Before the Department of Commerce
National Institute of Standards and Technology
Washington, D.C.

In the Matter of	)	
	)	
Study on People's Republic of China	)	Docket Number: 211026–0219
(PRC) Policies and Influence in the	)	
Development of International Standards	)	
for Emerging Technologies	)	

COMMENTS OF CTIA

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December 6, 2021

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I. INTRODUCTION AND SUMMARY

CTIA[1] welcomes the opportunity to respond to the Department of Commerce's National Institute of Standards and Technology ("NIST") Request for Information ("RFI") on the People's Republic of China's ("PRC's") approach to the development of international standards for emerging technologies.[2] CTIA's members represent organizations across the wireless ecosystem that lead global standardization processes and develop technical specifications to ensure that communications networks and products are built securely and work together seamlessly.

Section 9414 of the National Defense Authorization Act ("NDAA") of 2021 directed NIST to support a study that would make recommendations with respect to "the effect of the policies of the People's Republic of China and coordination among industrial entities within the People's Republic of China on international bodies engaged in developing and setting international standards for emerging technologies."[3] In June 2021, NIST awarded a contract to Makwa Global LLC to conduct this study and develop a report. Comments submitted to this RFI

[1] CTIA® (www.ctia.org) represents the U.S. wireless communications industry and the companies throughout the mobile ecosystem that enable Americans to lead a 21st-century connected life. The association's members include wireless carriers, device manufacturers, suppliers as well as apps and content companies. CTIA vigorously advocates at all levels of government for policies that foster continued wireless innovation and investment. The association also coordinates the industry's voluntary best practices, hosts educational events that promote the wireless industry, and co-produces the industry's leading wireless tradeshow. CTIA was founded in 1984 and is based in Washington, D.C.

[2] *Study on People's Republic of China (PRC) Policies and Influence in the Development of International Standards for Emerging Technologies*, Request for Information, 86 Fed. Reg. 60801 (Nov. 4, 2021) ("RFI"), https://www.federalregister.gov/documents/2021/11/04/2021-24090/study-on-peoples-republic-of-china-prc-policies-and-influence-in-the-development-of-international.

[3] William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283, 134 Stat. 4821 (2021).

are intended to help inform this report, which is due to Congress by January 2023.[4] The RFI raises concerns that the PRC has sought to dominate international standards bodies and distort outputs to serve its national interest. The RFI poses questions about the *Made in China 2025* and the *Chinese Standards 2035* plans and their influence on international standards-setting.[5]

Potential undue influence in standards-setting organizations should be taken seriously by both the private sector and the U.S. federal government and CTIA is pleased to provide recommendations to address concerns expressed in the RFI. CTIA recommends that:

- The U.S. should champion industry-led standards and best practices. Consensus-based standards are developed by a multitude of organizations in the technology sector, and the model works well for U.S. interests.

- The U.S. government can play an important role in third-party standards development, with appropriate agencies having delineated roles as supporters of private sector work in relevant venues.

- The U.S. government should work with industry and other stakeholders, like ATIS and others, to discuss ways to strengthen and defend the private sector-led technical standardization model.

The U.S. government should aim to balance the PRC's increased engagement in standards development with an increase in U.S. industry involvement.

II. PRINCIPLES FOR SUCESSSFUL STANDARDS DEVELOPMENT ARE WELL ESTABLISHED.

A. International Standards Are Vital to Seamless, Interoperable Wireless Technologies, and the Attributes of Successful Standards Organizations Are Widely Embraced.

[4] *See Sources Sought Notice – Development of International Standards for Emerging Technologies*, System for Award Management, (May 12, 2021), https://sam.gov/opp/89b5d0c2922e415bb9900ae00c28d12b/view.

[5] *See, e.g.*, Press Release, 'Made in China 2025' plan issued, State Council of the People's Republic of China (May 19, 2015), http://english.www.gov.cn/policies/latest_releases/2015/05/19/content_281475110703534.htm.

