

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

In the Matter of	)	
	)	
Communications Marketplace Report	)	GN Docket No. 18-231
	)	
Wireline Competition Bureau Seeks Comment	)	
on the State of Fixed Broadband Competition	)	
	)	

**COMMENTS OF ECHOSTAR SATELLITE OPERATING  
CORPORATION AND HUGHES NETWORK SYSTEMS, LLC**

EchoStar Satellite Operating Corporation (“ESOC”) and Hughes Network Systems, LLC (“Hughes”, and collectively, “EchoStar”) provide the following comments in response to the Wireline Competition Bureau’s Public Notice seeking comment and data for the Federal Communications Commission’s (“Commission”) analysis of fixed broadband competition as required by RAY BAUM’S Act of 2018.<sup>1</sup> As discussed in more detail below, the fixed broadband market is competitive, and satellite broadband is an important part of the competitive landscape. The Commission’s analysis should reflect the full gamut of this competition. The Commission can further improve competition in the fixed broadband marketplace by creating a technology-neutral regulatory environment for satellite broadband providers. Examples of where regulatory changes are needed include universal service and spectrum policy.

EchoStar, a Denver-based company, is the largest U.S. commercial geostationary orbit (“GSO”) satellite operator, and the fourth largest GSO operator worldwide. EchoStar provides broadband, video, and other services to meet the needs of small and large customers, including

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<sup>1</sup> *Wireline Competition Bureau Seeks Comment on the State of Fixed Broadband Competition*, Public Notice, DA 18-784 (rel. July 27, 2018) (“Public Notice”).

media and broadcast organizations, direct-to-home (“DTH”) providers, enterprise customers, government service providers, and residential consumers in North America and globally.

Hughes, based in Germantown, MD, is the largest provider of satellite broadband services in the United States and globally, with over 1.2 million subscribers in the Americas.<sup>2</sup> Hughes provides its broadband service through the use of a three satellite, geostationary orbit (“GSO”), Ka-band constellation over the United States, which includes coverage of the continental United States, southeastern Alaska, Puerto Rico and the U.S. Virgin Islands. Hughes is currently in the process of constructing its next generation, Commission-licensed, Ultra-High Density Satellite, EchoStar XXIV, which will provide service throughout the Americas at speeds of 100 Mbps or more.<sup>3</sup> EchoStar XXIV is expected to begin service in 2021.<sup>4</sup>

**I. THE FIXED BROADBAND MARKETPLACE IS COMPETITIVE, AND SATELLITE BROADBAND IS AN IMPORTANT PART OF THE COMPETITIVE LANDSCAPE**

The fixed broadband market is competitive, as the Commission’s own data show. The most recent available Form 477 data filed by broadband providers show that, as of December 31, 2016, fully 84% of developed census blocks were served by three or more fixed broadband providers at speeds of 10 Mbps down and 1 Mbps up (“10/1”), and more than a quarter of census

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<sup>2</sup> Press Release, Hughes, *Bank BRI Selects Hughes to Power Next Generation Satellite Network* (July 17, 2018), <https://www.hughes.com/who-we-are/resources/press-releases/bank-bri-selects-hughes-power-next-generation-satellite-network>.

<sup>3</sup> Press Release, Hughes, *Hughes Selects Space Systems Loral to Build Next-Generation Ultra High Density Satellite* (Aug. 9, 2017), <https://www.echostar.com/en/Press/Newsandmedia/Hughes%20Selects%20Space%20Systems%20Loral%20To%20Build%20Next-Generation%20Ultra%20High%20Density%20Satellite.aspx>.

<sup>4</sup> *Id.*

blocks were served by three or more providers offering service at or above 25 Mbps down and 3 Mbps up (“25/3”).<sup>5</sup>

Satellite broadband is an important part of the competitive landscape. Hughes is the largest provider of commercial satellite broadband services globally and in North America. With the launch of HughesNet Gen5, Hughes’ fifth generation high-speed satellite Internet service launched in March 2017, Hughes is now a fixed broadband alternative across the continental United States, southeastern Alaska, Puerto Rico, and the U.S. Virgin Islands, providing consumer broadband services meeting the Commission’s 25/3 Mbps broadband speed threshold ubiquitously.<sup>6</sup> Given the March 2017 launch date of HughesNet Gen5, the Form 477 data discussed above does not include the availability of Hughes’s current service offerings. Thus, the current market is actually even more competitive. Hughes competes with ViaSat across much of the country in the satellite broadband market. Additional competition in the satellite broadband market is poised to increase as the non-geostationary orbit systems that have been licensed by the FCC, such as OneWeb, are deployed.<sup>7</sup>

