SES^ | Networks

July 17, 2018

<u>Via e-mail</u>

National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Avenue, NW, Room 47226
Washington D.C. 20230
Attention: Fiona Alexander

Re: **Notice of Inquiry Regarding International Internet Priority Policies, Docket No. 180124068–8068–01**

    SES Americom, Inc. and its affiliate O3b Limited ("O3b") (collectively, "SES") welcome the opportunity to submit these comments in response to the National Telecommunications and Information Administration's ("NTIA") Notice of Inquiry regarding International Internet Priority Policies ("*NOI*").[1]

I. BACKGROUND

    SES, one of the world's largest commercial communications satellite operators, is uniquely positioned to comment on the issues raised by this *NOI,* with facilities that include both geostationary ("GSO") and non-geostationary ("NGSO") satellite fleets. SES entities operate more than 50 GSO satellites able to reach 99% of the world's population. SES spacecraft serve broadcasters, direct-to-home ("DTH") service providers, and corporate and government

---

[1] *See generally* Notice of Inquiry, International Internet Policy Priorities, Federal Register, Docket No. 180124068–8068–01, (rel. June 5, 2018) ("NOI").

customers worldwide with offerings that include video and audio content distribution, private networks, broadband, satellite news gathering, aeronautical and maritime services, and mobile backhaul.

O3b, a wholly-owned subsidiary of SES, is a global broadband satellite system in Medium Earth Orbit ("MEO") that operates a constellation of 16 NGSO satellites in the Ka-band and offers high-speed, low-latency broadband connectivity where coverage from terrestrial networks is limited or non-existent. The O3b satellites orbit at approximately 8,000 km from Earth – four times closer to the planet than geostationary (GEO) satellites, delivering connectivity with low latency and fiber-like performance for data services across the globe. As the only NGSO system delivering fiber-like broadband services today, the O3b fleet is enhancing coverage and increasing performance to the market, while continuing to drive digital equality to support digital transformation worldwide.

II.   SATELLITE CONNECTIVITY IS AN EMERGING TECHNOLOGY THAT FACILITATES THE FREE FLOW OF INFORMATION ONLINE THROUGHOUT THE WORLD

The NTIA has asked commenters what emerging technologies and trends should be considered when discussing international internet policy discussions. The expansion of access to broadband connectivity will rely on a mixture of technologies including satellite communications, which continues to play a crucial role in providing connectivity in the U.S. and across the globe. The NTIA has found that in addition to existing broadband capabilities, new satellites will enable lower-latency services in the U.S., expand broadband coverage inside and

outside the U.S., and add broadband capacity to the overall satellite infrastructure."[2] SES is already providing those services at home and abroad and is accelerating the development of broadband access for communities and governments around the world by supplying connectivity for commercial broadband service to the home, the expansion of mobile networks, disaster response and humanitarian efforts, e-health, e-education, e-government, as well as defense and security missions. SES plays an expansive role in enabling the free flow of online information at a global scale and ensuring that millions of people worldwide have unfiltered broadband access.

The NTIA has determined that "broadband access is delivered in multiple ways – through fixed, terrestrial wireless and satellite connections – the latter of which is particularly crucial in developing nations an is delivered in multiple ways – through fixed, terrestrial wireless and satellite connections – the latter of which is particularly crucial in developing nations and markets."[3] Internationally, SES continues to provide this crucial connectivity to underserved and unserved communities across the globe. SES' O3b fleet continues to bring new capabilities to the 'other 3 billion' people in emerging markets who do not have access to affordable Internet connectivity. SES serves more than 130 countries throughout Europe, Africa, Latin America, the Middle East and Asia. In Africa, for example, SES' MEO capacity currently reaches 15 million end users. SES serves enterprises as well, bringing high speed connectivity to businesses in

---

[2] *See Remarks of Assistant Secretary Redl at Satellite 2018*, NTIA (March 14, 2018)
https://www.ntia.doc.gov/speechtestimony/2018/remarks-assistant-secretary-redl-satellite-2018.
[3] *See Remarks of Assistant Secretary Redl at the Broadband for All Seminar, Royal Swedish Academy of Engineering Sciences, Stockholm, Sweden*, NTIA (June 25, 2018)
https://www.ntia.doc.gov/speechtestimony/2018/remarks-assistant-secretary-redl-broadband-all-seminar-royal-swedish-academy.