U.S. law and policy have long embraced global standards processes that prioritize transparency, broad global inputs, and technical innovation rather than top-down government controls. Standards should be developed through open processes that are transparent and driven by technical experts, advancing compatibility, innovation, and security. No country or company should control or unduly shape the direction of international standards processes. Many standards organizations are exemplary in following such principles. As described below, the 3rd Generation Partnership Project ("3GPP")—which sets technical specifications for cellular networks, including 5G and future wireless networks—functions in this way, including in its use of an iterative process to develop 5G standards.[6]

Questions have been raised about the growing role of the PRC and Chinese companies in standards development, which is consistent with the PRC's 2025 and 2035 strategies to drive global adoption of standards favorable to Chinese companies and government. Accordingly, concerns raised by Congress in the NDAA of 2021 and explored by NIST in this proceeding are legitimate. China has made clear its intentions to drive standards-setting in support of its aspirations to lead global technology development. To this end, the PRC and Chinese companies have established a large presence in several standards-setting venues covering the communications sector. COVID-19 has exacerbated challenges in following the well-established positive models for standards development—because meetings are no longer in person—and truncated online sessions challenge consensus building.

[6] Release 16 is complete, and Release 17 will be complete in June 2022. *See Release 16*, 3GPP (last updated July 3, 2020), https://www.3gpp.org/release-16; *see also Release 17*, 3GPP (last updated Mar. 29, 2021), https://www.3gpp.org/release-17. Releases 18 and 19 are also open. *See 3GPP Portal*, 3GPP (last visited Nov. 23, 2021), https://portal.3gpp.org/#/55934-releases.

B. The Model Standards-Setting Body for the Wireless Industry Is 3GPP, While Balance May be a Concern for Others, such as the ITU.

1. 3GPP Is the Exemplar Standards-Setting Body for the Wireless Industry and its Procedural Protections and Technical Primacy Should be Preserved.

The key standards-setting body for the wireless industry is the 3GPP, notable recently for its central role in standards development for 5G.[7] This organization unites seven telecommunications standards-setting bodies (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, and TTC), known as "Organizational Partners" and has provided their members with a stable environment to produce the Reports and Specifications for 3G, 4G, and 5G technologies. 3GPP has a number of Working Groups housed within Technical Specification Groups.[8] 3GPP is governed by the Third Generation Partnership Agreement (Annex 40).[9]

At 3GPP, private sector entities develop standards through consensus. 3GPP procedures are transparent and fair, promoting technical merit over political influence. Participation in 3GPP is accomplished through three categories of membership: (1) Organizational Partnerships are open to any "Standards Organization" irrespective of its geographical location, which is committed to "all or part of the 3GPP scope" and has authority to set standards within 3GPP scope, among other requirements.[10] Organizational Partners have the collective responsibility to "conduct compliance training at least annually" for elected leadership.[11] (2) Entities registered as members of an Organizational Partner may become Individual Members if they can

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[7] 3GPP, *About 3GPP*, https://www.3gpp.org/about-3gpp/about-3gpp.

[8] 3GPP, *Specifications Groups*, https://www.3gpp.org/specifications-groups.

[9] 3GPP, *About 3GPP*, https://www.3gpp.org/about-3gpp/about-3gpp.

[10] 3GPP, 3GPP WORKING PROCEDURES 9 (April 29, 2021), https://www.3gpp.org/ftp/Information/Working_Procedures/3GPP_WP.pdf.

[11] *Id.* at 11.

"contribute technically or otherwise" and will "use 3GPP results to the extent feasible."[12] (3) Market Representative Partners are entities invited to offer market advice.[13] As for decision-making, 3GPP bodies "shall endeavor to reach consensus on all issues."[14]

Quantification of PRC-related presence in standards-setting bodies is complex. Chinese businesses participate in 3GPP with a significant presence, but at this point commentators and CTIA members generally do not see those businesses as driving distorted outcomes in the organization. According to a recent report, the PRC has a higher percentage of the 3GPP voting members than the United States does.[15] However, overall membership may not be the most relevant metric when various working groups may have vastly different long-term impacts on the sector.

The success of 3GPP derives in large part from its being *a non-governmental organization* with a technical mission and practice, without the political dynamics that attend traditional intergovernmental organizations. Members of 3GPP may consult with government agencies in developing positions, but 3GPP is undeniably a private sector organization, driven by private sector leadership and participants. Private sector leadership in 3GPP should not be interfered with or disturbed by government interventions, which could have unintended impacts or delay ongoing technical specifications in critical technologies.

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[12] *Id.* at 10.

[13] *Id.* at 9. The 3GPP Project Coordination Group leadership body is structured to achieve balance by limiting the numbers of participants from any one Partner and ensuring successive chairs and vice-chairs are not from the same Organizational Partner or region. *Id.* at 13.

