

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

In the Matter of )  
 )  
Inquiry Concerning the Deployment of Advanced ) GN Docket No. 15-191  
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 certain of the comments submitted in response to the *Eleventh Broadband Progress Notice of Inquiry* adopted by the Commission on August 6, 2015 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>

As the leading provider of satellite-based broadband services throughout the United States, ViaSat is pleased that the record reflects the valuable role that satellite providers can play in making “advanced telecommunication capability” available to American consumers. For example, Verizon notes that satellite operators are investing heavily to deploy new broadband technologies for the benefit of consumers,<sup>2</sup> and ADTRAN observes that “America is making significant strides towards ubiquitous broadband”—in part due to the fact that “[s]atellite service now provides broadband at speeds up to 40 mbps to remote and insular areas from

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<sup>1</sup> *NOI* ¶ 1.

<sup>2</sup> Comments of Verizon, GN Docket No. 15-191, at 3 (Sep. 15, 2015).

Geostationary satellites.”<sup>3</sup> The message is clear: Satellite broadband services should be recognized along with other broadband services in the Commission’s Section 706 Report.

Indeed, the only parties that overtly attempt to exclude satellite broadband services are the Rural Associations, which argue that geostationary satellite services should not be deemed “advanced” telecommunications services “[i]nsofar as the laws of physics preclude geostationary satellite services from meeting the 100 ms latency benchmark . . . .”<sup>4</sup> This position is entirely unsupported. Indeed, the Rural Associations fail to provide *any* explanation of why relatively high levels of latency are at all significant in evaluating the capabilities or service quality available to consumers in connection with a given broadband offering.

In contrast, the record reflects widespread agreement that a latency threshold should *not* be employed to determine whether “advanced telecommunication capability” is available in a given area. As an initial matter, and as CTIA notes, any attempt to employ such a threshold would present numerous implementation challenges.<sup>5</sup> More fundamentally, and as ViaSat noted in its initial comments, low latency is not necessary to ensure the availability of high-quality service to consumers, particularly as: (i) the vast majority of broadband traffic is not latency-sensitive and (ii) consumers perceive certain services that might not be able to satisfy a latency benchmark—including certain satellite broadband services—as being on par with the

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<sup>3</sup> Comments of ADTRAN, Inc., GN Docket No. 15-191, at 2-3 (Sep. 15, 2015). ADTRAN cites ViaSat’s service as a key example of this trend. *See id.* at 3 n.5. As ViaSat has explained, ViaSat’s service also is provided throughout the nation, and the vast majority of its subscribers live in and around major population centers.

<sup>4</sup> Comments of NTCA—The Rural Broadband Association, WTC—Advocates for Rural Broadband, the Eastern Rural Telecom Association, and the National Exchange Carriers Association, GN Docket No. 15-191, at 7 (Sep. 15, 2015).

<sup>5</sup> Comments of CTIA—The Wireless Association, GN Docket No. 15-191, at 8-9 (Sep. 15, 2015).

leading cable and DSL services.<sup>6</sup>

NCTA succinctly echoes this sentiment, explaining that even relatively high levels of latency associated with a given broadband service may not prevent a consumer from “fully using the service.”<sup>7</sup> Microcom appropriately urges that the discussion “not be about latency per se, but about *capability*.”<sup>8</sup> And while O3b does not reject the use of a latency threshold outright, it too 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 the levels at which there is an “impact [on] the delivery of service, and demonstrated customer satisfaction.”<sup>9</sup>

AT&T observes that network design involves trade-offs between different quality-of-service metrics (including but not limited to latency), which must be “carefully balance[d] . . . to provide high quality user experiences.”<sup>10</sup> Stated differently, service providers can offset the impact of latency through appropriate network design. The Rural Associations

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<sup>6</sup> Comments of ViaSat, Inc. GN Docket No. 15-191, at 6 (Sep. 15, 2015) (“ViaSat Comments”).

<sup>7</sup> Comments of the National Cable & Telecommunications Association, GN Docket No. 15-191, at 8 (Sep. 15, 2015).

<sup>8</sup> Comments of Microcom Communications Solutions, GN Docket No. 15-191, at 1 (Sep. 15, 2015) (emphasis supplied).

<sup>9</sup> Comments of O3b Limited, GN Docket No. 15-191, at 3 (Sep. 15, 2015). O3b notes that its service has a latency of 120-150 ms. *Id.* at 2. It would be inappropriate to set the latency threshold at this level as: (i) there is no evidence that higher levels of latency necessarily impact the customer experience; (ii) even O3b does not suggest that 120-150 ms would be the appropriate threshold; and (iii) O3b’s proposal would categorically exclude the broadband service provided by virtually all other satellite operators.

<sup>10</sup> Comments of AT&T Inc., GN Docket No. 15-191, at 5 (Sep. 15, 2015) (“AT&T Comments”).

utterly fail to account for features of *existing* satellite broadband networks that manage the impact of latency (and many other technical factors as well) on service quality, and the fact that *future* satellite broadband networks will be designed to do the same. As Mobile Future aptly articulates, “[m]arketplace demands—not regulatory edicts—will best ensure that services meet the quality of service that consumers require;”<sup>11</sup> the data reflect that ViaSat has responded to such demands effectively.<sup>12</sup>

Thus, ViaSat agrees with AT&T that the Commission should focus on evaluating the “overall user experience” instead of micromanaging “individual performance metrics like latency.”<sup>13</sup> In its initial comments, ViaSat advocated the use of the Mean Opinion Score (MOS) as a metric for measuring the consumer’s overall experience in the voice context.<sup>14</sup> This approach is consistent with the positions discussed above and sidesteps any need to evaluate specific quality-of-service metrics like latency. Notably, the California Public Utilities Commission (CPUC) has utilized the MOS metric successfully as part of the CalSPEED Assessment, and specifically recommends use of the MOS to measure quality of service.<sup>15</sup> The CPUC’s experience with the MOS demonstrates that it is workable metric, and highlights the value of focusing on consumer *outcomes* instead of provider *inputs* in measuring service quality.

In conclusion, the record clearly demonstrates that satellite broadband services should be considered along with other broadband services as the Commission prepares its

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<sup>11</sup> Comments of Mobile Future, GN Docket No. 15-191, at 6 (Sep. 15, 2015).

<sup>12</sup> See ViaSat Comments at 7-8.

<sup>13</sup> AT&T Comments at 5.

<sup>14</sup> ViaSat Comments at 4-5.

<sup>15</sup> See Comments of the California Public Utilities Commission, GN Docket No. 15-191, at 18-19 (Sep. 15, 2015).

Section 706 Report. Satellite providers have made and will continue to make essential and high-quality communications capabilities available to consumers. This is reflected in consumer acceptance of satellite broadband technologies and consumer perception of satellite broadband services as high-quality offerings on par with the leading DSL and cable services. There simply is no basis for discounting the significant contribution made by satellite broadband providers in this context or, indeed, any other context.

Respectfully submitted,

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