Advancing Technology and Standardization in a Digital World: Collaboration with the NATO Standardization Office

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ANSI

A NONPROFIT ORGANIZATION

THAT

COORDINATES

THE U.S. STANDARDIZATION SYSTEM

AND

REPRESENTS U.S. INTERESTS

TO INTERNATIONAL STANDARDS ORGANIZATIONS

Standards

are the building blocks of innovation.

They establish the size, shape, or capacity of a product or system. They specify performance of products, processes, or personnel. They may also define terms.

Conformity Assessment

Assures that standards are properly implemented.

By assuring implementation of a standard or other requirements, conformance activities boost consumer trust and confidence in goods, services, people, and systems.

The U.S. System

Most countries (top down)

Standards development priorities are driven by government or national standards bodies

U.S. system (bottom up)

Standards development priorities are driven by users and markets

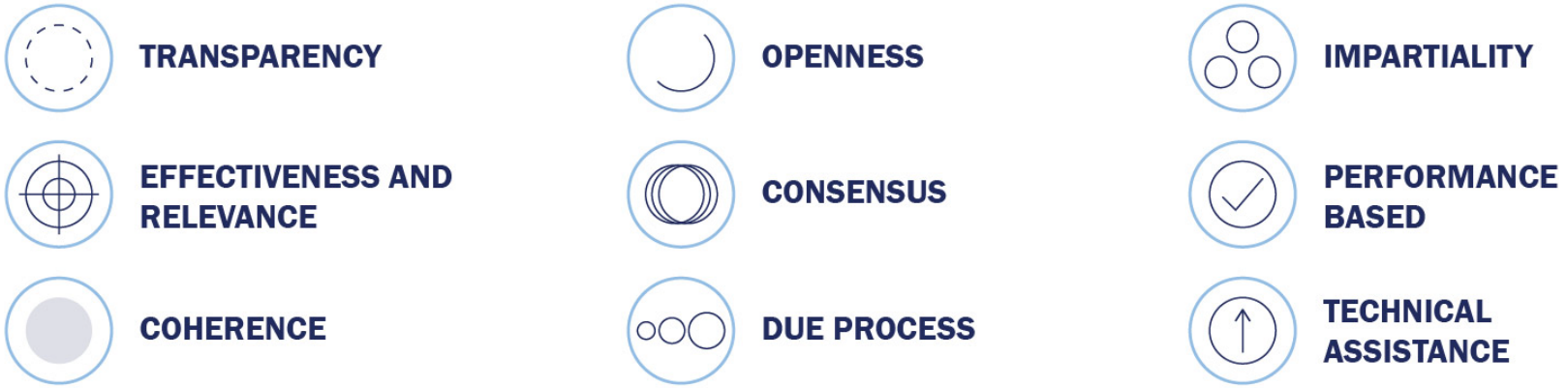
The Public/Private Partnership

The cornerstone of the U.S. standardization system

Government and industry together develop standards to achieve policy objectives.

The 12 Principles of Standardization

According to the World Trade Organization (WTO), standards should meet societal and market needs and should not be developed to act as barriers to trade. The U.S. standards system is based upon the following set of globally accepted principles:



In addition, U.S. interests strongly agree that the standardization process should be:

Standardization: A Global Community

Standards developers and conformity assessment bodies

Commercial and consumer acceptance

Government acceptance

NATO EDT Strategy

- In February 2021, NATO Defense Ministers endorsed "Foster and Protect: NATO's Coherent Implementation Strategy on Emerging and Disruptive Technologies."
  - fostering a coherent approach to the development and adoption of dual-use technologies (i.e., technologies that are focused on commercial markets and uses but also have defense and security applications) that will strengthen the Alliance's technological edge, and
  - creating a forum for Allies to help protect themselves from the use of EDTs by hostile actors, and protect their own EDTs and innovation ecosystems from interference and manipulation by potential adversaries and competitors.
- These goals are key to ensuring NATO retains its strategic and effective dominance.

