

June 10, 2015

Via e-mail

Attention: Broadband Opportunity Council  
National Telecommunications and Information Administration  
U.S. Department of Commerce  
1401 Constitution Avenue, NW, Room 4626  
Washington D.C. 20230  
[BOCrfc2015@ntia.doc.gov](mailto:BOCrfc2015@ntia.doc.gov)

Re: Broadband Opportunity Council Notice and Request for Comment, Docket No. 1540414365-5365-01

**Dear Sir or Madam:**

The Satellite Industry Association (SIA)<sup>1</sup> submits these comments in response to the Broadband Opportunity Council's (Council) above referenced notice and request for comment.<sup>2</sup> SIA appreciates the opportunity to comment on the important issue of broadband adoption in the United States. As discussed herein, satellite operators provide competitive broadband services across the United States, including the most rural and remote parts of the country. Accordingly, SIA and its members are uniquely qualified to provide their insight into how to expand broadband deployment and adoption throughout the United States.

As discussed below, in order to help enable broadband adoption and ensure broadband availability, including in times of emergencies, SIA urges the Executive Branch agencies to include satellites in critical government programs—such as the First Responder Network Authority (FirstNet), to ensure that sufficient spectrum is available to support the important services that satellite provides, and to adopt technology neutral policies so the satellite industry can help the Council accomplish its goals.<sup>3</sup>

## **I. Background**

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<sup>1</sup> SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, and ground equipment suppliers. Since its creation twenty years ago, SIA has advocated for the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business. SIA Executive Members include: The Boeing Company; The DIRECTV Group; EchoStar® Corporation; Harris CapRock Communications; Intelsat S.A.; Iridium Communications Inc.; Kratos Defense & Security Solutions; LightSquared; Lockheed Martin Corporation; Northrop Grumman Corporation; SES Americom, Inc.; SSL; and ViaSat, Inc. SIA Associate Members include: ABS US Corp.; Airbus DS SatCom Government, Inc.; Artel, LLC; ATK Inc.; Cisco; Cobham SATCOM Land Systems; Comtech EF Data Corp.; DRS Technologies, Inc.; Eutelsat America Corp.; Glowlink Communications Technology, Inc.; Hughes; iDirect Government Technologies; Inmarsat, Inc.; Exelis, Inc.; Marshall Communications Corporation.; MTN Government; O3b Limited; Orbital Sciences Corporation; Panasonic Avionics Corporation; Row 44, Inc.; TeleCommunication Systems, Inc.; Telesat Canada; TrustComm, Inc.; Ultisat, Inc.; Vencore Inc.; and XTAR, LLC.

<sup>2</sup> Broadband Opportunity Council Notice, 80 Fed. Reg. 23785, 23787 ¶¶ 24, 25, 26 (Apr. 29, 2015) ("BOCN").

<sup>3</sup> *Id.*

The Satellite industry provides affordable, ubiquitous, and reliable broadband services throughout the United States. Satellite operators continue to improve the cost and quality of their services by utilizing advanced technologies (e.g., frequency reuse, spot beams) in new satellites, such as high throughput satellites, in order to respond to the growing demand for broadband services.<sup>4</sup> Today, there are over 1.6 million satellite broadband subscribers across North America.<sup>5</sup> Moreover, satellite broadband providers offer quality services that are comparable to other broadband providers. Specifically, satellite customers are able to download music and movies, browse web pages, check email, engage in social media, and utilize Voice over Internet Protocol (“VoIP”) phone calls—all at prices comparable to those charged by terrestrial broadband providers.<sup>6</sup> In addition, satellites provide speeds that are comparable to cable and fiber networks. In fact, for the past two years, a satellite broadband operator was ranked first by the Federal Communications Commission (FCC) in terms of speeds promised to its subscribers.<sup>7</sup> In sum, the satellite industry is and will continue to be, a significant provider of broadband services in the United States.