[14] *See, e.g.*, *id.* at 14, 18.

[15] *See* Giulia Neaher et. al, *Standardizing the Future: How Can the United States Navigate the Geopolitics of International Technology Standards?*, Atlantic Council, at 12 (Oct. 2021), https://www.atlanticcouncil.org/in-depth-research-reports/report/standardizing-the-future-how-can-the-united-states-navigate-the-geopolitics-of-international-technology-standards/.

2. Conversely, the ITU Faces Balance Issues that the U.S. Government Is Justified in Addressing Aggressively.

In contrast, the United Nations' International Telecommunication Union's ("ITU's") work on technical standards development reveals room for improvement in its implementation of guidelines for successful standards development. The ITU is an *intergovernmental* organization with associate members from industry that may participate but do not vote. In the ITU, governments are the leading participants. The ITU's activities include its important work in the Radiocommunication Sector regarding global spectrum harmonization and in the Development Sector regarding expanded global connectivity.

The development of standards in the ITU, known as Recommendations,[16] is carried out in the Standardization Sector ("ITU T-Sector") within Study Groups ("SGs") on various topics. Challenges related to the role of the PRC in ITU standards development have arisen in this context. There are over 4,000 ITU-T Recommendations in force on topics such as next-generation networks, future networks, convergence of fixed/mobile services, web services, cloud computing, ubiquitous sensor networks, e-health, climate change, and IP-related issues. ITU-T SGs are led by chairs and vice-chairs. The ITU-T SGs consider study questions that have been adopted in higher level meetings of the ITU-T Sector and include as their input reports led by editors. Work on study questions often is led by vice chairs—who may be from government or the private sector—and facilitated by rapporteurs and document editors. ITU-T SG websites identify the parties filling these roles.[17] Higher-level decisions occur at the Telecommunication

[16] ITU, *ITU-T Recommendations and other publications*, https://www.itu.int/en/ITU-T/publications/Pages/default.aspx.

[17] *See, e.g.*, ITU, *SG13: Future networks, with focus on IMT-2020, cloud computing and trusted network infrastructures*, https://www.itu.int/en/ITU-T/studygroups/2017-2020/13/Pages/default.aspx.

Standardization Advisory Group ("TSAG"),[18] the quadrennial World Telecommunications Standardization Assembly ("WTSA"),[19] and the overall ITU decisional body, the quadrennial Plenipotentiary Conference.[20]

In the ITU-T, the role of the PRC's government and Chinese industry appears to be imbalanced in some respects, especially since the carriers in China are state-owned enterprises. The PRC has built a powerful presence in the ITU-T SGs, as illustrated by examples of ITU-T SGs on key topics for new technologies during the 2017–20 study period. In ITU-T SG13 on Future Networks, PRC government and industry representatives hold 3 of the 22 chair/vice chair positions, are rapporteurs on 11 of the 13 study questions, and are editors on 92 of the 124 reports.[21] In ITU-T SG17 on Security, PRC government and industry representatives hold 2 of the 20 chair/vice chair positions, are rapporteurs on 12 of the 13 study questions, and are editors on 48 of the 84 reports.[22] The roles of rapporteurs and editors typically are closely tied to the

[18] ITU, *TSAG at a glance*, https://www.itu.int/en/ITU-T/about/groups/Pages/tsag.aspx.

[19] ITU, World Telecommunication Standardization Assembly (WTSA-20), https://www.itu.int/en/ITU-T/wtsa20/Pages/default.aspx.

[20] Press Release, Agreement signed between UN tech agency and host country Romania for ITU Plenipotentiary Conference 2022, ITU (June 30, 2021), https://www.itu.int/en/mediacentre/Pages/pr07-2021-PP22-HC-agreement.aspx.

[21] *See* ITU, *SG13 - Management Team (Study Period 2017-2020)* (last visited Nov. 29, 2021), https://www.itu.int/net4/ITU-T/lists/mgmt.aspx?Group=13&Period=16; ITU, *SG13 - List of Questions and Rapporteurs (Study Period 2017-2020)* (last visited Nov. 29, 2021), https://www.itu.int/net4/ITU-T/lists/loqr.aspx?Group=13&Period=16; ITU, *SG13 - List of Editors (Study Period 2017-2020)* (last visited Nov. 29, 2021), https://www.itu.int/net4/ITU-T/lists/editors.aspx?Group=13&Period=16.