NATO Technology Priorities

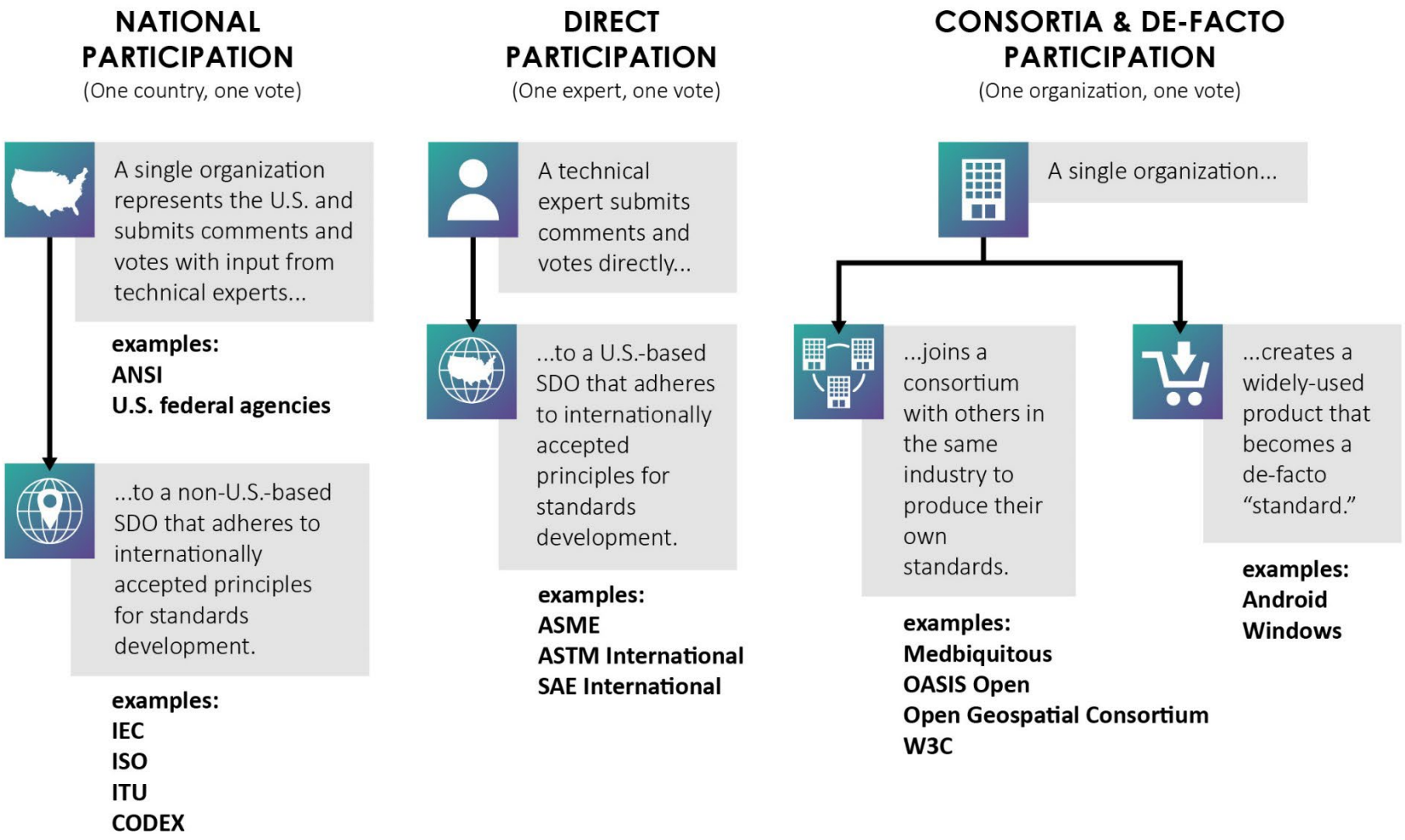
NATO's innovation activities focus on nine priority technology areas:

- artificial intelligence
- autonomous systems
- quantum technologies
- biotechnology and human enhancement technologies
- space
- hypersonic systems
- novel materials and manufacturing
- energy and propulsion
- next-generation communications networks

NATO Definition of a "Standard"

- NATO defines a standard as a "document, established by consensus and approved by a recognised 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."

Pathways to Globally Relevant Standards



Key NATO Contacts on Standards

- Committee for Standardization (CS)
  - issues policy and guidance for all NATO standardization activities.
- Standardization Office (NSO)
  - initiates, coordinates, supports and administers NATO standardization activities conducted under the authority of the Committee for Standardization (CS).
- Standardization Staff Group (NSSG)
  - assists the Director of the NSO. It is a staff-level forum that facilitates coherence of NATO standardization activities and procedures across NATO bodies, especially the standardization tasking authorities.

