC Thomas A. Edison Award Frankfurt, Germany, during the IEC 80th General Meeting. Robert Arseneault, who wasn't present in Frankfurt, will receive his Award from the SMB in June 2017.

Robert Arseneault, Secretary, IEC TC 4, Canada

Robert Arseneault has been Secretary of IEC Technical Committee (TC) 4: Hydraulic turbines, since 1992, when Canada took over the responsibility of the Secretariat. He has been particularly instrumental in the publication of dual logo standards like IEC/IEEE, where the coordination of editing, comments and planning are essential. Arseneault excels in fostering the exchange of ideas between people from different cultures. In the last five years,



Robert Arseneault



IEC Vice-President and SMB Chair James E. Matthews III with Giovanni Cassinelli...

Arseneault worked closely with the Chair of TC 4 to launch two new groups, Maintenance Team (MT 31) on turbine residual life and Working Group (WG) 33 on pressure fluctuations. Through presentations at international conferences (recently at HydroVision) and through his contributions to articles about the work of IEC TC 4, Arseneault is also constantly promoting the work of the IEC.

Giovanni Cassinelli, Secretary, IEC SC 23E, Italy

Giovanni Cassinelli has served as Secretary of IEC Subcommittee (SC) 23E: Circuit-breakers and similar equipment for household use, since January 2003. He strongly supports the TC Chair in smoothly solving conflicts and maintaining a cooperative environment. Cassinelli has helped ensure highest quality results in the development, editing and translation of SC 23E documents. His contributions led to 23 new publications, including new IEC International Standards

and amendments of existing ones, and over 400 official SC documents. He played a crucial role in the successful implementation of a new Blocks and Modules approach in the structure of SC 23E Standards, aiming at harmonizing a family of standards, thus avoiding mistakes, inconsistencies or discrepancies.

Marie-Elisabeth d'Ornano, Chair, IECQ, France

Chair of the IEC Quality Assessment System for Electronic Components (IECQ) since 1 January 2014, Marie-Elisabeth d'Ornano has embraced her role, responsibilities and duties with enthusiasm and a dynamic hands-on approach. In this role, she has had the strong support of her employer, LCIE – a Bureau Veritas company. IECQ has been reinforced as an international “best practice” model for supplier assessment and as an extremely valuable Supply Chain Management tool for the many industries involved in the manufacture, supply and distribution of electrical/electronic components, parts and assemblies.



IEC Vice-President and CAB Chair Ulrich Spindler with Marie-Elisabeth d'Ornano.

During her initial term as Chair, IECQ has benefited from d'Ornano's leadership as illustrated in a number of key initiatives and achievements:

- IECQ support and collaboration on the new CA Harmonized Basic Rules
- Closer cooperation between IECQ and specialized industries, e.g. avionics
- Development and rollout of the new IECQ Scheme for LED lighting
- Establishment of collaboration between IECQ and other CA Systems, notably IECEE
- Introduction of the new IECQ developed and run Training Programme, launched in 2015
- The first IECQ International Conference on Supply Chain Management, in Paris in April 2016
- Fostering international cooperation with other organizations, e.g. STACK International

Geoffrey S. Ibbott, Past Chair, IEC SC 62C, United States

During his term as Chair of IEC SC 62C: Equipment for radiotherapy, nuclear medicine and radiation dosimetry, Geoffrey S. Ibbott outstandingly promoted the development and recognition of IEC Standards for medical radiation therapy equipment,

nuclear medicine and radiation measurement. Ibbott successfully encouraged various experts and stakeholders from industry, medical physics and regulatory bodies to join the Committee. About 20 IEC publications have been issued under his leadership, and these have been widely accepted in the regulatory

environments of European Union, US, China, Japan and other jurisdictions. As a result, IEC is highly recognized as a home for standards in the field of medical equipment publications for radiation therapy, nuclear medicine and radiation measurement.

Yoshiaki Ichikawa, Chair, IEC TC 11, Japan

Dr Yoshiaki (Yoshi) Ichikawa has led environmental standardization in IEC TC 111: Environmental standardization for electrical and electronic products and systems, for 11 years, since its establishment in 2004. He served as the Convenor of WG 2: Environmentally Conscious Design (ECD), and published IEC 62430:2009, *Environmentally conscious design for electrical and electronic products*. For this contribution he received the IEC 1906 Award in 2007. In 2009, Ichikawa was appointed as the Chair of TC 111. TC 111 has published 18 deliverables to date, in the fields of chemical, eco-



...Geoffrey Ibbott...



...Yoshiaki Ichikawa...

design, greenhouse gas and resource efficiency. Most of these have been integrated into legal frameworks specifying product environmental aspects around the world through which the electrotechnical industry has gained benefits. Ichikawa's activities also extend to other fields. He is an expert of IEC TC 62: Electrical equipment in medical practice, where he is supporting the Convenor of Project Team (PT) 62926, addressing the systems aspects of real-time radiation therapy.

