Before the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, DC 20230

In the Matter of	)	
	)	
Implementation of the National Spectrum Strategy	)	FR Doc. No. 2023–26810
	)	
	)	

COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION

Tom Stroup, President
1200 18th St., N.W., Suite 975
Washington, D.C. 20036

January 2, 2024

SIA The voice of the satellite industry

TABLE OF CONTENTS

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

SIA The voice of the satellite industry

Before the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, DC 20230

In the Matter of	)	
	)	
Implementation of the National Spectrum Strategy	)	FR Doc. No. 2023–26810
	)	
	)	
	)	

COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION

I. INTRODUCTION AND SUMMARY

The Satellite Industry Association ("SIA")[1] submits the following comments on the National Telecommunications and Information Administration's ("NTIA") Notice of Opportunity for Public Input in the above-referenced proceeding,[2] which seeks comment on the implementation of the National Spectrum Strategy for the United States (the "Strategy").[3] As NTIA develops the Implementation Plan for the Strategy, SIA urges the protection and expansion

[1] SIA Executive Members include: Amazon; The Boeing Company; Comtech; DIRECTV; EchoStar Corporation; HawkEye 360; Intelsat S.A.; Iridium Communications Inc.; Kratos Defense & Security Solutions; Ligado Networks; Lockheed Martin Corporation; Northrop Grumman; Eutelsat Group; Planet Labs PBC; SES Americom, Inc.; Spire Global Inc.; and Viasat Inc. SIA Associate Members include: ABS US Corp.; The Aerospace Corporation; Artel, LLC; AST SpaceMobile; Astranis Space Technologies Corp.; Eutelsat America Corp.; ExoAnalytic; Kymeta Corporation; Leonardo DRS; Lynk; Omnispace; Ovzon; Panasonic Avionics Corporation; Telesat; ULA; and XTAR, LLC.

[2] Nat'l Telecomm. & Info. Admin., *Implementation of the National Spectrum Strategy*, 88 Fed. Reg. 85266 (Dec. 7, 2023).

[3] The White House, *National Spectrum Strategy* (2023), *available at* https://www.ntia.gov/report/2023/national-spectrum-strategy-pdf ("*Strategy*").

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

of spectrum allocated to satellite services to ensure continued U.S. leadership in the growing satellite and space sectors. Identifying additional spectrum for terrestrial mobile broadband should not come at the expense of robust, world-leading satellite innovation. Instead, NTIA should focus its implementation plan on identifying a balanced path that will:

- Strengthen U.S. leadership abroad by actively participating in efforts to harmonize international spectrum allocations and demonstrate commitment to decisions made at the 2023 World Radiocommunication Conference ("WRC") by implementing these actions domestically;
- Support the U.S. satellite industry in the domestic, regional, and international processes leading up to the 2027 WRC to protect important existing operations *and* ensure access to additional spectrum and increased flexibility;
- Establish additional processes to enable faster and better coordinated decision making on commercial satellite spectrum authorizations;
- Protect vital existing satellite spectrum, including, but not limited to the 8025-8400 MHz portion of the 7125-8400 MHz "X-band"; and
- Make at least 15 GHz of additional low-, mid-, and high-band spectrum available for use by satellite and other space services.[4]

II. PILLAR ONE: A SPECTRUM PIPELINE TO ENSURE U.S. LEADERSHIP IN ADVANCED AND EMERGING TECHNOLOGIES

Consistent with the United States Space Priorities Framework, the Implementation Plan should "foster a policy and regulatory framework that enables a

[4] *See, e.g.*, Satellite Industry Ass'n, *SIA Spectrum Report*, 3 (Sept. 2023), *available at* https://sia.org/wp-content/uploads/2023/10/Mktg23-Spectrum-Report-September-FINAL-2.0.pdf ("*SIA Spectrum Report*") ("[T]he satellite and space industry must have made available (in addition to the existing allocations) by 2027 at least 15 GHz more of spectrum available globally within a wide variety of frequency bands from 390 MHz to 60 GHz.").

