

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of )  
 )  
Inquiry Concerning the Deployment of ) GN Docket No. 14-126  
Advanced Telecommunications Capability to )  
All Americans in a Reasonable and Timely )  
Fashion, and Possible Steps to Accelerate )  
Such Deployment Pursuant to Section 706 of )  
the Telecommunications Act of 1996, as )  
Amended by the Broadband Data )  
Improvement Act )

To: The Commission

**COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION**

The Satellite Industry Association (“SIA”)<sup>1</sup> submits comments in response to the Commission’s Tenth Broadband Progress Notice of Inquiry (“*Inquiry*”), which seeks to determine and report whether broadband is being deployed in a reasonable and timely fashion to all Americans.<sup>2</sup> Section 706 of the Telecommunications Act of 1996, as amended, directs the

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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. 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.; and SSL. SIA Associate Members include: Artel, LLC; Astrium Services Government, Inc.; ATK Inc.; Cisco; Cobham SATCOM Land Systems; Comtech EF Data Corp.; DigitalGlobe, Inc.; DRS Technologies, Inc.; Encompass Government Solutions; Eutelsat America Corp.; Globecom Systems, Inc.; Glowlink Communications Technology, Inc.; iDirect Government Technologies; Inmarsat, Inc.; Exelis, Inc.; Marshall Communications Corporation.; MTN Government; NewSat America, Inc.; O3b Limited; Orbital Sciences Corporation; Panasonic Avionics Corporation; Raytheon Space and Airborne Systems; Row 44, Inc.; TeleCommunication Systems, Inc.; Telesat Canada; The SI Organization, Inc.; TrustComm, Inc.; Ultisat, Inc.; ViaSat, Inc., and XTAR, LLC.

<sup>2</sup> *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Tenth Broadband Progress Notice of Inquiry, GN Docket No. 14-126, FCC 14-113, ¶ 1

Commission to report on the availability of broadband, defined as “advanced telecommunications capability” under the Act.<sup>3</sup> In its *Inquiry*, the Commission seeks comment on whether to incorporate satellite services into the next broadband progress report<sup>4</sup> and whether to define advanced telecommunications capability in terms of speed, latency and usage allowance benchmarks.<sup>5</sup>

Satellites provide broadband services to millions of Americans and deserve recognition in the next broadband report. Following billions of dollars of investment and four-generations of innovation, modern satellite services provide the capability to use the broadband applications that consumers want, including cloud computing, streaming video, photo sharing, and other data-intensive services. Current-generation satellite broadband services readily meet the proposed 10 Mbps downlink and 1 Mbps uplink benchmark required to support these types of data-intensive broadband Internet applications. Establishing these minimum downlink and uplink speeds will ensure that the Commission only reports on those services capable of supporting broadband applications that consumers find meaningful.

By comparison, carving out services from the definition of broadband based on ambitious latency and data usage benchmarks would improperly exclude many data-intensive Internet service offerings from the broadband progress report and offer a misleading picture of the nation’s progress in deploying services to all Americans. The proposed benchmarks for latency and usage bear little relationship to consumers’ real-world broadband needs and exhibit a systemic bias towards terrestrial wireline systems. Section 706 of the Act does not seek to

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(August 5, 2013). Consistent with the *Inquiry*, SIA uses the term “broadband” interchangeably with “advanced telecommunications capability.” *Id.* at ¶ 1 n.1.

<sup>3</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, § 706.

<sup>4</sup> See *Inquiry* at ¶ 35.

<sup>5</sup> *Id.* at ¶¶ 5-27.

establish *goals* for performance, but rather requires the Commission to undertake a technology-neutral *assessment* of broadband deployment from the perspective of consumers.<sup>6</sup> As a result, aggressive latency and data usage benchmarks that have no meaningful effect on web browsing, streaming video, social media engagement and other core broadband services have no place in the Commission’s definition of broadband services.