Maurice Montavon, Secretary, IEC TC 5, Switzerland

With his personal engagement during the last 44 years Maurice Montavon has devoted countless hours to IEC. In 1972, Montavon was designated as expert by the Swiss National Committee (NC) for the first time – to WG 1 of IEC TC 5: Steam turbines. From 1982 to 1984 he was involved in the publication IEC 60045-1:1991, Steam turbines - Part 1: Specifications. Montavon has been Chair of the Swiss Mirror Committee TC 5 for almost 30 years. In 2007 he

was elected by the SMB as Secretary of TC 5, succeeding in the reactivation of TC 5 in 2008. Today TC 5 has four MTs and two WGs, with more than 70 experts. In the area of cogeneration he has recently also achieved a collaboration with the International Organization for Standardization (ISO),



...Maurice Montavon...

following the advice given by SMB. During his career Montavon always promoted international standardization within IEC and used his network to bring new experts into TCs, not only from Switzerland but also from other countries where he worked. Montavon founded the Swiss Mirror Committee of IEC TC 117: Solar thermal electric plants, as Chair in 2011, and he acts as liaison officer between IEC TC 5, IEC TC 117 and IEC TC 120: Electrical Energy Storage (EES) Systems.

Heribert Schorn, IEC Coordinator, ISO CASCO WGs, Germany

Heribert Schorn has been recognized for exceptional current and long-term achievement in representing the IEC CAB in ISO/CASCO Working Groups, for the development of conformity assessment standards, specifically the ISO/IEC 17000 series. This series of dual logo ISO/IEC Standards are the foundation on which the IEC Conformity Assessment (CA) Systems are based. Schorn has been active as an IEC representative and coordinator in CASCO Working Groups for the last ten years. He has been actively involved in the preparation



IEC Vice-President and CAB Chair Ulrich Spindler with Heribert Schorn.

of ISO/IEC 17043:2010, *Conformity assessment – General requirements for proficiency testing*; ISO/IEC 17065:2012, *Conformity assessment -- Requirements for bodies certifying products, processes and services*; and ISO/IEC TR 17026:2015, *Conformity assessment – Example of a certification scheme for tangible products*. Since 2014, he has been the IEC Coordinator for CASCO WG 42, preparing the revision of ISO/IEC 17011:2004, *Conformity assessment - General requirements for accreditation bodies accrediting conformity assessment bodies*. This standard is expected to be published in 2016.

In 2015, a leadership structure with a Convener and two Co-conveners was agreed for the revision of ISO/IEC 17025:2005, *Conformity assessment – General requirements for the competence of testing and calibration laboratories*. This is a very important Standard for IEC CA activities. CASCO WG 44 was created for this revision, with Schorn as Co-Convener.

Bernd Sisolefsky, Past Chair, CISPR CIS/B, Germany

Dr Bernd Sisolefsky, former Chair of CISPR, the International special

committee on radio interference, is an experienced electromagnetic compatibility (EMC) expert who has been active in IEC work since the early 1990s. During the last 25 years, he has made countless contributions and held several offices in technical bodies under the CISPR roof. These include

the role of Chair of CISPR/B from 2006 to September 2015. CISPR/B is responsible for standardization in the field of radio interference suppression of industrial, scientific and medical radio frequency equipment and also of high voltage lines and installations. During this period, the International Standard CISPR 11:2016 CVS, was advanced two times, which culminated in the addition of requirements for grid connected power converters (GCPC), which serve for the connection of photovoltaic systems to the electricity distribution network. The addition of further requirements for wireless power transfer (WPT) devices was also started when Sisolefsky was Chair. Finally he also worked constantly within other technical bodies of CISPR, in particular in CISPR/F, which is responsible for radio interference suppression of household and similar electrical appliances and of lighting equipment, and in CISPR/I especially in the field of radio interference suppression of powerline telecommunications equipment.



...and Bernd Sisolefsky

Arming the IEC for the future

Jim Matthews goes over his six years at the helm of SMB

By Jim Matthews

Over the past 6 years, IEC Vice-President and Standardization Management Board (SMB) Chair Jim Matthews served the IEC well. A calm, focused diplomat, he updated and helped put in place new structures and processes that will allow the IEC to satisfy market needs faster and even more efficiently. At the end of this year he will hand over to Ralph Sporer who has been elected at the General Meeting in Frankfurt.

This is how Jim remembers his time at the IEC; what he set out to do and what he accomplished.

