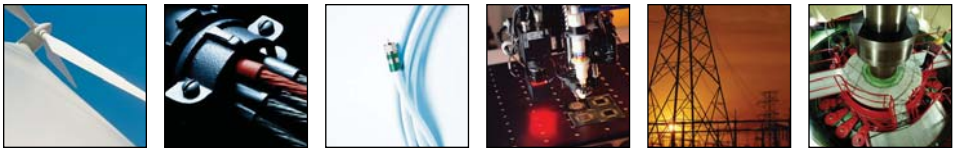
United States National Committee of the IEC

News and Notes



In This Issue

Volume 2 Number 2 July 2007

In 2006, the International Electrotechnical Commission (IEC) celebrated 100 years of innovation. This year, the focus turns to domestic activities as National Committees around the globe – including our own U.S. National Committee (USNC/ IEC) – recognize the centennial anniversary of their founding. As a leader of the global electrotechnical standardization movement, we take pride in the extraordinary accomplishments of the USNC and the IEC, we celebrate their history, and we look ahead to what the next one hundred years might bring.

The USNC — 100 Years Young and Poised for Growth

by Jim Matthews, Corning, Inc., USNC/IEC President

A BRIEF HISTORY OF THE USNC

Since the International Electrical Congress in 1904 that led to the formation of the IEC, the U.S. has played a leading role in electrotechnical standardization.

The USNC started its activities in 1907 under the administrative aegis of the American Institute of Electrical Engineers (AIEE), which later became part of the Institute of Electrical and Electronics Engineers (IEEE). During the nation's remarkable economic transformations in the turbulent 1930s, the USNC also underwent significant change.

In 1931, we affiliated with the Electrical Standards Board of the American Standards Association (ASA) in 1931. Thirty-five years later, ASA restructured itself and became the United States of America Standards Institute (USASI). Another evolution came in 1969 when USASI became the American National Standards Institute (ANSI).

In addition to the administrative support ANSI has provided to the USNC, a strong collaborative relationship has developed and fostered standardization activities across many industry sectors.

Over time, the USNC has been diligently representing the U.S. electrotechnical industry before the IEC, other international and regional organizations, and to counterparts in National Committees from all parts of the globe.

Delegates to the Fifth International Electrical Congress – St. Louis, 1904

From the definition of a commonly accepted electrotechnical vocabulary to the innovation of alternative energy sources and nanotechnology, U.S. contributions to the technical and global policy accomplishments over these hundred years are too many to list here. Rather, I'll mention some of our more recent overarching harmonization and policy activities.

The USNC maintains a strong position in the leadership of IEC, both at the policy and technical levels. Such a role enables the USNC to help shape the long-term future direction and planning of the IEC by actively contributing to the implementation strategy of the IEC Masterplan 2006. We are also one of the primary architects of the IEC Global Relevance Policy and a strong proponent of its effective implementation. This agreement makes it possible to include essential differences, on an equivaluent basis, in an IEC standard.

Regional harmonization and coordination with other National Committees have always been priorities to the USNC. Outreach activities have significantly increased over the years and, as a result, the USNC has been meeting annually with the other full members of the IEC in the Western Hemisphere. The 2007 "Multi-National Meeting" with the National Committees of Argentina, Brazil, Canada, Mexico, and the U.S. will take place on October 1-2 in Ottawa, Canada. During the Ottawa meeting, participants will work together to prepare for the 71st IEC General Meeting in Paris on October 22-26, 2007.

(*Continued on page 2*)

Published by the American National Standards Institute and its U.S. National Committee of the IEC

LATEST FROM THE IEC

IEC opens regional office in Latin America

President Elect Jacques Régis opened the newest IEC regional office on 2 May in São Paulo, Brazil, thus beginning a new chapter in IEC history. Alfredo Cotait Neto, representing the City of São Paulo authority, officiated along with Régis at the opening ceremony.

Commenting on the opening, IEC General Secretary Aharon Amit said, "For IEC standards to be truly global in content and application they need input from experts from all areas of the world. This new regional office gives Latin America a more direct voice in IEC affairs, makes the logistics of IEC work there more efficient in terms of language and time zones, and gives the IEC closer contact to electrotechnical expertise in the region."

USNC President Jim Mathews attended the opening ceremony on behalf of the Committee and gave a presentation on potential areas of cooperation between the newly opened office in São Paulo and the USNC.

