United States National Committee of the IEC

News and Notes

In This Issue

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FOCUS ON: STANDARDS FOR EXPLOSIVE ATMOSPHERES

Explosive atmospheres are areas where flammable liquids, vapors, gases, or combustible dusts are likely to occur in quantities sufficient to cause a fire or explosion. They are present in nearly every industry all across the globe, creating a worlwide need for effective and harmonized international standards that can maintain safety while facilitating global trade. The IECEx System provides that solution.

Harmonization for Hazardous Locations – A Success Story

By Kerry McManama, General Manager, Global Hazardous Locations, UL; Chairman, IECEx System

Standards, conformity assessment, and certification requirements for products for use in hazardous locations (HazLocs) have been in existence in the United States for more than 85 years. The National Electrical Code (NEC) first addressed the installation of equipment for use in hazardous locations in 1920. Over the course of the following decades, the requirements for hazardous locations in the United States evolved around a single area classification system known as the Division system.

Today, the Division system addresses the design, manufacture, installation, maintenance, and inspection of hazardous areas and the equipment and wiring used in them. Regulatory agencies, be it the Occupational Safety and Health Administration (OSHA), the Mine Safety and Health Administration (MSHA), or the U.S. Coast Guard, further enshrined the Division-based methodology by incorporating it into their laws.

Meanwhile, other countries were developing their own area classification systems to address hazardous locations safety issues – but that development was mostly independent from the U.S. approach.

This independent development resulted in regulations, standards, and installation codes primarily based on the IEC Zone classification system. While the techniques or methods to prevent explosions are widely known, and do not differ between the regions of the world, the manner in which an area with an explosive gas/vapor or combustible dust is classified (Division or Zone) has made it difficult for manufacturers to 1) produce a product suitable for both classification systems, and, 2) gain market acceptance and entry into the global market.

As a result of this dual approach to the classification of hazardous locations, major global HazLoc markets were regulated by two different hazardous area classification systems. While the Division and Zone systems have many similarities, they also have significant differences. These differences impacted

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Harmonization for Hazardous Locations – A Success Story (continued)

the ability of manufacturers to sell products and the ability of users to install these products in hazardous locations around the world.

U.S. Adoption of the IEC System

As a result of these Division/Zone differences, global manufacturers and users found it increasingly difficult to conduct business in the emerging world market. This global business challenge made it critical for the U.S. to examine the Zone system more closely and find a way to integrate it into its codes. In 1995, the U.S. completed this review and adopted the IEC Zone system as a new Article 505 in the 1996 edition of the NEC.

The new Article and with subsequent revised Articles through to today's 2011 edition of the NEC have allowed for a second, parallel, classification system to the traditional U.S. Division system – the U.S. Zone system. The IEC standards from Technical Committee (TC) 31, *Equipment for explosive atmospheres,* have been harmonized within the U.S. and are now fully referenced within the NEC.

While it is still necessary for the U.S. Zone system and its' harmonized standards to differ slightly from the IEC Zone system, the key concepts of the IEC system are incorporated into the U.S. system – including area classification, gas grouping, temperature codes, protection methods, and markings. Some U.S. national differences from the IEC standards continue to be deemed necessary primarily to maintain compliance with the NEC. This is due to the IEC requirements that allow some markings, wiring methods and sizing, and grounding constructions that do not comply with the NEC.

In addition to differences due to the NEC, the need to assure compliance with U.S. general equipment requirements for risk of fire and electric shock hazards through third-party certification bodies continues to be a concern of the U.S. HazLoc industry. Many other countries or regions only require third-party verification of compliance with equipment requirements that address the risk of explosion. Requirements that address risk of fire and electric shock hazards such as insulation properties, electrical spacings, and overload and endurance capabilities are often allowed to be self-declared by the manufacturer.

The Structure of the System

With the adoption of the IEC Zone-based system in the 1996 NEC, and the harmonization with the IEC technical Standards of TC 31, the U.S. was now positioned to be able to participate in the new conformity assessment scheme being rolled-out by the IEC – then known as the IECEx Scheme. So, what exactly is the IECEx Scheme – now known as the IECEx System?

IECEx System Objective: The objective of the IECEx System is to facilitate international trade in equipment and services for use in explosive atmospheres, while maintaining the required level of safety. Outcomes include:

- reduced testing and certification costs to manufacturers;
- reduced time to market;
- international confidence in the product assessment process; and
- one international database listing.

The IECEx International Certification System comprises the following Schemes:

1. The IECEx Certified Equipment Scheme

EX AREA BASICS

What is an Ex area?

Ex areas can be known by different names such as "hazardous locations,""hazardous areas," "explosive atmospheres," and the like, and relate to areas where flammable liquids, vapours, gases, or combustible dusts are likely to occur in quantities sufficient to cause a fire or explosion.

The modern day automation of industry has meant an increased need to use equipment in Ex areas. Such equipment is termed "Ex equipment."

Where do you commonly find Ex equipment?

- Oil refineries, rigs, and processing plants
- Chemical processing plants
- Automotive refuelling stations
- Printing, paper, and textile industries
- Aircraft refuelling areas and hangars
- Underground mines
- Gas pipelines and distribution centers
- Sugar refineries
- Woodworking areas
- Metal surface grinding operations, i.e., aluminium dusts and particles
- Sewage treatment plants
- Grain handling and storage
- Hospital operating rooms
- Surface coating industries

Harmonization for Hazardous Locations – A Success Story (continued)

2. The IECEx Certified Service Facilities Scheme
3. The IECEx Conformity Mark Licensing System
4. The IECEx Certification of Personnel Competencies (CoPC)

1. The IECEx Certified Equipment Scheme: This is an international certification scheme covering products that meet the requirements of international standards. The IECEx Certified Equipment Scheme provides:

a) A single International Certificate of Conformity that requires manufacturers to successfully complete:
- testing and assessment for compliance with standards;
- assessment and auditing of manufacturers' premises; and
- on-going surveillance audits of manufacturers premises.

Or:

b) A "fast-track" process for countries where regulations still require the issuing of national Ex certificates or approval. This is achieved by way of global acceptance of IECEx equipment test and assessment reports.