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

competitive and burgeoning U.S. commercial space sector."[5] Implementation should focus on ensuring a spectrum pipeline that will support a wide variety of communications technologies and services, including ample spectrum to support innovation for satellite and other space operations. It is particularly critical that satellite operators have access to diverse spectrum bands to support different use cases and that those spectrum allocations be globally harmonized to facilitate the types of world-wide services that satellite services provide. The various satellite services in need of spectrum include: the Earth Exploration Satellite Service ("EESS"), which enables remote sensing operations for applications such as national security, weather prediction, climate change research, space situational awareness, and other vital functions; the Fixed Satellite Service ("FSS"), Broadcast Satellite Service ("BSS"), and Mobile Satellite Service ("MSS"), which provide broadband Internet access and other communications functions, including video as well as mobility-based services to users, anywhere on the planet;[6] and the Inter-Satellite Service ("ISS"), which facilitates real-time communications within large constellations of satellites or between satellites in different orbits.

[5] *United States Space Priorities Framework*, 5 (2021), *available at* https://www.whitehouse.gov/wp-content/uploads/2021/12/united-states-space-priorities-framework-_-december-1-2021.pdf.

[6] In addition, as recognized at WRC-23, satellites will be critical for the provision of communications on the moon and beyond with action likely to enable this use at WRC-27. *See* Int'l Telecomm. Union [ITU], *Agenda for the 2027 world radiocommunication conference*, Res. COM6/23 (WRC-23), Agenda Item 1.15 (2023) (resolving "to consider studies on frequency-related matters, including possible new or modified space research service (space-to-space) allocations, for future development of communications on the lunar surface and between lunar orbit and the lunar surface, in accordance with Resolution COM6/4 (WRC-23).").

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

While the Strategy focuses on the need for a "spectrum pipeline" to support the next generation of terrestrial wireless broadband networks and technology, this spectrum pipeline must be extended to include non-terrestrial networks. The commercial satellite industry is the global leader for technological innovation and the services it provides increase U.S. competitiveness by supporting virtually all parts of U.S. industry, including telecommunications, broadcasting, energy, critical infrastructure, agriculture, utilities, healthcare, education, earth observation, maritime, aviation, transportation, national security, manufacturing, and commerce in general. The commercial satellite industry also plays a critical role in connecting the unconnected and ensuring that all Americans can participate in an increasingly digital economy and society.[7] Innovative new space-based applications enabled by satellite spectrum include:

- **Direct-to-device services ("D2D"):** As satellites are incorporated into the 3GPP non-terrestrial network ("NTN") standards in Releases 17 and 18, they will be able to provide cost-effective communications services directly to user devices.[8] The inclusion of emergency SOS capabilities into the iPhone 14 heralded only the most recent phase in satellite "direct-to-device" connectivity. Multiple companies (including several SIA members) are investing in and developing proprietary solutions, as well as handsets,

[7] For example, in 2022, there were over 2 million satellite broadband subscribers in the United States alone. *See* S&P Global Market Intelligence, *The History of U.S. Broadband 2023* (May 11, 2023), *available at* https://www.spglobal.com/marketintelligence/en/news-insights/research/the-history-of-us-broadband. *See also SIA Spectrum Report* at 3-4 (detailing the roles that the satellite and space industry play in numerous critical sectors).

[8] See 3GPP Release 17, *available at* https://www.3gpp.org/specifications-technologies/releases/release-17; 3GPP Release 18, *available at* https://www.3gpp.org/specifications-technologies/releases/release-18.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

chipsets, and satellite capabilities needed to expand satellite direct-to-device connectivity using MSS, FSS, and potentially mobile spectrum.[9]

- **IoT and M2M:** Because satellites are able to provide ubiquitous coverage on Earth, satellite data is ideally suited for Internet of Things ("IoT") and machine-to-machine ("M2M") applications, especially for operations in remote areas beyond the coverage of terrestrial networks. Satellite IoT and M2M have many uses including monitoring of assets and key infrastructure (*e.g.*, utilities), maritime location and safety, remote monitoring of buoys and maritime environmental conditions, connected agriculture, and on-board GPS navigation in cars.[10]