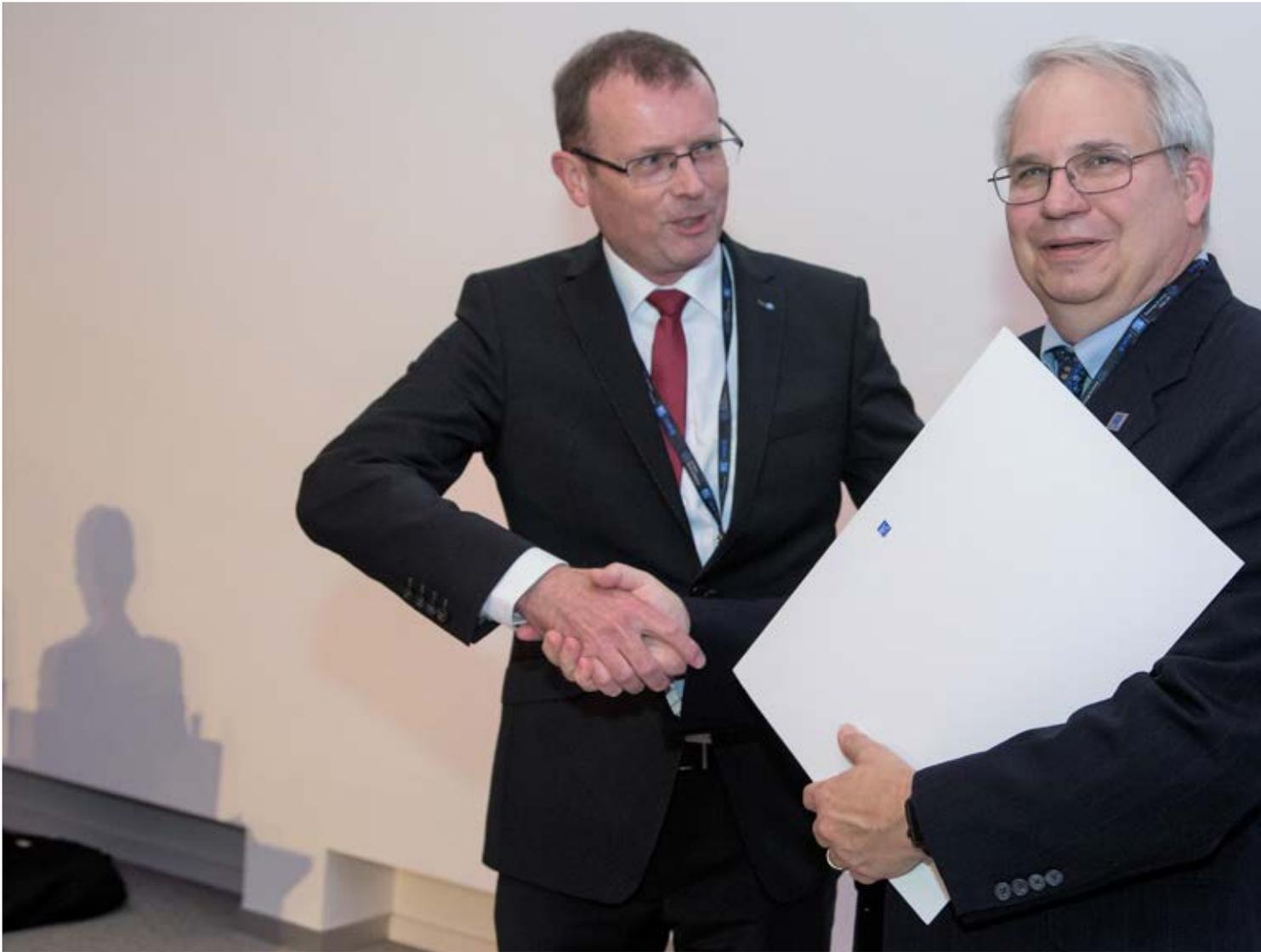
It has been a real pleasure to serve as the IEC Vice-President and SMB Chair from 2011 through the end of this year. I have had the opportunity to collaborate with people who are truly dedicated, hard-working, and enthusiastic about the IEC and its impact across the whole field of electrotechnology.

Structures for future relevance

All organizations, including the IEC, are faced with challenges every day from the markets they serve as well as from their internal stakeholders. How an organization reacts to those challenges determines its long-term



Jim Matthews (centre) with Jack Sheldon, IEC SMB Secretary (right), and Joyce Bleeker at the SMB meeting during the IEC General Meeting in Minsk, Belarus



With Frans Vreeswijk, IEC General Secretary and CEO, in Frankfurt, Germany, during the last SMB meeting chaired by Matthews

success, viability, and relevance. During my mandate my main aim was to optimize the processes and structures and put in place the tools that would allow the IEC to become as fast and nimble as possible so as to allow it to remain relevant well into the future. I believe an organization has to react and if possible preempt change in order to remain relevant. If it fails to do so, it becomes rigid and over time obsolete.

Strategies for success

When I became IEC Vice-President in 2011, we were at the beginning of the implementation of an updated IEC Masterplan. The plan stressed the need to strengthen

ties to industry and the markets we serve; to take into account new approaches to technologies and the complexity that resulted from rapidly occurring convergence. In this context we needed to examine IEC governance and find ways to enhance collaboration at the global level so as to make effective use of our experts.

Optimizing IEC structures

The experts that are appointed by the IEC National Committees to work in Technical Committees and Subcommittees (TC/SCs) are the heart of IEC standardization work. Many of our technical committees are high functioning, effective, and efficient. They serve the needs of

their stakeholders well, adapting to market changes, bringing new people on board, initiating relevant projects, updating structures and processes as needed. We have tried to celebrate these groups and hold them up as examples. We tapped into their leadership and invited them to share their expertise on advisory or ad hoc groups. However, there were other groups that stopped being relevant because they didn't adapt to the market and as a result their work no longer satisfied market needs.

LVDC

We knew we needed to put in place changes but we also had to be careful because we simply could not risk



sacrificing the good with the bad.

For this reason, the SMB established five metrics of performance to assess the activity level of TCs and SCs. Any group that failed to meet any three of the five criteria was subjected to closer examination. This process resulted in the shutdown or merger of a number of committees that had no experts, no projects, or no meetings in the last five years. I can assure you, it is really hard to close down standards groups, but it is also hard to defend the continued existence of a TC that has not met since 1998.