2. The IECEx Certified Service Facilities Scheme: This scheme covers the assessment and the on-site audit of organizations that provide services such as repair and overhaul service to the Ex industry. Due to the very high capital investment made by industry in most Ex equipment, it is much more economical to repair and overhaul equipment rather than to replace it with new.

3. The Ex Mark of Conformity System: This is an international conformity system where a Mark of Conformity is granted by approved IECEx certifiers for equipment that is covered by an IECEx Certificate of Conformity and hence has been tested and manufactured under systems that are under ongoing surveillance by Ex certification bodies (CBs).

4. IECEx Certification of Personnel Competencies (CoPC): This scheme provides the global Ex industries with a single system for the assessment and qualification of persons meeting the competency prerequisites needed to properly implement the safety requirements based on the suite of IEC international standards covering explosive atmospheres, e.g., the IEC 60079 and IEC 61241 series of standards.

How Does the U.S. Participate?

The U.S. participates in, and is a member of, the IEC through the American National Standards Insitute (ANSI). ANSI is the sole U.S. representative and dues paying member, via the U.S. National Committee (USNC) to the IEC. The USNC is responsible for U.S. representation in the IEC TCs, as well as other electrotechnical bodies associated with the IEC, such as the conformity assessment scheme.

With NEMA serving as secretary, the conformity assessment committee, now called the USNC/IECEx, includes representatives from industry, other test houses, and trade organizations, along with representatives from U.S. governmental regulatory agencies. The USNC/IECEx functions to govern the operation of the scheme within the U.S., and is the official U.S. "member body" within the IECEx System. The USNC/IECEx is the U.S. voice at international IECEx meetings, and membership is open to U.S. interests.

Ongoing Efforts

Participation at IECEx meetings continues at the national and international level, with the USNC actively positioning the nation in a stronger and more competitive role internationally. By becoming an active participating member body of the IECEx System, and by establishing three approved Ex Certification Bodies and Ex Test and Assessment Laboratories, the United States can be assured that its interests are now served.

U.S. representatives have also been elected to officer positions at the international level of the IECEx System, as well as taken on chairmanship and convener positions of Committees and Working Groups.

Kerry McManama, General Manager, Global Hazardous Locations, UL; Chairman, IECEx System

A Lasting Commitment

With most countries embracing IEC standards and IEC conformity assessment systems such as the IECEx, the importance to the stakeholders the U.S. can't be overstated. By making a strategic decision in 1995 to pivot and embrace a path toward harmonization, the U.S. hazardous locations industry avoided being locked-out of an ever-increasing IEC-based market place.

It took a collaborative – some would say herculean, effort – by manufacturers, code-developers, associated trade organizations, certification and testing laboratories, authorities with jurisdiction, regulators, and ANSI to ensure that U.S. interest were considered and protected. The harmonization story and subsequent adoption of the IECEx System is the proof, today, that the efforts were successful. That is not to say we are done; there is still work to be done. But, rest assured, most of the same individuals that began this journey almost 15 years ago are still working today to fine-tune it.

Further information

Visit www.iecex.com. ■

IECEx: Birth and Evolution of a Certification System

By Chris Agius, IECEx Executive Secretary

On May 7 – 9, 1996, in London, the inaugural meeting of a new IEC Committee met to commence work on the implementation of an idea for an international certification scheme dedicated to the highly specialized field of explosive atmospheres (Ex) took place. The meeting, attended by experts from 11 countries, was the result of an identified industry need, worldwide, for a mechanism to address wasteful duplication of testing and certification of Ex equipment.

Building on a Foundation

The 1996 meeting followed earlier work of IEC Working Group (WG) WGEx, which was formed following IEC Technical Committee (TC) 31's request that IEC develop the nucleus for an international certification scheme to facilitate international trade of Ex equipment while preserving the necessary level of safety. The intent was to address an industry need for closer cooperation among test houses worldwide, to overcome wasteful duplication of testing and assessment in the Ex Field at that time.

From its humble beginnings, IECEx has emerged to become an essential compliance assessment tool for all industries worldwide where flammable or combustible materials that present a risk of fire or explosion are used, stored, or transported. The IECEx Scheme was born using what has become known as the "IECEx Model" for operating certification schemes globally.

Situations where flammable substances in the form of gas, vapor, dust, fibers, or flyings are used, processed, stored, or transported in quantities considered to present an explosion hazard are referred to as "Hazardous Locations," "Hazardous Areas," or "Explosive Atmospheres." But the common term for these areas is "Ex."

It is important to clarify that Ex is not an industry of its own, but rather a part of nearly every industry known to mankind. From transportation, aerospace, furniture manufacturing, automotive manufacturing and repair, and production of pharmaceuticals, to food processing, the grain industry, the coal mining industry, and, of course, oil and gas, petrochemical, and chemical – they all utilize flammable substances in quantities that may give rise to an explosive concentration being present either continuously, during normal operation, or due to abnormal situations. And when we refer to "industry," we include equipment manufacturers and sellers along with end users (e.g., oil and gas producers, mining companies, etc.) and service providers such as consultants, inspectors, repair and overhaul workshops, and so on.

A Globally Recognized System

IECEx now exists as the international system solely dedicated to providing internationally recognized certification schemes as verification of compliance with international standards. The IECEx System, as it has become, now operates separate international certification Schemes addressing equipment, service providers, and competent persons.

Beyond gaining worldwide recognition among industry, it is the more recent recognition by the United Nations via its United Nations Economic Commission for Europe (UNECE) that has elevated the IECEx's prominence even further. This UN endorsement is the conclusion of a four-to-five-year project to consider a common regulatory objective covering Ex equipment, services, and persons. The project determined that use of international standards such as those produced by IEC TC 31 and supported by certification under the IECEx System demonstrates the world's best practice for ensuring safety in the Ex-related fields.

The UNECE decision led to its publication of *A Common Regulatory Framework for Equipment Used in Environments with an Explosive Atmosphere* in 2011 (available on the IECEx website at http://www.iecex.com/unece.htm).

