Before the
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE
Washington, DC

In the Matter of	)	
	)	
Study on People's Republic of China	)	Docket No. 211026-0219
Policies and Influence in the Development	)	
Of International Standards for Emerging	)	
Technologies	)	

COMMENTS OF NCTA – THE INTERNET & TELEVISION ASSOCIATION & CABLELABS

INTRODUCTION

NCTA – The Internet & Television Association (NCTA) and CableLabs file these joint comments in response to the Department of Commerce, National Institute of Standards and Technology's (NIST) request for comments to inform a study of the People's Republic of China's (PRC) policies and influence in the development of international standards for emerging technologies[1] as required by Section 9414 of the National Defense Authorization Act for Fiscal Year 2021.

NCTA is the principal trade association of the cable television industry in the United States, which is a leading provider of residential broadband service to U.S. households. Its members include owners and operators of cable television systems serving nearly 80 percent of the nation's cable television customers, as well as more than 200 cable program networks. Cable service providers have invested more than $290 billion over the last two decades to deploy and continually upgrade networks and other infrastructure.

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[1] Study on People's Republic of China (PRC) Policies and Influence in the Development of International Standards for Emerging Technologies, 86 Fed Reg. 60,801 (Nov. 4, 2021) (NIST RFI).

CableLabs is the research, development, and innovation lab for the global cable industry, based just outside of Denver, Colorado with 63 network operator members serving approximately 200 million subscribers across five continents, with over half of its members also providing mobile services today.[2] Established in 1989 as a 501(c)(6) non-profit membership organization, CableLabs convenes industry stakeholders to develop CableLabs-specific specifications, such as DOCSIS® technology, which enables the delivery of broadband over cable networks. CableLabs is also the cable industry's expert body on standards and participates in over 25 standards bodies and industry consortia globally, including in wireless (e.g., 3GPP, TIP, O-RAN Alliance, WFA, WBA), wired (e.g., IETF, IEEE, ETSI), and security (e.g., M3AAWG, CSA, OCF).[3] The development of standards and specifications is key to the delivery of cable broadband and mobile services.

As described below, NCTA and CableLabs appreciate NIST's inquiry and urge NIST to work with industry partners to advance concrete measures for the United States government to enhance open and transparent, private sector-led global standards development processes, including by:

1. Incentivizing and promoting good governance of standards development organizations (SDOs);
2. Increasing and diversifying participation by U.S.-based companies in industry-led SDOs and consortia; and
3. Increasing support for U.S.-based pre-standards research and development activities.

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2 *See Member Companies*, CableLabs, https://www.cablelabs.com/about-cablelabs/member-companies (last visited Nov. 30, 2021).

3 *See* Kelton Shockey, *Driving toward 10G and Beyond: CableLabs Engagement in Standards Organizations and Industry Consortia*, CableLabs (Aug. 9, 2021), https://www.cablelabs.com/driving-toward-10g-and-beyond-cablelabs-engagement-in-standards-organizations-and-industry-consortia.

Voluntary, private sector-driven standard-setting processes play a critical role in promoting investment and innovation in today's global digital economy. They are also an increasingly crucial component of good public policy, because in the technology-based digital economy the flexibility and agility of industry-driven, consensus standards, specifications, and best practices is far superior to promoting interoperability, security, and accessibility than backward-looking, snapshot-based prescriptive rules. As a result, anything short of full participation in global standards-setting processes has adverse consequences not only for economic growth and technology leadership, but for good public policy.

U.S. companies have long been a driving force for global technology innovations because of billions of dollars of investment in research and development. U.S. companies have also for many years been leading participants in the international standards development efforts that lead to global scale and international markets for those U.S.-developed innovations. Although the global standards and specifications development process continues to serve strategic U.S. interests, the PRC's stated goal of dominating global standards processes as part of its strategy for economic and national security[4] poses a threat to the open and global nature of standards development. The United States government should support U.S.-led innovation and participation in SDOs and industry consortia while respecting the private-sector-driven nature of successful standards development.