## **II. Broadband Satellites Are Instrumental in Facilitating Broadband Deployment and Adoption in Rural and Remote Areas**

Satellite is the most economically efficient technology to provide broadband services to consumers in rural and remote portions of the United States. Therefore, satellites must play a vital role in the expansion of broadband in rural and remote areas to accomplish the objectives of the notice.<sup>8</sup> Satellite operators do not face the same geographic and economic obstacles as other broadband providers (e.g., mobile service or wireline providers) in providing broadband service to rural and remote areas.<sup>9</sup> Unlike for terrestrial infrastructure, satellite broadband providers do not require additional infrastructure in order to add customers, assuming available satellite coverage and capacity. Thus, unlike the provision of terrestrial broadband services, the cost to provide satellite broadband is not geographically sensitive.<sup>10</sup> This results in lower costs to provide service to customers in more rural and remote areas of the country.

By contrast, broadband providers that provide services via underground cables are faced with the high cost of extending expensive terrestrial infrastructure to relatively few homes.<sup>11</sup> As a result, these providers have limited economic incentive to provide broadband services to rural and remote areas unless

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<sup>4</sup> Satellite Industry Association, State of the Satellite Industry Report, 14 (May 2015), *available at* <http://www.sia.org/wp-content/uploads/2015/05/Mktg15-SSIR-2015-FINAL-Compressed.pdf>.

<sup>5</sup> *See id.* at 12.

<sup>6</sup> *See e.g.*, <http://www.hughesnet.com/index.cfm?page=Plans-Pricing>; <http://www.exede.com/internet-packages-pricing/service-availability?zip=20536>, *see also*, Patrick Nelson, The Skies Have It: Affordable Broadband Internet for All, (Dec. 5, 2012, 5:00 AM PT), <http://www.technewsworld.com/story/76771.html>.

<sup>7</sup> Exede Service Ranked No. 1 Again in Delivering Advertised Speeds, (Jun. 18, 2014), *available at* <http://investors.viasat.com/releasedetail.cfm?ReleaseID=855447>; For broadband, it is less clear-cut in terms what metric should be measured to determine performance.

<sup>8</sup> *See* BOCN ¶ 24, 25, 26.

<sup>9</sup> *See* <https://www.fcc.gov/encyclopedia/types-broadband-connections#satellite> (last visited May 28, 2015).

<sup>10</sup> Satellite broadband providers face the same costs regardless of whether a customer lives in a rural or urban area.

<sup>11</sup> Brian Witkowski, Bridging the Digital Divide: Improving Broadband Access for Rural Americans, 13 Pub. Int. L. Rep. 170, 174 (2008).

they can recoup these costs through higher charges to customers. Accordingly, the Executive Branch must take into account the cost-effective nature of the provision of satellite broadband, including those involving universal service goals.

#### **A. Satellite Broadband Services are Vital in the Aftermath of a Natural Disaster**

Unlike terrestrial infrastructure, satellite broadband service is ubiquitous and extremely reliable in the event of a natural disaster because satellites do not rely on ground-based infrastructure. As such, satellites can provide critical communications during a disaster by easily deploying small dish antennas practically anywhere, even where the terrestrial infrastructure is unavailable.<sup>12</sup> In comparison, terrestrial broadband service providers are extremely vulnerable in the event of a natural disaster.

For instance, during Hurricane Sandy, New York City's telecommunications network was damaged due to downed landlines and cell towers.<sup>13</sup> As a result, terrestrial broadband providers were unable to provide Internet or voice communications to thousands of their customers.<sup>14</sup> Satellite technology, however, was resilient and successfully provided vital communications to the New York City region. There are copious examples where satellites stepped in to provide critical communications services to first responders and consumers while the terrestrial communications network was down. For example, in Rockaway, New York, Hughes Network Systems, Limited (Hughes) provided satellite broadband services to the Federal Emergency Management Agency (FEMA) so volunteers and disaster victims could make calls and apply for services online.<sup>15</sup> Also, after a tornado leveled Beaver Crossing, Nebraska in 2014, Exede Enterprise services from ViaSat, a satellite broadband operator, provided critical Internet services to first responders.<sup>16</sup>