- **In-space servicing, assembly, and manufacturing ("ISAM"):** As NTIA has previously noted, "ISAM capabilities are anticipated to be an important part of the burgeoning space economy."[11] Indeed, ISAM capabilities represent a giant leap in the space industry and are poised to revolutionize space activities moving forward.[12] Current ISAM use cases include mission extension for aging spacecraft, spacecraft repair and servicing, orbital debris removal, and extension of deep space mission resources. SIA agrees with NTIA's assessment that although "ISAM needs can be met in the near-term within current spectrum allocations and through the use of existing and planned commercial services[,]

[9] *See generally Single Network Future: Supplemental Coverage from Space; Space Innovation*, Notice of Proposed Rulemaking, GN Docket No. 23-65, IB Docket No. 22-271, FCC 23-22 (rel. Mar. 17, 2023).

[10] Satellite Industry Ass'n, *IoT & M2M*, *available at* https://sia.org/satellites-services/iot-m2m/.

[11] Comments of the National Telecommunications and Information Administration, IB Docket Nos. 22-271, 22-272, 1 (filed Nov. 28, 2022), *available at* https://www.fcc.gov/ecfs/document/1129942425664/1.

[12] White House National Science and Technology Council (NSTC), *In-Space Servicing, Assembly, and Manufacturing National Strategy*, 6 (Apr. 2022), *available at* https://www.whitehouse.gov/wp-content/uploads/2022/04/04-2022-ISAM-National-Strategy-Final.pdf ("ISAM capabilities can promote a sustainable space environment, improve the scientific output of in-space spacecraft and instruments, and create robust, sustainable, and enduring in-space infrastructure. Fostering an ecosystem that leverages ISAM capabilities can expand the performance, availability, resilience, and lifetime of space systems compared to the status quo. Space mobility, logistics, and reusability are enabled by ISAM capabilities. Cost-effective ISAM capabilities could bring economic benefits – remote sensing, climate science, human exploration – if available and effectively utilized through the coordination of relevant stakeholders.").

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

[o]ther types of access will require study and could involve changes to domestic and international allocations, radio service definitions, or both."[13]

- **Lunar:** Human exploration of the Moon is expected to resume as soon as 2025. These missions will require extensive lunar equipment, including spacesuits, handhelds, habitation, other lunar assets and other communication stations, landers, rovers, and extravehicular activity, and this will require connectivity both on the moon and to/from Earth.[14]

- **On-the-Go Connectivity:** Demand for on-the-go connectivity has increased exponentially in recent years, and additional capacity is required to meet these growing needs. Satellite services provide ubiquitous connectivity on land, in the air, and at sea and support applications such as smart roads, autonomous transportation, the needs of crew, safety-of-life, and passenger entertainment. WRC-23 adopted regulatory frameworks for FSS geostationary satellite orbit ("GSO") satellites and non-geostationary satellite orbit ("NGSO") systems to provide these services in the Ku-band and Ka-band, respectively.[15] These new international allocations will allow satellite operators to meet some, but not all, of this demand.

- **Satellite Data Relay:** The recent decision of the World Radiocommunication Conference 2023 ("WRC-23") to regularize the use of certain FSS bands for ISS links will help eliminate delays in the delivery of government and commercial earth observation data, and thus provide real-time intelligence on the state of the world for better weather prediction, faster and more accurate disaster relief, and more.[16] ISS relay

[13] Reply Comments of the National Telecommunications and Information Administration, IB Docket Nos. 22-271, 22-272, 2 (filed Nov. 21, 2023), *available at* https://www.fcc.gov/ecfs/document/112150855208/1.

[14] National Aeronautics and Space Administration, *NASA's Lunar Exploration Program Overview*, 19 (Sept. 2020), *available at* https://www.nasa.gov/wp-content/uploads/2020/12/artemis_plan-20200921.pdf (detailing key communication and navigation technologies that will be used to support exploration activities on the Moon); *SIA Spectrum Report* at 4.

