

ORIGINAL

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

In the Matter of)
)
Petition for Rulemaking to Establish Rules)
Permitting Blanket Licensing of Two-Way)
Earth Stations With End-User Uplinks in the)
24.75-25.05 GHz band)
)

RM - _____

IB Docket No. 06-123

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Federal Communications Commission
Office of the Secretary

PETITION FOR RULEMAKING

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Summary

Xanadoo and Spectrum Five petition the Commission to implement changes to its rules regarding the 24.75-25.05 GHz band that would:

1. Eliminate an allocation for Radionavigation Service in the band, which has been unused for many years, and where there do not appear to be any plans for future use;
2. Lift an unnecessary restriction applicable to the band limiting its use to 17/24 GHz Broadcasting-Satellite Service (“BSS”) feeder links; and
3. Permit blanket licensing of two-way earth stations with end-user uplinks in the band.

Under the proposed changes, a 17/24 GHz BSS licensee would be afforded the flexibility to use 300 MHz of its already-licensed spectrum for end-user uplinks in the provision of two-way broadband services. When aggregated across all applicable satellite systems, thousands of megahertz of spectrum would be made available for consumer broadband services to rural and underserved areas throughout the United States. Implementing the proposal would serve the public interest by facilitating the development of the 17/24 GHz BSS band and helping the Commission realize its goal of deploying abundant and cost-effective broadband capability to rural and underserved areas. Moreover, the proposal is consistent with the predominant themes of the recently announced National Broadband Plan -- greater flexibility for licensees and more efficient use of spectrum.

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PETITION FOR RULEMAKING

Xanadoo Company (“Xanadoo”) and Spectrum Five LLC (“Spectrum Five”) (collectively, the “Petitioners”) hereby petition the Commission, pursuant to Section 1.401 of the Commission’s rules, 47 C.F.R. § 1.401, to initiate a rulemaking proceeding to free 300 MHz of spectrum in the 24 GHz band for end-user uplinks in the provision of two-way satellite broadband service by 17/24 GHz Broadcasting Satellite Service (“BSS”) licensees.¹

I. Background

A. Xanadoo Company

Xanadoo’s interest in proposing these changes arises from its long-standing interest in broadband and in the use of the 17/24 GHz BSS satellite band. Xanadoo, which filed applications for 17/24 GHz satellite licenses approximately eight years ago, was recently awarded a 17/24 GHz satellite license at 115 degrees West Longitude, and has an additional application pending for a second 17/24 GHz satellite license at 95 degrees West Longitude.²

Xanadoo is a pioneer in the construction and operation of fourth generation (4G) WiMAX wireless broadband networks. Since 2006, Xanadoo has constructed, and is now operating, WiMAX networks in Texas, Oklahoma, and Illinois. Xanadoo was the first WiMAX

¹ The term “17/24 GHz BSS” refers to the space-to-Earth (downlink) frequencies at 17.3-17.8 GHz and the corresponding Earth-to-space (uplink) frequencies at 24.75-25.25 GHz.

² See Stamp Grant, File Nos. SAT-LOA-20060412-00044, SAT-AMD-20080114-00023, Call Sign S2700 (December 17, 2008); see Application, File No. SAT-LOA-20090807-00084, Call Sign S2795 (August 7, 2009).

service provider to receive a designation as a “Cisco Powered” partner service organization. Xanadoo has a 2.5/2.6 GHz spectrum footprint covering 11 states in the Southwest and Midwest.

Xanadoo’s subsidiary, Pegasus Rural Broadband, was one of the first companies to be approved for funding under the U.S. government’s Rural Utilities Service Title VI Broadband Loan Program, and that loan has since been repaid in full. Xanadoo has pending applications under the BIP stimulus funding programs to build WiMAX wireless broadband networks serving rural and underserved areas in Illinois, Kansas, Oklahoma, and Texas.

