

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of	)	GN Docket No. 16-245
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	)	

**REPLY COMMENTS OF VIASAT, INC.**

ViaSat, Inc. replies to the comments submitted in response to the *Twelfth Broadband Progress Notice of Inquiry* adopted by the Commission on August 2, 2016 in this proceeding (the “*NOI*”), which initiated the Commission’s annual assessment of the “availability of advanced telecommunications capability to all Americans” pursuant to Section 706 of the Telecommunications Act of 1996.<sup>1</sup>

In its comments, ViaSat urged the Commission to ensure that its *2017 Broadband Progress Report* accounts for the fact that satellite broadband providers are meeting the 25/3 Mbps speed threshold and otherwise providing high-quality, advanced telecommunications capability to consumers. ViaSat also explained that it would not be appropriate or desirable to apply a separate latency threshold in the Section 706 context given that latency need not adversely impact the end-user experience, as the Commission itself has recognized. The comments filed on the record reflect strong support for these positions. Accordingly, ViaSat reiterates its request that the Commission: (i) fully consider satellite broadband deployment in

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<sup>1</sup> *NOI* ¶ 1.

preparing its *2017 Broadband Progress Report* and (ii) eschew the adoption of any latency threshold in the Section 706 context.

**I. THE RECORD REFLECTS STRONG SUPPORT FOR INCLUDING SATELLITE BROADBAND SERVICES IN THE COMMISSION’S EVALUATION OF THE AVAILABILITY OF “ADVANCED TELECOMMUNICATIONS CAPABILITY”**

**A. The Record Confirms that Satellite Broadband Providers Play an Important Role in Extending “Advanced Telecommunications Capability” to All Americans**

ViaSat’s comments established that satellite broadband services—and, in particular, ViaSat’s own Exede services—are now meeting the 25/3 Mbps speed threshold applicable to fixed terrestrial services and otherwise provide high-quality, advanced telecommunications capability to consumers. ViaSat also explained that satellite broadband services will be further enhanced in coming years, as reflected in the construction of: (i) ViaSat-2, which is scheduled to enter into service in 2017, and which will support peak speeds of 100-plus Mbps; and (ii) ViaSat-3, which is scheduled to be deployed in 2019, and which will provide over one terabit per second (1,000 Gbps) of throughput and burst in the 1 Gbps range.<sup>2</sup>

The record reflects the valuable contribution that satellite broadband providers are making in providing high-quality competitive telecommunications alternatives to consumers.<sup>3</sup>

As Hughes Network Systems succinctly states, “both the Commission’s reports and industry data show that satellite broadband provides consumers with an excellent product, indicating that

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<sup>2</sup> See, e.g., *ViaSat Announces Third Quarter Fiscal Year 2016 Results* (Feb. 9, 2016), available at <http://investors.viasat.com/releasedetail.cfm?ReleaseID=954130>.

<sup>3</sup> See Comments of the National Cable & Telecommunications Association, GN Docket No. 16-245, at 3 (Sep. 6, 2016) (noting that consumers are able to access the Internet through multiple broadband architectures, including satellite networks) (“NCTA Comments”); Comments of the United States Telecom Association, at 3 (Sep. 6, 2016) (noting that most consumers have a choice of broadband providers—including wired, wireless, and satellite broadband options); Comments of ADTRAN, Inc., GN Docket No. 16-245, at 17 (Sep. 6, 2016) (“ADTRAN Comments”).

satellite broadband providers are playing and will continue to play an integral role in ensuring that broadband services are deployed to all Americans in a reasonable and timely fashion.”<sup>4</sup>

Notably, no commenter suggests that satellite broadband services should be excluded from the Commission’s Section 706 inquiry. In short, the record underscores ViaSat’s position that the Commission should fully account for satellite broadband deployment in preparing its *2017 Broadband Progress Report*.