Promoting speed and effectiveness

Looking at how projects are managed and developed, we found

that measuring “average time to publication” covered up a multitude of problems and opportunities for improvement. In the past progress in the development of International Standards was measured by fixed milestones within fixed time frames and intervals, regardless of size or complexity of the work at hand. Success was expressed by average time to publication. This approach didn’t take into account difficult situations or differing market needs.

Also, some projects took a long time because a group decided to write a single Standard with over 500 pages instead of a series of smaller, more easily maintained subsections. Other groups were working meeting to meeting, progressing slowly as they generally only met once every 12 to 18 months.

The SMB took a hard look at all the aspects of project management and saw many opportunities for improvement. Today, TC/SC Officers, Convenors, and Project Leaders are empowered to manage technical work in line with market needs. They are responsible for planning and advancing projects. With this we moved from a “one-size-fits-all” project timing metrics to holding TC leadership accountable to a plan they select and develop. To achieve this, we have provided them with training and new tools. This provides them with a new level of freedom but also a lot more responsibility.

Better quality work, earlier

In looking at how IEC publications are developed we also found that a lot of our scarce resources were spent late in the project, editing drafts to bring them to the quality level we were looking for. In an effort to increase the quality of drafts already at the Committee Draft (CD) stage, the SMB decided to bring project leaders in TCs much earlier in closer contact with IEC editing staff. Every TC now has access

to the contact information for their editor and their Technical Officer on the IEC website. This will help reduce late corrections and increase quality and speed of publications.

Saving additional time

During my mandate as SMB Chair we have managed to shorten the time span for a number of steps in the standardization process by a quarter of a year:

- New work item: 12 weeks, with the option of 4 week vote for outline only
- CD: 8, 12, or 16 weeks, as deemed appropriate by TC/SC Officers
- Translation: 6 weeks
- Committee Draft for Vote (CDV): 12 weeks
- Translation for Final Draft International Standard (FDIS): down to an optional 0 weeks, if the CDV is approved without technical changes; this is currently being discussed

All systems go

Perhaps the biggest change to occur in the IEC during my mandate was the introduction of systems activities. Recognizing that technical areas are both converging and becoming more complex, there are a number of domains where TCs cannot function in isolation. Many technology areas require interaction across several groups inside and outside of the IEC.

For this reason we created two layers of systems-related activities and new structures to allow new approaches, use cases, and high-level connections to emerge between existing groups. The Systems Evaluation Groups (SEGs) are a radically new idea for the IEC: participation in them is completely open, including to interested parties who traditionally were not involved in IEC work. An example in case was SEG 4, the



The SMB paid heartfelt tribute to Jim Matthews at the end of their meeting in Frankfurt

SEG for low-voltage direct current (LVDC) which brought together several hundred new experts. This innovative approach allows us to move the IEC forward by connecting traditional methods with radical new ones.

The work of the Systems Committees (SyCs) is intended to bridge and complement the work of traditional IEC TCs. The aim is for both types of committees to collaborate by consensus without one dominating the other. To aid our thinking and approach to the systems level, we created the Systems Resource Group (SRG) to provide tools and best practices.

Encouraging the passing of the torch

By encouraging younger professionals to join the IEC and participate in IEC work through the IEC Young

Professionals Programme, we soon noticed that succession to high-level positions in technical committees was often blocked. Many TC/SC Chairs had been in their position essentially for all their (professional) life. And while many remained open, dynamic and active leaders, some blocked all change or new ideas. After extended discussions in the SMB and Council Board, it was agreed that we should phase in a term limit for a TC/SC Chair of no more than 9 years. This was probably one of the most controversial decisions I have been involved in as SMB Chair, but one I feel had the strongest positive impact on the IEC for the future. As a result of this decision, new leaders with new ideas and working approaches are now coming into TC/SC leadership. Long-serving individuals are continuing to contribute to their TCs in other ways, and TCs and SCs are now seriously engaged in succession planning.

Advancing Communication

As a management body, the SMB itself has also evolved. SMB members were constantly asking for an opportunity to have more discussions on some issues with strategic impact, but a one-day meeting with a packed agenda made that difficult. The SMB Chair had traditionally invited a few select members to discuss more contentious topics the day before the meeting as a Chair's Advisory Group. To increase communication, I was able to institute a Chair's Advisory Group that was open to all SMB members and alternates. As an informal meeting with no decision-making power, we found the freedom to more deeply discuss strategic issues in the level of depth and detail they deserved.

I would probably be remiss if I did not address my own fondness for the use of ad-hoc groups in the work of the SMB. They offer an opportunity outside of the meeting to thresh out potential solutions, identify the issues with those approaches, and then present a clear set of options to the management body for voting and decision. Ad-hoc groups allow for the development of a clear picture and the setting of clear deadlines. This approach has helped the SMB make better decisions.

Changing of the guard

My term as IEC Vice-President and Chair of the SMB is ending this year, and Dr Ralph Sporer of Germany has been elected to take office in January 2017. I hope that the IEC community will give Dr Sporer the same support, engagement, and dedication that I have had the privilege to enjoy over the past six years. And finally, I want to express my gratitude to the members and alternates of the IEC SMB, the IEC Central Office Staff (especially Jack Sheldon and Joyce Bleeker) for all their help and support.