A two-day seminar that followed the opening gave participants a close look at the breadth of technologies handled by the IEC and at its conformity assessment work. The second day focused on particular aspects of technology, including information and communication technologies, multimedia, ultra-high voltage, e-cubed (electrical energy efficiency), and renewable energies.

IEC-LARC (Latin America Regional Centre) joins two other regional offices in Singapore (Asia-Pacific Regional Centre) and Boston (Regional Centre for North America). IEC-LARC is headed up by Amaury Santos.

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FEATURED ARTICLE (continued)

Jim Matthews: The USNC — 100 Years Young and Poised for Growth

(*Continued from page 1*)

Domestically, ongoing communications and continuing education programs are critical components of the USNC work. Some significant accomplishments in these areas include enhanced communication efforts – including the issuing of this newsletter, the launch of consumer advocacy and academic outreach programs, and the establishment of a comprehensive USNC training program.

The IEC finds in the USNC a strong ally in the cause of global electrotechnology. For the fifth time in its history the USNC will be hosting a General Meeting of the IEC. The General Meeting is IEC's chief gathering; it brings together all IEC member countries and key stakeholders in the electrotechnology industry worldwide.

The 74th IEC General Meeting, sponsored by the USNC, will take place in Seattle, WA in October of 2010.

USNC — THE NEXT 100 YEARS

In the early years, the USNC was the only face of the U.S industry seen at the international level, as individual companies and organizations were typically local or regional and multi-national corporations had not yet emerged. The level of technical proficiency was limited, thus work produced at the technical level was widely "peer reviewed" through the Committee and a true national vote carried forward.

Technology has played a great part in enabling and driving change.

For most of its history, paper copies of IEC documents were mailed from Geneva to the USNC, which in turn distributed them widely to the national constituency. Voting was done by correspondence or conferences and meetings of the interested constituency. Votes and correspondence of the committees were sent back to Geneva by mail.

In today's world, e-mail and instant communication have been thrust upon us. This has transformed the processes and roles of the organization. The dissemination of information by the IEC central office in Geneva is now done electronically each weekend. Ballots are cast electronically and votes are automatically tallied each Friday.

As the distribution of documents and information became more efficient, the U.S. has decentralized so that USNC constituents now have direct access to the documents and interest that is of most interest to them.

The U.S. National Committee of the IEC is committed to removing barriers that inhibit access to IEC standardization and conformity assessment activites and we will work to simplify processes wherever possible.

Looking to the future, the functions of the Committee will continue to evolve. We have already moved from gatekeeper to facilitator – providing a venue for stakeholders to discuss and agree on common positions at the national level and to submit national consensus positions that reflects the true interests of the constituency.

Our number one priority, however, remains unchanged: the USNC will represent United States industry, association, government and consumer interests across all aspects of the IEC. We will continue to reach out to a broad base of stakeholders to ensure that all voices are represented. And we will move forward with our efforts to ensure that the individuals who do participate in the work at the international level are as prepared and effective as possible.

The next hundred years of the USNC will certainly bring deeper partnership with an always growing U.S. constituency. I look forward to working with each of you to accomplish our mutual goals. ■

Read more about the influence of technology on the USNC and IEC in the article on page 8 of this issue.

LATEST FROM THE IEC

New IEC Technical Committee to harness wave and tidal energy

The International Electrotechnical Commission (IEC) has created a new technical committee to address the ever increasing demand for alternative renewable resources. IEC TC 114 – *Marine Energy – Wave and Tidal Energy Converters*, is recruiting industry experts to develop international standards for wave and tidal energy technology. The goal of TC 114 is to maximize the power that tidal energy offers as a competitive form of electrical energy production.

Harnessing alternative and renewable energy resources will reduce dependence on fossil fuels, mitigate the effects of global warming, and raise the living standard of people in developed and developing countries. In its report to the recent G8 Summit in Heiligendamm, Germany, the International Energy Agency (IEA) made clear that the accelerated deployment of renewable energy could significantly reduce carbon dioxide emissions, improve energy security, and further drive down technology costs.

According to a recent IEC press release, the standards developed by TC 114 will support IEA's efforts to recommend best practices for the effective network and integration of electricity from wave and tidal energy devices. As technologies advance, TC 114 will ensure that its standards help to make tidal energy increasingly competitive with existing energy alternatives while ensuring the transfer of expertise from traditional energy systems.

