Before the
U.S. DEPARTMENT OF COMMERCE
Washington, DC 20230

In the Matter of	)	
	)	
Public Wireless Supply Chain Innovation	)	Docket No. 221202-0260
Fund Implementation	)	RIN-0693-XC053

COMMENTS OF THE
TELECOMMUNICATIONS INDUSTRY ASSOCIATION

The Telecommunications Industry Association ("TIA") welcomes this opportunity to provide input in response to the National Telecommunications and Information Administration's ("NTIA") Request for Comment ("RFC) on the implementation of the Public Wireless Supply Chain Innovation Fund ("Innovation Fund"). TIA is a trade association and Standards Developing Organization ("SDO") that represents more than 400 trusted manufacturers of telecommunications equipment and services. From fiber optic cables in the ground, to wireless in the air, to satellites in orbit – TIA members design, produce, market, and manage the information communications technology ("ICT") equipment and services that connect Americans across the nation with high-speed broadband networks.

Given our expertise, both as a representative of ICT manufacturers and as an SDO that creates the standards that enable modern ICT networks, we welcome this opportunity to provide input to NTIA on setting up this Innovation Fund. For the purposes of this comment, we largely focus on the importance of ensuring the Innovation Fund can be utilized on projects that will promote the secure, interoperable deployment of open, interoperable, and standards-based radio access networks ("RAN" or "Open RAN"). To that end, NTIA should allow funds from the Innovation Fund to be used on security and network-focused standards, industry participation in

standards-setting activities, and applications from both U.S.-headquartered and trusted, non-U.S. headquartered entities for projects with a strong U.S. nexus.

I. The Innovation Fund Should Be Available for Standards and Standards Development Activities that Foster Secure and Interoperable Open RAN Networks.

Relevant Questions Addressed: 1, 2, 3, 7, 17, 18, 19

This Innovation Fund represents a critical opportunity to fund the development of an emerging open, interoperable, and standards-based radio access network architecture. For Open RAN architectures to achieve widespread adoption, these networks must be proven to be interoperable with existing networks and, most importantly, secure. ICT cyber attacks and vulnerabilities introduced by state-sponsored vendors are on the rise, and as an emerging technology, Open RAN must be developed with cyber and supply chain security built in. Given the standards-based foundation of Open RAN architectures, we believe that funding standards is particularly important when it comes to certifying the secure and trusted nature of the Open RAN supply chain. This Innovation Fund offers an opportunity to demonstrate the important role standards will play in the secure, interoperable deployment of Open RAN networks.

While the RFC references some standards organizations working primarily on Open RAN standards, it neglects to mention SDOs whose standards are used routinely to deploy secure, standards-based RANs. Most of these SDOs have existed for decades, though it may not be obvious by reading an SDOs website that their standards are used to promote and deploy secure Open RAN. TIA standards, for instance, are used by all U.S. network operators to ensure a high-quality, trusted, and secure environment; deploy and update cabling, data centers, and

antenna towers; among many other important activities used to promote and deploy secure standards-based RAN.[1]

Our standards also help ensure that networks, including Open RAN networks, are deployed with security built-in. TIA's SCS 9001[2] is a process-based standard that is focused on ensuring that the cybersecurity of equipment and software deployed in ICT networks, including Open RAN, has been verified and is from a trusted supplier by ensuring the processes used to develop a solution or product includes the relevant cyber and supply chain risk management controls. The Innovation Fund offers an opportunity to fund projects that can show how security-based requirements for Open RAN networks, based on industry best practices or standards such as SCS 9001, can be utilized to ensure Open RAN deployments are secure. For example, such Innovation Fund projects would include certifications, improvement programs, reporting, mapping to zero-trust architectures, and benchmarking all of which would be used to show the security of Open RAN deployments.

In addition to being available for existing standards, the Innovation Fund should also be able to be utilized for participation in standards-setting activities, which remains a key challenge in the ICT industry. Industry support in SDOs varies among private sector organizations. Some companies are highly supportive while many are not due to the cost of participation, which one independent report estimates can cost $300,000 per engineer per year.[3] Yet the standards

[1] See https://tiaonline.org/products-and-services/buy-standards/#:~:text=TIA%20standards%20apply%20to%20a,Ensure%20quality%20performance%20and%20connectivity

[2] SCS 9001 is based on ISO 9001 a widely used quality management system standard used in a variety of ecosystems, e.g., automotive, financial, manufacturing, as well as telecommunications.