Recognition by United Nations Economic Commission for Europe has further elevated the IECEx System's prominence and demonstrated that use of international standards such as those supported by IECEx certification demonstrates the world's best practice for ensuring safety in Ex fields.

IECEX SYSTEM GUIDES AVAILABLE FOR DOWNLOAD

The following guidance documents are available to assist in a common understanding of IECEx objectives and procedures (click to access):

IECEx 01A, *A guide comparing various elements of IECEx and ATEX*

IECEx 01B, *Guidance for use of the IECEx Logo*

IECEx 02A, *Guidance for applicants seeking IECEx certification under the IECEx Certified Equipment Scheme*

IECEx 03A, *Guidance for applications from service facilities seeking IECEx certification*

IECEx 04A, *Guidance for making applications for and use of IECEx Conformity Mark IECEx 04*

IECEx 05A, *Guidance and instructions for applicants to obtain a Certificate of Personnel Competence (CoPC)*

IECEx: Birth and Evolution of a Certification System (continued)

While the name UNECE may suggest a European scope, UNECE actually has a global mandate and is part of the Social and Economic Council, a principal organ of the United Nations.

The aim of the IEC and of the United Nations involvement in the Ex sector is to act as catalysts for a broad global coalition of forces aiming at ensuring the safety of all industries worldwide where flammable or combustible materials are used, stored or transported that present a risk of fire or explosion.

Further Expansion

While the initial demand driver for IECEx was "to provide an internationally standardized way of conducting Ex equipment testing and certification, in order to facilitate global trade of Ex products," industry and regulators worldwide soon saw the benefits of a standardized way of doing Ex certification for other Ex-related functions such as Ex services – e.g., certification of repair workshops and certification of persons deemed competent in Ex activities.

The desire by industry and regulators to move IECEx into areas other than the testing and certification of equipment centers around the acceptance that to ensure safety in Ex environments, the following broad areas must all be properly addressed:

a) Area classification
b) Equipment selection
c) Equipment installation
d) Maintenance, repair, and overhaul of equipment
e) Inspection

While it is very easy to demonstrate the importance and criticality of all of these areas, the past has seen more attention given to equipment selection, and less to the others. As Ex installations become larger, more complex, and greater in number, industries are now paying greater attention to details surrounding areas a, c, d, and e than they did in the past. The consequences of "things going wrong" justifies this renewed attention by industry and governments.

Worldwide Need

Further justification for industry's request for IECEx to cover Ex services and personnel has been the fact that while national and regional approval/regulatory systems may exist, they have focused on the compliance of equipment with safety requirements addressing primarily point-of-sale or installation requirements. Very little attention has been given to what is required after the product has been purchased.

Of course, there is a range of occupational health and safety legislation in many countries aimed at ensuring that employers provide a safe working environment, which places responsibility for safety solely upon employers and leaves them to their own devises to determine the mechanisms or processes needed to ensure that their "duty of care" has been sufficiently covered.

Use of a system that is considered "internationally accepted practice" by the international Ex community, such as the IECEx Schemes, provides a compelling argument for anyone needing to justify an approach taken to address their "duty of care" responsibilities.

The Standard Model

All IECEx certification schemes have been developed using a standard model comprising the following elements:

- One single set of rules and operational procedures for *all* test laboratories (ExTLs) and IECEx certification bodies (ExCBs) to follow
- All ExTLs and ExCBs undergo the same qualification process to join IECEx
- Common test report and certificate format issued by *all* ExTLs and ExCBs
- Use of an online system for both the registration of issued reports and formal issue of IECEx certificates

Chris Agius,
IECEx Executive Secretary

Under the IECEx Scheme, paper original certificates do not exist. Rather, IECEx ExCBs, through individual password protocols, enter the online system based at the IEC Central Office in Geneva and create a new certificate, in draft form. Then once all certification stages have been completed, the ExCB re-enters the password-protected area and changes the status of the certificate from "DRAFT" to "CURRENT." At the instant that this change has been saved by the ExCB, the certificate then can be accessed by the public area of the IECEx Internet site, where industry can view, download, and print copies of the certificate.

Perhaps the main benefit of this system, apart from added security, is the fact that all IECEx Certificates appear in one place, regardless of which ExCB issues the certificate. This saves industry and regulators enormous time and effort, as there is no need to search or navigate one's way around each of the 40-plus ExCB websites.

A worldwide super abundant supply of fossil fuels coupled with an ever increasing demand for energy and growth among developing and immerging economies demands increased awareness for "Proof of Compliance" with minimum safety standards. Thus, the impressive annual growth rates experienced in IECEx are set to continue for many years to come. ■

FOCUS ON: STANDARDS FOR EXPLOSIVE ATMOSPHERES

Strong U.S. Participation and Leadership Helps TC 31 Achieve Steady Progress

By William G. Lawrence, Principal Engineer – Hazardous Locations, FM Approvals; Technical Advisor, U.S. TAG/IEC TC 31

IEC Technical Committee (TC) 31, *Equipment for explosive atmospheres,* was established in 1948 to address the need to develop techniques for ensuring that electrical equipment would not provide an explosion risk when used in atmospheres involving gases, vapors, mists, and dusts.

With 33 participating countries and 13 observer countries, TC 31 has 26 published standards along with 18 projects in the current work program. The committee has 7 Working Groups (WGs), 1 Project Team (PT), 11 Maintenance Teams (MTs), 2 Joint Working Groups (JWGs), and 3 Ad-Hoc Groups (AGs) progressing the work program. The U.S. has a very strong presence, with 11 of these groups convened by U.S. experts and a total of 53 participating U.S. experts overall.

In addition to the main committee, there are three Subcommittees (SCs): SC 31G, *Intrinsically safe apparatus;* SC31J, *Classification of hazardous areas and installation requirements;* and SC31M, *Non-electrical equipment and protective systems for explosive atmospheres*. There are a total of 17 MT/PT/WG/AGs addressing the work programs of these 3 SCs.

Because of the extensive work program, TC 31 has been holding a plenary meeting annually since 2003. The U.S. normally has a delegation of five, with two or three observers. The next plenary meeting is scheduled for October 2012 in Oslo, Norway, in conjunction with the IEC General Meeting, and includes two weeks of MT/PT/WG/AG meetings.