Further, many first responders rely on satellite broadband service for day-to-day activities. For instance, the Honolulu Police department recently upgraded their mobile command center by utilizing a satellite system that provides broadband data for Internet access.<sup>17</sup> Since Honolulu is in a uniquely isolated region, its police department needed a reliable broadband system in order to communicate with other agencies to better serve the community on a daily basis. Therefore, whether for day-to-day activities or in the event of an emergency, it is critical that first responders have access to broadband satellite services, especially in rural and remote communities. Accordingly, ensuring that critical government programs, such as a next generation 911, have a satellite component is critical to developing a sufficiently reliable, nationwide communications infrastructure.

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<sup>12</sup> See SuperStorm Sandy, Hughes Satellite Technology Provides Critical Communications in the Aftermath of Superstorm Sandy, *available at* <http://www.hughes.com/resources/superstorm-sandy-1>.

<sup>13</sup> *See id.*

<sup>14</sup> *See id.*

<sup>15</sup> *See id.*

<sup>16</sup> Randy Sukow, Rural Connect, *Nebraska Telco Teams With Nonprofit to Provide Exede Broadband to Tornado-Struck Town*, (Jun. 2, 2014 5:22 PM), <http://www.ruralconnect.coop/blog/?p=1323>.

<sup>17</sup> Squire Tech Solutions, *A Case Study: Honolulu Police Department*, Mar. 24, 2015, <http://www.squiretechsolutions.com/portfolio/case-study-honolulu-police-department-community-safe-with-1-5m-command-unit/>.

Providing interoperable advanced communications for first responders is a high priority in United States. In 2012 Congress established FirstNet, which is responsible for deploying a single interoperable nationwide broadband network to provide cost-effective, resilient, and reliable wireless communication services to first responders across the entire country in order to improve public safety coordination during emergencies and daily missions.<sup>18</sup> In order to achieve the required reliability and coverage, a satellite component must be included in this network for the following reasons. First, deployable satellite equipment provides reliability and the ability to provide additional capacity due to its short set up time. Second, by providing coverage where needed through deployable satellite equipment, FirstNet will be able to provide instant coverage to first responders/public safety users during any situation. Finally, satellite backhaul is a critical component to ensure the reliability of the LTE network, when terrestrial infrastructure is not available, which is particularly important to critical sites such as command centers or public safety answering points.<sup>19</sup>

FirstNet acknowledges the challenges rural emergencies pose and plans to improve the communications in these areas.<sup>20</sup> So it is vital that the network deployed by FirstNet includes a satellite component to provide reliable coverage in all areas of the country.

#### **B. Spectrum Certainty is Essential for the Satellite Industry to Efficiently Provide Broadband Services to Rural and Remote Areas**

Like other wireless communications technologies, the satellite industry relies on spectrum to provide its important communication services. In order for satellite operators to continue to meet the demands for satellite broadband and other services, the Executive Branch must ensure sufficient broadband resources are available to support those services.<sup>21</sup>

First, the Executive Branch agencies must ensure that existing satellite spectrum remains fully available for satellite operators. Sufficient spectrum resources will create regulatory certainty, which will allow operators to continue investing in innovative communication services. Ensuring spectrum certainty is essential to satellite broadband innovation because satellites take multiple years to design and build. Moreover, once a spacecraft is launched, its design is locked in for the life of the satellite, which can run up to 20 years.<sup>22</sup> Given these time frames, the satellite industry needs spectrum certainty in order to make the decision to invest. Second, as new and innovative services continue to be introduced and as demand for satellite broadband services continues to increase, it is imperative that the Executive Branch ensure that additional satellite spectrum is made available to meet these needs.

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<sup>18</sup> <http://www.firstnet.gov/about> (last visited May 28, 2015).

