

NIST

Global Standards Information

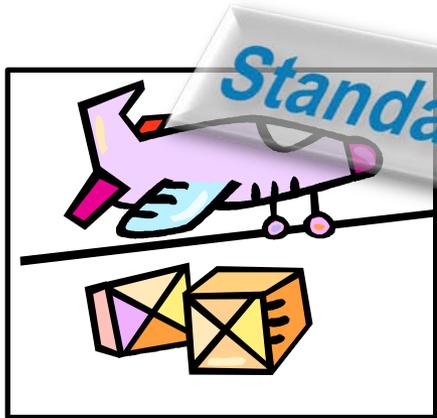
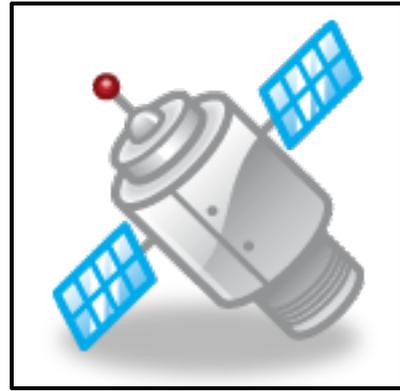


Fundamentals of Standards

Fundamentals of Standards and
Conformity Assessment Workshop for
the EISA§436(h) Ad Hoc Review Group
June 7, 2012

Today's Discussion

- Standards: A Brief Historical Perspective
- U.S. Standards System
- Key Players and Organizations



Standards are all around us



Early Drivers for Standards



Baltimore
Fire
of 1904

Early Drivers for Standards



New York City
Triangle Shirtwaist
Fire of 1911

Key Terms & Concepts

STANDARDS

Market-driven technical specifications for a product, service, person, process or system, with which compliance is voluntary

TECHNICAL REGULATIONS

Technical specifications, which may include (or reference) particular standards, with which compliance is mandatory

CONFORMITY ASSESSMENT

Processes used to verify the compliance of a product, service, person, process or system to either a standard or a regulation (e.g., testing, certification, inspection)

Definitions of a Standard (1)

Document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context. Note. Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits. (ISO/IEC Guide 2:1994)

Document, approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method. (WTO TBT Agreement of 1995)

Definitions of a Standard (2)

Common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices. (NTTAA of 1995 and OMB Circular A-119 of 1998)

Market-driven technical specification for a product, service, person, process or system with which compliance is voluntary. (Anonymous)

The U.S. Standards System Today

The U.S. standards system is voluntary, decentralized, sector driven and is, sometimes, competitive.

The system relies on cooperation and communication among:

- Private sector standards organizations
- Industry
- Government

One Approach Among Many in the World

The U.S. Standardization Model:

- resembles the nation's economic structure: sector-based and driven by market needs
- reflects U.S. culture and traditions
- reflects government/private sector dynamics
- relies strongly on diversity and decentralization