**B. There Is No Basis for Shifting the Section 706 Inquiry To Focus Solely on Fiber Technologies, as Suggested by the Fiber to the Home Council**

As the *NOI* acknowledges, the term “advanced telecommunications capability” is defined in Section 706 without regard to transmission media or technology.<sup>5</sup> It follows that the central question to be addressed by the Commission in its Section 706 inquiry is *whether* that capability is available, and not *how* it is made available. Consistent with this notion, the Commission historically has recognized that “advanced telecommunications capability” can be provided by any number of service providers using any number of technologies.<sup>6</sup>

Nevertheless, the Fiber to the Home Council urges the Commission to adopt a fundamentally different approach in this year’s Section 706 proceeding and instead focus on whether *fiber* technologies—and fiber technologies alone—are available to all Americans.<sup>7</sup> In

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<sup>4</sup> Comments of Hughes Network Systems, LLC, GN Docket No. 16-245, at 3 (Sep. 6, 2016) (“HNS Comments”).

<sup>5</sup> *NOI* ¶ 1.

<sup>6</sup> *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2016 Broadband Progress Report, 31 FCC Rcd 699, at ¶ 13 (2016) (citing the “technologically neutral” language utilized by Congress to frame Section 706 and the legislative history of the 1996 Act in explaining why Section 706 inquiries historically have “center[ed] on the functionality broadband services provide to end users, rather than the underlying technology being utilized”).

<sup>7</sup> Comments of the Fiber to the Home Council Americas, GN Docket No. 16-245, at 3

doing so, the Council expressly asks the Commission to ignore whether consumers have access to services offering minimal levels of *performance*, and instead adopt a metric “based on network *infrastructure*”—and, more specifically, whether a level of fiber infrastructure that the Council deems sufficient is present in a given area.<sup>8</sup> There simply is no basis for this approach, which: (i) runs directly contrary to the plain language of Section 706; (ii) is neither competitively nor technologically neutral; and (iii) unjustifiably assumes that any type of fiber network will *always* deliver high-quality service to end users—and that other technologies *never* will.

Accordingly, the Commission should reject the Council’s proposal.

## **II. THE RECORD REFLECTS OVERWHELMING OPPOSITION TO THE ADOPTION OF A LATENCY THRESHOLD IN THE SECTION 706 CONTEXT**

ViaSat’s comments urged the Commission to evaluate the availability of “advanced telecommunications capability” in a manner that accounts for the many different platforms that are and may be used to provide broadband services and other advanced telecommunications capability to consumers. ViaSat therefore urged the Commission to eschew rigid definitional criteria that unnecessarily (and unreasonably) exclude technologies and services that *are* providing consumers with a high-quality broadband experience. In particular, ViaSat demonstrated that there is no basis for adopting a latency threshold in the Section 706 context, particularly given that: (i) the Commission still lacks any empirical basis for concluding that latency below 100 ms is critical in defining the end-user experience; (ii) if anything, recent developments have further eroded the already suspect link between latency and service quality suggested in the *2016 Broadband Progress Report*; and (iii) application of a 100 ms latency threshold would result in the Commission not “counting” satellite broadband services that

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(Sep. 6, 2016).

<sup>8</sup> *Id.* (emphasis added).

currently deliver high-quality, 25/3 Mbps, “advanced telecommunications capability” to consumers.

ViaSat’s positions are well-supported by the record. As an initial matter, most parties agree that it would be a mistake for the Commission to adopt any rigid latency benchmark in this proceeding, particularly given the wide variety of factors that impact the end-user experience. For example, ADTRAN maintains that “a ‘hard and fast’ latency benchmark for purposes of the Section 706 inquiry would appear to be inconsistent with the recognition that latency is just one factor that consumers trade off when acquiring broadband.”<sup>9</sup> Another commenter makes the related point that the end-user experience is shaped by a variety of external forces, observing (among other things) that “[w]eb page load time data shows that the user experience of the Internet is actually shaped more profoundly by non-network factors under the control of web services firms and end users than by broadband factors under the control of network service providers.”<sup>10</sup>

In addition, broad recognition exists from the wireless and cable industries that focusing on latency would be a mistake given that only a small (and shrinking) percentage of Internet traffic is even potentially latency sensitive (with this potential impact often offset through appropriate network design), such that the impact of latency on the end-user experience is dwarfed by other factors. As CTIA notes, “[t]he applications that comprise the vast majority of all Internet traffic—namely, video streaming, downloading, and web browsing—are

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<sup>9</sup> ADTRAN Comments at 10; *see also* Comments of Mobile Future, GN Docket No. 16-245, at 7 (Sep. 6, 2016) (urging the Commission to focus on speed and exclude other, non-speed factors from its Section 706 assessment).