Africa that otherwise lack access to broadband services.[4] SES' role in ensuring the free flow of online information remains crucial in accelerating the socio-economic development needed in many developing countries.

The federal government relies on the commercial satellite industry for voice and data communications and purchasing data services from commercial operators.[5] For example, in 2017, the Department of Defense ("DOD"), expanded its use of O3b MEO capacity by signing a five-year task order with SES Government Solutions.[6] SES is providing additional capacity to enable access to real-time information for key U.S. government end-users in the field. O3b connectivity will allow for faster broadband deployment as users will have the capability to transfer large files from remote locations in just minutes instead of hours.[7] Cloud-based applications and information can be used anywhere in the service area and end-users will have the ability to view real-time high-definition videos providing situational awareness to commanders.

SES satellite communications play an irreplaceable role in disaster relief efforts in the United States and abroad, notably in areas where mobile networks have been damaged or

---

[4] *See* Press Release, *AFT and SES Networks Bring High-speed Connectivity to Businesses in Africa*, SES Networks (March 14, 2018) https://www.ses.com/press-release/aft-and-ses-networks-bring-high-speed-connectivity-businesses-africa. Atlantique Future Technology (AFT), one of the leading service providers of innovative wireless connectivity and broadband network services in West and Central Africa, is partnering with SES Networks to bring cutting-edge end-to-end connectivity service to enterprise customers and households in Niger and Burkina Faso.
[5] *See Remarks of Assistant Secretary Redl at Satellite 2018*, NTIA (March 14, 2018) https://www.ntia.doc.gov/speechtestimony/2018/remarks-assistant-secretary-redl-satellite-2018.
[6] *See* Press Release, *SES Government Solutions Lands Additional MEO Beam Task Order with U.S. Department of Defense*, SES Networks (August 1, 2017), https://www.ses.com/press-release/ses-government-solutions-lands-additional-meo-beam-task-order-us-department-defense.
[7] Id.

destroyed. SES capacity allows humanitarian organizations, first responders, and government services to communicate reliably over a high-performance network to coordinate effective, time-sensitive relief efforts. When terrestrial infrastructure is down or overburdened due to natural disasters or other emergencies, SES can provide backhaul services to facilitate communications. After Hurricane Maria damaged or destroyed about 95 percent of Puerto Rico's cellphone towers, SES' O3b *FastConnect Solution*[8] was used to support Alphabet's Project Loon[9] and local telecommunications operations to provide reliable, high-performing 4G/LTE mobile connectivity to people on the ground. [10] The coverage of the combined Project Loon-O3b network extended existing carrier service to the "hardest hit parts of the island" where there are no cell towers. [11] SES also provided GSO C-band capacity to help restore and maintain connectivity. These examples demonstrate the importance of satellite services in general, and SES' unique fleet specifically, to the expansion of broadband access. Satellite is just as critical as a redundancy for

---

[8] *FastConnect Solution,* O3b Networks (2017) https://www.o3bnetworks.com/wp-content/uploads/2017/04/Product-FastConnect-Solution-English-14FEB17.pdf. (The O3b *FastConnect Solution* is a high throughput and fiber-like satellite connectivity service that provides quickly deployable and re-deployable IP Transit bandwidth, with the infrastructure needed to provide network connectivity, when and where it is needed).

[9] *What is Loon,* Project Loon (last visited July 17, 2018) https://x.company/loon/. (Project Loon is a network of balloons designed to extend Internet connectivity to people in rural and remote areas worldwide. High speed internet is transmitted up to the nearest balloon from our telecommunications partner on the ground, relayed across the balloon network, and then back down to users on the ground.).