Standards to be developed by the TC 114 will cover the performance of tidal and wave energy converters, how these converters will plug into electricity grid systems, and how they should be tested. The British and Canadian national committees to the IEC have applied for secretariat duties.

The U.S. National Committee to (USNC) the IEC held a public comment period through July 13, 2007 to collect input concerning the scope, member participation, and secretariat responsibilities of TC 114. Input received on these issues is now being used to develop a U.S. position to be submitted to the IEC Standards Management Board.

The IEC proposal and an administrative circular are available for review as background documents. Please visit www.ansi.org for more information and to review the proposal and circular. ■

Tidal Power Facts

Unlike wind and solar energy, tidal power is seen as a reliably predictable renewable resource.

Tidal energy is rooted in the orbital mechanics of the solar system and is considered essentially inexhaustible.

Two types of energy systems can be used to extract wave and tidal energy:

- kinetic energy – rivers, tides, and ocean currents drive underwater turbines
- potential energy – tidal fences (dams) exploit the difference in water levels during high and low tide, creating pressure that drives turbines

Suitable sites to produce tidal energy are those that exhibit high water speeds where water currents are concentrated, typically occurring in channels, entrances to bays, estuaries, and rivers between islands.

LATEST FROM THE IEC

Cuba joins the IEC

More than a year after the March 2006 announcement that Sri Lanka had joined the IEC as an Associate Member, the IEC Council has accepted the Republic of Cuba as the IEC's newest member. Following the early May decision, Cuba now moves from Affiliate Country Programme to IEC Associate Member status.

Today, the Republic of Cuba is the largest central American country in the Caribbean. The nation's 11 million people produced 15.34 billion kWh in 2005 up from 14.1 billion kWh in 2004. Since 2000, when the new Ministry of Information Technology and Communications was established, there has been much improvement made to the Cuban telephone system. According to 2005 statistics, roughly 850,000 main lines are installed and 134,500 mobile cellular phones are in use.

In 2006, while still in its capacity as an Affiliate member, Cuba celebrated the IEC centenary and commemorated the global celebration of World Standards Day with a special event under the banner "Standards for a safer world."

The IEC family now counts 51 Full Members, 17 Associate Members and a further 76 Participants who, although not yet members, are following the program for affiliated countries.

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■

LATEST FROM THE IEC

IEC and CIGRE host ultra high voltage symposium in Beijing

Nations such as Brazil, China, and India are faced with the challenge of supplying densely populated urban centers with power from remote generating stations in an efficient and environmentally responsible manner. In places where electric demand is growing but room for transmission lines is limited, a ultra high voltage (UHV) technology offers an important viable solution. International standards for this emerging technology have yet to be developed.

On July 18-21, 2007, in Beijing, China, the IEC and CIGRE (the International Council on Large Electric Systems) are hosting the International Symposium on International Standards for Ultra High Voltage. The event brings together global experts to lay the plans necessary to support this new technology and its potential applications.

Through panel discussions led by major international players, the conference explores research and projects in progress around the globe; technical challenges relating to systems planning and equipment design; as well as testing, regulatory and standardization issues.

On the first day of the symposium, Joe Koepfinger, CEO of Koepfinger Consulting, presented the U.S. perspective on UHV.

The symposium offers an opportunity for U.S. stakeholders to become engaged early on in the process and influence international UHV standardization efforts at the ground level. The conference is open to all interested stakeholders, including planners and operators of utilities and transmission systems, contractors, equipment manufacturers, transmission design engineers, researchers, and members of government and academia.

Further information

http://www.iec.ch/online_news/etech/arch_2007/etech_0307/focus.htm ■

LATEST FROM THE IEC

New IEC Committee for *Nanotechnology* holds inaugural meeting

The first plenary meeting for TC 113 — *Nanotechnology standardization for electrical and electronic products and systems* was held in Frankfurt, Germany on March 26-27, 2007. An interim chairman from the U.S. was very successful in leading the meeting to complete its tasks. Both the Scope and Strategic Policy Statements for TC 113 were completed and then approved by the participants. Germany and Japan each had six person delegations; Korea sent four delegates. The Chair and Secretary from ISO TC 229 – *Nanotechnology* observed and helped with the scope and SPS development based on their relatively recent experiences. TC 113 participants asserted their independence from ISO TC 229 while emphasizing the desire and need to establish and maintain a strong liaison relationship, including agreement to form two joint working groups – one for terminology and the other for measurement and characterization. A key element of the meeting was the high level of cooperation between the delegations to work toward the goals for the meeting.

