

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

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| In the Matter of                               | ) |                      |
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| Inquiry Concerning the Deployment of Advanced  | ) | GN Docket No. 18-238 |
| Telecommunications Capability to All Americans | ) |                      |
| in a Reasonable and Timely Fashion             | ) |                      |

**COMMENTS OF VIASAT, INC.**

Viasat, Inc. submits these comments in response to the *Fourteenth Broadband Deployment Notice of Inquiry* adopted by the Commission on August 8, 2018 (the “*NORI*”). The *NOI* initiates the Commission’s annual assessment of “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”<sup>1</sup>

Viasat is a leading provider of communications solutions across a wide variety of technologies (both terrestrial and satellite), and has played a significant role in expanding the availability of advanced telecommunications capability across the country. Among other things, Viasat has revolutionized the satellite industry by reducing the “cost per bit” of delivering broadband service. As a result, Viasat now provides high-quality broadband service to end users, and affords millions of Americans—including in rural and “high-cost” areas—an effective competitive alternative to wired and wireless terrestrial services, which rely on infrastructure that is often less cost-effective.

Today, Viasat offers 25/3 Mbps speeds within its coverage area using a fleet of satellites operating in the Ka band. These satellites also connect over 46 million mobile devices a year on airplanes. Viasat is actively working to continue to enhance its existing network and service offerings, including through the use of additional satellites and spectrum resources. ViaSat-2,

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<sup>1</sup> *NOI* ¶ 4 (quoting 47 U.S.C. § 1302(b)).

launched in 2017, supports peak speeds of 100 Mbps and higher. And in the 2020 timeframe, less than a decade after entering the satellite broadband industry, Viasat will commence service with its third-generation spacecraft, ViaSat-3, which will provide over one terabit per second (1,000 Gbps) of throughput.<sup>2</sup>

Viasat’s experience as a leading broadband services provider affords it particular insight into the issues raised by the *NOI*. Viasat takes this opportunity to address three areas of particular interest: (i) Viasat’s plans to use universal service fund (“USF”) support to drive the deployment of advanced telecommunications capability; (ii) the value of expanded spectrum access to Viasat’s efforts in this regard; and (iii) how satellite deployment data should be presented, including how the Commission should account for satellite coverage.<sup>3</sup> Viasat addresses each of these areas in turn.

## **I. SATELLITE BROADBAND PROVIDERS WILL MAKE EFFICIENT USE OF UNIVERSAL SERVICE SUPPORT TO CLOSE THE DIGITAL DIVIDE**

The *NOI* seeks comment on the “effectiveness of USF funding in driving the deployment of advanced telecommunications capability.”<sup>4</sup> More specifically, the *NOI* asks whether “targeting USF funding to decrease the cost of network deployment”—the chief objective of the Commission’s Connect America Fund (“CAF”) programs—has “proven to be an effective driver in increasing deployment and in providing more broadband service choices to all Americans[.]”<sup>5</sup>

Viasat supports the Commission’s efforts to expand access to broadband services through the CAF and the programs that it supports on a technology-neutral basis. Viasat is pleased 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> *NOI* ¶ 17.

<sup>4</sup> *NOI* ¶ 25.

<sup>5</sup> *Id.*

the CAF II framework finally has allowed satellite broadband providers to make a significant and meaningful contribution to the Commission’s USF efforts. Viasat had sought such an opportunity for years given the significant advantages that satellite broadband technologies deliver—including the ability to cover large geographic areas where service can be offered in a cost-effective manner.

Notably, Viasat was selected as a winning bidder in the CAF II auction and intends to offer supported service in twenty states and approximately 27 percent of the awarded locations.<sup>6</sup> Viasat looks forward to working closely with the Commission to ensure that USF support is used efficiently and effectively to drive the deployment of advanced telecommunications capability, and that future CAF auctions maximize the ability of satellite-based services to compete for USF support.

## **II. ADDITIONAL SPECTRUM ACCESS ENHANCES THE ABILITY OF SATELLITE BROADBAND PROVIDERS TO MEET CONSUMER NEEDS**

The *NOI* seeks comment on ways the Commission might “expand access to spectrum for wireless and satellite broadband services.”<sup>7</sup> Viasat agrees that expanding such access should be a priority for the Commission, as this will ensure that satellite broadband providers have adequate spectrum with which to meet the demands of consumers. Satellite broadband networks—like terrestrial wireless networks—require spectrum to serve additional customers and also to provide higher speeds and greater throughput. Notably, satellite broadband networks (e.g., the Viasat-3 network described above) are being designed, launched, and brought into service that promise to offer exponential increases in speed and capacity to consumers

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<sup>6</sup> See Federal Communications Commission, *Connect America Fund Phase II Auction (Auction 903) Closes; Winning Bidders Announced; FCC Form 683 Due October 15, 2018*, Public Notice, DA-18-887, AU Docket No. 17-182 (Aug. 28, 2018).

<sup>7</sup> *NOI* ¶ 26.

throughout the United States, both in fixed locations and on the move. But these networks will not be able to deliver on this promise without access to adequate spectrum resources.