Satellite broadband services are an important part of the consumer marketplace. As commentators have noted, “satellite broadband services and integrated satellite and terrestrial services are becoming potent new sources of competition to the benefit of both residential consumers and enterprise customers,” with the “potential to quickly close the broadband coverage gap almost entirely and to give consumers who already have access to broadband

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<sup>5</sup> Industry Analysis & Technology Div., FCC, *Internet Access Services: Status as of December 31, 2016* at 6, Fig. 4 (Feb. 2018).

<sup>6</sup> Press Release, Hughes, *Hughes Announces HughesNet Gen5 High-Speed Satellite Internet Service*, (Mar. 7, 2017), <https://www.hughes.com/who-we-are/resources/press-releases/hughes-announces-hughesnet-gen5-high-speed-satellite-internet>.

<sup>7</sup> *See id.*

services new competitive choices.”<sup>8</sup> As noted above, satellite broadband providers including Hughes have won significant numbers of customers. Furthermore, evidence in Commission proceedings has demonstrated that satellite broadband customers are just as satisfied with their service as customers of other types of broadband service.<sup>9</sup>

In light of the evidence, including the important competitive option that satellite broadband provides across much of the United States, the Commission should conclude that the fixed broadband marketplace is competitive.

## **II. THE COMMISSION CAN REDUCE BARRIERS TO ENTRY AND COMPETITIVE EXPANSION BY SATELLITE BROADBAND PROVIDERS THROUGH TECHNOLOGY-NEUTRAL REGULATORY POLICIES**

The Public Notice seeks comment on “whether laws, regulations, regulatory practices or demonstrated marketplace practices pose a barrier to competitive entry into the fixed broadband marketplace, or to the competitive expansion of existing providers.”<sup>10</sup> It also seeks comment, consistent with a commitment to the Government Accountability Office, on how well the Commission’s actions promote broadband competition.<sup>11</sup>

One of the key barriers to competitive entry into the fixed broadband marketplace and expansion for existing providers is the lack of technology neutral regulations. This is especially the case with regard to access to scarce resources, such as Universal Service Funding and

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<sup>8</sup> Seth L. Cooper, *Satellite Broadband Deserves Promoting*, MULTICHANNEL NEWS (Mar. 19, 2018), <https://www.multichannel.com/blog/satellite-broadband-deserves-promoting-418751>.

<sup>9</sup> Letter from Jennifer A. Manner, Vice President, Regulatory Affairs, Hughes Network Systems, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Oct. 26, 2015), *attached to* Letter from L. Charles Keller, Attorney for Hughes Network Systems, Inc. to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 (filed Oct. 26, 2015); Comments of ViaSat, Inc., WC Docket Nos. 10-90, 14-58, 14-259, at 5-6 (filed July 21, 2016) (“ViaSat’s satellite broadband service ... now has an overall user satisfaction rating that is on par with that of leading cable-based broadband service providers”).

<sup>10</sup> Public Notice at 1.

<sup>11</sup> *Id.* at 2.

spectrum. By adopting technology neutral regulations, the Commission will ensure that satellite and terrestrial platforms can compete to meet the full range of consumer broadband demands. Failure to enable such competition could result in certain segments of the U.S. population being denied affordable access to important services.

Moreover, the Commission must ensure that, beyond simply adopting regulations that appear on their face to be technology neutral, it must ensure that the rules formulated to govern proceedings do in fact permit equal participation by all technologies. For instance, using the Universal Service example, although the Commission has ostensibly recognized the importance of technology neutrality, its policies ultimately have placed satellite providers at a significant and unnecessary disadvantage. The Commission stated its intention that “the Connect America [“CAF”] Phase II competitive bidding process and Remote Areas Fund will be implemented in a technology neutral manner to allow the participation of as many entities as possible.”<sup>12</sup> Then, in formulating the competitive bidding process for CAF Phase II, the Commission stated that it adopted “four technology neutral performance tiers with varying speed and usage allowances, and for each tier permit bidders to designate either low or high latency.”<sup>13</sup> Crucially, however, when it decided how bids within those tiers will be weighted, the Commission imposed an unreasonably extreme penalty on latency—the one service characteristic that satellite providers uniquely cannot control, given the time it takes for signals to travel to and from geostationary

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<sup>12</sup> *Connect America Fund, et al.*, Report and Order, Declaratory Ruling, Order, Memorandum Opinion and Order, Seventh Order on Reconsideration, and Further Notice of Proposed Rulemaking, 29 FCC Rcd 7051, 7130 ¶ 246 (2014).