[22] *See* ITU, *SG17 - Management Team (Study Period 2017-2020)* (last visited Nov. 29, 2021), https://www.itu.int/net4/ITU-T/lists/mgmt.aspx?Group=17; ITU, *SG17 - List of Questions and Rapporteurs (Study Period 2017-2020)* (last visited Nov. 29, 2021), https://www.itu.int/net4/ITU-T/lists/loqr.aspx?Group=17&Period=16; ITU, *SG17 - List of Editors (Study Period 2017-2020)* (last visited Nov. 29, 2021), https://www.itu.int/net4/ITU-T/lists/editors.aspx?Group=17&Period=16.

choice of topics for standardization and drafting of text for proposed standards at all stages. According to a recent study of the roles of nine historically major countries in ITU-T SGs, China holds 28% of rapporteur positions, while the United States holds 4%.[23]

While it is hard to draw conclusions about outcomes from raw numbers of participants based on nationality, the level of Chinese government participation in key efforts reasonably is cause for concern. With high levels of PRC participation in ITU-T, it may be difficult for the U.S. and other countries to exert the same level of influence over proposed standards topics and substance. CTIA provides suggestions herein to assist in responding to the PRC's involvement in standards organizations. As discussed below, the U.S. government should be even more active in the ITU to help address disparities and possible inconsistencies with good principles for standards development. The U.S. government should work to encourage the ITU-T to focus on telecommunications standards and should prioritize reform of ITU-T procedures to ensure consensus on new areas of work before they are pursued. The U.S. government could work to support greater industry involvement in ITU standards development where identified by the private sector as relevant and helpful.

3. Other Standards-Setting Bodies Generally Follow 3GPP's Lead and Provide Examples of What the U.S. Government Should Champion.

Numerous other standards-setting bodies are active in areas relevant to the wireless industry. The Internet Engineering Task Force ("IETF") and International Organization for Standardization ("ISO") are among them, and generally track the practices of an effective and balanced standards-setting body.

IETF: IETF is an international community of network designers, operators, vendors, and researchers concerned with the evolution of Internet architecture and the smooth operation of the

[23] Neaher et. al, *supra* n.17, at 13.

Internet.[24] The technical work of the IETF is done in Working Groups,[25] which are organized by topic into Areas.[26] Other Groups support the technical work of the working groups.[27] The IETF has a mission statement and principles.[28]

IETF's mission statement and principles include an "open process," enabling any interested person to participate.[29] IETF supports this open process through public internet availability of documents, working groups mailing lists, and meeting minutes.[30] The principle of "technical competence" includes the expectation that the IETF will produce documents on issues within its technical competence, and IETF output will be designed to sound network engineering principles. Decision-making occurs under the principle of "rough consensus."[31] These principles are summarized in working group guidance: "The IETF has basic requirements for open and fair participation and for thorough consideration of technical alternatives."[32]

ISO and IEC: The wireless industry also uses standards developed by the ISO and the International Electrotechnical Commission ("IEC").[33] Both organizations have focused on good governance of standards development and publish the guidelines that they follow.

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[24] IETF, *Who we are*, https://www.ietf.org/about/who/.

[25] IETF, *Working groups*, https://www.ietf.org/how/wgs/.

[26] IETF, *IETF Areas*, https://www.ietf.org/topics/areas/.

[27] IETF, *Groups*, https://www.ietf.org/about/groups/.

[28] IETF, *Mission and principles*, https://www.ietf.org/about/mission/.

[29] IETF Network Working Group, *A Mission Statement for the IETF* (last updated Oct. 14, 2015), https://datatracker.ietf.org/doc/rfc3935/.

[30] *See id.*

[31] IETF, *Mission and principles*, https://www.ietf.org/about/mission/.

[32] IETF Network Working Group, *IETF Working Group Guidelines and Procedures* (last modified Sept. 18, 1998), https://www.rfc-archive.org/getrfc?rfc=2418#gsc.tab=0.

[33] ISO, *Structure and Governance* (last visited Nov. 15, 2021), https://www.iso.org/structure.html.

