



The U.S. Role in the International Smart Grid Standardization Community

Presented by

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Once the standards are in place, entrepreneurs, start-ups and existing energy companies will be free to innovate, create new products and get them to the market. And we'll be able to export their new technology around the world, creating jobs in America while reducing fuel consumption around the globe.

- Secretary Locke, April 16, 2009, ABB Transformer Factory

Smart Grid is an urgent national priority that requires all levels of government as well as industry to cooperate.

- Secretary Chu, May 18, 2009, Meeting of Industry Leaders

IEEE is excited to be a central force in the Smart Grid initiative as it will be impactful to life as we know it.

- Dr. James Prendergast, Executive Director, IEEE

Introduction to ANSI

- n Coordinator of the U.S. voluntary standards and conformity assessment system – a partnership between the public and private sectors
- n Neutral forum where all parties can come together to identify standards-based solutions
- n U.S. member body to ISO and – via the U.S. National Committee – to the IEC



- n U.S. member of ISO
- n U.S. member of the IEC, via ANSI's U.S. National Committee
- n member of regional forums in the Pacific Rim and the Americas
- n liaison with groups in Europe, Africa and the Middle East
- n bilateral agreements with other national standards bodies



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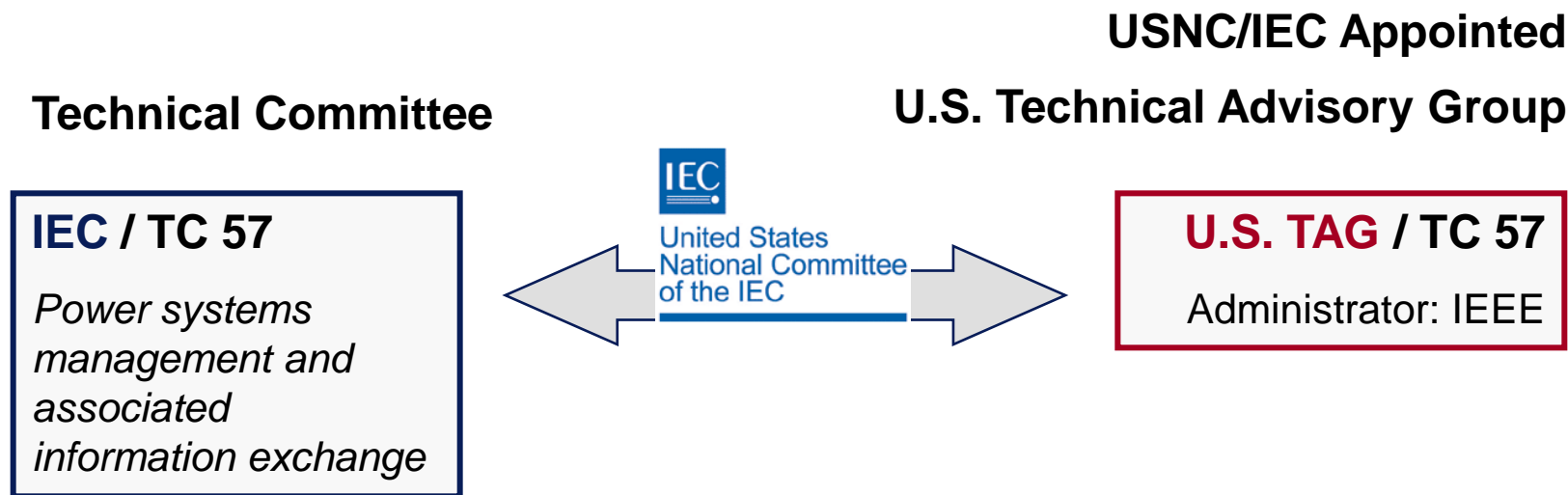


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U.S. Technical Advisory Groups – Interface to IEC

- n USNC appoints U.S. TAGs to develop U.S. positions on IEC activities and ballots and complete technical work



Overview: IEC and USNC



- n International Electrotechnical Commission (IEC)
Geneva, Switzerland
 - u Comprised of 56 Full Members and 20 Associate Members = 76 National Committees
 - u 83 Affiliates from developing countries
 - u 95% of the world's population

- n U.S. National Committee
 - u Participates in 90% of Technical Committees/Subcommittees
 - u Actively engaged and holds several leadership positions at the policy level