<sup>13</sup> *Connect America Fund, et al.*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5949, 6021 ¶ 206 (2016).

satellites.<sup>14</sup> The Commission then further exacerbated the situation by requiring CAF support recipients to test their voice quality with a “conversational-opinion test” that further penalizes the presence of latency.<sup>15</sup> These penalties are not factually justified given that, as noted above, satellite broadband customers are just as satisfied with their service as customers of other types of broadband service.<sup>16</sup>

With regard to access to spectrum resources, it is critical that the Commission adopt a technology neutral approach to ensure that competitive broadband providers have access to the spectrum they need to support current and future customers. Over the previous decade or so, spectrum was still largely allocated to different uses on an exclusive basis.<sup>17</sup> While the Commission required spectrum sharing in certain bands, this was accomplished primarily through coordination in limited geographic areas, whereby these services had technical

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<sup>14</sup> *Connect America Fund*, Report and Order and Order on Reconsideration, 32 FCC Rcd 1624, 1628 ¶ 17 (2017). The latency penalty was exacerbated by the decision to impose an additional extreme penalty on service in the 25/3 Mbps speed tier in which the Commission knew satellite providers would be bidding. *Id.*

<sup>15</sup> *Connect America Fund*, Order, DA 18-710 ¶ 45 (WCB, WTB, OET rel. July 6, 2018). *See also* Letter from Jennifer A. Manner, Hughes, to Marlene H. Dortch, FCC, WC Docket No. 10-90 (filed July 16, 2018).

<sup>16</sup> *See supra* note 9.

<sup>17</sup> *See, e.g., Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, Second Report and Order, 17 FCC Rcd 23193 (2002) (allocating spectrum, which previously was used for fixed microwave, multipoint distribution service, and federal government operations, to support deployment of new advanced wireless services, or “AWS”); *Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems*, Third Report and Order, Third Notice of Proposed Rulemaking and Second Memorandum Opinion and Order, 18 FCC Rcd 2223 (2003) (reallocating spectrum previously used for mobile satellite services to provide additional spectrum for new fixed and mobile services, including AWS).

characteristics that enabled sharing to occur within limited operational constraints.<sup>18</sup> At that time, there was a belief by the Commission, and spectrum managers as a whole, that it was very difficult to enable sharing between two widely deployed services, such as cellular mobile user devices and satellite VSATs used in the home and in businesses.<sup>19</sup>

However, demand for greater speeds and increasingly more spectrum required Congress and the Commission to adopt new methods of increasing spectrum efficiency, including expanding spectrum sharing and clearing for new uses. For example, Congress authorized the use of incentive auctions to clear some of the 600 MHz band previously allocated to television for new uses.<sup>20</sup> This auction was very successful at providing access to new spectrum for mobile wireless services. In addition, Congress has successfully required some government operations to be relocated to other frequency bands to make spectrum available for new commercial services, a subject also of the Mobile NOW Act.<sup>21</sup> And of course, the Commission has enabled

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<sup>18</sup> See, e.g., *Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755- 1780 MHz, and 2155-2180 MHz Bands*, Report and Order, 29 FCC Rcd 4610, 4692-93 ¶ 220 (2014) (adopting AWS-3 rules requiring successful coordination with federal government incumbents prior to operation in certain designated protection zones); *FWCC Request for Declaratory Ruling on Partial-Band Licensing of Earth Stations in the Fixed-Satellite Service That Share Terrestrial Spectrum*, First Report and Order, 16 FCC Rcd 11511, 11512 ¶ 1 (2001) (adopting licensing rules for very small aperture terminal, or "VSAT," earth station operations in C-band spectrum shared on a co-primary basis with terrestrial fixed microwave-systems, and requiring completion of frequency coordination for each earth station antenna prior to operation).