[15] WRC-23 adopted frameworks to provide aeronautical and maritime services in the 12.75-13.25 GHz band for GSO satellites and in portions of the 27.5-30.0 GHz/17.7-20.2 GHz bands for NGSO systems.

[16] *See, e.g.*, Int'l Telecomm. Union, *Provisional Final Acts of WRC-23*, 529 (2023), *available at* https://www.itu.int/dms_pub/itu-r/opb/act/R-ACT-WRC.15-2023-PDF-E.pdf (adopting Res.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

links will also support other near-Earth missions, such as NASA and NOAA science missions, the International Space Station, as well as new space tourism ventures.[17]

The growing spectrum demands of the U.S. commercial satellite sector must be addressed for the satellite industry to maintain its global competitiveness. Thus, NTIA, in collaboration with other partners in government, need to ensure adequate spectrum allocations for space-based services, and not just the spectrum needs of terrestrial wireless services. The government must also be cognizant that operators utilize different satellite orbits to optimize performance and provide efficient and reliable service to end-users and, therefore, sufficient spectrum for GSO, medium earth orbit ("MEO"), and low earth orbit ("LEO") satellite systems must be available. These considerations will become increasingly important as the ecosystem for NTN services further develops and satellite services become increasingly pervasive for all communications services—narrowband, wideband, and broadband services—both on earth and in space.

U.S. leadership in international standards setting bodies and the International Telecommunication Union ("ITU") is also essential for the United States industry to remain a leader in space. The need for internationally harmonized spectrum is particularly crucial for

---

COM5/8 (WRC-23), which provides new rules for ISS use in the bands 18.1-18.6 GHz, 18.8-20.2 GHz, and 27.5-30 GHz); *id.* at 351 (providing text of ITU Res. 249 (Rev. WRC-23), *Study of technical and operational issues and regulatory provisions for space-to-space transmissions in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz,* which resolves to prepare numerous studies on space-to-space links for WRC-27).

[17] Leandra Bernstein, *Inter-Satellite Links Are Making Space Networks a Reality*, Constellations (July 26, 2022), *available at* https://www.kratosdefense.com/constellations/articles/inter-satellite-links-are-making-space-networks-a-reality.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

satellite operators, and, in particular, for GSO satellites providing hemispheric coverage and NGSO constellations providing global coverage. For satellite operators, the need to accommodate discrepancies between domestic and international allocations therefore diverts capital and other resources away from research, development, and deployment of innovative technologies. Accordingly, to ensure that satellite operators have access to the spectrum they require now, and, in the future, SIA urges NTIA and the U.S. government to implement the WRC-23 Final Acts as soon as possible, and to support the U.S. satellite industry in their efforts domestically, regionally, and internationally as WRC-27 preparation begins. This includes ensuring that satellite spectrum is harmonized globally to the fullest extent possible.

III. PILLAR TWO: COLLABORATIVE LONG-TERM PLANNING TO SUPPORT THE NATION'S EVOLVING SPECTRUM NEEDS

SIA agrees that collaborative long-term planning involving key government and private sector stakeholders is critical to supporting evolving U.S. spectrum needs. The U.S. satellite industry is in a phase of extraordinary growth and requires expanded access to satellite spectrum in order to continue growing. Accordingly, any loss of satellite spectrum will adversely affect the growth prospects of the satellite industry.

SIA, moreover, welcomes initiatives for collaboration between industry and government agencies and agrees that decision making on spectrum matters should rely on factual data and rigorous analysis. Developing models that facilitate a robust examination of spectrum use and tools to maximize use of spectrum and to measure the impact of potential spectrum reallocations

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

are critical, and the satellite industry stands ready to actively participate in such activities along with our federal partners.

To best support the nation's evolving spectrum needs, including for space-based services, SIA urges the United States to keep several principles in mind when engaged in long-term spectrum planning:

- All wireless services, including satellite-based services, need dedicated spectrum to deploy ubiquitously and to truly flourish.[18]

- Decisions on whether to re-purpose spectrum for new or other uses should not be based solely on whether the existing users can justify continued use of the band or are using the band efficiently, but also on whether the prospective new users have a sound case for re-allocation as well as the future plans of the incumbents for the bands.