[3] Costs estimated for full participation in 3GPP by Melanie Hart and Jordan Link, *There is a Solution to the Huawei Challenge*, Center for American Progress (October 14, 2020) https://www.americanprogress.org/article/solution-huawei-challenge/

development process benefits from a wide variety of experts and viewpoints, new people, new organizations, and new ideas.

The U.S. Government has recognized the important role of fostering industry participation in the development of interoperable standards and the role such participation plays in supporting U.S. leadership in the global ICT market.[4] It should reinforce this support by making standards-related activity eligible for funding from the Innovation Fund. The Innovation Fund is a perfect vehicle to encourage organizations to support standards-related activity and foster the next generation of standardization professionals for technologies such as Open RAN.

To that end, TIA recommends that standards-related activities that will support the promotion and deployment of Open RAN networks be eligible for funding from the Innovation Fund. SDOs, organizations involved in assessments and certifications of standards, and industry organizations involved in standards-related activity should all be eligible to apply for funding for expenses incurred supporting standards-related activities. Expenses could include staffing that contributes to standards development, holding standards committee meetings, membership fees, certifying processes and deployments, and purchasing standards, among other activities. Funding standards-related activity will be an important aspect of meeting NTIA's goal to "support network operators in procuring trusted, secure RAN"[5] and to "unlock opportunities for U.S. companies, particularly small and medium enterprises, to compete in a market historically dominated by a few foreign suppliers."[6] Small and medium enterprises typically cannot support

[4] President's National Security telecommunications Advisory Committee, Letter to President Joseph Biden (May 24, 2022) (available at https://www.cisa.gov/sites/default/files/publications/NSTAC%20Letter%20to%20the%20President%20on%20Standards%20%285-24-22%29_508.pdf).
[5] NTIA RFC, I. Background, para. 3
[6] NTIA RFC Section I, last para.

standards-related activity and therefore would greatly benefit from funding support. The Innovation Fund's 10-year timeline will be beneficial to helping establish U.S. leadership in secure standards-based RAN.

II. This Innovation Fund Should be Organized in a Way That Promotes US Competitiveness in a Global ICT Market

Relevant Questions Addressed: 22, 25

Open RAN architectures have the potential to provide new opportunities for U.S. firms to enter the 5G RAN market by disaggregating the RAN into its component parts and supporting further virtualization in the network thereby creating opportunities for new and innovative development. As the U.S. government invests in projects that support this technology architecture, it should balance the need for global innovation and a diverse network of suppliers with a valid domestic interest in supporting U.S. leadership in this area.

To this end, TIA believes that it is reasonable to insist that funds spent on deploying networks be spent on projects that are based in the United States. The deployment of the networks by building towers, installing radio units, and physically connecting network elements is a location-based exercise. As a result, focusing Innovation Fund grants on deployments in the U.S. delivers economic benefits to American workers and the American taxpayer without diminishing the development of a globally-relevant technology.

The Implementation Fund should, however, not be limited to grantees headquartered in the United States. For one, such a limitation based on foreign ownership might violate U.S. commitments to global trade rules regarding subsidies, and it could give other countries an excuse to discriminate against U.S. firms in the context of similar programs. For another, there

are major, global companies and organizations with vital technologies in the Open RAN space that are important to the success of Open RAN. For example, the O-RAN Alliance itself – which the National Institute of Standards Technology announced it would be joining this week as a member – is based in Germany, and leading players such as NEC, Fujitsu, Nokia, Ericsson, and Samsung just to name a few are based in Europe and East Asia. Excluding such companies and organizations from receiving funds would lead to an uneven development of the underlying technologies, and would ignore the fact that some of these companies are developing, researching, and manufacturing these products right here in the United States. Indeed, with the global nature of these companies, a company headquartered outside the United States might in fact do more R&D on Open RAN within the U.S. than a U.S.-based company that outsources its R&D to other countries. A company could also initially be constituted in the United States and receive funds, and then later be acquired by a foreign party and move its headquarters outside of the United States.