Xanadoo also holds 23 licenses for upper 700 MHz A Block spectrum covering approximately 55% of the U.S. population, including the most populous areas of the East Coast, the West Coast, the Midwest and Florida. Xanadoo’s spectrum, at 757-758/787-788 MHz, lies between the C Block spectrum, at 746-757/776-787 MHz, licensed to Verizon Wireless and the D Block spectrum, at 758-763/788-793 MHz, which has not yet been assigned.

B. Spectrum Five

Spectrum Five was granted authority in 2006 to provide direct broadcast satellite (“DBS”) services into the United States from a new orbital location at 114.5 degrees West Longitude. It subsequently filed an application in 2008 to provide service from the nominal 119 degrees West Longitude orbital location in the 17/24 GHz BSS band. From these locations Spectrum Five intends to provide a new generation of high definition television and multi-media services to U.S. consumers.

C. The 17/24 GHz BSS Spectrum

BSS is the international term used for a radiocommunication service in which signals transmitted, or retransmitted, by space stations are intended for direct reception by the public.³ Domestically, the term “DBS” has been used to describe the implementation of BSS in the 12.2-

³ See, e.g., 47 C.F.R. § 2.1.

12.7 GHz frequency bands (downlink).⁴ Historically, BSS/DBS service has been used primarily to provide multichannel video distribution services, but licensees are authorized to provide a wide variety of communications services, including broadband data.⁵

Anticipating a growing need for BSS spectrum, the 1992 World Administrative Radio Conference (“1992 WARC”) of the International Telecommunication Union (“ITU”) adopted the 17/24 GHz BSS frequency allocation for Region 2, which includes the Americas.⁶ In 2000, the Commission, in large part, implemented domestically the 1992 WARC ITU Region 2 allocation for BSS, by allocating:⁷

- 500 MHz of spectrum at 17.3-17.8 GHz on a primary basis to BSS for downlink transmissions;⁸
- 200 MHz of spectrum at 25.05-25.25 GHz for co-primary use between Fixed Service (“FS”) and Fixed-Satellite Service (“FSS”) uplinks, limited to 17/24 GHz BSS feeder links;⁹ and
- 300 MHz of spectrum at 24.75-25.05 GHz for co-primary use between Radionavigation Service and FSS uplinks, limited to 17/24 GHz BSS feeder links.

At the time of the order, there was already both a primary federal and non-federal RNS allocation in the band. However, the Commission did not explicitly address or acknowledge the

⁴ See 47 C.F.R. §§ 25.201, 25.202(a)(7).

⁵ See, e.g., *In the Matter of the Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band*, Notice of Proposed Rulemaking, 21 FCC Rcd 7426, at ¶ 1 (2006) (“17/24 GHz NPRM”); Report and Order, 22 FCC Rcd 8842, at ¶ 1 (2007) (“17/24 GHz Report and Order”); *Policies and Rules for the Direct Broadcast Satellite Service*, 17 FCC Rcd 11331, at ¶¶ 152-155 (2002).

⁶ 17/24 GHz NPRM, at ¶ 4.

⁷ *Redesignation of the 17.7-19.7 GHz Frequency Band, Blank Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcasting-Satellite Service Use*, Report and Order, 15 FCC Rcd 13430, at ¶¶ 96-99, 102-106 (2000) (“18 GHz Report and Order”).

⁸ The 17.7-17.8 GHz band is limited to the provision of international service.

⁹ The Petitioners do not request in this Petition that the feeder link limitation applicable to the 25.05-25.25 GHz band be removed or that the co-primary status of the FS allocation in this band be changed.

co-primary allocation.¹⁰ In 2006, the Commission initiated a rulemaking to establish rules regarding the 17/24 GHz BSS allocation. In the *17/24 GHz NPRM*, the Commission stated that it was aware of no operational RNS system in the band, but invited comments on the feasibility of operating BSS feeder links on a co-primary basis with potential RNS systems operating in the band.¹¹ No party commented on the issue. The NTIA filed comments in the proceeding discussing issues regarding the 17.3-17.7 GHz band but did not address the sharing issues in the 24.75-25.05 GHz band. In the resulting *17/24 GHz Report and Order*, the Commission proposed no sharing criteria between the two services and simply reiterated in a footnote that it was aware of no operational RNS systems in the band.¹²