[4] NIST RFI, 86 Fed. Reg. at 60,802 ("'Made in China 2025' is a strategic plan that was initiated in 2015 to reduce China's dependence on foreign technology and promote Chinese technological manufacturers in the global marketplace. . . . The 'China Standards 2035' project will most likely build upon Made in China 2025. The 'China Standards 2035' plan will lay out a blueprint for China's government and leading technology companies to set global standards for emerging technologies in areas such as artificial intelligence and advanced communications technology.").

I. Background: Standards Development Processes Work Best as an Open and Transparent Marketplace of Ideas

Innovation spurs the U.S economy and private sector advancement. New technologies are developed, tested, and offered to consumers worldwide every year based on the efforts of U.S.-based companies. The longstanding technological leadership, investment, and innovation provided by U.S.-based companies both contributes to and relies on their participation in industry-led SDOs and consortia both at home and internationally. These venues provide companies with concrete and expert-vetted opportunities to drive scale and adoption, as well as to ensure interoperability, security, and accessibility of new technologies. By and large, the existing open standards and specifications development processes work very well today, allowing for robust U.S. participation and providing U.S. companies with critical fora for ensuring their innovations can be widely commercialized. However, with increased PRC focus on influencing global standards in a way that disproportionately benefits Chinese companies, NIST appropriately inquires if the U.S. government should now do more "to mitigate the influence of the People's Republic of China and bolster United States public and private sector participation in international standards-setting bodies."[5]

Recognizing the success of the existing standards and specifications development models but also the PRC's ongoing efforts to dominate international standards development, U.S. policy should remain focused on supporting open and transparent private sector-led efforts, which accelerate innovation through the identification and adoption of technologies based on technical merit. Such processes are conducive to the core strengths and national interests of the U.S. private sector: innovation and competition. They also play an increasingly critical role in

[5] *Id.*

underpinning public-private partnership policy collaboration and initiatives on the security, interoperability, and accessibility of cutting-edge technologies.

The global information and communications technology market, ranging from connectivity infrastructure to phones to laptops to smart connected devices such as thermostats and sensors, is enabled by harmonized standards and specifications developed in industry-led SDOs and consortia. These standards drive economies of scale and lower prices for U.S. businesses and consumers while supporting rapid and continual innovation and technology commercialization. The economies of scale provided by globally harmonized standards and specifications also benefit U.S. companies and the U.S. economy by substantially increasing the availability of international markets for U.S.-based products and services that conform to those standards or specifications.

U.S. industry participation in SDOs and consortia is critical to enabling U.S.-based companies to drive new standards and technology development. Absent the robust participation of U.S.-based companies, stakeholders with different priorities may come to dominate the technology development and commercialization process. Given the fact that influencing standards development is central to China's national industrial policy, it is crucial for U.S. competitiveness and the future of global technological innovation that the U.S. government and other like-minded governments of free market economies promote the continued independence and success of industry-led standards and specification development models by taking the steps that NCTA and CableLabs outline in Section II below.

Standards development processes constitute an open and transparent marketplace of technical ideas and technological advances. These processes have long been and must continue to be an essential complement to the thriving global transparent marketplace for technology

products and services created by innovators based in the free markets of the United States and our partners. Below we outline three concrete recommendations for U.S. policy to ensure that this marketplace of technical ideas and innovative products and services continues to thrive through substantial participation and leadership by the private sector.

II. Recommendations

A. Incent and Promote Good Governance in Industry-Led International Standards Development Organizations and Pre-Standards Consortia

The U.S. government should continue to incent and promote good governance of industry-led SDOs, as described in OMB Circular A-119, as well as open and fair industry consortia, for strategically important technologies. By expanding support, such as grant funding and tax incentives, for U.S. company participation in SDOs that meet the guidelines for federal agency participation in SDOs, the federal government can solidify the U.S. industry's influence while ensuring that SDOs remain open and transparent and free from undue government influence. The U.S. government should also make such funding and support available for increased participation in industry consortia, even where the A-119 attributes may not fully apply.