The revolutionizing Internet of Things

MSB workshop discusses updates of IoT-related work

By Antoinette Price

From home heating systems, smart medical devices and fridges that automatically replenish food items, to connected cars that guide drivers to free parking spots, increasingly IoT is a part of our daily lives. However, this technology is not new. Industrial applications, power generation, digitization, connectivity and automation have been around for many years and IEC has been working in these areas for some time.

Developing strategies for key technology trends

The Marketing Strategy Board (MSB) identifies technology trends and market needs to guide IEC standardization and conformity assessment work. IoT is growing rapidly and revolutionizing how we live in our homes, move around, work and take care of our health. Research by Gartner shows that 20,8 billion things will be connected by 2020, of which 13,5 billion will be from the consumer sector.

Against this backdrop, during the IEC GM in Frankfurt, the MSB held an IoT workshop in which participants presented the latest developments in IEC standardization activities in this area.



Smart energy is growing as more utilities use connected devices (Photo: www.metering.com)

Smart wearable devices - a major technology category

The falling cost of sensors, processing power and bandwidth to connect devices, and the broad uptake of smart phones has led to widespread use of fully portable devices with internet connectivity. Technology has also become smaller, more flexible and fashionable.

The global potential for Smart wearable devices (SWDs) and IoT is vast, when considering advances in materials, such as biodegradable and bio-adaptable, as well as technologies supporting new applications. However the scope is even greater when the IoT connects such devices in the bigger picture of Smart Cities, buildings, manufacturing, energy, transportation and active assisted living (AAL).

Working Group dedicated to IoT

IEC and ISO (International Organization for Standardization) established ISO/IEC JTC 1, a joint technical committee to address the global ICT market. One of its four working groups focuses on IoT. Karen Higginbottom, Chair of the Joint Committee, gave a presentation highlighting developments from the IoT WG (Working Group), which is developing important International Standards for the general IoT Reference Architecture (ISO/IEC 30141), definition and vocabulary (ISO/IEC 20924) and an interoperability framework (ISO/IEC 21823-1).

It has also produced a wearable devices technology trend report, which covers terminology and market trends and provides details of ISO/IEC JTC 1 committees and other standards development organizations working in this field.

IoT improves care for Active Assisted Living

Many people of different ages require help of some kind in their daily lives. Whether monitoring a newborn or supporting a person with physical or mental disabilities, connected devices, appliances and systems enable people to live longer in their homes.

The work of IEC Systems Committee for Active Assisted Living (SyC AAL) contributes to a sustainable society and helps to improve quality of life. It enables usability and accessibility of AAL systems and services, facilitates cross-vendor interoperability of AAL systems, services, products and components, and addresses systems level aspects such as safety, security and privacy. Ulrike Haltrich, Chair of SyC AAL, explained how AAL is greatly improved by SWD in smart homes, which connect B2B systems, such as services provided by carers. IoT provides the connection that many devices and systems need, for

example to provide teleassistance monitors linking to therapists.

Wearables make life easier and better

Kate Grant from the IEC Standardization Management Board (SMB) Strategic Group (SG) 10, talked about the types of smart wearable devices which can also be used for AAL. These include: health and fitness monitors (bracelets, watches), smart glasses, patches for monitoring temperature and chemical sensing, as well as ingestibles and implantables.

Tiny electronic technology woven into textiles produces smart clothing, which can check vital signs, such as heart and breathing rate, sweat, movement and display findings. Constant, real time monitoring could be used for early detection of health issues.

GPS technology built into clothes and shoes lets carers keep track of people with cognitive impairment, who may get lost. Equally, first responders or military could use this type of smart clothing to improve safety, performance and for communication.

SG 10 has also prepared a detailed report on smart wearable devices, which describes products and players, current trends and market forecasts. It provides information on IEC and external activities in this area and makes a case for a new technical committee dedicated to wearable electronic devices and technologies.

As with anything connected to the IoT, security, privacy and data protection must be addressed. IEC can shape direction and protocols for devices to deal with these points, as well as interoperability. Additionally, Standards will be needed for product, service



Smart production lines use autonomous learning to develop faultless production processes

and process interoperability, interface standards, data exchange/interchange protocol standards, essential performance requirements and quality criteria, data security and data privacy requirements and standard test methodologies.

IoT for smart energy

The energy industry must modernize existing infrastructure and improve operations, energy efficiency and cost, if it is to offer more value-added services to consumers.

IEC Systems Committee for Smart Energy (SyC Smart Energy) was set up to provide systems level standardization, coordination and guidance in the areas of Smart Grid and Smart Energy. Richard Schomberg, Chair of SyC Smart Energy, explained how the IoT will help achieve this.



(Photo: www.htsm-nn.nl)

IoT brings more sensing and actuating capabilities for the energy system, by using interconnected microchips everywhere. It also links devices that may never have been connected, manages these and develops applications for them to function together.