The scope was written in a single sentence with a broad range so as not to restrict TC 113, but also to establish differentiation from ISO TC 229 and emphasize that IEC product committees still have responsibility for their fields while cooperating with TC 113 for nanotechnology harmonization across IEC. The SPS was identified as the document to contain additional details, and will be established as a living document so that it will be able to keep pace with the expanding field. Both of these documents now need to be approved by the IEC Standardization Management Board.

It was stressed during the meeting that there needs to be close cooperation between TC 113 and product committees that are working on applications of nanotechnology within their scopes. The first committees for collaboration seem to be TC 47 and TC 91 based on their efforts in the area of semiconductors. TC 113 hopes to be a facilitator toward the development of common terminology, measurement techniques, and other aspects to avoid duplication of effort in the nanotechnology field. It also anticipates serving as the coordinator between ISO and IEC in this field. There will also be liaison established with TC 111 for environmental issues.

Participation in the USNC TAG for TC 113 must be greatly expanded to ensure all interests from industry, academia, government and other areas are represented. The U.S. needs to have a pool of individuals available to volunteer for convenor and WG expert positions. If you have an interest in being a part of the U.S. group helping to lead the activities of IEC TC 113, please contact Ken Gettman (703.841.3254; ken_gettman@nema.org). ■

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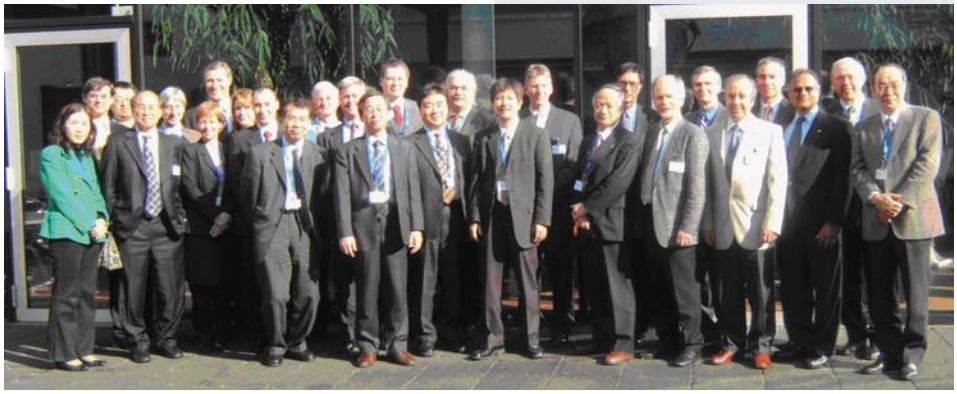


Delegates to the first meeting of IEC TC 113 — *Nanotechnology standardization for electrical and electronic products and systems* gathered for a photo outside the meeting facility in Frankfurt in March.

LATEST FROM THE IEC

IEC, ISO and ITU agree on common patent policy

Under the banner of the World Standards Cooperation (WSC), the IEC, the International Organization for Standardization (ISO), and the International Telecommunication Union (ITU) adopted in March 2007 a common policy to address patented technology in International Standards.

With an eye toward promoting greater efficiency in standards-setting and to sidestep potential patent rights issues, the new policy encourages the early disclosure and identification of patents that may relate to standards under development. Any party either involved in or external to the work of the ISO, IEC or ITU technical bodies is requested to draw the attention of the WSC organizations to known patents or pending patent applications as early as possible during a standard's development.

"Today, it is difficult to develop technical standards without implicating patents," explained Malcolm Johnson, director of the Telecommunication Standardization Bureau, ITU. "We believe that this policy will encourage industry to share its intellectual property with implementers of standards . . . knowing that their interests will be protected."

A solid patent policy provides adequate protection while freeing up intellectual property resources for broader implementation. The new joint policy allows for a company's new technologies to be included in a standard, provided that intellectual property is made available under reasonable and non-discriminatory terms and conditions.

"International standards developed by ISO, ITU and IEC provide a practical solution to many of the challenges faced by business in today's increasingly global markets," said IEC General Secretary Aharon Amit. "Industry has been seeking a common approach to patents from the world's leading standards developers. This common policy . . . will ultimately benefit end-users and industry."