As stated in OMB Circular A-119, the critical attributes of good governance within industry-led SDOs include:[6]

1. Openness: Industry-led standards are best developed through transparent processes, open to interested parties to meaningfully participate on a non-discriminatory basis. This should include openness with respect to participation at the policy development level and at every stage of development of the technical standards. The development organization

[6] Office of Mgmt. & Budget, Exec. Office of the President, Circular No. A-119 (Revised), at § 2(e) (2016) (OMB Circular A-119), *available at* https://www.whitehouse.gov/wp-content/uploads/2020/07/revised_circular_a-119_as_of_1_22.pdf.

should also seek to ensure participation of interested parties with limited resources – for example, new entrants and smaller companies.[7]

2. Balance of Interest: To truly capture the broad base of industry expertise, different perspectives must be represented in the standards development process. The SDO must have meaningful involvement from a broad range of parties, with no single interest dominating the decision-making. All interested parties should be provided with meaningful opportunities to contribute to the development of standards or specifications to ensure balanced representation.[8]
3. Due Process - Notice, Transparency, and Appeals: Participation must also be equitable for those involved. The SDO must adhere to the basic notions of due process, including notice, transparency, and appeal procedures. Notice and transparency require that interested parties have access to written policies and procedures, adequate notice of meetings and standards development, sufficient time to review drafts and prepare views and objections, and access to views and objections of other participants.[9] The SDO must also have a fair and impartial process for resolving conflicting views and for resolving substantive and procedural appeals.[10]

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7 *See id.* § 2.e.i.; *see also* ISO/IEC Guide 59:2019, ISO and IEC recommended practices for standardization by national bodies, §§ 4.1 & 4.3 (2019) (ISO/IEC Guide 59), *available at* https://www.iso.org/standard/71917.html.

8 *See, e.g.*, OMB Circular A-119, § 2.e.ii & Annex A; ISO/IEC Guide 59, § 6.5.

9 *See, e.g.*, OMB Circular A-119, § 2.e.iii; *see also* ISO/IEC Guide 59, §§ 4.1, 4.3 (emphasizing the need for written procedures to govern the standards development process that are reasonably available to interested parties and notice appropriate to afford interested parties a chance for meaningful contributions).

10 *See, e.g.*, OMB Circular A-119, § 2.e.iv; ISO/IEC, Guide 59, § 4.2 (explaining that "written procedures should contain an identifiable, realistic and readily available appeals mechanism for the impartial handling of any substantive and procedural complaints").

4. Consensus: Decisions must also be reached in a fair manner. The development organization must use a consensus decision-making process that involves interested stakeholders. "Consensus" is defined as "general agreement, but not necessarily unanimity."[11] The organization must consider comments and objections using "fair, impartial, open, and transparent processes."[12]

5. Intellectual Property Rights Policy: Intellectual property rights (IPR) must be clearly addressed upfront both to ensure broad participation in the standards development process and to reduce the barriers to adoption of the standard. The development organization must have an IPR policy that requires participants to: (i) disclose any necessary patents; and (ii) license those patents to implementers of the standard on nondiscriminatory and royalty-free or reasonable royalty terms (and to bind subsequent owners of standard-essential patents to the same terms). The IPR policy should be easily accessible, set out clear rules governing the disclosure and licensing of the relevant intellectual property, and take into account the interests of all stakeholders, including the IPR holders and those seeking to implement the standard.[13]

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[11] OMB Circular A-119, § 2.e.v; *see also* A standard for standards – principles of standardization § 3.16 (British Standards Publication 2011), *available at* https://www.bsigroup.com/LocalFiles/en-GB/standards/bs0-pas0/BSI-BS0-Standard-for-Standards-UK-EN.pdf (defining consensus as "general agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments"); Standards Council of Canada, *Requirements & Guidance - Accreditation of Standards Development Organizations* 10, 17-24 (2019) (SCC Requirements and Guidance 2019), *available at* https://www.scc.ca/en/system/files/publications/SIRB_RG_SDO-Accreditation_v4_2021-03-04.pdf ("Consensus does not imply unanimity.").

[12] OMB Circular A-119, § 2.e.v.; s*ee generally*, ISO/IEC Guide 59, §§ 1.4, 4.1-.2; SCC Requirements and Guidance 2019 at 21; World Trade Organization, *The WTO Agreement Series: Agreement on Technical Barriers to Trade* 122-24 (2014), *available at* https://www.wto.org/english/res_e/publications_e/tbttotrade_e.pdf.