<sup>10</sup> Richard Bennett, American Enterprise Institute, *G7 Broadband Dynamics*, at 49, *attached to* Letter from HighTech Forum to FCC, GN Docket No. 16-245 (Sep. 6, 2016).

unaffected by latency, as the Commission is well aware.”<sup>11</sup> In light of these trends, NCTA urges the Commission to eschew any latency standard and instead employ benchmarks that “accurately reflect[] the capabilities that consumers need to support popular applications.”<sup>12</sup> Similarly, Hughes Network Systems argues that “given the minimal effect of latency on the majority of actual uses made by consumers with advanced telecommunications access, it is premature for the Commission to adopt a latency standard for its Section 706 analysis.”<sup>13</sup> And O3b acknowledges that “the Commission would be in error if it established 100 ms latency as the benchmark when higher latencies are fully capable of supporting advanced telecommunications capability” and recognizes that, if a latency threshold is adopted, it should be based on empirical data; namely, the point at which there is an “impact [on] the delivery of service, and demonstrated customer satisfaction.”<sup>14</sup>

In contrast, the few parties that endorse the use of a latency threshold do so in perfunctory fashion, without providing any empirical basis for the use of such a threshold. For example, the Utilities Technology Council: (i) provides *no* data to validate its claim that a strict latency threshold is necessary to ensure that consumers receive quality voice service;<sup>15</sup> and (ii) fails to acknowledge or address the Commission’s finding that broadband services with latencies above 100 ms are fully capable of providing high-quality voice service as long as they satisfy a

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<sup>11</sup> Comments of CTIA, GN Docket No. 16-245, at 24 (Sep. 6, 2016).

<sup>12</sup> NCTA Comments at 3.

<sup>13</sup> HNS Comments at 5.

<sup>14</sup> Comments of O3b Limited, GN Docket No. 16-245, at 3 (Sep. 6, 2016).

<sup>15</sup> Comments of the Utilities Technology Council, GN Docket No. 16-245, at 7 (“UTC Comments”).

Mean Opinion Score (“MOS”) of four or better.<sup>16</sup> Similarly, the Open Technology Institute tacitly concedes that the most important Internet applications do not require low latency (and, in any event, it does not account for the fact that the impact of latency can be mitigated through proper network design).<sup>17</sup>

In short, the record convincingly demonstrates that adopting a latency threshold with which to determine the availability of “advanced telecommunications capability” would be inconsistent with the text and policies underlying Section 706.<sup>18</sup>

### CONCLUSION

For the reasons provided above and in ViaSat’s initial comments, ViaSat urges the Commission to fully consider satellite broadband deployment in preparing its *2017 Broadband Progress Report*. The record clearly establishes the valuable contribution that satellite broadband providers are making in extending advanced telecommunications capability to all Americans—including by offering services that meet the 25/3 Mbps speed threshold. At the same time, the record reflects a continuing lack of any empirical justification for adopting a latency threshold in the Section 706 context, and demonstrates that such a threshold would be

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<sup>16</sup> See *Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949, at ¶ 33 (2016). UTC also suggests that low-latency service is critical for certain M2M applications—again, without providing any data to validate this claim. See UTC Comments at 8.

<sup>17</sup> The only applications discussed by the Open Technology Institute are online games and virtual reality applications. See Comments of New America’s Open Technology Institute, GN Docket No. 16-245, at 13-14 (Sep. 6, 2016).

<sup>18</sup> Similarly, it would be inconsistent with Section 706 to adopt a usage allowance threshold as suggested by Netflix. See *generally* Comments of Netflix, Inc., GN Docket No. 16-245 (Sep. 6, 2016). On the one hand, market forces are ensuring that broadband service offerings meet the needs of consumers—including with respect to access to “Internet television.” On the other hand, terms for the use of broadband networks ensure that service providers can manage costs (and ultimately price) and avoid having the vast majority of their customers subsidize the broadband capacity consumption of outliers.

counterproductive and actually would undermine efforts to extend advanced telecommunications capability to all Americans. Accordingly, the Commission should abandon any further consideration of such a latency threshold.

Respectfully submitted,

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