Since 1997, TC31 has operated a Chairmans Advisory Committee (CAG) consisting of the chairman, secretary, and convenors of all of the MT/PT/WGs, including those of the SCs, to act as a steering group. The CAG normally meets midway between plenary meetings and includes a series of MT/PT/WG/AG meetings over a two-week period. Having two sets of two-week meetings each year has resulted in effective use of expert's time, allowing the large workload to move quickly forward.

The U.S. Technical Advisory Group (TAG) to TC 31 is quite active, normally meeting face-to-face two times per year to review the progress of the various TC 31 projects. The U.S. TAG is preparing comments and votes for up to 25 documents per year. The majority of this work is conducted electronically, but particularly contentious items are addressed at the biannual meetings.

The current technical advisor for the U.S. TAG to TC 31 is Bill Lawrence of FM Approvals. Mr. Lawrence has been with FM Approvals working in the certification of hazardous location equipment for 28 years and has been TC 31 technical advisor since 2004. The current deputy technical advisor is Mark Coppler from AMETEK Process and Analytical Instruments. Mr. Coppler has been working in the certification of hazardous location equipment for 15 year and has been TC 31 deputy technical advisor since 2009.

William G. Lawrence

The U.S. TAG is ably supported by Eliana Brazda of ISA in her role as the U.S. TAG administrator.

In addition to the development of international standards, the IEC also facilitates the operation of conformity assessment systems, one of which is the IECEx Equipment Certification Scheme. The Scheme evaluates products that meet the requirements established by the TC31 standards. The resulting significant international usage of these standards has created extensive international interest in supporting and developing the requirements, as evidenced by the extensive participation in TC31.

Further information

Interested in getting involved? Email ebrazda@isa.org. ■

IEC TC 31 MEMBER COUNTRIES

PARTICIPATING COUNTRIES

Australia
Belgium
Brazil
Canada
China
Croatia
Czech Republic
Denmark
Finland
France
Germany
India
Ireland
Italy
Japan
Republic of Korea
Malaysia
Netherlands
New Zealand
Norway
Pakistan
Poland
Portugal
Romania
Russian Federation
Serbia
Slovenia
Spain
Sweden
Switzerland
Ukraine
United Kingdom
United States

OBSERVER COUNTRIES

Argentina
Austria
Bulgaria
Greece
Hungary
Indonesia
Israel
Mexico
Singapore
Slovakia
South Africa
Thailand
Turkey

USNC NEWS

USNC Selectees for the 2012 IEC Young Professionals Workshop: In Their Own Words

The USNC is pleased to present the essays submitted by the U.S. winners of the IEC Young Professionals Workshop competition. The workshop will be held in conjunction with the 76th IEC General Meeting in Oslo, Norway, on October 1-5, 2012. The following three essays were selected for their demonstration of outstanding commitment to representing the United States as future leaders on the IEC global platform.

Benefits of Global Standardization

By Aisha Bajwa,
Field Applications Engineer, Alcan Cable Division, Alcan Products Corp.

Standardization is the key for any process to be safe, stable, and sustainable. History has shown repeatedly that standards are the key to maintaining success; no company can prosper in today's competitive world without standardization. Electrical standards are the cornerstone of the construction industry, ensuring continued growth while maintaining safety.

The importance of electrotechnical standards has been learned at the expense of many tragedies. Arguably, one of the most tragic disasters attributed to electrical fault was the Iroquois Theatre fire on December 30, 1903, in Chicago, Illinois. This is the deadliest single-building fire in US history blamed on an electrical malfunction, and at least 605 people were lost. The cause of the fire was determined to be a shorted arc light. This was a world wide wake up call to develop and strictly enforce electrotechnical standardization in the industry.

We are at a unique stage of history, where people are transcending national societies and becoming integrated into a global community. To cater to this changing socio-economic dynamic, there is a strong need for global standardization of electrical standards.

The need for electrical codes and standards arose due to an increase in fire rates and incompatible systems. Businesses are moving quickly in a global competitive environment, and cannot fail to recognize the benefits of the strategic use of international standards. Harmonizing standards will help to reduce manufacturing errors, sales loss, transportation costs, and environmental footprint. For example, the Occupational Health and Safety Administration (OSHA) has updated their products standards through a program called "Globally Harmonized System of Classification and Labeling of Chemicals (GHS)". The GHS is a system for standardizing and harmonizing the classification and labeling of chemicals world wide. The goal is to encourage or require all manufacturers to follow the same standard. The benefits include consistent information on the hazardous properties of chemicals, allowing production, transport, use, and disposal to be managed safely, efficiently, and with a reduced environmental footprint.

A drawing of the interior of the Iroquois Theater as it appeared before the December 1903 fire.

USNC 2012 IEC Young Professional Aisha Bajwa

Electrotechnical standardization still has a ways to go. Specifically, one of the major issues faced by aluminum cable manufacturers is connector incompatibility on switchgear. For example, a standard 400 ampere switchgear sometimes doesn't accommodate aluminum conductor sizes. Installers must use other products, such as pin connectors, to meet the code requirements and ensure safety. The participation from U.S. companies at both the national and international levels can address these issues and mitigate future installation problems. This will not only increase safety, but will also increase productivity as manufacturers can utilize their time for continuous improvements and innovations.

As a benchmark, the GSM Association (GSMA) is an association of mobile operators that is leading an exemplary effort towards standardization. In February 2009, the group approved a universal Micro-USB charger interface for new mobile phones. The environmental benefits include reduced waste, since fewer chargers will have to be discarded. In addition, the manufacturing process for

USNC Selectees for the 2012 IEC Young Professionals Workshop: In Their Own Words (continued)

chargers will be streamlined, resulting in less energy consumption, more efficiency, and lower price for the consumer.

Consumer expectations for safety and quality while maintaining low costs have pushed manufacturers and regulatory bodies to stay on top of their game. Consequently, this has also put pressure on the standards organizations to develop global standards. Any one project can consume industrial products that may be manufactured in multiple countries. If international suppliers are not held to the same standards, component integration can adversely affect cost and spell disaster from a safety perspective. Global standards will help manufacturers to reduce their production costs through healthy competition and increased product compatibility. The long term benefits of global standardization include increased product quality, increased installation safety, and reduced environmental footprint.

