



September 1, 2017

BY ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: *Spectrum Bands Above 24 GHz et. al.*, GN Docket No. 14-177, IB Docket No. 15-256,
 WT Docket No. 10-112, and IB Docket No. 97-95**

Dear Ms. Dortch:

On August 31, 2017, EchoStar Satellite Operating Corporation and Hughes Network Systems, LLC, (collectively “EchoStar”); Inmarsat, Inc. (“Inmarsat”); Intelsat Corporation (“Intelsat”); SES Americom, Inc. (“SES”); and O3b Limited (“O3b”) (jointly, and including WorldVu Satellites Ltd. d/b/a OneWeb, the “Satellite Broadband Companies”) met with Kevin Holmes, Acting Legal Advisor for Wireless and Public Safety in the Office of Commissioner Brendan Carr, regarding pending petitions for reconsideration and the pending further notice of proposed rulemaking in the above-referenced proceeding.

EchoStar was represented by Jennifer A. Manner, Senior Vice President, Regulatory Affairs. Inmarsat was represented by Giselle Creeser, Director, Regulatory. Intelsat was represented by Cynthia Grady, Regulatory Counsel. SES was represented by Philippe Secher, Senior Manager, Spectrum Management and Development. O3b was represented by Will Lewis, Regulatory Counsel.

In the meeting the parties discussed the attached talking points, which were provided to Mr. Holmes, setting out the Satellite Broadband Companies’ recommendations to facilitate intensive and equitable use of 5G platforms in the Fixed Satellite Service (FSS) and Upper Microwave Flexible Use

Service (UMFUS), ensuring both services have sufficient access to the scarce spectrum resources they need to meet U.S. consumer demands.

Pursuant to the Commission's rules, this notice is being filed in the above-referenced dockets for inclusion in the public record. Please contact me should you have any questions.

Respectfully submitted,

/s/ Brennan T. Price

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Cc: Kevin Holmes

Attachment

The Satellite Broadband Companies Propose Rules to Permit Equitable Use of the 28, 39, 47, 48 and 50 GHz Bands by Fixed Satellite Service Operators and UMFUS Licensees

- EchoStar Satellite Operating Corporation, Hughes Network Systems LLC, Inmarsat, Inc., Intelsat Corp., O3b Ltd., SES Americom, Inc., and WorldVu Satellites Ltd. d/b/a OneWeb (“the Satellite Broadband Companies”) propose rules for fixed satellite service (FSS) earth stations in the 27.5-28.35 GHz (28 GHz), 37.5-40 GHz (39 GHz), and 48.2-50.2 GHz (48 GHz) bands that will facilitate intensive and equitable use of 5G platforms in the Fixed Satellite Service (FSS) and Upper Microwave Flexible Use Service (UMFUS), ensuring both services have sufficient access to the scarce spectrum resources they need to meet U.S. consumer demands.
- The Satellite Broadband Companies encourage the Commission to develop licensing schemes that will accommodate and enable the significant satellite interest in the 47.2-48.2 GHz (47 GHz) and 50.4-52.4 GHz (50 GHz) bands.
- In order to ensure the most efficient use of the spectrum resource, the FCC should revise the conditions for deployment of FSS earth stations at 28 and 39 GHz as follows:
 1. ***Adopt a revised population coverage limit for FSS earth stations in the 28 and 39 GHz bands.*** By adopting an 0.2% population coverage limit in the most densely populated license areas, a fixed population limit in low and medium density license areas, and a 10% (for 28 GHz) or 5% (for 39 GHz) population coverage limit in the most sparsely populated license areas, the FCC would create a framework that encourages FSS operators to site their stations in areas that are likely to be of lower value to UMFUS operators.
 2. ***Better define the transient population limits.*** When coupled with other siting restrictions, the transient population restrictions severely restrict FSS deployment. If such limits are to be retained, each of these terms should be defined to avoid absurd results. Specifically:
 - a. “Major event venue” should be defined as one with a capacity of 10,000 or more.
 - b. “Arterial street, interstate or U.S. highway” should include only principal arterials.
 - c. “Passenger railroad” should be defined as railroad track operated by Amtrak.