- Evaluating the benefits of different uses of spectrum should also be done in a holistic manner. The public interest and overall benefits of spectrum use cannot be measured by efficiency alone. What is efficient for one service is not necessarily efficient for others. For example, it makes no sense to use bits-per-hertz to compare the national security benefits of using a band for radar versus the benefits of using a band for mobile broadband.

- Any decisions to introduce "sharing" must be carefully balanced. Spectrum sharing comes with trade-offs, as the need to protect each of the services sharing a given band from interference will necessarily constrain the design and/or deployment of each service in the band. The burden of sharing should not fall entirely on existing users; new entrants also may need to modify their proposed operations to address harmful interference and accommodate existing services.

In addition to these general principles, SIA is concerned that the Strategy identified the X-band for study for potential mobile broadband use without sufficient collaboration and

[18] *See generally SIA Spectrum Report*; Strand Consulting, *Spectrum and the Technological Transformation of the Satellite Industry* (Apr. 2023), *available at* https://sia.org/wp-content/uploads/2023/04/Website23-SIA-Spectrum-Report-from-Strand-Consult-Final-Updated-April-13th.pdf.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

consideration of private sector needs. Specifically, the strategy states that "certain planning components are needed immediately . . . to monitor the success of study and repurposing efforts, including the impact on the mission effectiveness of Federal incumbents in the bands selected for in-depth study."[19] But where identified spectrum bands house not just Federal but also critical commercial operations like the X-band, NTIA should account for those operations in its implementation plan and studies.

The 8025-8400 MHz portion of the X-band is vital for both Federal *and* commercial remote sensing satellite operations. The vibrant U.S. commercial Earth observation sector uses this spectrum for a wide variety of downlink communications, including payload imagery and data as well as telemetry, tracking and control ("TT&C") communications. As the federal government looks at long term planning for 8025-8400 MHz, Federal and commercial remote sensing capabilities would be threatened if the band was re-allocated for terrestrial mobile use. Earth observation satellite ground station operations operate at low elevation angles and low power spectral density and are therefore susceptible to interference from high powered terrestrial mobile broadband operations.

To protect these vital services, the Satellite Industry Association urges NTIA to preserve X-band spectrum for satellite operations and exclude the 375 megahertz from 8025-8400 MHz from the initial study. Transitioning 8025-8400 MHz spectrum to terrestrial mobile use would curtail the vibrant and innovative U.S. commercial remote sensing industry at a critical time

[19] *Strategy* at 7-8.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

when international competitors are growing competing EESS capabilities. Moreover, repurposing this spectrum would imperil national security and impact a wide variety of sectors, including meteorological research, emergency preparedness and response, and space situational awareness. If NTIA does move forward with studying the 8025-8400 MHz portion of the X-band for terrestrial mobile broadband use, in the spirit of collaboration and long-term planning, it must fully consider the operational and economic impact of such a change on Federal and co-primary commercial users alike.

IV. PILLAR THREE: UNPRECEDENTED SPECTRUM INNOVATION, ACCESS, AND MANAGEMENT THROUGH TECHNOLOGY DEVELOPMENT

As the U.S. space industry seeks to remain at the forefront of technological development, satellite and other space operators will require continued access to existing spectrum resources as well as new allocations to foster growth and innovation. While NTIA and the FCC have made progress on this through the FCC-NTIA Memorandum of Understanding ("MOU") that was recently updated,[20] SIA urges NTIA and the FCC to adopt additional processes to enable faster and more coordinated interagency decision making for commercial spectrum authorizations. In

[20] *See Memorandum of Understanding Between the Federal Communications Commission and the National Telecommunications and Information Administration* (rel. Aug. 2, 2022), *available at* https://docs.fcc.gov/public/attachments/DOC-385867A1.pdf.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

addition, SIA urges the U.S. government to provide additional funding for research and development ("R&D") for technologies that improve spectrum planning and sustainability.[21]

Coordination delays between the FCC and NTIA on commercial satellite authorizations affect the rollout of new technology including products, and services of weeks or more. However, these disruptions can be mitigated by adopting a streamlined interagency coordination process. For example, investments in information technology upgrades that improve the interoperability of FCC and NTIA systems for data sharing and communication, can streamline interagency spectrum coordination. In addition, given the many non-Federal satellite bands that are shared with Federal users (*e.g.*, the extended C-band, X-band, extended Ku-band, and Ka-band downlink), it may be fruitful to consider a joint FCC/NTIA-sponsored forum or similar mechanism for Federal and non-federal users to engage directly and provide feedback with the goal of improving co-existence and/or streamlining coordination procedures.