The exception to the above should be entities owned or controlled by foreign adversary governments. As a starting point, any entities on the FCC's Covered List should be excluded from benefiting from such grant programs to be consistent with other government programs such as the IIJA, the FCC's USF program, and Section 889 of the 2019 NDAA. With the lower barriers of entry into the industry, the Commerce Department should also consider whether new entrants into the Open RAN ecosystem may be owned or controlled by adversary governments and adjust its funding parameters accordingly. As TIA has noted previously to the FCC, there

are at least two state-owned or affiliated equipment OEMs from China that are actively involved in the development, research, and deployment of Open RAN technology around the world.[7]

Finally, there should be no domestic sourcing threshold requirement for U.S.-origin network components. Put simply – there is no such equipment that would cover the breadth of the Radio Access Networks. "American-made" is defined in a range of ways in existing legislation and federal rules.[8] The government itself has found this in the context of the Department of Homeland Security and Department of Commerce report on the Information and Communications Technology Supply Chain ("ICT Supply Chain Report"), which noted that "90% of macro radio components are manufactured in Asia."[9] This mirrors TIA's own analysis, which found that Access Equipment – as a broad category – does not meet "American-made" content requirements primarily due to a lack of relevant semiconductors. Because it will take 3-5 years to build semiconductor fabrication facilities in the United States and semiconductors represent 54% of the value of access equipment as a category, it is not clear that this program will be able to support any Open RAN deployment in the medium-term should the Department apply existing standards.[10]

Since the CHIPS and Science Act that authorized the Innovation Fund is focused on research and development and is not, per se, an infrastructure program or an acquisition by the

[7] Comments of the Telecommunications Industry Association (TIA), GN Docket No. 21-63, (filed April, 2021) https://tiaonline.org/wp-content/uploads/2021/05/2021.5.28-OpenRAN-NOI_Reply-Comments_Final.pdf

[8] Relevant definitions of U.S.-made include "substantial transformation" assessments used to determine duties, "Buy American" requirements as outlined under Federal Acquisition Regulations, product-specific country-of-origin determinations made under specific bilateral treaties and multilateral agreements like USMCA, "Buy American" requirements for the Department of Agriculture under the Rural Electrification Act, and "Buy America" requirements as laid out in IIJA and related OMB guidance.

[9] Assessment of the Critical Supply Chains Supporting the U.S. Information and Communications Technology Industry, The U.S. Department of Commerce and the U.S. Department of Homeland Security (February 24, 2022) https://www.dhs.gov/sites/default/files/2022-02/ICT%20Supply%20Chain%20Report_2.pdf

[10] TIA internal analysis, available upon request.

federal government, requirements to follow "Buy America" in the IIJA or "Buy American" per the FAR should not apply. Should requirements under the FAR be found to apply here, they would likely fall under the scope of the government's commercial IT exemption.

III. NTIA Should Harmonize Open RAN Efforts With Trusted Governments

Relevant Questions Addressed: 26

As stated previously, collaboration with international stakeholders will be key to the success of Open RAN because of the global nature of supply chains and technologies. While much of this will be between the government and the private sector, government-to-government engagement is also important to the success of Open RAN. This is already happening bilaterally with interested partners like the UK and Japan, as well as multilaterally via the Quad, Transatlantic Trade and Technology Council ("TTC"), and other partnerships.

The primary purpose of these partnerships should be to promote the use of trusted technologies, ensure non-discrimination in the funding of various projects, avoid duplication of effort, share best practices, provide financial support for trusted telecommunications initiatives, share information regarding cybersecurity vulnerabilities, and support the development of robust, innovation-first standards. Such efforts should not include efforts to introduce mandates or requirements to use Open RAN.

Conclusion

TIA appreciates the opportunity to provide input in response to NTIA through this RFC. Developing and deploying secure and interoperable networks across the U.S. is core to TIA's mission as an SDO and representative of the ICT manufacturer and vendor community, and we would welcome the opportunity to discuss the Innovation Fund further as NTIA works to implement the grant program.

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