How the Standards Community Can Energize the Next Generation of Professionals to Participate Actively in Standards Setting Activities

By Kevin S. Duncan,
Senior Staff ESD Engineer,
Seagate Technology

I consider myself very fortunate; I became actively involved in standards development very early in my career. I attribute this early involvement to a core group of individuals directly involved with domestic and international standards organizations.

As a young professional I had a limited understanding of how standards were actually created, I was a bit naïve really. I thought writing standards was easy; you sit down, put some words and few requirements on paper and pass it around to a couple people to look at. Voilà, you're done. Time to publish it, pat yourself on the back, relax and reap the rewards. If it were only that easy.

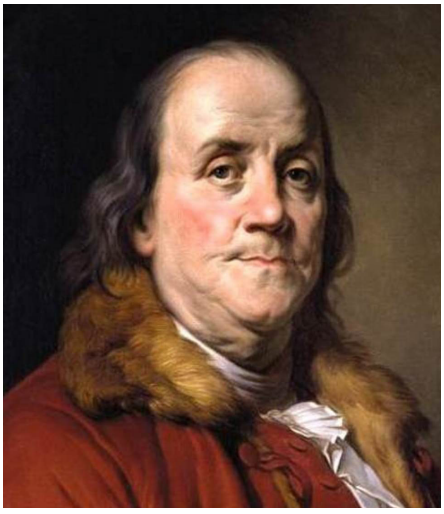
Looking back today, I understand and appreciate the passion those involved must have, and the effort they need to put forth to make a standards organization a success. To be involved in a standards organization, you shall truly believe in what you are doing and you should love doing it.

I often wonder; *How and why did I ever get involved in standards development?* Why did those involved ask me to join? What on earth did they see in me, and now that I am involved, what keeps me coming back?

Going through the rigors of being the "new guy" in standards development, I have an understanding that you can only gain with experience. Standards organizations need new young professionals like me. They need us to carry the torch, to pass on the knowledge and experience that has been gained, ensuring it isn't lost. They need us to maintain their edge, to keep abreast on the industries and technologies that are the pulse of the next generation. They need us to bring in the next new wave of new guys. Our organizations need to grow, we need to progress.

"Without continual growth and progress, such words as improvement, achievement and success have no meaning."

— Benjamin Franklin



USNC 2012 IEC Young Professional Kevin S. Duncan

Benjamin Franklin is quoted as saying, "Without continual growth and progress, such words as improvement, achievement and success have no meaning."

This is the IEC's Mission: "To achieve global recognition as the leading provider of standards, conformity assessment systems and related services needed to make international trade successful and to improve user value in the fields of electricity, electronics and associated technologies."

How do we achieve our mission? Through continual growth and progress within the standards development community. This growth fosters improvements and ensures success, and with success, global recognition is achieved. Benjamin Franklin was right. Logically, the next questions is, where do we find this new growth needed to progress?

First we must know where to look. We need to search for and engage this new growth, to actively seek it out. We can use our own National Committees to solicit members as a place to start. Use our own technical committees to lobby observing "O" member countries to turn them into actively participating "P" members, increasing the size of the pool where this new growth can be

USNC Selectees for the 2011 IEC Young Professionals Workshop: In Their Own Words (continued)

found. Encourage cross pollination within our own technical committees. Contact foreign and local organizations with similar interests in electrotechnical standardization to find new recruits. Always be on the lookout for the next generation of standards professionals, wherever our travels take us. Embrace social media. Put together succession plans. The opportunities are endless; we need only to put forth the effort.

Once we find this growth, we need to develop and nurture it; we need to drive home the importance and benefits of standards development to keep the young professionals actively involved. We need to demonstrate the return on investment, the professional opportunities, the cultural adventures, the feeling of being part of something big that affects the whole world.

There are many reasons young professionals should participate in standards development activities: to increase their personal knowledge on given fields of interest, to network with colleagues and develop friendships, to enhance their company's awareness in a standardized area, to increase customer satisfaction, to implement best practices, which reduces waste and increases yield, to be on the forefront of new technologies, to have a voice in a standard that is recognized globally, and many others. Why do I do it? For me it's simple, I enjoy the many challenges and the lifelong friendships that develop.

Smart Grid

By Manyphay Souvannarath,
Senior Systems Engineer,
General Electric Co.

For the past 10 years, my career has been within the energy industry, where I started as the environmental specialist internat a power plant. It was there that I learned a lot about power generation and grew a great appreciation for electricity. My fascination and desire to learn more about the industry kept me at the utility for the next eight years, where I was fully employed in the information technology department and grew my career.

I started as the Internet technology specialist, where I was responsible for developing, maintaining, and improving the Internet communication infrastructure and the web services, both internal and external sites.

USNC 2012 IEC Young Professional Manyphay Souvannarath

Understanding and complying with standards was part of my day-to-day activities. This included complying with W3 standards for building and rendering web pages and ensuring the cyber network was abiding by federal security standards as dictated by the North American Electric Reliability Corporation (NERC), IEEE, the National Institute of Standards and Technology (NIST), and others.

I soon moved into the programmer analyst position, where I was heavily involved in developing and analyzing applications used across the company, from back-end business applications to advanced metering systems. It was obvious that applications across the utilities existed in silos and had very little interoperability. Aside from building and analyzing new applications, I spent a lot of my time building bridges between systems. I did a lot of research on existing standards on communication exchange between applications, such as the Common Information Model (CIM).

In other specific areas, such as finance, I was involved in upgrading the financial enterprise resource planning system (ERP), and had to learn several financial standards and practices. Other projects included deploying, integrating, and maintaining the advanced metering infrastructure (AMI) system. I touched on some of the standards as they apply to meters as we rolled out the system.