## **Discussion**

### **I. THE COMMISSION SHOULD INCLUDE SATELLITE BROADBAND SERVICES IN ITS NEXT BROADBAND PROGRESS REPORT**

Today broadband satellite service providers offer customers the capability to use a full range of applications, comparable to terrestrial wireline broadband providers. Specifically, satellite customers are able to stream high definition and standard definition videos, download movies, stream music, conduct video conferences, make and receive Voice over Internet Protocol (“VoIP”) phone calls, browse web pages, engage in social media, and check emails.<sup>7</sup> Unbiased reviews have also acknowledged the capabilities of modern satellite services.<sup>8</sup> For example, Hughes Network Systems, LLC (“Hughes”) and ViaSat, Inc. (“ViaSat”), satellite service providers in this sector, today support a panoply of feature-rich broadband services to

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<sup>6</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, § 706(c)(1) (“The term ‘advanced telecommunications capability’ is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”)(emphasis added).

<sup>7</sup> See <http://www.hughesnet.com/index.cfm?page=Plans-Pricing> (last visited September 4, 2014); <http://www.exede.com/internet-packages-pricing/service-availability?zip=20536> (last visited September 4, 2014).

<sup>8</sup> See, e.g., Sean Gallagher, How ViaSat’s Exede makes satellite broadband not suck (January 10, 2012) (“[A] call over a VoIP phone tethered to an Exede home unit . . . was better than cellular quality.”), <http://arstechnica.com/business/2012/01/how-viasats-exede-makes-satellite-broadband-not-suck/>.

more than 1.5 million customers.<sup>9</sup> The scale and scope of satellite broadband offerings warrant recognition in the Commission’s next broadband progress report.<sup>10</sup>

## **II. THE COMMISSION SHOULD ADOPT ONLY BENCHMARKS THAT REFLECT THE REAL-WORLD BROADBAND NEEDS OF TYPICAL CONSUMERS**

The FCC’s proposal to adopt a 10/1 Mbps speed benchmark<sup>11</sup> represents a reasonable minimum threshold to ensure consumers in a “moderate use household” can satisfy their broadband internet access needs. Speeds of this level allow a “moderate use household” to stream videos, make VoIP phone calls, browse webpages, and check emails, which are the core broadband applications used by typical consumers.<sup>12</sup> Consumer broadband satellite services provided by Hughes go as high as 15/2 Mbps and by ViaSat go as high as 12/3 Mbps,<sup>13</sup> and they offer all of the above applications as part of their respective satellite services.<sup>14</sup> In addition, O3b Limited (“O3b”), another satellite operator in this sector, is enabling broadband services of up to

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<sup>9</sup> See EchoStar Corporation, Quarterly Report (Form 10-Q) at 40 (August 7, 2014) (approximately 935,000 subscribers as of June 30, 2014); ViaSat, Inc., Annual Report (Form 10-K), at 3 (May 27, 2014) (approximately 641,000 subscribers as of April 4, 2014).

<sup>10</sup> The Commission previously declined to include satellite service providers in its Eighth Broadband Progress Report because at the time comments were filed there were no satellites capable of meeting the Commission’s speed benchmark. *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Eighth Broadband Progress Report, GN Docket No. 11-121, 27 FCC Rcd 10342, ¶ 41 (2012).

<sup>11</sup> See *Inquiry* at ¶ 15.

<sup>12</sup> *Id.* at ¶ 12. Further, the download speed of 10 Mbps meets the estimated needs of a typical “high use household.”

<sup>13</sup> See <http://www.hughesnet.com/index.cfm?page=Plans-Pricing> (last visited September 4, 2014), and <http://www.exede.com/internet-packages-pricing/service-availability> (last visited September 4, 2014).

<sup>14</sup> See *supra* note 7.

12 Mbps to individual consumers using its non-geostationary broadband satellite system with high-quality IP application functionality.<sup>15</sup>

By comparison, the Commission’s discussion of latency reflects an inflexible, one-dimensional view of the diverse services the multi-faceted satellite ecosystem can offer. The proposed latency benchmark of 100 milliseconds is not necessary for a “moderate use household” to satisfy its typical broadband needs or expectations.<sup>16</sup> Latency at levels of approximately 750 milliseconds does not impair the capability of consumers to use core broadband applications, including VoIP. New satellite offerings are being developed that further improve latency for satellite broadband customers. For example, O3b’s non-geostationary broadband satellite capacity offers customers latency levels between 120 and 150 milliseconds.<sup>17</sup>

Unlike throughput, moreover, many different factors can affect latency, including excessive buffering by some services, multiplexing services, and other system setting and usage patterns that providers cannot necessarily control. The latency benchmarks the Commission has proposed do not address factors affecting latency that are unrelated to network performance. The Commission’s latency proposal appears derived from the latency requirement necessary for

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<sup>15</sup> O3b offers broadband satellite capacity to telecommunications service providers, mobile carriers, Internet Service Providers, and large enterprises for their onward provision of internet connectivity. Telecom Cook Islands commenced broadband service on O3b’s systems in March 2014 offering speeds over the O3b network of up to 12 Mbps. See <http://www.telecom.co.ck/content/page/internet-broadband-plans/m/2/> (last visited September 4, 2014).