NISTIR 8007, *A Review of U.S.A. Participation in ISO and IEC*,[34] provides "historical information on the extent of U.S.A. participation and leadership roles in two private-sector international standardization bodies, perspectives on the organizations involved, the present role of international standards in world trade, and the correlation between the U.S.A. position in international standardization activities and world trade."[35] NISTIR 8007 covers U.S. participation in ISO and IEC for the period from 1966 to 2012. It includes a brief overview of each standards-setting body and reviews the roles of NIST and American National Standards Institute ("ANSI") in standards-developing activities. As a sign of relevance of ISO standards to the U.S., NISTIR 8007 includes a new section "Referencing ISO and IEC Standards in U.S.A. Regulations" that illustrates a significant increase in the number of ISO and IEC standards incorporated by reference into regulations.[36]

ISO and IEC publish rigorous processes and procedures for the development of international standards. ISO and IEC procedures have common requirements as well as standards-setting-body-specific requirements.[37] The ISO Code of Conduct for the technical work ("ISO Code") is an "obligation for participation in ISO committees and their subgroups that

[34] NIST, NISTIR 8007, A Review of U.S.A. Participation in ISO and IEC (June 2014), https://www.nist.gov/system/files/nistir_8007-reviewofusparticip_isoiec-2014_0.pdf.

[35] *Id.* at 1.

[36] *Id.* at 27.

[37] *See*, *e.g.*, ISO/IEC Directives Part 1 + IEC Supplement (May 2021), https://www.iec.ch/members_experts/refdocs/iec/isoiecdir1-consolidatedIECsup%7Bed17.0%7Den.pdf; ISO/IEC Directives, Part 1, Consolidated ISO Supplement — Procedures for the technical work — Procedures specific to ISO (last accessed Nov. 15, 2021), https://isotc.iso.org/livelink/livelink/fetch/2000/2122/4230450/4230452/Consolidated_ISO-IEC_Part-1_%28E%29_2021.pdf?nodeid=21825221&vernum=-2.

work in the framework of ISO/IEC Directives."[38] The ISO Code's General Principles require participants to "Act in good faith and with due care and diligence" and "[a]void collusive or anticompetitive behavior."[39] The ISO Code also contains a commitment to "Uphold consensus and governance."[40] It states, "We will uphold the key principles of international standardization: consensus, transparency, openness, impartiality, effectiveness, relevance, coherence, and the development dimension."[41] IEC has published a code of conduct with similar provisions.[42]

While there are numerous standards-setting bodies, NIST should recognize that 3GPP appears to be the most meritocratic, balanced, and technically oriented. Any actions the federal government takes should prioritize protecting the best attributes of existing standards-setting bodies and championing values of transparency and meritocracy. Efforts to deal with more politically charged standards-setting bodies, such as the ITU-T, should be carefully considered and aligned with a broader federal and trusted international ally strategy, discussed below. The U.S. government should consult with the private sector before considering any interventions at private sector-led standards-setting bodies, including 3GPP, IETF, ISO, or others.

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[38] The ISO Code of Conduct for the technical work at 2 (last accessed Nov. 15, 2021), https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100397.pdf.

[39] *Id.* at 4.

[40] *Id.* at 5.

[41] *Id.*

[42] IEC Code of conduct for technical work (last accessed Nov. 15, 2021), https://storage-iecwebsite-prd-iec-ch.s3.eu-west-1.amazonaws.com/2021-09/content/media/files/iec_2021_code_of_conduct_a5_en_lr_0.pdf. Participants shall "Act in good faith, with due care and diligence, respectful of the mandate and related rules and responsibilities as stated in the *ISO/IEC Directives*." *Id.* at 4. Participants shall also "Avoid collusive or anticompetitive behaviour." *Id.* at 6.

III. THE PRC'S STRATEGIC PLANS TO SEEK LEADERSHIP IN TECHNOLOGY AND STANDARDS MERIT ONGOING VIGILANCE BY THE UNITED STATES.

The RFI discusses the PRC's *Made in China 2025* and *China Standards 2035* plans. In its plans, the PRC has publicly stated its intention to shape standards organizations and to emerge as a technological leader. The PRC seeks to be a leader in standards to benefit its economy. The RFI explains that the *Made in China 2025* plan aims to "reduce China's dependence on foreign technology and promote Chinese technological manufacturers in the global marketplace" by the year 2025. Key industries include next-generation information technologies, such as Artificial Intelligence ("AI"), Internet of Things, and smart cities and manufacturing.[43] Among the 2020 goals was the PRC becoming a leader in 5G international standards, technology, and industry. The 2025 goals for wireless mobile communications were international market shares for 40% of mobile telecommunications system equipment, 45% of mobile terminals, and 20% of mobile terminal chips.[44]