USNC NEWS

USNC Selectees for the 2011 IEC Young Professionals Workshop: In Their Own Words (continued)

Before long I was promoted to applications manager, where I oversaw a staff of programmers, developers, and database administrator. I was responsible for application needs for the entire company, and interoperability was a major focus of my job. The company had acquired a lot of software and tools, but they were underutilized and not interoperable. I worked closely with management and executive staff to strategize how the company could move towards an ideal cyber world. This involved a lot of communication with vendors to understand their product and the efforts being undertaken by those struggling with the same issues. These efforts ultimately led to a lot of the Smart Grid initiatives that were taking place at different levels across the nation.

After a couple of years as the applications manager, I felt a strong passion to work towards a larger initiative, Smart Grid. As a utility, we were mainly the receiving end of the supply chain. I felt that perhaps being in the development-vendor field, my contributions would be more significant. That is when I made the conscious decision to join General Electric, where I now serve as the senior systems engineer, with a focus on Smart Grid architecture. I work with a team to develop the Smart Grid road map, specifically architectures. I also design new Smart Grid solutions for various teams, which involves a lot of standards understanding. I collaborate closely with the standard experts on the teams to help me develop solutions that comply with current requirements.

In addition to new product projects, I have been directly involved with the IEC in developing the mapping chart and tool, which helped me learn a lot about Smart Grid standards. I served as the designer, developer, and maintainer of the system. The IEC Smart Grid mapping tool is an interactive tool that allows users from different roles working on Smart Grid project to easily search for standards that are applicable to their needs. The tool uses a Smart Grid mapping chart that allows the user to isolate the area of research. I am deeply involved with the Smart Grid committee group, where I am learning the needs, capturing the requirements, and taking those needs/requirements and converting them into a practical tool. This project continues to be a great opportunity for me to learn about the standards themselves, as well as the policies and work that go on behind them. ■

IEC Young Professionals Program

Learn more at

www.iec.ch/members_experts/ypp/

USNC NEWS

SMB Administrative Secretary Joyce Lacroix Retires

The USNC wishes to acknowledge with thanks and appreciation the retirement of our friend and colleague, Joyce Lacroix, who served as Administrative Secretary of the IEC Standardization Management Board (SMB) for a number of years. Her retirement became effective after the June 12, 2012, SMB meeting in Boston.

Ms. Lacroix contributed in a major way to the success of the SMB. Her knowledge of IEC and its procedures was limitless and her dedication was renowned. Most importantly, her laughter brought a pleasant atmosphere to the work.

The USNC deeply appreciates her tremendous contributions to IEC and global standardization, and wishes Joyce and her family happiness, peace, and success in the years to come. ■

IEC
United States National Committee of the IEC

IEC HEADLINES

IEC Represented at PASC 35 in South Korea with a Focus on Energy; U.S. to Host 2013 Meeting in Hawaii

The Pacific Area Standards Congress (PASC) held its 35th meeting on June 4–8, 2012, in Yeosu, South Korea. Representatives from the IEC, the International Organization for Standardization (ISO), and the International Telecommunication Union (ITU) were in attendance, alongside the American National Standards Institute (ANSI) and 15 other PASC national member bodies. Coinciding with the PASC meeting, Yeosu, South Korea, is currently hosting Expo 2012, a World's Fair focused on balancing the preservation of ocean and coastal areas with economic development.

Gary Kushnier, ANSI vice president of international policy, and Doug Durant, chair of the ANSI Regional Standing Committee for Asia Pacific (RSC-AP) and manager of product standards at John Deere, led the seven-person U.S. delegation, which included ANSI members from the private and public sectors. The meeting was hosted by the Korean Agency for Technology and Standards (KATS), which is established under the Ministry of Knowledge Economy (MKE).

During a workshop on *Home Energy Management Systems (HEMS) in Smart Grid,* Ajit Jillavenkatesa, Ph.D., of the National Institute of Standards and Technology (NIST), provided a presentation entitled "U.S. Smart Grid: The Green Button Initiative – A U.S. Perspective." He discussed U.S. approaches to HEMS and the role of standards in supporting the development and deployment of this technology. This information was presented in relation to the status of U.S. efforts currently underway to develop and deploy an interoperable Smart Grid.

Attendees at PASC 35 in Yeosu, South Korea

In addition, ANSI's Gary Kushnier provided a report on the Recent European Commission Standardization Review, and moderated an open forum on *Trends in Standardization around the World*. The discussion featured panelists from the Standards Council of Canada (SCC), Standards Australia (SA), and SPRING (Singapore), and included valuable input from other PASC members. The information gathered will help lead a possible workshop or discussion for upcoming PASC meetings.

ANSI is pleased to report that it will host PASC 36 in May 2013 in Waikiki, Hawaii, in conjunction with Pacific Accreditation Cooperation (PAC) meetings. This will be the first time that PASC and PAC meetings will be held simultaneously.

Further information

For more information on PASC 36, please contact Jessica Roop, ANSI manager – international policy – regional and bilateral programs, at intl@ansi.org. ■

LAUGH TRACK

"Looks like Bob may have taken the agenda for the explosives meeting a bit too literally."

U.S. Celebrates ISO/IEC JTC 1's 25 Years of Success in a Rapidly Changing ICT Industry

There is no sphere of life today that is not impacted by information and communication technology (ICT). ICT increasingly fuels innovation, efficiency, and economic growth, both in the ICT-producing and ICT-using sectors – in other words, the whole interconnected world.

From a standards perspective, this means that any document developed needs to at once respond to and anticipate the needs of a multitude of different industries and applications operating on a global scale. The effectiveness and growth of the industry are dependent upon the ability of the many component parts and systems to interoperate, work reliably and efficiently, and meet diverse needs.

ISO/IEC Joint Technical Committee (ISO/IEC JTC) 1 on *Information Technology* has addressed the standardization needs of the ICT industry around the world for more than two decades. ISO/IEC JTC 1 is the place where the basic building blocks of new technologies are defined and the foundations of ICT infrastructures are laid. As the committee's secretariat, the American National Standards Institute (ANSI) is proud to mark the 25th anniversary of ISO/IEC JTC 1, and share some history and highlights of a remarkable record of accomplishment in moving ICT standardization forward.