U.S. Leadership and Participation in Smart Grid-Related IEC TCs

n The U.S. participates in **22 Smart Grid-related IEC TCs**

u Leadership roles:

- F Secretary of TC 82, *Solar photovoltaic energy systems*
- F Chairman of TC 88, *Wind turbines*
- F Chairman of CISPR, *International special committee on radio interference*

u IEEE is the USNC approved U.S. TAG Administrator for:

- F TC 38, *Instrument transformers*
- F TC 57, *Power systems management and associated information exchange*
- F TC 95, *Measuring relays and protection equipment*
- F TC 115, *High voltage direct current transmission for DC voltages above 100 kV*



IEC SMB Strategic Group 3 – Smart Grid

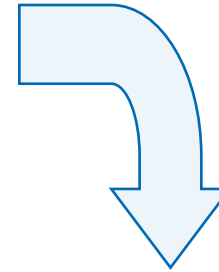
www.iec.ch/smartgrid

- n In April 2009, SG3 identified 24 IEC TCs with published International Standards playing a role in the Smart Grid

- n Agreed on a basic set of standards representing cross cutting needs for:
 - u Interoperability
 - u Transmission
 - u Distribution
 - u Metering
 - u Connecting the consumers
 - u Cybersecurity

IEC SMB Strategic Group 3 – Roadmap

- n Roadmap to coordinate Smart Grid standardization within IEC:
 - u Description of the individual parts and applications of the Smart Grid system
 - u New requirements are derived from this description
 - u **Existing standards** are mapped to the requirements
 - u New gaps are identified
 - u Recommendations for IEC actions are formulated



- n Relevant standards include:
 - u IEC/TR 62357, *Power system control and associated communications*
 - u **IEC 61850**, *Communication networks and systems in substations*
 - u **IEC 61970**, *Energy Management System – CIM and GID definitions*
 - u **IEC 61968**, *Distribution Management System – CIM and CIS definitions*
 - u **IEC 62351**, *Information security for power system control operations*

Also
identified
in NIST
Roadmap

IEC SMB Strategic Group 3 – Recommendations

- n Set up a concrete plan involving relevant TCs to:
 - u Document the usability of their existing standards
 - u Interact with each other, close gaps and reduce overlaps of identified standards
 - u Incorporate Smart Grid design in their current and future planning

- n Encourage the use of the PAS process to address gaps and jumpstart standards development

- n Investigate a conformity assessment type scheme for testing and certification of how standards are implemented in Smart devices and projects

IEC SMB Strategic Group 3 – The U.S. Role

- n USNC nominated Richard Schomberg to convene SG3
 - u Vice President of Research in the United States for Electricité de France, a French utility

- n New participants always welcome to the U.S. TAG to SG3
 - u Joining the TAG provides an opportunity to influence the interoperability of Smart Grid components and systems

Recent Bilateral Outreach Meetings on Smart Grid

- n IEC General Meeting - October 2009 in Tel Aviv, Israel

- n USNC held bilateral meetings with CENELEC and with other national committees, including Australia, China, Germany, India, Japan, and Russian Federation
 - u Smart Grid a major topic of discussion
 - u General enthusiasm and agreement to share information and cooperate

- n Workshop on International Standards for E-mobility convened at General Meeting

Smart Grid Standards Repository

- n NIST Framework and Roadmap for Smart Grid Interoperability Standards
 - u 31 standards for implementation
 - u 46 standards identified for further review

- n September 2009: Meeting to discuss how Smart Grid standards would be moved from the NIST process into FERC rulemakings
 - u Representatives from FERC, NIST, ANSI, and the SDO community
 - u Question: how might regulators access the standards identified in the NIST document at no cost for the purpose of rulemaking?

Smart Grid Standards Repository, continued

- n November 2009: NIST asks if ANSI can coordinate posting of identified standards on a secure website

- n December 2009: ANSI sends requests to all 27 organizations whose standards were identified in the NIST Framework
 - u Responses to date have been very positive with regard to approved standards

- n If the standards are picked up in regulation, does that create the expectation that they will be freely available?
 - u No: the intellectual property of the standards developers must be respected
 - u This matter will be addressed very directly in the NIST Smart Grid Framework

Moving Forward

- n What are the key challenges we face with Smart Grid standardization?
 - u We need to strike the right balance between speed and doing it right.
 - u The process does not end with a standard — it is just the beginning.
 - u **The three Cs:** cooperation, collaboration, and coordination

For more information



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