



# *Standards in the U.S. and the role of NIST*

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## *Acknowledgements*

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# Background

- NIST is a non-regulatory federal agency
  - About 3,000 people
  - Two locations (Gaithersburg, MD and Boulder CO)
- NIST is part of the Department of Commerce
  - Measurements and standards are important to trade and commerce
- NIST is not a Standards Developing Organizations (SDO)
  - The US relies on private sector SDOs
  - ANSI is not an SDO
  - NIST is an impartial and knowledgeable participant with industry
- NIST is the National Measurements Laboratory (NML)
  - This carries national and international responsibilities
  - Some codes and standards require measures “tracable to NIST”
  - Fundamental units, constants, meas, SRMs, calibrations



# *Fundamental U.S. Standards Concepts*

- Market drive
- Openness
- Transparency
- Balanced participation
  - No single interest may dominate
- Due Process
  - Appeals mechanism



# *Standardization in the US*

- The system relies on cooperation and communication amongst:
  - private sector standards organizations
  - industry and representative trade groups
  - professional and technical organizations
  - Government
  - consortia formed by some combination of above
- The U.S. standards and conformity assessment system is decentralized and sector-based
  - Medical devices: Federal Regulations
  - Building: State and Local Codes
  - Others, Industry maintained, voluntary standards



## *Standardization in the US*

- Private sector voluntary standards provide the backbone (approximately 400 private sector organizations and 150 consortia develop approximately 30,000 voluntary standards)
- There is no national standards body in the US – the American National Standards Institute (ANSI) coordinates the US interests in the voluntary private sector standards process (over 270 SDOs are accredited by ANSI)
- The government's role is:
  - to issue regulations when necessary after Federal Register notice and adequate comment period
  - as a standards user
  - to participate in standards development
  - to contribute technical knowledge underlying these standards
  - to advocate U.S. national interests



## *NIST's Role*

- Maintains fundamental physical standards, measurements, reference data and materials
- Participation in voluntary standards committees
- Accredits testing and calibration laboratories needed by industry
- Supports international trade activities
- Coordinates government efforts
  - NIST Chairs the Interagency Committee on Standards Policy (ICSP)
  - agencies use ISO 9000 and 14000 standards
  - policy on laboratory accreditation
  - policy on use of voluntary standards in regulations
  - policy on strategic standards management



## *NIST Standards Activities*

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- Committee chairs and secretariats
- Technical input to standards committees
- Technical Advisory Groups (TAGs)
- Service on Boards and Councils
- Produces directories, indices, and input to standards network



# *NIST Helps Ensure the Technical Efficacy of Documentary Standards*

- By participating as measurement experts in the development of test methods; product, system, and process specifications; etc.
- By participating in data collection efforts in support of the development of test methods
- By providing measurement standards needed to calibrate instruments used in test methods
  - e.g., ASTM standards reference ~800 NIST Standard Reference Materials
- NIST's objective is to be an impartial and unbiased participant whose main interest is technical merit.
  - “Ensuring the technical efficacy of documentary standards”
  - “providing added confidence in measurements”





## *NIST Participation in Documentary Standards Activities*

- 440 staff members, 29% of the technical staff, participate in 111 voluntary standards organizations
  - 41% of these organizations are international
- ASTM committee memberships (470) account for 33% of NIST committee memberships, followed by
  - ANSI, ISO, IEEE, IEC, ASME
- Focus is on analytical testing, building and construction, health care, information technology, manufacturing, and telecommunications



# *NIST Programs and Conformity Assessment Activities*

- National Voluntary Laboratory Accreditation Program (NVLAP)
  - Accreditation of testing & calibration labs
- Representation to International Organization of Legal Metrology (OIML)
- National Voluntary Conformity Assessment System Evaluation (NVCASE) Program
  - Recognition of U.S. conformity assessment bodies to assure foreign governments under MRAs



## *NIST Programs and Conformity Assessment Activities (contd.)*

- U.S. Inquiry Point in support of WTO TBT Agreement, NAFTA, and APEC
- Development and marketing of standard reference materials and data
- Certification of software; accreditation of facilities testing software for federal use



# *National Center for Standards and Certification Information (NCSCI)*

- U.S. WTO TBT Inquiry Point
  - **WTO TBT Article 10** - establishment of inquiry point to respond to technical regulations requests
- U.S. WTO TBT Notification Authority
  - **Articles 2 and 5** - notification of central government proposed regulations and conformity assessment procedures



## *NIST promotes efficiency in the U.S. system*

- By continuing to encourage Federal agencies to rely on standards developed by private, consensus organizations
- By supporting the U.S. laboratory accreditation system
  - Encourage the use by Federal, State, and local government of recognized accreditation bodies and their accredited laboratories
- By assuring that other types of private-sector accreditation programs meet Federal agency needs
  - e.g., NIST has recognized ANSI as an accreditor of product certifiers to Federal Communications Commission (FCC) requirements



## *Standards Related NIST Outreach Programs*

- Support for standards experts
  - U.S. Mission to EU in Brussels
  - U.S. Embassy, Mexico City, Mexico
  - U.S. Embassy, Brasilia, Brazil
  - SASO & U.S. Embassy, Riyadh, Saudi Arabia
- Workshops on standards and conformity assessment systems and procedures
  - SIT: Standards in Trade
  - SABIT: Special American Business Internship Training (with the U. S. Department of Commerce- DoC)
- Participation in regional organizations



## *Summary*

- Standards are cornerstones for trade (\$/Meas)
- The United States relies heavily on the private sector whenever feasible
- Tests for conformity are essential
- Competence must be verified
- Governmental assurances under MRAs
- Acceptance of valid test results