FACT SHEET: Implementing the National Standards Strategy for Critical and Emerging Technology

Today, the Biden-Harris Administration released the Implementation Roadmap for the U.S. Government's May 2023 National Standards Strategy for Critical and Emerging Technology (USG NSSCET). The roadmap sustains and reinforces the U.S. Government's commitment to standards development led by the private sector and enhanced by partnerships with public institutions and calls for robust engagement in the standardization of critical and emerging technologies (CETs) to protect U.S. national and economic security.

Standards are essential to commerce and to the safe, reliable, and interoperable functioning of a broad array of essential products and services. Standards help ensure that technologies and parts from many suppliers work together seamlessly, and facilitate efficient operation of services and manufacturing while facilitating a competitive marketplace for goods and services. Standards provide industries and innovators with a common language that facilitates trade, simplifies transactions, accelerates innovation, and enables people to work across disciplines and borders toward common goals.

Critical and emerging technologies have been designated by the Administration as potentially significant to U.S. national security, including economic security and the defense of democratic values. Recognizing the strategic value of CETs,

our competitors abroad are seeking to influence international standards development to their own advantage, placing at risk leadership opportunities for U.S. innovators and industry and access to quality products and services that benefit all.

The Implementation Roadmap recommends steps the U.S. Government should take to realize the objectives of the USG NSSCET. The roadmap is organized around eight lines of effort for the U.S. Government, with an understanding that success will require extensive and sustained coordination with the U.S. private sector and like-minded allies. The Implementation Roadmap is based on information collected through a Request for Information, stakeholder engagements, consultations, and formal recommendations from federal advisory committees including the National Institute of Standards and Technology (NIST) Visiting Committee on Advanced Technology.

The U.S. Government is committed to supporting and upholding private sector-led standards development processes that are:

- Built on transparency;

- Strengthen long-standing public private partnerships;

- And, reflect the U.S. commitment to free and fair market competition in which the best technologies come to market.

Approach

The United States is committed to a private sector-led standards system that is inclusive, diverse, and draws on robust research and innovation. Through clear actions and effective diplomacy, the Departments of Commerce and State, together with the Office of the United States Trade

Representative, will continue to work with private sector leadership including the American National Standards Institute (ANSI) to engage international partners with an aim to promote this approach globally.

The ANSI administers and coordinates the private sector-led U.S. voluntary standards and conformity assessment system, while the NIST coordinates Federal Government engagement in standards activities. The USG NSSCET complements the United States Standards Strategy (USSS) published by the ANSI and supports, complements, and further communicates U.S. Government priorities for CET standards development. Through SDOs, the U.S. private sector leads standardization activities globally to respond to market demand, with substantial contributions from the U.S. Government, academia, industry, and civil society groups. Industry associations, consortia, and other private sector groups work together within this system to develop standards to solve specific challenges and respond to national priorities.

We also call upon standards stakeholders, including representatives of industry, start-ups, small- and medium-sized enterprises, the academic community, and civil society organizations to work with U.S. Government officials and ANSI on creative solutions to lower barriers, incentivize greater participation, and protect the integrity of international standards development through robust investment and engagement. Building on increased investment in Research and Development (R&D) through initiatives like the National Artificial Intelligence Research Resource, the CHIPS and Science Act, and the 21st Century Cures Act, the Implementation Roadmap focuses on short-term actions and long-term sustained outcomes that promote global trade, interoperability in manufacturing, and U.S. competitiveness and innovation through CET standardization.

In the short-term, the U.S. Government will take immediate action to include but not limited to:

- Identifying opportunities to increase U.S. Government pre-standardization R&D and standards participation efforts;

- Tracking and evaluating current U.S. Government CET standards education grants and programs that promote, foster, and remove barriers to U.S. stakeholder participation in national and international standards activities, and;

- Tracking and evaluating current U.S. Government technology cooperation agreements and international mechanisms for standards-related communication and cooperation.

For long-term sustained implementation outcomes, the U.S. Government will take steps to:

- Enhance standards coordination across the federal government;

- Enhance standards coordination with the private sector;

- Enhance standards policy coordination between the U.S. Government and foreign governments;

- Recognize and incentivize federal agency engagement in standardization;

- Provide strong and sustained funding for CET R&D and pre-standardization coordination;

- Engage academia as a critical partner to the private sector in standards development efforts;

- Enhance educational efforts in standards;

- Develop and sustain communications about standards, and;

- Remove barriers to participation in standardization.

A Whole-of-Government Effort

Many U.S. Government organizations are demonstrating their commitment to implementation through their actions and partnerships. These efforts signal a broad emphasis across the government aimed at strengthening U.S. competitiveness, innovation, and national and economic security via standards-related policies and actions. Examples include:

The National Institute of Standards and Technology (NIST) coordinates Federal agency implementation of standards and conformity-assessment-related National Technology Transfer and Advancement Act provisions. In addition, NIST provides technical expertise to standards development efforts across the entire science and technology enterprise, including for critical and emerging technologies. For example: NIST's experience in contributing to trust in new technologies in general, and in AI research in particular, is why it was among the federal agencies chosen to help fulfill President Biden's Executive Order (EO) on Safe, Secure, and Trustworthy Artificial Intelligence (14110). The deliverables include *A Plan for Global Engagement on AI Standards,* which recognizes the importance of technical standards in shaping the development and use of artificial intelligence.