Smart technology real time monitoring optimizes operations. Traditionally, many infrastructures have been invested in separately. However, new apps, which blend across different utilities (water, electricity, gas and transport), providing data from each, would allow the streamlining of investments, maintenance and operations.

One example is smart street lighting, which is being trialled in several countries. Street lighting consumes a third of local energy budgets, but making it smart by adding technology to the lamps, provides light more efficiently and services (finding drivers parking spaces, local weather and event information), which also offer revenue streams.

A global urban services industry is emerging, with the goal of creating more sustainable cities, improving infrastructure, services to citizens and reducing costs. To achieve this, industry must build in security of key infrastructure and services from the start, enhance interoperability of services and infrastructures, and develop cross-industry standards.

SyC Smart Energy must now identify new use cases, to establish the gaps to be addressed by technical committees, regarding system design, operation modes, performance, security, safety. With multiple IoT frameworks under development, IEC must anticipate how to leverage these fast moving efforts to augment its existing and future Standards.

Two White Papers

MSB recommendations regarding key technology trends are summarized

in White Papers written for the IEC community, regulators, governments and academia.

IoT 2020: Smart and Secure IoT Platform

Dr Tanja Rückert from EVP Digital Assets and IoT, SAP SE talked about current IoT limitations and challenges, as well as the need for standards for the next generation of enabling technologies for IoT. This White Paper offers an outlook of what the next big step in IoT could be, in other words, the smart and secure IoT platform. It comprises the concept of bridging the gaps between different existing 'legacy' platforms not designed for IoT. It suggests advanced connectivity and device management capabilities that can handle huge volumes of devices, sophisticated sensing, processing and analytics for providing real insight and action, and finally, end-to-end security and safety concept from device to application ensuring trust, privacy and identity management.

Factory of the future

Thilo Zimmermann from Fraunhofer IPA gave a presentation on the factory of the future, describing the current manufacturing environment and how it is evolving thanks to technology. The ultimate goal of the factory of the future is to interconnect every step of the manufacturing process. Factories are organizing unprecedented technical systems integration across domains, hierarchy, geographic boundaries, value chains and life cycle phases. This integration will only be a success if the technology is supported by global consensus-based International Standards.

This White Paper assesses the potential global needs, benefits, concepts and pre-conditions for the factory of the future. It identifies the business trends in related technologies and markets and their impact on data, people, technologies and Standards.

Developing tomorrow's IEC leaders

IEC Young Professionals Programme workshop in Frankfurt

By Janice Blondeau

The seventh IEC Young Professionals (YP) workshop was held in October 2016, during the IEC General Meeting in Frankfurt. There were 75 YPs present from 41 countries, with each participant nominated by his or her National Committee (NC). The IEC YP Programme has more than 400 participants from 49 countries, since it kicked off in 2010. National Committees have been great supporters of this Programme, which continues to evolve and grow.

Positive experience

All participants at the 2016 workshop said that they found it to be a valuable experience, and at least 72 plan to become more involved in IEC work. Some of the benefits of attending the workshop given by participants include outstanding international networking opportunities, being able to meet and interact with IEC management and NC Officers, gaining an enhanced understanding of IEC procedures and processes, and access to the inner circles of the IEC.

YPs at the workshop also stated that it's THE platform for people who want to advance their career



Attending the 2016 workshop were 75 Young Professionals from 41 countries

in standardization and conformity assessment. Companies benefit from the workshop, which provides their staff with fast-track access to the world of standardization and boosts their personal motivation.

Introducing the IEC

Introducing the IEC and how it works began before the workshop. Participants completed an online

training course so they could make the best use of their time during interactive sessions in Frankfurt. The YPs were also asked to review and comment on a mock standard, in preparation for a technical meeting simulation session.

The YPs were enthusiastic – their interest and motivation continued to grow as the tailor-made workshop unfolded. As part of the Programme,

participants learnt more about the IEC and its standardization and conformity assessment work. They were also introduced to how the IEC approaches emerging trends and technologies, and they heard about the importance

of having balanced representation in the NC structure.

Looking to the future

Workshop participants had the choice of observing either the Standardization Management Board (SMB) or the Conformity Assessment Board

Committee (ExCo) and the IEC Council Board (CB), for the development of the new Masterplan.

A very popular workshop session was once again the country-tables breakfast, where YPs had the occasion to meet with the NC Officers from their country. Also an aperitif was organized for YPs to meet IEC Technical Committee (TC) and Subcommittee (SC) Officers. Four of the 2012 and 2015 elected YP Leaders participated in the workshop, leading various sessions. Workshop participants also received

- YPs can help the IEC market and technology watch activities
- It is advantageous to include the widest variety of stakeholders in IEC work
- IEC national YP Programmes are essential to reach out to the next generation of IEC experts and leaders
- IEC work needs to accelerate by using modern IT tools

The 2016 Young Professional Leaders are working closely with the Young Professionals and the IEC Central Office to develop the Programme further. Following the Frankfurt workshop, the 2016 YP Leaders are encouraging the 2016 YPs to identify areas of IEC work where they could become more involved.

National Committees are crucial

Recurring feedback from IEC YPs since 2010 has been that national equivalent IEC YP Programmes focused on the electrotechnical sector are key to help ensure that the IEC and its National Committees have the experts and leaders needed to address future standardization and conformity assessment challenges. Therefore it is very encouraging to note an increase in the number of NCs developing national IEC YP Programmes, with new countries developing such programmes each year.