D. Radionavigation Service in the 24 GHz Band

RNS is a radiodetermination service used for purposes of navigation. *See* 47 C.F.R. § 87.5. A radiodetermination service is used for the determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation of radio waves. *Id.*

The RNS allocation in the 24 GHz band was originally for 1000 MHz across the entire 24.25-25.25 GHz band.¹³ In 1991, in a report addressing proposals for the 1992 WARC, the Commission noted that the RNS allocation in the 24 GHz band was not in use at the time.¹⁴ In

¹⁰ *18 GHz Report and Order*, at ¶¶ 96-99, 102-106.

¹¹ *17/24 GHz NPRM*, at ¶ 93.

¹² *17/24 GHz Report and Order*, at ¶ 116 n. 361. None of the proposals raised in this Petition involving the 24.75-25.05 GHz band are relevant to the pending 17/24 GHz Further Notice of Proposed Rulemaking, which concerns ground-path and space-path interference resulting from the reverse band use of the 17.3-17.8 GHz band. *See 17/24 GHz Report and Order*, at ¶¶ 149-180.

¹³ *See, e.g., An Inquiry to Preparation for the International Telecommunication Union World Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum*, 6 FCC Rcd 3900, at ¶ 75 (1991); *In the Matter of Amendments to Parts 1, 2, 87 and 101 of the Commission's Rules to License Fixed Services at 24 GHz*, 15 FCC Rcd 16934, at ¶ 11 (2000) (“*24 GHz Order*”).

¹⁴ *See An Inquiry to Preparation for the International Telecommunication Union World Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum*, 6 FCC Rcd 3900, at ¶ 75 (1991) (“[W]e noted that some European countries were examining the possibility of using the 24.25-25.25 GHz for HDTV-

1997, the Commission identified only two radionavigation facilities operating in the 24.25-25.25 GHz band, and those facilities were decommissioned in 1998 and 2000, respectively.¹⁵ In 1999, the Commission stated that it had not issued any RNS licenses in the 24 GHz band and that it did not anticipate any demand for the service.¹⁶ During this period, the Commission (in consultation with NTIA) reduced the allocation, leaving only a 300 MHz RNS allocation in the 24.75-25.05 GHz portion of the band.¹⁷ In 2006 and 2007, as part of a rulemaking regarding the 17/24 GHz BSS spectrum, the Commission affirmed that there were no operational RNS systems in the 24.75-25.05 GHz band.¹⁸ More generally, federal reports regarding RNS systems indicate that the federal government in the past decade has been moving away from land-based RNS systems to GPS-based systems for radionavigation.¹⁹

BSS. *As this band is allocated to the radionavigation service but is not currently in use, we sought comment on proposing it as an additional allocation to meet HDTV-BSS requirements*) (emphasis added).

¹⁵ See *In the Matter of Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service From the 18 GHz Band to the 24 GHz Band and to Allocate the 24 GHz Band for Fixed Service from the 18 GHz Band*, 12 FCC Rcd 3471, at ¶ 15 (1997); *In the Matter of Amendments to Parts 1, 2, and 101 of the Commission's Rules to License Fixed Services at 24 GHz*. Notice of Proposed Rulemaking, 14 FCC Rcd 19263, at ¶ 8 (1999) ("24 GHz NPRM").

¹⁶ See *24 GHz NPRM*, at ¶ 8.

¹⁷ See *24 GHz Order*, at ¶ 11.

¹⁸ See *17/24 GHz NPRM*, at ¶ 93; *17/24 GHz Report and Order*, at ¶ 116 n. 361.