"In this way we enable International Standards to be used to successfully disseminate innovation, with a clear set of guidelines regarding the disclosure of and commitment to license the use of patented technologies," said Alan Bryden, Secretary-General of ISO.

ISO, IEC and ITU also jointly adopted Guidelines for the Implementation of the Common Patent Policy and a Patent Statement and License Declaration Form to support implementation of the patent policy.

International standards developed by ISO, ITU and IEC provide a practical solution to many of the challenges faced by business in today's increasingly global markets.

— IEC General Secretary Aharon Amit

The organizations resolved to make every effort to obtain patent information in cases where a patent holder refuses to grant licenses free of charge or under reasonable and non-discriminatory terms and conditions.

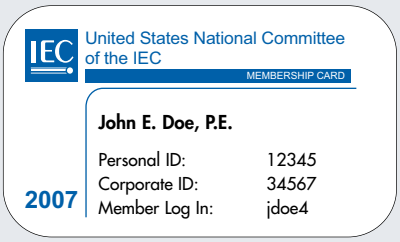
Additionally, the WSC organizations each maintain an online patent information database intended to facilitate the standards-setting process. For this purpose, patent holders use a patent statement and a licensing declaration form in which they specify one of three different situations, namely:

- Willing to negotiate licences free-of-charge with other parties;
- Willing to negotiate licences with other parties based on reasonable terms and conditions;
- Not willing to negotiate licences, in which case, patent information is not included in the standardization and the objective of ensuring compatibility of technologies and systems on a worldwide basis is not met. ■

USNC NEWS

Membership cards signify new benefits for USNC TAG members

For the first time in its 100-year history, in 2007 the USNC began issuing membership cards to all its active members. The personalized cards will be updated each year upon payment of all applicable membership and TAG participation fees.



On the front of each card, USNC TAG members will find their personal and corporate identification numbers, as well as a unique User ID that can be used to access online resources such as:

- personal account management tools
- electronic bill payments (e.g., participation fee or member dues)
- online event registration
- improved security systems, including password synchronization with the ANSI Online secure document library

Card distribtution is currently in progress; active members should receive their cards shortly. Questions can be directed to Kevin Sullivan, supervisor of the USNC department (212.642.4963; ksullivan @ansi.org).

Affiliate Membership in ANSI

Payment of the 2007 participation fee also grants USNC and U.S. TAG members automatic access to the "ANSI Affiliate Program" that will be launched during the second half of 2007. Normally a $99 value, ANSI affiliates will receive electronic access to a broad range of online products and services, including members-only information from one of the Institute's several policy committees.

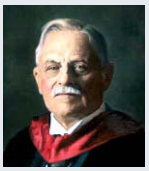
ANSI's membership team will follow-up soon with more information about the full range of affiliate program benefits. ■

USNC NEWS

New this year: Elihu Thomson Electrotechnology Medal

At the suggestion of the USNC, the American National Standards Institute (ANSI) has created the Elihu Thomson Electrotechnology Medal – a new award to honor an individual who has contributed in an exceptional way to the field of electrotechnology standardization, conformity assessment, and related activities both at the national and international levels.

2007 marks the first year that nominations have been accepted for this award. The selection of a recipient for the Thomson Medal will be based on the individual's leadership accomplishments within the electrotechnology standardization and/or conformity assessment field via the IEC, the USNC, and/or other such bodies.



Elihu Thomson was a prolific inventor and engineer whose ideas and achievements helped shape the modern electrotechnology industry. He was instrumental in the founding of the Thomson-Houston Electric Company which later became the General Electric Company, as well as the General Electric Company Limited in Britain and the Compagnie Générale d'Electricité in France. In 1909 Thomson received the first *American Institute of Electrical Engineers* (now IEEE) *Edison Medal*, bestowed upon him for "meritorious achievement in electrical science, engineering and arts as exemplified in his contributions during the past thirty years." At the time of his death in 1937, Elihu Thomson's name graced over 700 patents.

Nominations for the Elihu Thomson Electrotechnology Medal, as well as for all of the ANSI leadership and service awards, were accepted through July 16, 2007. Medals will be presented at the ANSI Awards Banquet and Ceremony being held October 17th in conjunction with World Standards Week in Washington, DC.

For more information, please visit **www.ansi.org/awards**. ■

USNC NEWS

Twenty-nine USNC experts honored with the IEC 1906 Award

Commemorating the 100th anniversary of the founding of the IEC, the "1906 Award" is presented annually to individuals who have made "major contributions to furthering the interests of electrotechnology, standardization and related activities."