Similarly, *China Standards 2035* "will lay out a blueprint for China's government and leading technology companies to set global standards for emerging technologies" in key areas such as AI and advanced communications technology.[45] The document is expected to include a plan to promote a new generation of standards systems for information technology. This would include developing standards guidance documents for emerging technologies such as 5G, blockchain, the Internet of Things, new cloud computing, big data, new artificial intelligence,

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[43] *See generally*, U.S. Chamber of Commerce, Made in China 2025: Global Ambitions Built on Local Protections (2017), https://www.uschamber.com/assets/archived/images/final_made_in_china_2025_report_full.pdf.

[44] *Id.* at 66.

[45] RFI, 86 Fed. Reg., at 60,802.

and new smart cities.[46] The PRC plans to leverage participation in standards-setting bodies to produce more international standards proposals, reach an improved level of internationalization of Chinese standards, and accelerate China's advantageous technical standards.[47]

An assessment should be made about how to maintain the effective, industry-led model of standards development, as well as whether the current U.S. approach to standards development is sustainable in the long term and adequately addresses the risk of imbalance in the ITU spreading to standards-setting bodies such as 3GPP, IETF, and ISO. It is important to take the PRC's plans and objectives at their word and to carefully monitor its engagement in standards development. The PRC's implementation of its goals ought to be properly understood, so that concerns are neither exaggerated nor ignored.

IV. THE U.S. GOVERNMENT AND PRIVATE SECTOR CAN BOLSTER PARTICIPATION IN INTERNATIONAL STANDARDS-SETTING BODIES AND MITIGATE POTENTIAL UNDUE INFLUENCE.

A. CTIA Has Long Championed Industry Participation in Standards-Setting Bodies.

CTIA and its members are active in global standards development, promoting compatible and secure networks and devices and have been actively engaged with 5G specifications and future technologies. CTIA is a "Market Representation Partner" in 3GPP, which enables the

[46] Emily de La Bruyère & Nathan Picarsic, China Standards 2035: Beijing's Platform Geopolitics and "Standardization Work in 2020," Horizon Advisory (2020) (translating China's "Main Points of National Standardization Work in 2020"), https://www.horizonadvisory.org/china-standards-2035-first-report. Horizon Advisory explains that "The definitive, final China Standards 2035 strategic document has not yet been published. But the 'Main Points of National Standardization Work in 2020' . . . offers a preview – and likely a roadmap for implementation of the eventual, final plan." *Id.* at 6.

[47] *Id.* at 21.

organizations to "offer market advice to 3GPP and to bring into 3GPP a consensus view of market requirements (e.g., services, features and functionality) falling within the 3GPP scope."[48]

CTIA recognizes the vital role of 5G standards and specifications developed through 3GPP. [49] Thanks to a private sector-driven approach, the U.S. has the fastest 5G speeds and is the largest country with three nationwide 5G networks. Our continued commitment to innovative, private sector-led 5G efforts will continue to unlock our 5G economy, boost wireless investment, and help push ahead of key 5G competitors.[50]

CTIA understands the importance of standards to innovation and the critical role of good governance practices in standards development because it maintains its own Certification Program. Working groups—made up of device manufacturers, providers, and other stakeholders—create a test plan to verify that a device meets certain requirements. Once a test plan is released, participating companies send their devices to an authorized test lab to begin the certification process. "The wireless industry's efforts to bring together a diverse set of stakeholders to establish technological best practices has led to smoother transitions between generations of wireless, and given manufacturers expectations of interoperability that they can rely on in markets around the world."[51]

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[48] 3GPP, *Partners*, https://www.3gpp.org/about-3gpp/partners.

[49] *See* Tom Sawanobori, *Release 16 Brings the Full Power of 5G One Step Closer*, CTIA (July 8, 2020), https://www.ctia.org/news/blog-release-16-brings-the-full-power-of-5g-one-step-closer.

[50] *See* Nick Ludlum, *Five Key Themes from the CTIA 5G Summit*, CTIA (Nov. 5, 2020) https://www.ctia.org/news/blog-five-key-themes-from-the-ctia-5g-summit.

[51] *See* CTIA, *Wireless Standards and Certification: A Brief Explainer* (Feb. 6, 2020), https://www.ctia.org/news/blog-wireless-standards-and-certification-a-brief-explainer.