[13] OMB Circular A-119, § 2.d; *see also* 2012 O.J. (L316) 29 § 4(c).

Further, it is critical that U.S. policy also recognize that many important technological developments occur in formal industry consortia that do not themselves follow all the guidelines of OMB Circular A-119 but are instead designed to advance technical specifications in discrete purpose-specific technology arenas so as to contribute to the future work of SDOs that do meet the guidelines. U.S. companies' participation in such industry consortia is as integral to U.S. technological leadership as participation in SDOs. Indeed, industry consortia are instrumental to accelerating technological development and innovation. American and global companies often turn to industry consortia as more nimble standards or specifications development fora.[14] To increase the efficiency and speed of technological innovation, these consortia often meet a majority of the guidelines in OMB Circular A-119, while membership may be limited to the most knowledgeable and relevant companies in a particular technical setting or specific industry. Such membership restrictions do not lead to benefits for any particular company, country, or geographic market. Thus, federal government support for U.S.-based companies to participate in both SDOs and purpose-specific consortia, for instance through funding or tax incentives as discussed below, should be based on the organizations meeting the core principles of the OMB Circular A-119 guidelines, while allowing for small variances that do not create benefits for a particular participant or geography.

B. Increasing and Diversifying U.S. Participation in Industry-Led SDOs and Consortia

NCTA and CableLabs believe that the federal government should take steps to encourage participation by U.S.-based companies in both industry-led SDOs and consortia. Minor changes to policy and the creation of funding opportunities will only increase participation by U.S.-based

[14] *See, e.g.*, O-RAN Alliance, https://www.o-ran.org/ (last visited Nov. 30, 2021) and CableLabs, https://www.cablelabs.com/ (last visited Nov. 30, 2021), which each have membership requirements based on a specific industry.

companies, leading to a more diverse set of views among SDO and consortia participants. Such actions will also result in strengthening the presence of U.S. national security and innovation tenets in these organizations.

i. Create a Robust Standards Development Exemption to Export Controls and Trade Sanctions

As an indispensable prerequisite to all U.S. government support for U.S. companies' participation in standards development processes, the U.S. government should broadly and clearly exempt standards development activities—including the activities of industry specification-setting consortia—from the prohibitions associated with the Entity List and any other export controls and trade sanctions. Such restrictions severely chill U.S. companies' participation in SDOs and in various specification-setting consortia that play an important role in contributing to and defining technical standards, including security standards. These restrictions also inhibit U.S.-based industry consortia from attracting the global participation that is necessary for widespread adoption and the associated economies of scale. To drive global economies of scale and reduce intellectual property risks, international SDOs and consortia should include participation from a wide diversity of interested and qualified stakeholders. Moreover, wider participation in SDOs and consortia leads to greater scrutiny and technical engagement, leading in turn to better, more effective, more secure, and more resilient information and communications technologies.[15] The U.S. government should therefore avoid policy restrictions that chill U.S. participation and limit robust global engagement in SDOs and specification-setting consortia.

[15] *See* NCTA – The Internet & Television Association, Comments on Interim Final Rule Regarding Release of "Technology" to Certain Entities on the Entity List in the Context of Standards Organizations, Docket BIS 2020-0017 (filed Aug. 17, 2020).

ii. Create Funding Opportunities and More Favorable Tax Treatment to Incent U.S. Company Participation

Organizations of all sizes face cost barriers to participation in industry-led SDOs and consortia. Not only do membership fees and the cost of travel to SDO or consortia meetings present a challenge, the reallocation of employee time to participate in the SDO or consortium can divert an expert from a critical project. As COVID-19 restrictions are being lifted, SDOs and consortia are again scheduling in-person meetings and events that take up more employee time than regularly scheduled virtual meetings, including because of travel to and from the meetings, which take place all over the world. In order to decrease the barriers to participation by a variety of U.S.-based organizations, the federal government should provide funding and/or incentives to increase and diversify U.S. participation in industry-led, international SDOs and industry consortia, with a particular focus on strategically valuable emerging technologies (e.g., 6G, quantum computing, and artificial intelligence).[16] Such funding should be structured in a manner to increase not only the number of representatives from U.S. organizations, including academics, but also to encourage a wider variety of organizations to participate.