The twenty nine U.S. experts identified below were named as award recipients in 2007. The USNC/IEC congratulates these individuals and extends its appreciation to each of them for their valuable and ongoing contributions:

Lal S. Bahra
Dell Computer
IEC TC 108

Robert G. Bartheld
IEC TC 2

Rudy Belliardi
Schneider Electric
IEC TC 65

Dennis L. Brandl
BR&L Consulting, Inc.
IEC TC 65

Frances M. Cleveland
Xanthus Consulting International
IEC TC 57

James Christensen
Holobloc, Inc.
IEC TC 65

Edwards W. Collings
Ohio State University
IEC TC 90

George J. Fechtmann
Underwriters Laboratories, Inc.
IEC TC 89

Harry P. Jones
Underwriters Laboratories, Inc.
IEC TC 105

Thomas E. Kimble
Dade Behring, Inc.
IEC TC 66

Alan Marsh
IEC TC 29

Kerry Mcmanama
Underwriters Laboratories, Inc.
IEC TC 31

Richard Nute
IEC TC 108

David Osborn
Philips Medical Systems
IEC TC 62

Tom Proctor
Power Paragon
IEC TC 22

Gregory Robinson
Xtensible Solutions
IEC TC 57

Werner Schaefer
Cisco Systems
IEC CISPR

Everett J. Scherrer
Rea Magnet Wire Co., Inc.
IEC TC 55

Paul A. Schilke
Nilfisk-Advance, Inc.
IEC TC 61

R. William Simpson Jr.
Innovative Paper Technologies, LLC
IEC TC 15

Paul Skare
Siemens
IEC TC 57

Walter Skuggevig
Underwriters Laboratories, Inc.
IEC TC 64

Vijay Tendulkar
Mge Ups
IEC TC 22

Larry F. Weber
IEC TC 110

Robert Weiner
Weiner Associates
IEC TC 76

Steven Wicelinski
Duracell, Inc.
IEC TC 35

Colin B. Willmott
The Chamberlain Group, Inc.
IEC TC 61

Jolanta Wroblewska
Underwriters Laboratories, Inc.
IECEE

Steve Swanson
Corning Incorporated
IEC TC 86

SAVE THE DATES

Save the dates for upcoming events of interest

For a complete schedule of upcoming meetings, or for more information on the events listed above, visit **www.ansi.org/calendar**.

Enter either "USNC" or "IEC" in the key word search field to narrow the list of results.

AUGUST 2007

Action and Reaction: *Developing a sustainable approach to emerging chemical issues*
Thursday and Friday, 9 and 10 August
American National Standards Institute
Baltimore, MD

USNC Communications and Continuing Education Committee
Wednesday, 22 August
Consumer Electronics Association
Washington, DC metropolitan area

Second USNC TAG Administrator Workshop
Thursday, 23 August
Consumer Electronics Association
Washington, DC metropolitan area

SEPTEMBER 2007

USNC Technical Management Committee
Wednesday, 26 September
FM Approvals
Norwood, MA

USNC 100th Anniversary Dinner
Wednesday, 26 September
Hosted by FM Approvals
Norwood, MA

USNC Council
Thursday, 27 September
FM Approvals
Norwood, MA

OCTOBER 2007

Multinational Meeting
Participating National Committees include Argentina, Brazil, Canada, Mexico, and the United States
Monday and Tuesday,
1 and 2 October
Ottawa, Canada

World Standards Week 2007
Monday-Friday, 15-19 October
Washington, DC
For a complete schedule of events, visit www.ansi.org/wsweek

U.S. Celebration of World Standards Day 2007
Thursday, 18 October
(reception and dinner)
Ronald Reagan Building and International Trade Center
Washington, DC

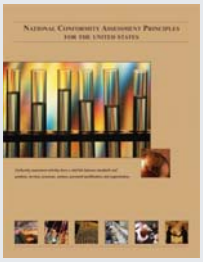
71st IEC General Meeting
Saturday to Saturday, 20 October to 27 October
Paris, France

NOVEMBER 2008

72nd IEC General Meeting
Monday to Friday,
3 November to 7 November
São Paulo, Brazil

ITEM OF GENERAL INTEREST

Second edition of U.S. NCAP document published

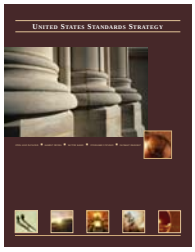


The ANSI Conformity Assessment Policy Committee (CAPC) recently updated the *National Conformity Assessment Principles for the United States* (NCAP) (www.ansi.org/ncap). The document articulates principles for U.S. conformity assessment activities that promote confidence among consumers, buyers, sellers, regulators and other parties, without creating unnecessary barriers to trade. Approved by the Institute's Board of Directors in early May, the second edition builds on the original framework published in October 2002.