Introducing the 2016 Young Professional Leaders

The three 2016 Young Professional Leaders elected by the participants are:

- Chan-keun Park, Republic of Korea
- Alan Sellers, UK
- Polad Zahedi, Canada

The IEC Young Professionals – 2017 workshop will be held in Vladivostok, Russia, from 9 to 11 October, in parallel with the IEC 81st General Meeting.



(CAB) meetings, which enabled them to gain insight into how these two management meetings operate. Through observing part of a technical meeting participants also saw IEC work in action.

In one session, the YPs were asked to give their input on the future IEC Masterplan. The ideas from the YPs have been integrated into a summary, shared with the IEC Executive

extensive networking opportunities both amongst themselves as well as with the wider IEC community, and they had the opportunity to go on an industry visit to the VDE Testing and Certification Institute.

Recommendations and next steps

Participants made the following recommendations during the workshop:

Frankfurt Agreement streamlines European and IEC Standards

New Agreement enhances transparency and pools expert resources

By Antoinette Price

Today, electrical and electronic devices are the largest category of goods traded in the world, representing 17,7% of total trade value in 2015, according to UN Comtrade statistics. This doesn't include lighting, photographic devices, aircraft and trains. IEC publishes the majority of International Standards for these devices and systems and around 80% of all European electrotechnical standards are identical to or based on IEC International Standards.

Increasing IEC visibility

During the IEC General Meeting in Frankfurt, IEC and CENELEC, its European counterpart, signed the Frankfurt Agreement, to increase harmonization between International and European standards.

The new Agreement will avoid duplication of efforts and help make the best use of IEC and European experts. It will also greatly increase transparency and facilitate content traceability, as CENELEC will start to include the IEC acronym in the designation of all European standards that are identical to IEC International Standards.

"Most countries in the world accept products that are built to



IEC President Dr Junji Normura and CENELEC President Dr Bernhard Thies sign the Frankfurt Agreement

IEC International Standards. This harmonization facilitates global trade and it allows developed and developing countries to compete on an equal footing, levelling the playing field. This agreement with CENELEC, an important IEC partner, will further boost the efficiency of both organizations, making best use of resources and ultimately help make the world a safer place," said Frans Vreeswijk, IEC General Secretary & CEO.

Benefiting manufacturers, businesses and consumers alike

Europe is an important consumer of electrical and electronic devices and

systems. It also has thousands of small, medium and large companies active in this field. The Frankfurt Agreement will benefit the European electrical and electronic industry. Companies which rely on IEC International Standards will find it easier to export to markets around the world. Additionally, manufacturers from other countries will also be able to export assemblies and products more easily into the European market.

Bernhard Thies, President of CENELEC said, "An electron is an electron, in Europe, Asia, the US or Africa. There is really no good reason to have a different standard from one

region to the next. Differences waste time and money and make it more difficult for European manufacturers to export and compete globally. This agreement is an important path forward in harmonizing European standards with the world and increasing European industry competitiveness on the global market."

The Frankfurt Agreement is a revision of the Dresden Agreement, which was approved in October 1991 and further modified in October 1996. It introduces changes which reflect the evolution of both organizations over 25 years.



Striking a balance with gender-informed standards

Insights from men and women improve safety for all

By Antoinette Price

Traditionally, women have not been encouraged to participate in science, technology, engineering and mathematics (STEM). As a result, a low number has made it into this field. Standards are meant to improve the safety and quality of products and services used by everyone. However, to achieve this, they must include the significant physiological

differences between men and women and their potential impact in daily situations.

One well-known example is the crash test dummy for vehicles, which until recently, was based on a male model. Given the diverse male/female

height and weight averages, trials revealed that manufacturers using male dummies only, could not provide the same level of safety for all vehicle occupants. A female dummy has since been developed.

Contributing to UN Sustainable Development Goals

The United Nations Economic Commission for Europe (UNECE) Working Party (WP.6) on Regulatory Cooperation and Standardization Policies has launched a new initiative to make standards gender-informed and ensure that they contribute to women's empowerment. During a panel to discuss how standards and technical regulations contribute to UN Sustainable Development Goal 5: "Achieve gender equality and empower all women and girls", Gabriela Ehrlich, IEC Global Head, Marketing and Communications, explained what IEC is doing to improve its gender balance.

IEC work directly impacts 12 of the 17 UN Sustainable Development Goals (SDGs). The UN recognizes energy as a cornerstone for economic development, facilitating poverty and hunger reduction efforts, improving



The objective of Sustainable Development Goal 5 is to achieve gender equality and empower all women and girls (Photo: United Nations)



education, providing better quality healthcare and ultimately empowering women.

In other words, providing access to electricity enables the use of simple technologies, such as cooling systems, which preserve food longer and reduce hunger. Solar lights and safe medical devices can significantly improve healthcare, particularly for women giving birth at home. Having light after dark means girls can study in the evenings and further their education, while access to a power supply can also facilitate e-learning options.