NIST will establish and operate a **Standardization Center of Excellence** as a *public-private partnership* focusing on four key areas: Pre-standardization engagement, workforce capacity building, an information and data sharing hub, and a collaborative pilot program in CETs.

The CHIPS and Science Act appropriated $50 billion to the **Department of Commerce's CHIPS for America program** both to support semiconductor research and development (R&D) and to expand semiconductor manufacturing capacity in the United States. A key element in achieving these CHIPS R&D goals is to accelerate the private sector-led development and deployment by industry of effective technical standards.

The U.S. Patent and Trademark Office (USPTO) is partnering with foreign partners to forge alliances and collaborate toward enhanced efficiencies in standards essential patent licensing markets. So far, the USPTO signed an Memorandum of Understanding (MOU) with the United Kingdom Intellectual Property Office to this effect on June 3, 2024. It has also partnered with the World Intellectual Property Organization on dispute resolution efforts related to standards essential patents.

The **National Telecommunications and Information Administration** (NTIA) continues to administer the Public Wireless Supply Chain Innovation Fund, a $1.5 billion grant program funded by the CHIPS and Science Act of 2022, which aims to catalyze research, development, and adoption of open, interoperable, standards-based next-generation wireless networks. NTIA coordinates extensively with the private sector, U.S. Department of State, and other agency partners to represent the United States at the International Telecommunication Union.

The **International Trade Administration** (ITA) leverages multilateral and bilateral fora, dialogues, and partnerships such as the Asia-Pacific Economic Cooperation and the U.S.-E.U. Trade and Technology Council to engage like-minded nations in promoting the use of international standards and best practices for the development of standards for

emerging technologies. Additionally, ITA employs Digital, Standards, and Intellectual Property Attachés in key foreign markets to increase U.S. exports by helping U.S. companies access the global marketplace and navigate foreign regulatory issues. These Attachés play a critical role in ensuring that U.S. companies remain competitive globally and that foreign markets have access to the high-quality products and services that U.S. industries provide.

The Department of State launched a project to support an international standards development process grounded in transparency, private sector leadership and public sector support, and diverse stakeholder engagement. The project will also enhance like-minded nations' representation and expand the number of countries that are aligned with U.S. Government vision, thus creating greater leadership in international standards governance by the United States. In addition, this project will assist participant countries in adopting international standards for domestic policies and laws.

The Department of Defense (DoD) engages with ANSI and the private sector in collaborative standards activities such as the Alliance for Telecommunications Industry Solutions and the 3rd Generation Partnership Project (3GPP). In the context of the North Atlantic Trade Agreement (NATO) and other multinational organizations, the DoD experts routinely engage with personnel from over 70 countries on standardization matters related to national defense requirements, including participation in Standards Developing Organizations (SDO) activities, development of standardization policy and implementing standards to support defense capability and interoperability requirements.

The Department of Transportation (U.S. DOT) has many

engagements across a diverse and complex spectrum of regulatory and technical standardization activities including within CETs such as automation/autonomy and complementary Positioning, Navigation, and Timing (PNT). U.S DOT will continue to support advancement of standards benefitting safe, efficient, and interoperable transportation in cooperation with public and private sector stakeholder communities. For example, the Intelligent Transportation Systems (ITS) Program supports both private and public sector stakeholder participation in standards activities via multiple SDOs including SAE International, IEEE, the Institute for Transportation Engineers (ITE), ISO and others, including facilitating multi-SDO cooperation on multiple topics, including the Connected Transportation Interoperability (CTI) family of standards.

The U.S. Department of Energy (DOE) has a long history of leadership in international standardization efforts to accelerate the adoption of transformative science and technology solutions to energy, environmental, and nuclear challenges. Technical experts at DOE and its 17 National Laboratories provide critical input to new standards in areas ranging from hydrogen and energy storage, to biotechnology, artificial intelligence, and high-performance computing (HPC). DOE's experts work alongside participants from all over the world toward standards that are consistent with U.S. values and informed by the latest scientific and technological advancements. DOE's continued investments support the USG NSSCET through research, development, and demonstration (RD&D) and participation and workforce. DOE recognizes that standardization can accelerate the adoption of transformative science and technology solutions that are key to the success of its mission.

The U.S. National Science Foundation (NSF) revised its

Proposal and Award Policies and Procedures Guide (PAPPG) governing submission, review, and oversight of all proposals and awards to now explicitly encourage researchers' "participation in national and/or international standards development efforts" as an example of the broader impacts of the funding agency's investments in the nation's research and innovation ecosystem. Relatedly, through the "CHIPS and Science Act of 2022," NSF's new Directorate for Technology, Innovation and Partnerships is charged with investing in new pathways for translating research results to practice, and is considering steps toward one such pathway that would enable researchers to mature their technological and related innovations to inform standards development.

The Federal Bureau of Investigation (FBI) engages with domestic and international government partners, the private sector, academia, and non-government organizations to further public safety standards activities in groups such as the International Telecommunications Union (ITU), Internet Corporation for Assigned Names and Numbers (ICANN), and 3rd Generation Partnership Project (3GPP). Technical and policy experts at the FBI serve as members, consultants, and in leadership roles in the Standards Development Organizations (SDO) and regularly contribute public safety perspectives across a broad range of activities from emergency and law enforcement communications networks to stemming the flow of counterfeit devices to tackling domain name system (DNS) abuse.

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