<sup>19</sup> Hughes and Thales LTE Mobile Network, Federal Communications Commission, Connecting America: The National Broadband Plan 21 (2010) (demonstrating that rural areas, such as Alaska and West Virginia, in terrestrial mobile broadband coverage).

<sup>20</sup> *Id.*

<sup>21</sup> See BOCN ¶ 24

<sup>22</sup> Virgil Labrador, Satellite Communication: *How Satellites Work*, Encyclopedia Britannica, available at <http://www.britannica.com/EBchecked/topic/524891/satellite-communication/288217/How-satellites-work> (last updated Feb. 18, 2015).

Sufficient certainty is at issue at the 2015 World Radio communication Conference. For instance, the World Radiocommunication Advisory Committee (WAC) just approved a proposal for a future agenda item for additional fixed satellite service spectrum.<sup>23</sup> Advancing proposals, such as this, will enable the satellite industry to continue to grow and meet the demand for broadband services.

At the same time, however, there are proposals under consideration that would negatively impact the satellite industry's ability to meet growing demand and, perhaps, even provide existing services. One such proposal is a future agenda item for IMT spectrum,<sup>24</sup> which would target all frequency bands above 6 GHz, including key frequencies such as the Ka- and V- bands, where satellite broadband services operated or future services planned and already offered. Adoption of such an item would threaten spectrum certainty for broadband satellite services. Accordingly, the Executive Branch should be wary of such an approach.

### **C. Technology Neutral Policies are Efficient and Cost Effective**

In any effort to promote broadband adoption, it is critical that the Executive Branch adopt policies that are technology neutral. Technological neutrality benefits the American public for two distinct reasons. First, it will allow the marketplace to direct the advancement of broadband technology.<sup>25</sup> As a result, consumer choice will be enhanced because the government will not be choosing which broadband technologies should be utilized. Second, technological neutrality avoids the possibility of agencies promoting broadband technologies that are obsolete or not cost effective.<sup>26</sup> Accordingly, adopting a technology neutrality approach to broadband services will ensure that customers have access to the best broadband technologies at reasonable rates.

Moreover, agencies of the U.S. government, such as the FCC, have recognized the importance of technological neutrality with regard to broadband and have adopted and maintained this approach in order to best serve the American public.<sup>27</sup> Accordingly, SIA urges that as the Administration reviews its broadband adoption programs, it adopts a technology neutral approach. This is true for funding programs, such as Universal Service and the Telecommunications Infrastructure Loan Program. Technology neutral policies will spur competition in rural areas by promoting fairness and efficiency in the marketplace, which is a goal the satellite industry can help the Council achieve.<sup>28</sup>

### **III. Conclusion**

As discussed herein, SIA urges Executive Branch agencies to provide sufficient spectrum resources, which are vital for the satellite industry to be able to continue developing innovative technologies that are responsive to the rising customer demand for broadband services. Moreover, a technology neutral approach in

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<sup>23</sup> *FCC Seeks Comments on Recommendations Approved by the Advisory Committee for the 2015 World Radiocommunication Conference*, IB Docket No. 04-286, Public Notice, DA 15-604, 120, (rel. May 21, 2015).

<sup>24</sup> *Id.* at 82.

<sup>25</sup> See Jim Chen, *Subsidized Rural Telephony and the Public Interest: A Case Study in Cooperative Federalism and its Pitfalls*, 307 J. Telecomm. & High Tech. L. 308, 334-35 (2003) (discussing the principle of technological neutrality).

<sup>26</sup> *See id.*

<sup>27</sup> See Strategic Plan of the FCC, <https://www.fcc.gov/encyclopedia/strategic-plan-fcc> .

<sup>28</sup> See BOCN ¶ 25.

regard to broadband will ensure that the best and most affordable broadband technologies are available for the public. In addition, satellite must be a component of important government communications projects, such as FirstNet. Accordingly, SIA supports the objectives of the Council and urges the Council to consider these comments in its efforts to expand broadband deployment and adoption across the country, especially in rural and remote areas and in the event of an emergency.

Respectfully submitted,

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