¹⁹ See 2001 Federal Radionavigation Plan, at p. viii ("As the full civil potential of GPS and its augmentations are realized, the service provided by other Federally provided radionavigation systems will be phased down to match the reduction in demand for those services."), p. 3-8 (FAA is transitioning to satellite navigation services; accordingly, the need for ground-based navigation services will diminish and the number of federally provided ground-based facilities will be reduced); see also 2005 Federal Radionavigation Plan, at pp. 2-1, 3-10 (same); 2008 Federal Radionavigation Plan, at pp. 3-1, 3-13 (same). The Federal Radionavigation Plan is prepared jointly by the Departments of Defense, Homeland Security, and Transportation with the assistance of other government agencies. The plans are available at <http://www.navcen.uscg.gov/pubs/>.

E. The Petitioners' Proposal

The Petitioners propose to make available the 24.75-25.05 GHz band for end-user uplinks in the provision of two-way satellite broadband service by 17/24 GHz BSS licensees. To implement the proposal, the Petitioners propose the following specific rule changes or Commission actions:

1. Remove the non-federal RNS allocation in the 24.75-25.05 GHz band from the U.S. Table of Frequency Allocations, 47 C.F.R. § 2.106, and make conforming edits in 47 C.F.R. §§ 87.173(b) and 87.187(x).
2. Work with NTIA to remove the federal RNS allocation in the 24.75-25.05 GHz band from the U.S. Table of Frequency Allocations.
3. Modify note NG167 to the U.S. Table of Frequency Allocations to remove the feeder link only restriction, as applied to the 24.75-25.05 GHz band,²⁰ and make conforming edits to 47 C.F.R. § 25.202(a)(1), as follows:²¹

“The use of the band ~~24.75-25.05-25.25~~ 24.75-25.05 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 24.75-25.05 GHz by fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service or other digital uplinks in the fixed-satellite service that are associated with the broadcasting-satellite service.”

4. Adopt a new rule permitting blanket licensing of two-way earth stations with end-user uplinks operating in the 24.75-25.05 GHz band. The technical parameters would be analogous to the blanket licensing rules established in 47 C.F.R. § 25.138 for Ka-band FSS terminals (*see* Exhibit A).

II. Discussion

A. Grant of the Petition Serves the Public Interest By Facilitating Development of the 17/24 GHz BSS Band and Deployment of Broadband Service to Rural and Underserved Areas

Satellites play a critical role in providing broadband access to consumers. The Satellite Industry Association (“SIA”) estimates that, as of the end of 2008, approximately 842,000 U.S.

²⁰ The note NG167 also restricts use of the 24.75-25.25 GHz uplink band to 17/24 GHz BSS licensees. *See* 47 C.F.R. § 2.106 note NG 167; *see also* 18 GHz NPRM, at ¶ 80; 18 GHz Report and Order, at ¶ 102. The Petitioners propose no change to this restriction.

²¹ As noted above, Petitioners do not request that the feeder link limitation applicable to the 25.05-25.25 GHz band be removed or that the co-primary status of the FS allocation in this band be changed.

consumers relied on satellite-delivered broadband, and more recent estimates place that number at over one million.²² As the Commission has acknowledged, because of the ubiquitous coverage capability and cost structure of satellites, they are especially well suited for cost-effective delivery of service to consumers in rural and remote areas.²³ Indeed, in many areas of the country, satellites may provide the only available means of broadband services.

At present, there are a handful of satellite operators providing broadband services to consumers, primarily through the Ku-band and Ka-band FSS. However, desirable orbital locations in these bands are effectively no longer available. While the Commission has allocated the V band (37.5-42.5 GHz band (downlink) and 47.2-50.2 GHz band (uplink)) to FSS, the high operating frequencies have less desirable propagation characteristics. Additionally, the 17/24 GHz BSS frequencies are much closer to those in the Ku-band and Ka-band FSS, as well as the DBS band, making it easier and less costly for equipment manufacturers to design consumer equipment.

In the *17/24 GHz Report and Order*, the Commission stated its belief that 17/24 GHz BSS would “introduce a new generation of broadband services to the public, providing a mix of local and domestic video, audio, data, video-on-demand, and multi-media services to U.S. consumers.”²⁴ The provision of two-way broadband services operating solely in the 17/24 GHz

²² See SIA, *State of the Satellite Industry Report 2009*, at 19 (June 2009), available at http://www.sia.org/news_events/2009_State_of_Satellite_Industry_Report.pdf (last visited January 8, 2010).