[10] *Hurricane Maria Destroyed 95% of Puerto Rico's Cell Sites*, TeleGeography (Sept. 22, 2017) https://www.telegeography.com/products/commsupdate/articles/2017/09/22/hurricane-maria-destroyed-95-of-puerto-ricos-cell-sites/ (FCC Chairman, Ajit Pai, reported that "Hurricane Maria has had a catastrophic impact on Puerto Rico's communications networks. For example, over 95% of Puerto Rico's wireless cell sites are currently out of service."); Caleb Henry, *Google Using O3b Satellites to Connect Project Loon Over Puerto Rico*, SpaceNews (Oct. 23, 2017) http://spacenews.com/google-using-o3b-satellites-to-connect-project-loon-over-puerto-rico/. (This off-ground NGSO satellite-supported connectivity provides basic communication and internet activities for customers in disaster-affected areas. This includes SMS, text, email, and "basic internet," but no voice service or calling.).

[11] Abner Li, *Alphabet deployed emergency LTE to Puerto Rico w/ Project Loon in under a month*, 9TO5 Google (Oct. 20, 2017) https://9to5google.com/2017/10/20/alphabet-x-project-loon-puerto-rico-live/.

existing telecommunications infrastructure to ensure that those that currently have access to the free flow of information online continue to have it.

III. IN ORDER FOR SATELLITE TO PLAY A ROLE IN THE FREE FLOW OF INFORMATION ONLINE, SATELLITE OPERATORS MUST HAVE GAURANTEED ACCESS TO SPECTRUM

To continue to provide connectivity to the U.S. and communities abroad, satellite providers need to have both existing and future access to spectrum. Satellite operators are already making efficient use of the spectrum bands allocated to their services, including within the Ku, Ka, and C-bands. In the case of Hurricane Maria described above, for example, SES utilized its spectrum both in the 28 GHz portion of the Ka-band and the C-band for disaster relief efforts. However, additional spectrum allocation is needed to meet increased market demand for satellite services and the emergence and development of new technologies.

As the U.S. continues to prioritize emerging technology and trends, it must recognize that next-generation capabilities, including 5G, will be comprised of complementary but diverse technologies including satellite, fiber, wireless, and high-altitude platforms. Each of these technologies will require access to sufficient spectrum to deliver high capacity and high-speed services. The ability of satellites to support next-generation applications, including facilitating 5G and IoT deployment will depend on having access to internationally harmonized spectrum, specifically in the Ka and Q/V bands. Technical barriers and competitive obstacles must be removed to ensure that satellite services can continue to efficiently utilize spectrum and take advantage of the economies of scale necessary to deliver of critical communications services, both domestically and internationally. For satellite operators to continue to play such a crucial role in

SES Networks
900 17th Street, NW Suite 300
Washington, DC 20006
USA

Tel. +1 202 813 4026
Fax +1 703 831 8780
Suzanne.Malloy@ses.com
www.ses.com

6

facilitation the free flow of information to end users across the globe, access to spectrum will be crucial. SES appreciates the NTIA's willingness to overcome the challenges of innovation through "collaboration on the global policy frameworks and industry-led standards that will generally define how 5G unfolds now and for the foreseeable future." [12]

IV.   CONCLUSION

SES appreciates the NTIA's effort to identify priority issues and encourage growth and innovation for the internet and internet-enabled economy. SES encourages the NTIA to consider innovative solutions, including satellite services, when discussing policy considerations for the issues discussed in the *NOI* and to remain invested in the health and success of all aspects of the satellite sector.[13] SES offer these comments in support of this *NOI* and is readily available to assist in furthering the NTIA's efforts.

---

[12] *See Remarks of Assistant Secretary Redl at Satellite 2018*, NTIA.
[13] Id.