B. Congress Has Expressed Interest in Strengthening U.S. Leadership in Standards-Setting Bodies.

Congressional interest in strengthening U.S. leadership in global standards-setting has been expressed in the context of the 2022 NDAA. The NDAA bill—H.R. 4350—passed by the House of Representatives on September 23, 2021, includes Section 846: *Support for Industry Participation in Global Standards Organizations*. This section would establish a grant program for small businesses to participate in standards-setting body meetings and proceedings.[52] In addition, Section 6499D on *Representation and Leadership of the United States in Communications and Standards-Setting Bodies* directs the Department of Commerce to equitably encourage participation in standards-setting bodies—including ISO and 3GPP—and offer technical expertise to companies and other relevant stakeholders.[53] The NDAA has yet to pass the Senate, but current text reveals congressional support for more industry participation in standards-setting bodies.

C. The Federal Government Can Strengthen Private Sector Leadership in Standards-Setting Bodies by Fostering More Collaboration.

The RFI seeks recommendations on how the U.S. can take steps to mitigate the influence of the PRC and bolster U.S. public and private sector participation in international standards-setting bodies. Before intervening in standards-setting bodies, the U.S. government can help play an important role by sharing threats, risks, and concerns with the private sector as part of a comprehensive national approach that champions private sector leadership.

NIST has played an important role as a developer of certain technical standards and a coordinator among federal agencies. NIST should be involved in any U.S. initiatives related to

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[52] *See* National Defense Authorization Act for Fiscal Year 2022, H.R. 4350, 117th Cong., at 884-88 (2021).

[53] *See id.* at 3054-58.

standards, and other federal agencies can play appropriate and tailored roles, as needed, to address diplomatic and international relations issues.

The U.S. government can continue to promote interoperability, openness, and diversity in technology and in standards bodies by adopting policies to promote even greater participation by the private sector. These improvements likely would strengthen successful standards-setting organizations and increase industry participation and leadership in the ITU.

The U.S. government should work with industry and other stakeholders, like ATIS and others, to discuss ways to strengthen and defend the private sector-led technical standardization model. It would be useful for private sector participants to be aware of government interests and objectives in advance of standards-setting body engagement in order to take them into account on a timely basis. The U.S. government, particularly the Department of Commerce, is well positioned to identify opportunities for private sector organizations to participate in standards bodies and, in coordination with the Department of State, to work with trusted international allies.

Measures to strengthen private sector leadership and effectiveness in the organizations by engaging in closer public-private collaboration could include the following:

- The federal government could foster closer consultation between industry and government to prepare for standards-setting body meetings, by sharing its views on approaches to standards issues. This would provide a channel for the government to make its views known to those in industry participating in standards development. While industry will continue to lead in standards development, this type of collaboration could enhance advocacy where common interests exist.

- The federal government should support increased private sector engagement at the ITU, and efforts to reform processes in ITU-T and to focus ITU-T on development of telecommunications standards instead of a broader, expanded work program.

- The federal government could implement joint activities to increase the expertise of government officials on technology and standards development, as well as the expertise of industry participants regarding standards development in venues like the ITU-T.

- The Department of Commerce could closely examine barriers to more robust private sector engagement in standards development and share its findings to aid industry while harmonizing with federal goals.

- A federal agency—most appropriately the Department of State in coordination with NIST and the Department of Commerce—through ongoing monitoring of the role of the PRC in standards development, could provide industry participants with information related to the U.S. government's perspectives and possible concerns.

The U.S. government can do more by doubling down on longstanding U.S. policy that champions private sector innovation and leadership in standards. The government should not play the role of top-down controller of technologies, such as 5G or future networks, or related standards development. Rather, the U.S. government should focus on policies such as facilitating private sector participation in standards work, promoting Research and Development ("R&D") in technology, collaborating to expand expertise, and advocating for good governance of standards development. Key engagement actions include:

Encouraging Greater Private Sector Participation. To maintain leadership, the United States needs commitment by more private organizations to contribute as members in organizations like 3GPP, IETF, and ATIS. Standards development driven by the private sector will ensure robust participation and foster U.S. technological leadership for the next decade and beyond. Importantly, it will also transfer institutional knowledge as longstanding corporate representatives train junior experts to carry forward this important work. This is particularly vital as standards work relies on relationships built on shared expertise and collaboration.