²³ *In the Matter of the 2000 Biennial Regulatory Review—Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations, et al.*, 23 FCC Rcd 15099, at ¶ 1 (2008) (“Satellite facilities provide a competitive platform for delivery of broadband services, which is especially well suited for extending these services to rural and unserved areas.... [and is a] cost-effective technology to serve communities with low penetration rates.”); *Bringing Broadband to Rural America: Report on Rural Broadband Strategy*, Michael J. Copps, Acting Chairman, at ¶ 78 (May 22, 2009), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-291012A1.pdf (last visited January 11, 2010) (“[S]atellite broadband, with its near ubiquitous coverage and downstream data rates between 512 kbps and 5 Mbps, can provide a much-needed connection in rural areas, especially where other broadband solutions are not viable for technical or other reasons.”).

²⁴ See *17/24 GHz Report and Order* at ¶ 1; see also *17/24 GHz NPRM*, at ¶ 1.

band, however, is not possible under the Commission's rules, because of limitations on the 17/24 GHz BSS uplink band. With relatively minor changes, however, the Commission will be able to facilitate the development of the 17/24 GHz BSS band and the deployment of abundant and cost-effective broadband capability to rural and underserved areas.

The proposed changes will provide each 17/24 GHz BSS licensee the flexibility to use 300 MHz of its already licensed feeder link spectrum for end-user uplinks in the provision of two-way broadband service. Aggregated across applicable systems, the Commission will effectively free thousands of megahertz of spectrum for two-way satellite broadband use. Using state-of-the-art satellite designs, including multiple spot beams and associated ground segment technology, Petitioners calculate that each satellite theoretically could have up to 20 gigabits per second of broadband capacity and serve hundreds of thousands of consumers located throughout the United States. The additional flexibility and greater spectrum efficiency are fully consistent with the predominant themes of the recently released National Broadband Plan ("NBP").²⁵

Additionally, the Commission has just authorized 17/24 GHz BSS licenses, and there are new applications pending. Thus, prompt action by the Commission would allow 17/24 GHz BSS licensees/applicants to be able to modify their systems for broadband deployment in a timely manner.

²⁵ See, e.g., Connecting America: The National Broadband Plan, at 79 ("Flexibility of use enables markets in spectrum, allowing innovation and capital formation to occur with greater efficiency. More flexible spectrum rights will help ensure that spectrum moves to more productive uses . . . through voluntary market mechanisms."), at 87 (FCC should take actions that will optimize license flexibility sufficient to increase terrestrial broadband use of MSS satellite spectrum), at 92 (FCC should grant LPTV stations license flexibility to use certain technologies to enable more efficient channel allotments), at 93 (FCC should revise rules to allow for greater flexibility and cost-effectiveness for wireless backhaul), at 97 (FCC should promote within ITU innovative and flexible approaches to global spectrum allocation), available at <http://www.broadband.gov/plan/> (last visited April 2, 2010).

B. There Are No RNS Operators or Prospective Operators in the 24.75-25.05 GHz Band

The Commission imposed the 17/24 GHz feeder link limitation on the entire 24.75-25.25 GHz band primarily to restrict the use of the band to 17/24 GHz BSS licensees and to facilitate sharing between FS and BSS earth stations in the 25.05-25.25 GHz band, and not out of any concerns regarding sharing with RNS systems in the 24.75-25.05 GHz band.²⁶

Indeed, the Commission's records show that the RNS allocation in the 24 GHz band has been unused for many years and there do not appear to be any plans for future use.²⁷ Further, as part of the due diligence in preparation of this proposal, Petitioners confirmed informally with NTIA and separately with the Federal Aviation Administration that there are no operational federal RNS systems in the 24.75-25.05 GHz band and verified that there are no non-federal RNS licensees in the FCC's ULS database. The lack of response by any entity to the Commission's 2006 request for comments regarding sharing criteria for 17/24 GHz BSS feeder links and RNS systems operating in the 24.75-25.05 GHz band also suggests that no entity has any prospective interest in deploying an RNS system in the band.²⁸ Moreover, removal of the RNS allocation in this band is consistent with the proposal in the NBP to identify spectrum that could be made more accessible for broadband use.²⁹