We recommend that for an organization to be eligible for such funding—whether in the form of government grants or tax incentives—the SDO or industry consortium that the organization is part of should follow the good governance attributes described above. The federal government should seek to offset the cost of participation enough that small and non-profit organizations may participate or increase their participation. New grants and/or tax incentives could address costs such as:

[16] *See* William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, § 9202(a)(1), 134 Stat. 3388, 4788 (establishing the Public Wireless Supply Chain Innovation Fund). Funding is allocated in the pending United States Innovation and Competition Act of 2021, S. 1260, 117th Cong. (2021).

1. The salaries and wages for personnel directly participating;
2. The cost of travel and accommodations for in-person events;
3. The cost of hosting SDO or industry consortia events in the U.S.; and
4. Membership fees or other direct expenses for a minimum of five years associated with participation.

By providing direct financial support and/or tax incentives to organizations that participate, the federal government could incent and quickly increase U.S.-based representation in industry-led SDOs and consortia, while also remaining true to the fundamental guiding principle of industry leadership in standards development.

iii. Ease United States Entry Requirements for Participants

In order to spur more U.S.-based organizations to participate in international SDOs and consortia and boost businesses hard hit by COVID-19, the federal government should ease U.S. entry requirements for SDO and consortia participants. The ability to host SDO and consortia conferences, events, and meetings in the United States not only reduces cost of participation for U.S.-based participants but brings jobs and income to the host location. The hotel, travel, and restaurant industries benefit greatly from conferences. By easing entry restrictions for international participants in SDO and consortium meetings, the federal government can make it easier for U.S. SDOs and consortia with international membership to host events and meetings in the United States.

C. Increasing U.S.-based Pre-Standards Research and Development Activity

There are a number of steps the federal government can take to remove barriers to pre-standards research and development work in the United States. Government incentives encouraging research and development work in areas of national interest leads to additional

innovations that can then be standardized and commercialized worldwide. As discussed above, pre-standards activities supporting R&D and specifications development, including by industry consortia, increase the efficiency and speed of standardization for new technologies. By increasing support for pre-standards efforts by U.S. companies, the United States can remain a leader in emerging technologies, quickly bringing the benefits of next-generation technology to consumers, businesses, and the government.

i. Create Funding Opportunities and Tax Incentives Related to Pre-Standards Research and Development

Reducing cost barriers for organizations that conduct pre-standards research and development will encourage a more diverse set of U.S.-based organizations to take up this important activity. Through the provision of grant funding or tax incentives, the federal government can help accelerate the development of emerging technologies and specifications by U.S- based companies, organizations, and industry consortia. The new technologies and associated specifications from these efforts will provide the foundation and direction for the next generation of international standards and increase U.S. industry's influence in these sectors.

ii. Intellectual Property Rights Reform

A key input to influencing the direction of international standards is the patents to the essential technologies on which the standards are built. The federal government should take steps to ensure that U.S.-based companies have the resources and incentives to appropriately protect pre-standards technologies as early as possible and better arm U.S. interests in the standards development process. At the same time, the federal government should ensure that licenses to standard essential patents are made available on reasonable and non-discriminatory (RAND) terms and discourage patent holdups. Additionally, the U.S. government should

examine the rise of patent assertion entities and patent litigation funding and their impact on standards adoption.

CONCLUSION

Although existing private-sector led open standards development processes are robust and working well, NCTA and CableLabs urge NIST to take further steps to examine how the United States government can promote good governance of standards developing organizations (SDOs), increase and diversify the participation by U.S.-based companies in industry-led SDOs and consortia, and increase support for U.S.-based pre-standards research and development activities.

/s/ Mark Walker

Mark Walker
CableLabs
858 Coal Creek Circle
Louisville, CO 80027

/s/ Rick Chessen

Rick Chessen
Neal M. Goldberg
Loretta Polk
NCTA – The Internet & Television Association
25 Massachusetts Avenue, NW, Suite 100
Washington, D.C. 20001