The NCAP can be applied to all types of conformity assessment activities, including accreditation, certification, inspection, registration, testing, and supplier's declaration of conformity. Particular consideration is given to approaches that facilitate trade, provide regulatory confidence, and protect public safety.

"This document is intended as a companion to the standardization framework described in the United States Standards Strategy," said ANSI president and CEO Joe Bhatia. "The two documents should be considered together in the evaluation of standards and conformity assessment activities and related issues. Understanding these principles will help stakeholders maximize benefit from compliance-related activities." ■

RELATED READING



United States Standards Strategy (published Dec. 2005)

www.ansi.org/usss

ITEM OF GENERAL INTEREST

Then and Now: A Changed Approach to IEC Standard-Setting

by Jim Matthews, USNC/IEC President
Excerpt from the *ANSI Reporter* | Vol 38 No 3 (2006)

For the past decade new IT tools and capabilities have been promoting considerable changes in the standards development process. Paper procedures have been almost completely replaced by electronic means. Collaboration in face-to-face meetings has been augmented by e-mail, electronic file transfer and, more recently, discussion threads and chat room functions for formulating groups. This is a living example of the flatter earth described by Thomas Friedman in his book, *The World Is Flat: A Brief History of the Twenty-first Century*. As tools get more widely deployed and more user-friendly, we will see true global collaboration on a document or standard.

Many national and regional standards groups are finding some value in real-time webcast meetings. This is difficult to scale to the global level however, since the issue of global time zones would force some participants to be online in the middle of their night. When you add the cultural and language differences, this becomes a pretty big hurdle to overcome.

Rather than go faster in the real-time sense, it is likely that standards organizations and their project leaders will need to evolve the processes and working styles. This means breaking problems and projects up into a manageable size, which can be easily discussed and brought to conclusion over a finite period.

Face-to-face meetings may never be fully replaced by online tools, since the need to have extended discussions on a few contentious issues will always exist. Electronic collaboration tools will allow those occasional in-person meetings to be more productive and focused on the value added topics. These tools are actively being explored in trials at the international level by standards organizations such as the IEC, looking to their full deployment in the future.

Often, "hardware" capabilities lead the "software," and this is the case in standards where we quickly gain new IT tools for standards development, but the working processes continue to evolve over a longer time period in order to fully utilize the capabilities of the tools. Users and implementers of standards have also driven standards development in two key directions: speed to market and efficiency.

Speed to market reflects the challenge from consortia and fora to do things quickly versus the traditional long term consensus-based standards process. Groups like the IEC have worked to streamline the traditional process, significantly cutting times for standards development. Alternative non-consensus products such as Industry Technical Agreements or Publicly Available Specifications also emphasize speed to market. In all cases, the next hundred years will probably see a trend to provide clear alternatives and perhaps more balance of speed and consensus.

The efficiency trend comes from industry, which will not and can not afford to pay for a standard to be developed in multiple venues or in multiple organizations. Industry will always participate and support standards efforts that are responsive and produce results which meet their needs. They cannot afford duplication and delays. One emerging trend is to enable collaboration between multiple standards organizations to bring together experts and capabilities from around the world, and build on quality work which may already exist in part or in whole. Agreements like the one between IEC and IEEE for dual logo documents seem to be a trend for the future.

A final key development is the emergence of conformity assessment activities to a more visible and central role in the standards processes. The IEC currently has three conformity assessment schemes. These could grow or new ones emerge as society's expectations grow. Users and consumers want ever more assurance that products are meeting minimum requirements for function, health, safety, and the environment. Conformity assessment will likely become a much more visible part of the standards portfolio in all sectors.

These changes may come to happen at the same time, or widely different times, but one thing is certain – for every one we can imagine today, there will probably be many more we cannot yet perceive. ■

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HOW TO CONTRIBUTE

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