²⁶ See *18 GHz Report and Order*, at ¶ 102; see also *In the Matter of Redesignation of the 17.7-17.9 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.7 GHz and 24.75-25.25 GHz Frequency Bands for Broadcasting-Satellite Service Use*, 13 FCC Rcd 19923, at ¶ 80 (1998) ("*18 GHz NPRM*"); 47 C.F.R. § 25.203(l) (prohibiting only feeder link earth stations operating in the 25.05-25.25 GHz band from locating in Economic Areas where there are 24 GHz terrestrial licensees).

²⁷ See *supra* notes 13-18 and accompanying text.

²⁸ See *supra* notes 11-12 and accompanying text.

²⁹ NBP, at 76 (encouraging the FCC and NTIA to work together and identify candidate spectrum that could be made available for broadband), 78 ("[W]here there is no overriding public interest in maintaining a specific use, flexibility should be the norm.").

C. There Is No Shortage of Alternative Spectrum Allocated for RNS

The U.S. Table of Frequency Allocations allows for the provision of RNS in a considerable amount of spectrum in a number of other frequency bands, including the 32.3-33.4 GHz and the 15.4-15.7 GHz bands.³⁰ The Commission's ULS database indicates that there are no non-federal RNS licensees operating in the 32.3-33.4 GHz band. Indeed, in 2000, the Commission stated that the entire 1.1 GHz RNS allocation at 32.3-33.4 GHz (as well as the 31.8-32.3 GHz band, then-allocated to RNS) was unused by non-federal licensees.³¹ With respect to the 15.4-15.7 GHz RNS allocation, the ULS database shows that in the entire United States there is but a single licensee located in Redmond, WA. operating in 200 MHz of this band.

D. The Proposed Blanket Licensing Rule Would Protect Co-Channel Satellite Operations at Adjacent Orbital Locations

Petitioners propose, for ubiquitous uplink operations in the 24.75-25.05 GHz band,³² the adoption of the blanket-licensing rule applicable to Ka-band FSS earth stations, 47 C.F.R. § 25.138.³³ This well-established rule was designed to protect adjacent Ka-band FSS satellite operators as close as two degrees away from a target satellite³⁴ and, accordingly, provides more than adequate protection in the Ka-band BSS environment, which is based on four-degree orbital spacing. The off-axis limits proposed under this blanket licensing rule are also consistent with the current rule applicable to 17/24 GHz feederlink earth stations, 47 C.F.R. § 25.223. Blanket-licensed 17/24 GHz BSS earth stations would also comply with the Commission's standard rule regarding OOBE, 47 C.F.R. § 25.202(f), to protect adjacent band operations, Fixed Service in the

³⁰ See 47 C.F.R. § 2.106; see also 47 C.F.R. § 87.173.

³¹ See *In the Matter of Amendment of Parts 2 and 87 of the Commission's Rules Regarding the Radionavigation Service at 31.8-32.3 GHz*, 15 FCC Rcd 18587, at ¶ 3 (2000).

³² The Petitioners propose no changes to the rules applicable to earth stations receiving in the 17.3-17.8 GHz BSS band or to satellite downlink operations in that band. See, e.g., 47 C.F.R. §§ 25.208(w), 25.224.

³³ The Ka-band FSS frequencies consist of the following bands: 18.3-18.8 GHz (space-to-Earth) & 19.7-20.2 GHz (space-to-Earth) and 28.35-28.6 GHz (Earth-to-space) & 29.25-30.0 GHz (Earth-to-space).

³⁴ See generally, *18 GHz Report and Order*, at ¶ 85.