<sup>19</sup> See, e.g., *Assignment of Orbital Locations to Space Stations in the Domestic Fixed Satellite Service and the Applications of GE American Communications, Inc.*, Order and Authorization, 15 FCC Rcd 3385 (Sat. & Radiocomm. Div. 1999) (noting that FCC's restriction on FSS use of the 10.7-11.7 GHz band to international systems limits the number of FSS earth stations with which licensees of co-primary terrestrial fixed stations would need to coordinate).

<sup>20</sup> See Middle Class Tax Relief and Job Creation Act of 2012, Pub. Law No. 112-96 §§ 6401-6414, 126 Stat. 156, 222-37 (2012).

<sup>21</sup> See S.19, 115th Cong. (2017), as incorporated in H.R. 1625, 115th Cong. (2018).

greater sharing of spectrum through innovative new approaches, as evidenced by the 3.5 GHz band rulemaking.<sup>22</sup>

With the upcoming development of, and anticipated consumer demand for, 5G broadband services, additional Commission actions will be required to make spectrum available for this use. Satellite is expected to serve a complementary role to the terrestrial network for 5G, especially in rural and remote areas where consumers might be left behind without access to broadband satellite services. Other wireless technologies, such as solar planes and Wi-Fi, also anticipate playing a role. Accordingly, in order to ensure the success of 5G and broadband access for all users, it is critical that additional spectrum be made available across platforms.

To ensure that consumers can have access to the technologies that best meet their needs, the Commission must follow the principle of enabling competition among platforms by ensuring that no single platform is favored. First, to the extent additional spectrum is cleared and made available for 5G, it should not be made available simply for one technology – whether satellite or terrestrial wireless. While the split between platforms does not have to be 50-50, it should take into account the consumer demand for access to different platforms, and the role that these platforms will play generally and in different geographic areas of the country.

Second, with regard to increasing sharing of spectrum, such as the millimeter wave bands above 24 GHz, the same technological neutrality principle must be followed. For frequency bands with incumbent operations, it is critical that any sharing criteria adopted be reasonable and enable both incumbent and new services (including satellite broadband) to grow. In addition, in some bands, such as where ubiquitous user terminals are planned, dedicated spectrum for

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<sup>22</sup> See *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959 (2015), Order on Reconsideration and Second Report and Order, 31 FCC Rcd 5011 (2016).



satellite is appropriate. The Commission adopted rules in Spectrum Frontiers that provide for both dedicated and shared frequency bands for satellite broadband in several of the millimeter wave bands.<sup>23</sup> While this is a good start, the Commission needs to, in conjunction with its government partners, export this approach internationally at the 2019 World Radiocommunication Conference, where use of these same bands is being considered. Failure to provide international harmonization will violate the principle of technology neutrality by creating a technical regulatory advantage for terrestrial wireless over satellite capabilities. Additionally, failure to harmonize spectrum regionally and internationally creates a significant technical barrier, and competitive hurdle for satellite providers, endangering:

- the emergence of existing and planned next generation satellite networks – both commercial and government,
- U.S. national space policy of enabling the use of commercial satellite systems to meet the growing communications needs of our government agencies, and
- U.S. ability to ever achieve its goal of bridging the digital divide at home and abroad.

Lack of harmonization will balkanize the satellite marketplace, depriving U.S. satellite manufacturers of next generation commercial satellite manufacturing and exports, built in the United States, using a skilled workforce, and jeopardizing United States leadership in commercial space.

Finally, it is important that until advanced sharing technology (such as cognitive radios) are proven, to limit necessarily sharing between widely deployed services, such as mobile wireless devices and satellite broadband user terminals. Accordingly, retaining some exclusive spectrum may be necessary. The Commission must follow a holistic approach to spectrum management to plan for the future, ensuring that there is competition among platforms and that

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<sup>23</sup> *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Third Report and Order, Memorandum Opinion and Order, and Third Further Notice of Proposed Rulemaking, FCC 18-73 (June 8, 2018).

growing consumer demands for all applications and uses can be met, including for fixed broadband.

### **III. CONCLUSION**

For the above-reasons, the Commission should conclude that the broadband marketplace is competitive, and that satellite broadband is an important element of the broadband marketplace. To reduce barriers to competitive expansion by satellite broadband providers and to promote broadband competition, the Commission should ensure that its rules and policies are technology-neutral, including its universal service and spectrum policies.

Respectfully submitted,

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