Providing Tax Incentives and Grants. The government can support and encourage participation in global standards-setting bodies as recommended in the 2019 National Security Telecommunications Advisory Committee report and addressed above by "[p]rovid[ing] tax

incentives and other encouragement for expanded participation by U.S. companies and academics in the [3GPP] and other standards bodies."[54] This economic incentive could be implemented by changing the research and experimentation tax credit to allow companies to include their spending on global standards-setting activities when they calculate their total expenditures on research and experimentation.[55] The availability of grants for expanded private sector participation in standards development processes would also help strengthen leadership.

Creating Incentives to Foster R&D. Research in R&D inevitably drives future releases of global standards work, which relies on peer-reviewed and innovative research. As many Western countries are cutting back on government-encouraged research and development, the PRC is making substantial investments. The United States should carefully consider the role it wants domestic industry and innovation to play in long-term technology leadership and standards development, and how to ensure that the incentives for R&D are in place.

Promoting Increased Expertise Among Policymakers. The government should bolster both U.S. government and private sector expertise in standards-setting bodies, such as the ITU. The government should also "[c]reate opportunities for policy makers to gain expertise in and increase support for global standards developments."[56] This increased expertise will help to

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[54] Nat'l Sec. Telecomms. Advisory Comm., NSTAC Report to the President on Advancing Resiliency and Fostering Innovation in the Information and Communications Technology Ecosystem ("NSTAC Report"), at A-2 (Sept. 3 2019), https://www.unisys.com/siteassets/collateral/about-unisys/moonshot/nstacreporttothepresidentonadvancingresiliencyandfosteringinnovation.pdf.

[55] *See* Alexandra Bruer & Doug Brake, *Mapping the International 5G Standards Landscape and How It Impacts U.S. Strategy and Policy*, ITIF, at 22 n.129 (Nov. 8, 2021), https://itif.org/publications/2021/11/08/mapping-international-5g-standards-landscape-and-how-it-impacts-us-strategy.

[56] NSTAC Report at A-2.

improve the government's effectiveness in intergovernmental activities at the ITU and with other governments also interested in standards development.

Removing Barriers to Private Sector Participation in Standards-Setting Organizations. The high cost of participation in standards organizations is widely known and could be addressed in part by the tax incentives and grants described above. Another known barrier has been the problem of possible export control constraints on participation. Application of Entity List restrictions to standards-development activities has negatively impacted U.S. private sector leadership in standards development. CTIA appreciates the decision by the Bureau of Industry and Security to put in place a standards authorization for certain interactions in the standards-setting body context.[57] Nonetheless, export control barriers to private sector standards-setting body participation remain that could be addressed by extending this type of authorization to a broader range of standards development activities and organizations. The Department of Commerce should take urgent action to exempt standards-development activities from export controls.

A lack of expertise within companies may also be a barrier. A study should be conducted to better understand the barriers to participation in certain standards organizations (e.g., due to a lack of resources or a lack of internal expertise). It would be helpful to study what the greatest obstacles are and to obtain suggestions on removing additional barriers. Furthermore, the Department of Commerce could expand public awareness and education of ongoing and important standards activities for the information of U.S. businesses, especially innovators and small businesses.

[57] *See* Comments of CTIA on Future Extensions to Huawei Temporary General License, Docket No. BIS 2020-0001/RIN 0694–ZA02 (Apr. 22, 2020).

Supporting Good Practices in Standards Development. The U.S. government should encourage good governance and fair participation across venues such as the ITU-T. The U.S. government should promote ITU-T standards activities focused on telecommunications/ICT that reflect principles for international standards that are open, transparent, consensus based, and market driven. The use of clear, balanced, inclusive, and effective procedures may help motivate increased participation and greater allocation of resources by the private sector.

Adopting and Promoting a Multilateral Strategy. Given the need for global and interoperable standards and the issues noted above with ITU-T, the U.S. government should work closely with other countries and allied governments to build support for needed changes and reforms at ITU-T. Many of the recommendations above could benefit from international cooperation and exchange of information on best practices. Based on the universal impact of technology standards, this strategy could include increased collaboration with governments from developing economies.

II. CONCLUSION

CTIA is proud to have worked with NIST on an array of important issues and looks forward to collaborating with NIST to advance the recommendations noted above to enhance U.S. participation in international standards development.

Respectfully submitted,
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December 6, 2021