25.05-25.25 GHz band and Inter-Satellite and Radiolocation-Satellite Service in the 24.65-24.75 GHz band.

E. The Proposal is Fully Consistent With the ITU Region 2 Table of Frequency Allocations for the 24.75-25.05 GHz Band

Pursuant to the ITU Region 2 Table of Frequency Allocations, the 24.75-25.05 GHz band is allocated solely to FSS with priority to BSS feeder links over other FSS uses.³⁵ Thus, the proposal conforms to the ITU allocation. Indeed, there is no ITU Region 2 allocation for terrestrial services, and it is the present domestic RNS allocation in the 24.75-25.05 GHz band and feeder link limitation that are non-conforming.

Further, in both Mexico and Canada, the 24.75-25.05 GHz band is allocated solely to FSS and not limited to BSS feeder links, consistent with the ITU Region 2 Table of Frequency Allocations. Unlike the United States, neither country has implemented a domestic allocation for RNS in this band.³⁶ Accordingly, there are no international bars to the proposal.

³⁵ See *17/24 GHz NPRM*, at ¶ 93; see also 47 C.F.R. § 2.106 n. 5.535.

³⁶ Like the U.S., Canada has a terrestrial allocation in the adjacent 25.05-25.25 GHz band, but those operations would be protected by the FCC's standard rule regarding OOB limits, 47 C.F.R. § 25.202(f). See *supra* Part II.D.

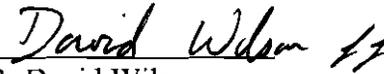
III. Conclusion

For these reasons, Petitioners respectfully request that the Commission initiate a proceeding to implement the proposals discussed above.

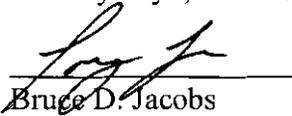
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April 16, 2010

Exhibit A – Proposed Blanket Licensing Rule for 17/24 GHz BSS Earth Stations

§ 25.XXX Blanket Licensing provisions of BSS Earth Stations in the 17.3-17.8 GHz (space-to-Earth) and 24.75-25.05 GHz (Earth-to-Space) bands.

(a) All applications for a blanket earth station license in the BSS in the 17.3-17.8 GHz and 24.75-25.05 GHz bands that meet the following requirements shall be routinely processed:

(1) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density for copolarized signals shall not exceed the following values, within +/- 3° of the GSO arc, under clear sky conditions:

18.5–25log(θ)–10log(N)	dBW/40kHz	for 2.0° ≤ θ ≤ 7°
-2.63–10log(N)	dBW/40kHz	for 7° ≤ θ ≤ 9.23°
21.5–25log(θ)–10log(N)	dBW/40kHz	for 9.23° ≤ θ ≤ 48°
-10.5–10log(N)	dBW/40kHz	for 48° < θ ≤ 180°

Where:

θ is the angle in degrees from the axis of the main lobe; for systems where more than one earth station is expected to transmit simultaneously in the same bandwidth

N is the likely maximum number of simultaneously transmitting co-frequency earth Stations.

(2) 17/24 GHz BSS earth station antenna off-axis EIRP spectral density for copolarized signals shall not exceed the following values, for all directions other than within +/-3° of the GSO arc, under clear sky conditions:

21.5–25log(θ)–10log(N)	dBW/40kHz	for 3.5° ≤ θ ≤ 7°
0.37–10log(N)	dBW/40kHz	for 7° < θ ≤ 9.23°
24.5–25log(θ)–10log(N)	dBW/40kHz	for 9.23° < θ ≤ 48°
-7.5–10log(N)	dBW/40kHz	for 48° < θ ≤ 180°

Where:

θ is the angle in degrees from the axis of the main lobe; for systems where more than one earth station is expected to transmit simultaneously in the same bandwidth.

N: is the likely maximum number of simultaneously transmitting co-frequency earth Stations.

(3) The values given in paragraphs (a) (1) and (2) of this section may be exceeded by 3 dB, for values of $\theta > 10^\circ$, provided that the total angular range over which this occurs does not exceed 20° when measured along both sides of the GSO arc.