ANSI Interactions with NATO Offices

- NATO Standardization Office
  - Provided multiple briefings on the standards landscape in NATO technology priority areas
  - On an ongoing basis, identify and promote multiple sources of global standards to meet NATO needs
  - Particular interest in identifying specific sources of relevant global standards
- NATO Committee for Standardization
  - Provided briefings at NATO Use of Civil Standards Workshops
  - Particular interest in ANSI collaboratives

America Makes & ANSI Additive Manufacturing Standardization Collaborative (AMSC)

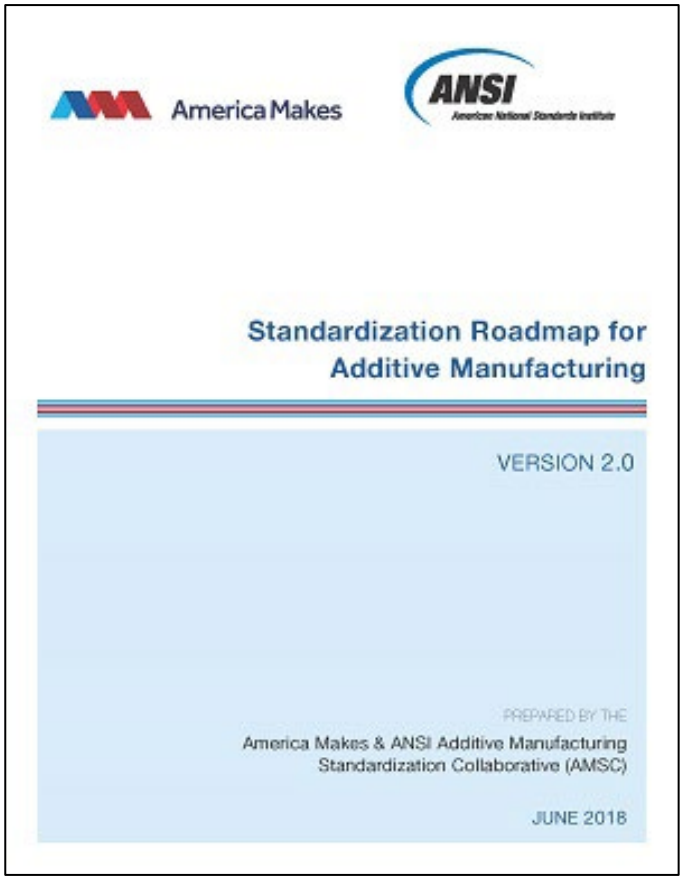
- Launched in March 2016 to coordinate and accelerate the development of industry-wide additive manufacturing (AM a/k/a 3D Printing) standards and specifications to help facilitate the growth of the AM industry
- America Makes is the nation's leading public-private partnership for additive manufacturing technology and education
- National Institute of Standards and Technology (NIST), U.S. Department of Defense (DoD), Federal Aviation Administration (FAA) and several SDOs were instrumental in its formation
- Before AMSC there was no process for identifying priorities and interdependencies in the development of standards and specifications for additive manufacturing
- A number of SDOs are engaged in standards-setting for various aspects of AM, prompting the need for coordination to maintain a consistent, harmonized, and non-contradictory set of AM standards and specifications

America Makes

ANSI American National Standards Institute

AMSC Deliverables

- A comprehensive roadmap describing the current and desired future standardization landscape for additive manufacturing
  - V1 published February 2017
  - V2 published June 2018
  - 93 gaps (no published standard) identified w/accompanying recommendations
  - Gaps progress report published April 2021
  - Available for free download at www.ansi.org/amsc



ANSI Unmanned Aircraft Systems Standardization Collaborative (UASSC)

- Launched in September 2017 to coordinate and accelerate the development of the standards and conformity assessment programs needed to facilitate the safe integration of unmanned aircraft systems (UAS a/k/a drones) into the national airspace system of the United States, with international coordination and adaptability
- Federal Aviation Administration (FAA) and many other public- and private-sector stakeholders participated in a May 2017 exploratory meeting which indicated broad-based support to establish UASSC
- Focus is to support the growth of the UAS market with emphasis on civil, commercial, and public safety applications
- Presentation given by ANSI staff at February 2020 NATO Use of Civil Standards Workshop

Standards

are the building blocks of innovation.

Standards can:

- help speed technology commercialization,
- facilitate interoperability, and
- support secure supply chains