In the *Spectrum Frontiers* proceeding, the Commission is developing frameworks for access to spectrum in frequencies above 24 GHz, including in the Q/V bands (*e.g.*, 40/50 GHz), which have long been the anticipated expansion bands for satellite services. As Viasat has explained in comments and *ex parte* filings in that proceeding, the Commission has an opportunity to make available spectrum access for satellite broadband networks that will allow for growth and expansion of broadband offerings throughout the country. This includes ensuring that the broadest range of satellite services can be made available anywhere within a satellite's coverage area throughout the Ka band (18/30 GHz) and the Q/V bands—including to earth stations in motion (“ESIMs”) and other types of user terminals. The draft ESIMs order scheduled for the September agenda is a significant step forward in this respect.<sup>8</sup> So is the proposal to make an additional 1 GHz of spectrum available for satellite gateways in the 50.4-51.4 GHz band.<sup>9</sup>

### **III. THE COMMISSION SHOULD EVALUATE AND PRESENT SATELLITE DEPLOYMENT DATA IN THE SAME MANNER AS TERRESTRIAL DEPLOYMENT DATA**

The *NOI* proposes to present deployment estimates for satellite broadband “in the text immediately following the tables” in which deployment data with respect to fixed terrestrial

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<sup>8</sup> See FCC Fact Sheet, *Amendment of the Commission's Rules Related to Earth Stations in Motion Communicating with Geostationary Orbit Satellites*, Draft Order, FCC-CIRC1809-08, IB Docket No. 17-95 (rel. Sept. 5, 2018).

<sup>9</sup> See Comments of Viasat, Inc. to Third Further Notice of Proposed Rulemaking, GN Docket No. 14-177, WT Docket No. 10-112 (filed Sept. 10, 2018).

services would be presented,<sup>10</sup> rather than including all technologies in the same tables. No basis has been provided for separating satellite deployment data in this fashion, which implicitly would appear to treat satellite deployment as an afterthought. Viasat respectfully submits that satellite deployment data should be presented in tabular form, in the same manner as deployment data for terrestrial services (be they fixed or mobile). Such presentation would appropriately reflect the parity between terrestrial and satellite technologies, the Commission’s conclusion that satellite-based broadband service that meets its CAF II standards is the effective equivalent of terrestrial broadband services offered in urban areas,<sup>11</sup> and the Commission’s guiding principle of technological neutrality.

The *NOI* also seeks comment on “how the Commission should take into account any possible limitations . . . in the geographic scope of reported satellite coverage.”<sup>12</sup> One way to improve the quality and accuracy of its broadband deployment data without treating satellite differently than other technologies would be to use additional data sources, as Viasat previously has suggested.<sup>13</sup> For example, Viasat has highlighted the potential use of data found in the Geographic Information System (GIS) shapefile—an industry-standard electronic file format that incorporates simple geometric shapes (*e.g.*, points and lines) to define the satellite coverage area, and which would offer a number of benefits. Among other things: (i) the GIS shapefile would provide an efficient way to succinctly capture coverage over broad geographic areas without the

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<sup>10</sup> *NOI* ¶ 17.

<sup>11</sup> *See Connect America Fund*, 31 FCC Rcd 5949, at ¶ 14 (2016) (adopting performance tiers in order to advance the statutory goal in Section 254 of the Communications Act of “ensuring that consumers in rural and high-cost areas of the country have access to advanced telecommunications and information services that are reasonably comparable to those services in urban areas, at reasonably comparable rates”).

<sup>12</sup> *NOI* ¶ 17.

<sup>13</sup> *See Letter from Viasat to FCC*, WC Docket No. 11-10 (July 16, 2018).

burden of listing every census block within that area; (ii) the perimeter depicted by the GIS shapefile could cut across pre-defined geographic lines (e.g., the census block or country boundaries), thus providing more granular and accurate coverage information and (iii) the GIS shapefile would allow the Commission to zoom into a household level-view and see exactly which households are within the relevant coverage area.

The *NOI* further suggests that “satellite capacity” could be a factor limiting the utility of satellite deployment data.<sup>14</sup> This statement is an apparent reference to the fact that satellite networks currently provide nationwide coverage, but do not currently have the ability to simultaneously serve all of the approximately 10 million locations that the Commission has deemed to be “unserved.” Viasat respectfully submits that this should in no way impact how satellite deployment data is evaluated or presented by the Commission.

Any suggestion that satellite networks are capacity-constrained in ways that other networks are not is incorrect. *All* networks, regardless of technology (e.g., wireline, terrestrial wireless, cable, satellite) are capacity-constrained to some degree and lack the ability to simultaneously serve all potential users within their network service area at any particular level of service. Just like terrestrial networks, satellite networks scale over time to serve a growing customer base through investments that conceptually are no different than those needed to scale terrestrial networks.

The relevant question is not the amount of theoretical capacity on a network, but whether and how the network operator builds out its network based on factors such as customer adoption rate, and also how it manages its network to minimize congestion and provide a high-quality experience to consumers. The satellite networks that Viasat is deploying allocate adequate per-

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<sup>14</sup> *NOI* ¶ 17.

subscriber bandwidth and otherwise ensure that consumers have that high-quality experience by connecting them directly to high-quality fiber. In contrast, many networks that are nominally “capacity-rich” (including fiber-to-the-node networks) can experience significant congestion issues and “bottlenecks,” which can significantly limit the speed and other benefits supposedly available over those networks (notably, Viasat is able to bypass many of these congestion issues by delivering traffic directly from the end user to the satellite and from the satellite to an earth station that efficiently connects directly to the rest of the Internet via high-quality fiber, and *vice versa*).<sup>15</sup>

## CONCLUSION

For the reasons provided above, Viasat urges the Commission to: (i) ensure that universal service programs continue to leverage satellite technologies in a technology-neutral manner; (ii) provide additional spectrum access to advance the efforts of satellite broadband providers; and (iii) otherwise ensure that the Commission, in fulfilling its statutory obligations under Section 706, evaluates and presents satellite broadband deployment data in a manner similar to terrestrial deployment data.

Respectfully submitted,

/s/

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<sup>15</sup> See generally Letter from Viasat to FCC, WC Docket No. 10-90 (May 19, 2016).