The IEC provides the technical foundation for all forms of electricity generation, both off-grid and on-grid. This includes small and big solar, wind, marine and hydro electricity. It also contributes the technical foundation for electrical and electronic hardware in education: computers, routers, printers and similar. IEC work also covers the basis for testing and certification of safety, energy efficiency and the reliability of many types of devices. IEC International Standards underpin infrastructure investment, for

example in tenders by the World Bank; they encourage technology transfer and are often used in technical regulations.

...particularly Goal 5 for women and girls

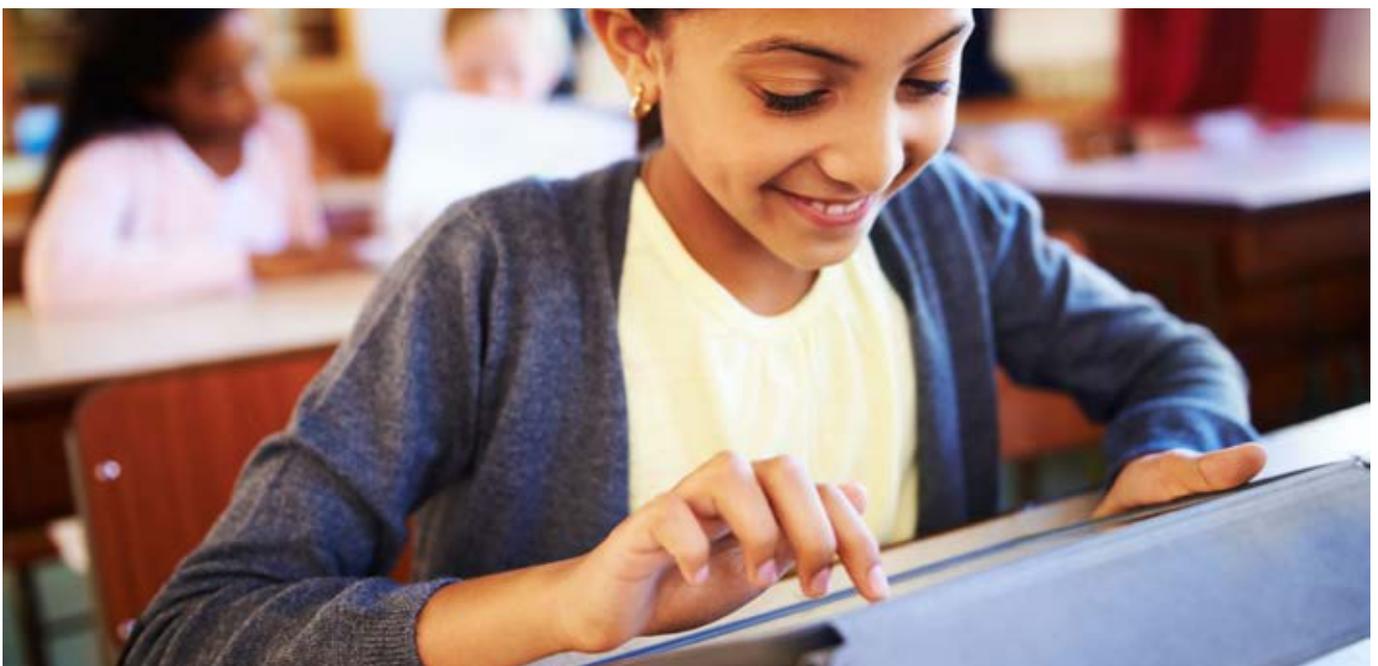
In relation to SDG 5, we are committed to helping increase women's participation in IEC work, involving qualified women wherever possible, and we are encouraging our members to do the same", said Ehrlich.

Despite being far from parity in technical work, Ehrlich highlighted some areas where IEC is ahead of the STEM curve with significant female participation. This includes the IEC Systems Committee on Active Assisted Living (SyC AAL), which has a majority female management. One third IEC Young Professional Leaders are women, as are both the IEC Affiliate Country Programme Leader and the Executive Secretary. The IEC Central Office has already achieved gender equality at top management level, and the Africa Regional Centre has management parity.

Other participants on the panel included representatives from UNECE, the International Organization for Standardization (ISO), United Nations Development Programme (UNDP), United Nations Conference on Trade and Development (UNCTAD) and the International Trade Centre (ITC).

IEC joins International Gender Champions initiative

Additionally, IEC President and CEO, Frans Vreeswijk recently accepted for the IEC to participate in the International Gender Champions initiative. The initiative is an international network of senior leaders working to advance gender equality in the executive management of their institutions and their programmatic work, through concrete and measurable commitments. In this context, Vreeswijk will motivate IEC Members to encourage the participation of more qualified women experts in IEC technical work and encourage technical committees to consider a gender-balanced approach in all relevant IEC International Standards and send more women to the Young Professionals programme.



Solar power allows the girls do their homework after dark

In the next issue:

Multimedia & consumer electronics - 01/2017



Issue 01/2017 of *e-tech* will take a close look at technological advances in the field of multimedia and consumer electronics.

The focus is on major trends from the 2017 International Consumer Electronics Show (CES) in Las Vegas, USA. It also outlines new developments in augmented and virtual reality, and the various aspects of artificial intelligence. It also features the need for IoT platforms and systems to be interoperable, which can be achieved through standardization.

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