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- d. “Cruise ship port” should apply to the fifteen largest ports in the United States.
 - e. “Urban mass transit route” should be eliminated as duplicative, as such routes typically follow principal arterial roads or share track with Amtrak.
- 3. ***Eliminate the rules limiting FSS operators to three earth stations in any given county (for 28 GHz) or Partial Economic Area (for 39 GHz).*** These rules prevent FSS operators from locating multiple earth station facilities in areas with little or no impact on UMFUS.
- 4. ***Apply the 70/80/90 GHz Band Database Approach to UMFUS Facilities.*** This would provide a streamlined way for FSS operators to identify areas of minimal UMFUS deployment for use by earth stations, while obviating the need for UMFUS operators to respond to numerous requests for coordination.
- In order to meet the requirements of both UMFUS licensees and FSS operators in the 47, 48 and 50 GHz bands and ensure the most efficient use of the spectrum resource, the Satellite Broadband Companies propose that the Commission should:
 - 1. ***Reserve the 48.2-50.2 GHz band as exclusive for FSS.*** When designating this spectrum primarily for FSS uplinks, the Commission found that “spectrum designated exclusively for FSS will ultimately permit more effective deployment of satellite systems than does the current shared allocation scheme” It reaffirmed this finding when identifying corresponding downlink spectrum. This is one of the few slices of spectrum in which satellite operators can deploy user terminals on a widespread basis with full protection against interference from other services.
 - 2. ***Give FSS greater and more equitable access to the 47.2-48.2, 50.4-51.4 and 51.4-52.4 GHz bands.*** Given the propagation characteristics of this band, the Commission should reconsider the proposals it has put forward in the 47 GHz and 50 GHz bands and allow both terrestrial and satellite operators to deploy meaningfully in these greenfield bands. FSS operators have a clearly demonstrated an interest in both bands for both GSO and NGSO operations.¹ The satellite industry has not yet developed a consensus on how the Commission should proceed because different operators have identified the bands for different applications. However, the industry has been unanimous in demonstrating viable commercial interests in the 47 GHz and 50 GHz bands and the Commission should strive to find a licensing scheme that accommodates those planned FSS operations.

¹ See The Boeing Company, Application, IBFS File Nos. SAT-LOA-20160622-00058 & SAT-AMD-20170301-00030 (Mar. 1, 2017); WorldVu Satellites Limited, Petition for Declaratory Ruling, IBFS File No. SAT-LOI-20170301-00031 (Mar. 1, 2017); ViaSat, Inc., Petition for Declaratory Ruling, IBFS File No. SAT-PDR-20161115-00120 (Nov. 15, 2016); Theia Holdings A, Inc., Petition for Declaratory Ruling, IBFS File Nos. SAT-LOA-20161115-00121 & SAT-AMD-20170301-00029 (Mar. 1, 2017); Audacy Corporation, Application, IBFS File No. SAT-LOA-20161115-00117 (Nov. 15, 2016); Hughes Network Systems, LLC, Application, IBFS File No. SAT-LOA-20170621-00092 (June 21, 2017); O3b Limited, Amended Application, IBFS File Nos. SAT-MOD-20160624-00060 & SAT-AMD-20170301-00026 (Mar. 1, 2017); Space Exploration Holdings, LLC, Application, IBFS File Nos. SAT-LOA-20161115-00018 & SAT-LOA-20170301-00027 (Mar. 1, 2017); Telesat Canada, Petition for Declaratory Ruling, IBFS File No. SAT-PDR-20170301-00023 (Mar. 1, 2017).

- This package of proposals strikes a fair and efficient balance between the needs of FSS and UMFUS operators in the 28, 39, 47, 48 and 50 GHz bands and will enable the deployment of both services to meet user demands across the United States. As ITU-R Working Party 5D recognized, 5G deployment scenarios contemplate indoor and outdoor use, with outdoor use contemplated in urban or suburban deployments limited to densely populated areas, such as airports and city squares.² This leaves a lot of territory in which FSS earth stations may deploy without impact to UMFUS operations, as 5G operations in less densely populated areas are better accommodated on lower bands.³
- The Satellite Broadband Operators urge the Commission to implement this approach in order to facilitate rapid development of both satellite and terrestrial broadband systems capable of providing advanced communications services to Americans no matter where they live, helping to close the digital divide and to increase competition for 5G and other advanced communications services

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² Liaison statement from ITU-R Working Party 5D to Task Group 5/1—Spectrum needs and characteristics for the terrestrial component of IMT in the frequency range between 24.25 GHz and 86 GHz, Feb. 28, 2017, attachment 2 (Characteristics of terrestrial IMT systems for frequency sharing/interference analyses in the frequency range between 24.25 and 86 GHz) (available at <https://www.itu.int/md/R15-TG5.1-C-0036/en>).

³ See Neville Ray, Chief Technology Officer, T-Mobile US, Maintaining US Leadership in 5G with Smart Spectrum Policy, June 30, 2017 (available at <https://newsroom.t-mobile.com/news-and-blogs/5g-mid-band-spectrum.htm>):

Millimeter wave spectrum has the promise of massive capacity but only limited range. So, while it will be very useful for meeting traffic requirements in areas with the highest demand and filling in coverage and capacity gaps, it won't do much to bring 5G to rural America. But 5G is so much more than millimeter wave, and that's why we've announced that T-Mobile will roll out 5G in lower band – 600 MHz – spectrum. It will allow us to provide better 5G coverage inside buildings and, because 600 MHz spectrum travels so well, in rural America, which desperately needs more and higher quality wireless competition.

....

The 3550-3700 MHz spectrum is ideal to meet the mid-band needs for 5G networks. It has better coverage characteristics than high-band spectrum, meaning that it can help deliver the promise of 5G to rural areas, and there is potentially more of it than there is low-band spectrum.