We've Come a Long Way

ISO started work on IT standardization around 1960, as computers began to utilize transistors and include most of the basic components we still see today. As the industry took off with rapid innovation and widespread acceptance, both ISO and IEC worked to keep pace with the development of responsive standards. By the 1980s, computers were ubiquitous in government, business, and industry, and on their way to common use throughout society.

Some of the earliest ICT standards were developed by what was then ISO Technical Committee (TC) 97, *Information Technology,* along with IEC TCs 47B and 83. Notable among the early publications are ISO 2132:1972, *Offset duplicators – Attachment features of plates;* ISO 2257:1980, *Office machines and printing machines used for information processing – Widths of fabric printing ribbons on spools;* and ISO 1538:1984, *Programming languages – ALGOL 60*.

Attendees at the ISO/IEC JTC 1 plenary in San Diego in November 2011

Joining Forces

As the technological innovations became more complex and far-reaching, the international standardization community recognized that a comprehensive venue in which to address all aspects of ICT standardization was needed.

ISO/IEC JTC 1 is one of the largest and most prolific technical committees in the international standardization community, with over 2,500 published standards under the umbrella of the committee and its 19 subcommittees.

So in 1987, ISO/IEC JTC 1 was formed by the merger of ISO TC 97 and IEC TCs 47B and 83. Bringing together the qualities and strengths of both ISO and IEC, ISO/IEC JTC 1 was positioned to speed progress and wide deployment and avoid the development of duplicative or possibly incompatible standards by the two organizations.

In its first 15 years, ISO/IEC JTC 1 brought about a large number of successful ICT standards in the fields of multimedia, MPEG, security, programming languages, and character sets, to name a few. Then in the 2000s, development really took off in new and expanding areas such as security and authentication, bandwidth/connection management, storage and data management, software and systems engineering, portable computing devices, and societal aspects (such as data protection and cultural and linguistic adaptability).

A Changing Landscape

Today, ISO/IEC JTC 1 is one of the largest and most prolific technical committees in the international standardization community. With over 2,500 published standards under the broad umbrella of the committee and its 19 subcommittees, I SO/IEC JTC 1 makes a tremendous impact on the ICT industry worldwide.

The United States is proud to play a leadership role in the work of ISO/IEC JTC 1, with ANSI, the U.S. member body to ISO, serving as secretariat. Tremendous progress

U.S. Celebrates ISO/IEC JTC 1's 25 Years of Success in a Rapidly Changing ICT Industry (continued)

has been made under the guidance of Karen Higginbottom of HP, now serving her second term as the committee's chair, and ANSI's Lisa Rajchel, who serves as secretary. But dozens of other nations work alongside us: ISO/IEC JTC 1 counts 37 countries among its participants (plus another 54 as observers) and over 2,000 experts from around the world represent their national body positions in collaboration to develop the most effective and relevant ICT standards. It is the untiring efforts of these dedicated professionals that drive JTC 1's record of accomplishment.

The ICT industry has seen tremendous change in recent years:

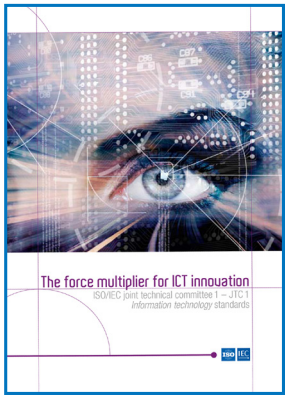
- Governments worldwide have changed their views on the purposes of ICT standardization and the role of ICT standards in procurement;
- Customers have new methods of systems development and specification;
- Compressed product life cycles have altered market conditions;
- Technologies continually evolve, converge, and become increasingly complex; and
- Customers want integrated, interoperable solutions.

To reflect these changes, ISO/IEC JTC 1 takes a proactive, forward-thinking approach to new work areas; establishes alliances to improve cross-sectorial cooperation; and focuses the technical orientation of work on three domains – core technologies, system integration, and areas of societal concern.

This approach has enabled ISO/IEC JTC 1 to make great progress in developing standards that cross a broad swath of technology sectors, particularly in rapidly expanding areas such as cloud computing, security, sustainability, and accessibility. For example, 2009 saw the publication of ISO/IEC 27000:2009, *Information technology – Security techniques – Information security management systems – Overview and vocabulary*. And later that year the ISO/IEC TR 29138 on *Information technology – Accessibility considerations for people with disabilities* was published.

ISO/IEC JTC 1 is also addressing such critical areas as teleconferences and e-meetings, cloud data management interface, biometrics in identity management, sensor networks for smart grid systems, and corporate governance of IT implementation. As technologies continue to converge, ISO/IEC JTC 1 has positioned itself as a system integrator, especially in areas of standardization where many consortia and fora are active.

In 2011 ISO/IEC JTC 1 and the World Wide Web Consortium (W3C) announced approval of a package of W3C Web Services technologies as ISO/IEC International Standards. W3C is one of nine organizations currently approved as ISO/IEC JTC 1 Publicly Available Specification (PAS) Submitters, allowing them to send specifications directly to ISO/IEC JTC 1 for national body voting to become International Standards. This collaborative process strengthens harmonization, and has led to more than 20 submitted PAS being approved as ISO/IEC standards last year.



The Future Looks Bright

There is no doubt that the ICT industry will continue its meteoric growth. ISO/IEC JTC 1 is committed to keeping pace, and has identified a large number of focus areas for future work, including social networking and web collaboration, augmented reality, e-learning, 3D image technology, virtualization, social analytics, and wireless power transfer.

The ongoing challenges and opportunities surrounding such critical areas as energy efficiency, sustainability, security, and cloud computing ensure that ISO/IEC JTC 1 will have many more years of prolific activity. ISO/IEC JTC 1 is committed to developing relevant ICT standards that respond to the needs of the industry, and make the world a better place for us all.