<sup>16</sup> See *Inquiry* at ¶ 25.

<sup>17</sup> O3b enables applications including cloud-based services, video and voice conferencing, video streaming and real-time multiplayer video gaming services over its satellite system. See “What is Network Latency and Why Does It Matter?”, [http://www.o3bnetworks.com/media/40980/white%20paper\\_latency%20matters.pdf](http://www.o3bnetworks.com/media/40980/white%20paper_latency%20matters.pdf).

typical terrestrial wireline systems to provide VoIP services,<sup>18</sup> rather than derived from what consumers actually want or need, as Section 706 requires.<sup>19</sup>

Similarly, adopting a minimum data use benchmark of 100 GB is at odds with providing a robust broadband internet access service offering to consumers.<sup>20</sup> Spectrum-based service providers (both terrestrial and satellite-based) must impose much lower data caps on customers than terrestrial wireline service providers to maintain a minimum level of performance across the network. Providers assign available capacity based on price, loading, customer expectations and other related factors. Adopting a 100 GB minimum allowance, which appears to be based on data usage allowances for terrestrial wireline systems, effectively would preclude any satellite (or terrestrial wireless) service from being recognized by the Commission as deploying broadband services.<sup>21</sup> This result would be both illogical and contrary to the principles of Section 706 of the Act, which require that deployment of advanced telecommunications capability be assessed from the perspective of the consumer and on a technology-neutral basis.<sup>22</sup> To the extent the Commission nonetheless elects to include a minimum data allowance as part of its assessment of the deployment of advanced telecommunications capability, that allowance should consider the need for rationing network spectrum use and be based on consumer usage

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<sup>18</sup> See *Inquiry* at ¶ 25 (citing *In the Matter of the Connect America Fund*, WC Docket No. 10-90, Report and Order, 28 FCC Rcd 15060, ¶¶ 19-36 (Wireline Comp. Bur. 2013)). Indeed, as a matter of physics, it would be impossible for any satellite system in geostationary orbit to meet a 100 millisecond latency benchmark.

<sup>19</sup> See *supra* note 6.

<sup>20</sup> See *Inquiry* at ¶ 28.

<sup>21</sup> *Id.* at ¶ 27 (citing *In the Matter of the Connect America Fund*, WC Docket No. 10-90, Report and Order, 28 FCC Rcd 15060, ¶¶ 18-21 (Wireline Comp. Bur. 2013)).

<sup>22</sup> See *supra* note 6.

patterns.<sup>23</sup> This is very much in the public interest as spectrum-based broadband services are more likely to reach less densely populated areas of the United States than wireline services, and are therefore key to *increasing* broadband deployment throughout the nation. In this regard, SIA proposes a minimum data allowance of 10 GB, which is a more realistic technical requirement for spectrum-based service providers and more accurately reflects typical consumer usage of spectrum-based broadband services.

Respectfully submitted,

**SATELLITE INDUSTRY ASSOCIATION**



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<sup>23</sup> Typical wireless service plans have monthly data caps that range from 1 GB to 10 GB. *See, e.g., In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Sixteenth Report, 28 FCC Rcd 3700, 3802-04, ¶¶ 146-47 (2013); Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2013-2018, at 26 (February 5, 2014) (estimating that 24 percent of mobile data users consume more than 2 GB per month; and only 3 percent of mobile data users consume more than 5 GB per month), available at [http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white\\_paper\\_c11-520862.html](http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white_paper_c11-520862.html); *The Broadband Availability Gap*, OBI Technical Paper No. 1, at 6 (2010) (estimating that the median broadband user in 2009 consumes 1.7 GB per month), available at <http://transition.fcc.gov/national-broadband-plan/broadband-performance-paper.pdf>.