Key Concepts in Standards Development

Openness

All stakeholders may participate; no single interest may dominate

Transparency

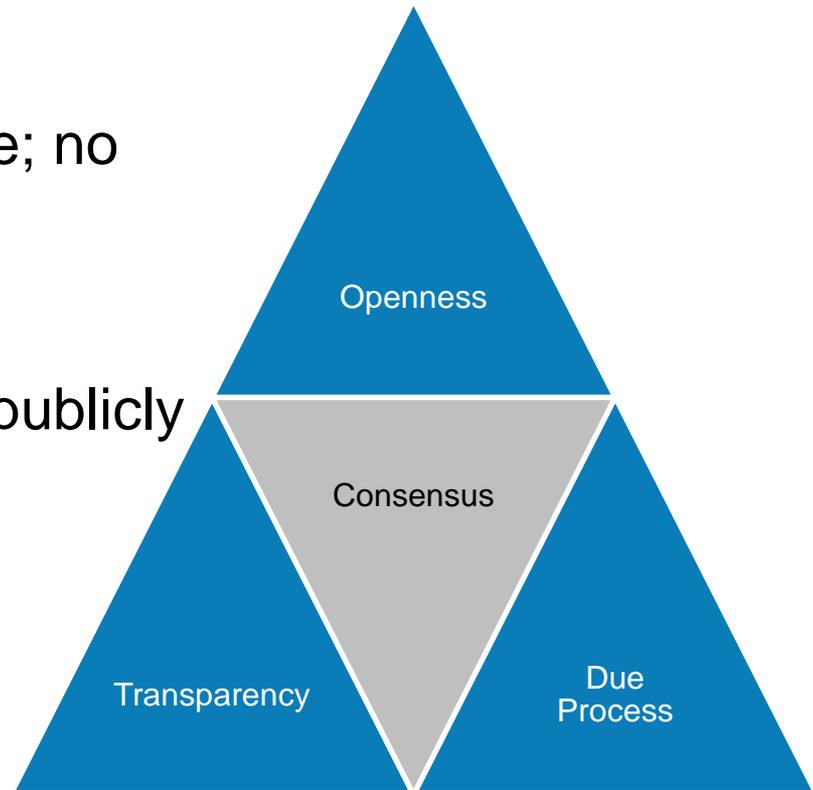
Records/ processes open and publicly available

Due Process

Appeals mechanism

Consensus

Decisions more than majority but not unanimity



Key Players and Organizations

1. American National Standards Institute (ANSI)
2. National Institute of Standards and Technology (NIST)
3. Standards Developing Organizations (SDO)
4. Consortia Standards Setting Organizations
5. Key International Players
6. Committee members who provide technical input

1. ANSI



- ANSI is a federation of about 1,000 members
- Was founded in 1918 by five professional/ technical societies and three federal government agencies
- Coordinates the U.S. standards system
- Does not write standards
- Accredits standards developers (about 280 SDO's are ANSI-accredited)
- Represents the United States in the ISO and IEC

2. NIST



- Serves as the National Measurement Institute in the U.S.
- Coordinates federal use of voluntary consensus standards and conformity assessment activities
- Coordinates with the private sector
- Staff participate in standards development
- Provides substantial technical contributions in thousands of committees

3. SDOs

- **Professional Societies** whose members seek to advance their professions, and also develop standards
- **Trade Associations** promote their industry's products, and also develop standards
- **Testing and certification organizations** produce their own standards and may also use those of other organizations
- **Organizations that only develop standards**



4. Consortia

Consortia are groups of companies that come together to create a standard to address a (typically single) commercial need

Characteristics:

- Quick standards setting
- Arose in the late 1980s to meet changing technological needs
- Most often are joint ventures that “pay to play”
- Recently, many consortia in the food industry and in the environmental/sustainability sectors
- “Proprietary” standards
- Enormous variation among consortia in terms of openness, transparency and consensus



5. International Players

- International Organization for Standardization (ISO)
- International Electrotechnical Commission (IEC)
- International Telecommunication Union (ITU-T)
- Other private SDO
- Treaty organizations (government based)
- Regional bodies

ISO and IEC



- ISO and IEC are member organizations, with participation by National Standards Body
- ANSI represents U.S. interest in ISO and IEC
- All U.S. stakeholders participate thru ANSI
- To participate in ISO and/or IEC work, all U.S. stakeholders must abide by ANSI rules and process

6. Committee Members

- Committee members provide technical input
- USG members ensure government needs are being met
- Standards are written in committee
 - draft standard
 - incorporate changes
 - balloting process
 - consider comments
 - possible re-balloting
 - final approval and publication
 - typically reviewed every 3-5 years



Thank You

Fundamentals of Standards

Erik Puskar

erik.puskar@nist.gov

301-975-8619

Useful Links

NIST

www.nist.gov

NIST Standards Services

<http://gsi.nist.gov/global>

NCSCI

www.nist.gov/ncsci

Notify U.S.

www.nist.gov/notifyus

Standards.Gov

www.standards.gov

Regulations.Gov

www.regulations.gov

ANSI

www.ansi.org