(4) 17/24 GHz BSS earth station off-axis EIRP spectral density for cross-polarized signals shall not exceed the following values, in all directions relative to the GSO arc, under clear sky conditions:

8.5–25log(θ)–10log(N)	dBW/40kHz	for 2.0° ≤ θ ≤ 7°
12.63–10log(N)	dBW/40kHz	for 7° < θ ≤ 9.23°

Where:

θ : is the angle in degrees from the axis of the main lobe; for systems where more than one earth station is expected to transmit simultaneously in the same bandwidth.

N: is the likely maximum number of simultaneously transmitting co-frequency earth

Stations.

(5) For earth stations employing uplink power control, the values in paragraphs (a) (1), (2), and (4) of this section may be exceeded by up to 20 dB under conditions of uplink fading due to precipitation. The amount of such increase in excess of the actual amount of monitored excess attenuation over clear sky propagation conditions shall not exceed 1.5 dB or 15 % of the actual amount of monitored excess attenuation in dB, whichever is larger, with a confidence level of 90 percent except over transient periods accounting for no more than 0.5% of the time during which the excess is no more than 4.0 dB.

(6) Power flux-density (PFD) at the Earth's surface produced by emissions from a 17/24 GHz BSS space station for all conditions, including clear sky, and for all methods of modulation shall not exceed the limits specified in § 25.208(w).

(b) Each applicant for earth station license(s) that proposes levels in excess of those defined in paragraph (a) of this section shall submit link budget analyses of the operations proposed along with a detailed written explanation of how each uplink and each transmitted satellite carrier density figure is derived. Applicants shall also submit a narrative summary which must indicate whether there are margin shortfalls in any of the current baseline services as a result of the addition of the applicant's higher power service, and if so, how the applicant intends to resolve those margin short falls. Applicants shall certify that all potentially affected parties (i.e., those 17/24 GHz BSS satellite networks that are up to 10 degrees apart) acknowledge and do not object to the use of the applicant's higher power densities.

(c) Licensees authorized pursuant to paragraph (b) of this section shall bear the burden of coordinating with any future applicants or licensees whose proposed compliant operations at 10 degrees or smaller orbital spacing, as defined by paragraph (a) of this section, is potentially or actually adversely affected by the operation of the non-compliant licensee. If no good faith agreement can be reached, however, the noncompliant licensee shall reduce its earth station and space station power density levels to be compliant with those specified in paragraph (a) of this section.

(d) The applicant shall provide for each earth station antenna type, a series of radiation patterns measured on a production antenna performed on a calibrated antenna range and, as a minimum, shall be made at the bottom, middle, and top frequencies of the 24.75-25.05 GHz band. The radiation patterns are:

(1) Co-polarized patterns for each of two orthogonal senses of polarizations in two orthogonal planes of the antenna.

(i) In the azimuth plane, plus and minus 10 degrees and plus and minus 180 degrees.

(ii) In the elevation plane, zero to 30 degrees.

(2) Cross-polarization patterns in the E- and H-planes, plus and minus 10 degrees.

(3) Main beam gain.

(e) Protection of receive earth stations from adjacent satellite interference is based on compliance with § 25.224 of this section.

(f) The earth station licensee shall not transmit towards a BSS satellite unless it has prior authorization from the satellite operator or a space segment vendor authorized by the satellite operator. The specific transmission shall be conducted in accordance with the operating protocol specified by the satellite operator. The holder of an FCC blanket license pursuant to this section shall be responsible for operation of any transceiver to receive BSS service provided by that licensee or provided by another party with the blanket licensee's consent. Operators of 17/24 GHz BSS systems shall not transmit communications to or from user transceivers in the United States unless such communications are authorized under a service contract with the holder of a pertinent FCC blanket license or under a service contract with another party with authority for such transceiver operation delegated by such a blanket licensee.

(g) A licensee applying to renew its license must include on FCC Form 405 the number of constructed earth stations.