While more advanced techniques for sharing spectrum are worth studying, SIA would note that spectrum sharing is not a panacea and is not always appropriate in every context or every circumstance. Sharing frameworks come with trade-offs—true sharing requires inter-service compatibility and coordination of interference protection, and both of these considerations constrain where and how services can be deployed. Sometimes, spectrum "sharing" can enable more intensive use of spectrum, such as when dozens of competing GSO

[21] To further enable innovation, access, and management, the U.S. government should continue to hire and retain spectrum policy and technical experts—especially those well-versed in space and satellite issues—into the federal government in senior roles.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

and NGSO satellite operators can share the same spectrum band under well-established sharing rules (*e.g.*, the Ku- or Ka-bands for FSS). Moreover, in the context of sharing between federal and non-federal services, FSS and EESS operators have proven themselves to be particularly adept at sharing spectrum with government systems. At other times, however, the conditions of spectrum sharing simply result in one or more impaired services with limited ability to grow. For example, FSS earth station operators must coordinate their operations in order to share with Fixed Services in the C-band (and vice versa) and must restrict their operations in the Upper Microwave Flexible Use Services ("UMFUS") in the Ka-band. In cases where federal agencies utilize commercial bands on SIA-member networks, additional federal agencies may need to be involved in coordination and sensitive or classified information may need to be shared between stakeholders. SIA urges NTIA and other federal agencies to adopt a cautious and measured approach when exploring spectrum sharing arrangements in these instances. Before adopting new inter-service sharing regimes, the agencies should carefully consider whether services would be able to coexist and grow in the same band or if separate spectrum allocations would be a better approach.

Innovative technologies will be key to increasing access and maximizing flexible use of spectrum. However, it is also essential for spectrum regulators to evaluate critically how spectrum is being licensed and the implications of different licensing regimes.

V. PILLAR FOUR: EXPANDED SPECTRUM EXPERTISE AND ELEVATED NATIONAL AWARENESS

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

The Federal government has historically had strong spectrum expertise within its ranks, with a deep of understanding and the ability to advance the spectrum goals of the United States. To maintain U.S. leadership in this regard, it is vital that the agencies hire, develop, and retain the next generation of spectrum policy and technical experts, including those with space and satellite spectrum expertise and by focusing on diversity. In this regard, the government should look into programs for recruiting such talent and training programs to educate junior staff on the diverse aspects of spectrum policy so that they are ready to address the emerging spectrum issues in the future.

VI. CONCLUSION

A robust and burgeoning U.S. space industry is essential for continued success and leadership of the United States on the global stage. The innumerable benefits provided by the space and satellite industry transcend sectors, national borders, and even Earth itself—and, as the *National Space Policy* rightly observes, "[o]ur way of life on Earth is greatly enhanced by space and the United States acknowledges the importance of space to the advancement of all humanity."[22] To ensure the nation's continued leadership in the global space economy, SIA urges NTIA to prioritize the protection and expansion of U.S. space and satellite services in the National Spectrum Strategy Implementation Plan.

Respectfully submitted,

[22] *National Space Policy of the United States of America*, 1 (2020), *available at* https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/12/National-Space-Policy.pdf.

1200 18th Street NW, Suite 975, Washington, D.C. 20036
Phone: 202-503-1560 Fax: 202-503-1590 www.sia.org

/s/ Tom Stroup

SATELLITE INDUSTRY ASSOCIATION
Tom Stroup, President
1200 18th St., N.W., Suite 975
Washington, D.C. 20036

January 2, 2024