Further information

For more information about ISO/IEC JTC 1, visit www.iso.org/iso/jtc1_home.html. ■

IEC HEADLINES

IEC and U.S. Show Strong Leadership at the COPANT General Assembly in Brazil; Increased Participation and Energy Issues Top the Agenda

The Pan American Standards Commission (COPANT) held its annual General Assembly (GA) on May 7–8, 2012, in Fortaleza, Brazil. Organized by the Associação Brasileira de Normas Técnicas (ABNT), Brazil's national standards body, the event brought together delegates from the Americas, representing public and private sector standardization organizations. IEC Immediate Past President Jacques Régis, IEC Deputy General Secretary Frans Vreeswijk, and IEC–Latin America Regional Centre (LARC) Regional Manager Amaury Santos were among the IEC leaders who participated. American National Standards Institute (ANSI) president and CEO and COPANT vice president S. Joe Bhatia led a strong U.S. presence.

The Latin America region was well represented by a large number of IEC National Committees (NCs), as well as several Affiliate Country Programme members. An area growing in importance globally and for the IEC, the territory covered by COPANT now comprises seven Full IEC Members, one Associate Member, and 17 Affiliates.

During the GA, Mr. Régis presented an update on IEC work globally and in the Latin America region. He first focused on membership and the Affiliate Country Programme, highlighting the fact that interaction between Members and Affiliates was stronger than ever. He remarked on the nomination of the new Affiliate Leader, Phuntsho Wangdi of Bhutan, who took over from Carlos Rodríguez of Costa Rica in June 2011. Mr. Rodríguez is now Affiliate Coordinator for Latin America, continuing his work with Affiliates in the region.

IEC Immediate Past President Jacques Régis; ANSI President and CEO and COPANT Vice President Joe Bhatia, COPANT President Sergio Toro, and ABNT CEO Ricardo Fragosa (left to right)

Mr. Régis also introduced the recently launched IECEE Affiliate status, which provides a form of participation in conformity assessment (CA) activities without the financial burden of actual membership. He also stressed the long and fruitful collaboration between IEC and COPANT, and recent activities initiated and organized by the IEC in the region, such as virtual training sessions to familiarize COPANT members with IEC IT tools.

After presenting the recently established IEC Technical Committee (TC) 117, *Solar thermal electric plants;* IEC Project Committee (PC) 118, *Smart Grid user interface;* and IEC TC 119, *Printed electronics,* Mr. Régis stressed the importance of effective participation in IEC standardization. He explained that to really benefit from IEC work, industry must be able to participate actively and must be fully represented through the IEC NCs. He added that active participation goes further than voting: it involves sending experts to IEC workings groups and project teams to represent all interests and be able to have influence on the standardization process. He also talked about the growing role played by the IEC in CA and the recent developments in setting up a systems approach both in standardization and CA work.

The IEC and COPANT are on the same wavelength in terms of strategies. The 2011-2015 Strategic Plan, adopted by COPANT last year and aiming to define a regional agenda to promote standardization, training, and CA, was reviewed and commented during the meeting. In addition, renewables, energy efficiency, and Smart Grid issues were high on the COPANT GA agenda this year. Two workshops covering renewable energies, energy efficient household appliances, and a seminar on social responsibility were held in conjunction with the GA.

The next COPANT General Assembly will be hosted in St. Lucia in April 2013. ■

LARC CELEBRATES 5-YEAR ANNIVERSARY AT COPANT MEETING IN BRAZIL

During the the COPANT General Assembly, the IEC–Latin America Regional Centre (LARC) celebrated its 5 years of existence with a cocktail reception, on May 7, 2012. IEC-LARC was inaugurated in May 2007 to promote awareness of the IEC, provide support to regional Technical Committees (TCs), encourage the use of IEC international standards and conformity assessment schemes, and enhance participation of countries in the Latin America region. IEC-LARC also works closely with the Latin American countries that participate in the IEC Affiliate Country Programme, notably countries of the Andean Community and Central America in liaison with Carlos Rodrigues, Affiliate Coordinator for Latin America. And IEC-LARC also provides support to FINCA (Forum of IEC National Committees of the Americas) and works continuously on strengthening ties with COPANT. Amaury Santos and Iris Szterenlicht head up the IEC-LARC office in São Paulo, Brazil.

IEC HEADLINES

USNC Welcomes Colombia as New Member of FINCA

As a founding member of the Forum of IEC National Committees of the Americas, (FINCA), the USNC is pleased to welcome the IEC National Committee (NC) of Colombia to FINCA. This brings FINCA membership to seven countries, all Full Members of the IEC: Argentina, Brazil, Canada, Chile, Colombia, Mexico, and the United States.

Established in 2004, FINCA's overall purpose is trifold: to collaborate strategically amongst its membership; to strengthen and advance the region's voice and presence in order to influence decisions and coordinate international positions within the IEC governance and policy committees; and to share information and develop a better understanding of issues of commonality. Membership in FINCA is open to all countries in the Americas who are Full Members of the IEC.

The last FINCA plenary meeting – which Colombia attended – was held in Mexico City in September 2011. The next plenary meeting will take place in Toronto, Canada, on September 10–11, 2012, to be held in conjunction with a FINCA workshop on "Counterfeit Products in Today's Global Marketplace." ■

Upcoming 2012 Issues of *News & Notes*

Quarter III Focus on China/India

Quarter IV System Standardization: Networking That Works

SAVE THE DATES

Mark Your Calendar for Upcoming Meetings & Events

August 2012
CAPCC/TMC/Council Meetings
August 27–28 & 30,
FM Approvals, Norwood, MA

September 2012
FINCA Meeting, September 10–11, Toronto, Canada

ISO General Assembly, September 16–22, San Diego, CA

October 2012
76th IEC General Meeting, October 1–5, Oslo, Norway

SMB Meeting	October 1
CAB Meeting	October 2
Council Board	October 3
Council Meeting	October 5

ANSI World Standards Week
October 9 – 12, Newseum, Washington, DC

JANUARY 2013
CAPCC/TMC/Council Meetings
January 15–17, Sony Inc., San Diego, CA

FEBRUARY 2013
SMB Meeting, February 12, Geneva, Switzerland

MAY 2013
CAPCC/TMC/Council Meetings
April 30–May 2, 2013, Dell Inc., Austin, TX

JUNE 2013
CAB Meeting, June 10, Geneva, Switzerland

SMB Meeting, June 11, Geneva, Switzerland

For more event information, visit www.ansi.org/calendar and enter "USNC" or "IEC" in the key word search field.

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