

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

In the Matters of)	
)	
Inquiry Concerning the Deployment of Advanced 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)	GN Docket No. 09-137
)	
)	GN Docket No. 09-51
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-47

To: The Commission

COMMENTS OF XANADOO COMPANY – NBP PUBLIC NOTICE #6

Xanadoo Company (“Xanadoo”) hereby submits comments urging the Commission to include in its National Broadband Plan a proposal to make two minor changes in its rules that will have the effect of freeing 300 MHz of spectrum for the provision of two-way satellite broadband service in the 17/24 GHz spectrum band.¹ When aggregated across all applicable satellite systems, these minor rule changes will have the effect of making thousands of megahertz of spectrum available for use in providing broadband services to rural and underserved areas throughout North America. Specifically, the proposed changes would:

1. Eliminate an allocation for Radionavigation Service (“RNS”) in the 24.75-25.05 GHz band which has been unused for many years, and where there do not appear to be any plans for future use;

¹ See *A National Broadband Plan for Our Future*, Docket No. 09-51, Notice of Inquiry, FCC 09-31 (April 8, 2009) (“*NOI*”); Public Notice, “Comment Sought on Spectrum for Broadband,” DA 09-2100, Docket Nos. 09-47, 09-51, and 09-137 (September 23, 2009) (“*NBP Public Notice # 6*”); Public Notice, “Reply Comments Sought in Support of National Broadband Plan,” DA 10-61, Docket Nos. 09-47, 09-51, and 09-137 (January 13, 2010) (*NBP Public Notice #30*). Xanadoo intends to file a Petition for Rulemaking, to the extent necessary to facilitate implementing its proposal.

2. Lift an unnecessary restriction limiting the use of 300 MHz of the 500 MHz uplink band for the 17/24 GHz Broadcasting-Satellite Service (“BSS”) to feeder links;² and
3. Permit blanket licensing of two-way earth stations operating in the 17/24 GHz BSS band.

If the Commission were to implement the proposed changes, each 17/24 GHz BSS licensee would be afforded the flexibility to use 300 MHz of its already-licensed spectrum for two-way broadband service, thus facilitating the development of this band and helping the Commission realize its goal of deploying abundant and cost-effective broadband capability to rural and underserved areas.

Background

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 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.³

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 service provider to receive a designation as a “Cisco Powered” partner service organization. Xanadoo has a 2.5/2.6 GHz spectrum footprint covering 12 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

² 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.

³ 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).

Loan Program, and that loan has since been repaid in full. Xanadoo has pending applications under the BIP and BTOP stimulus funding programs to build WiMAX wireless broadband networks serving rural and underserved areas in Oklahoma, Arkansas and Kansas.

Xanadoo also holds 23 licenses for upper 700 MHz A Block spectrum covering approximately 50% 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. Xanadoo anticipates that it will soon submit comments in the NOI and NBP Public Notice #2 regarding the A Block's suitability for 4G wireless broadband networks.

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.⁴ Domestically, the term direct broadcast satellite ("DBS") service has been used to describe the implementation of BSS in the 12.2-12.7 GHz frequency bands.⁵ 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.⁶

Anticipating a growing need for BSS spectrum, the 1992 World Administrative Radio Conference ("1992 WARC") of the International Telecommunication Union ("ITU") adopted the

⁴ See, e.g., 47 C.F.R. § 2.1.

⁵ See 47 C.F.R. §§ 25.201, 25.202(a)(7).

⁶ 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).

17/24 GHz BSS frequency allocation for Region 2, which includes the Americas.⁷ In 2000, the Commission, in large part, implemented domestically the 1992 WARC ITU Region 2 allocation for BSS, by allocating:⁸

1. 500 MHz of spectrum at 17.3-17.8 GHz on a primary basis to BSS for downlink transmissions;⁹
2. 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;¹⁰ and
3. 300 MHz of spectrum at 24.75-25.05 GHz for co-primary use between RNS 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 co-primary allocation.¹¹ 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.¹² No party commented on the issue. 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.¹³

⁷ *17/24 GHz NPRM*, at ¶ 4.

⁸ *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*”).

⁹ The 17.7-17.8 GHz band is limited to the provision of international service.

¹⁰ Xanadoo does not request in these Comments 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 that band be changed.

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

¹² *17/24 GHz NPRM*, at ¶ 93.

¹³ *17/24 GHz Report and Order*, at ¶ 116 n. 361.

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.¹⁴ 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.¹⁵ In 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.¹⁶ 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 this service.¹⁷ 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.¹⁸ 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.¹⁹

¹⁴ 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”).

¹⁵ 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-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).

¹⁶ 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”).

¹⁷ See *24 GHz NPRM*, at ¶ 8.

¹⁸ See *24 GHz Order*, at ¶ 11.

¹⁹ See *17/24 GHz NPRM*, at ¶ 93; *17/24 GHz Report and Order*, at ¶ 116 n. 361.

Discussion

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. consumers relied on satellite-delivered broadband, and that number is now estimated to be over one million.²⁰ 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.²¹ 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 service 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

²⁰ 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).

²¹ *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 kpbs 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.”).

local and domestic video, audio, data, video-on-demand, and multi-media services to U.S. consumers.”²² The provision of two-way broadband services operating solely in the 17/24 GHz band, however, is not possible under the Commission’s rules, because of limitations on the 17/24 GHz BSS uplink band. With only 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.

Specifically, Xanadoo requests that the Commission, as part of its National Broadband Plan, remove the non-federal RNS allocation in the 24.75-25.05 GHz band and the feeder link limitation applicable to 17/24 GHz BSS licensees with respect to that band. The Commission should also permit blanket licensing of two-way earth stations operating in the 17/24 GHz band to facilitate consumer adoption of the broadband service.²³ Xanadoo also requests that the Commission consult with NTIA regarding the removal of the federal RNS allocation in the 24.75-25.05 GHz band.

The proposed changes will provide each 17/24 GHz BSS licensee the flexibility to use 300 MHz of its already licensed spectrum for 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, Xanadoo calculates 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.

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

²² See *17/24 GHz Report and Order* at ¶ 1; see also *17/24 GHz NPRM*, at ¶ 1.

²³ Xanadoo believes that technical operating rules for blanket licensing of 17/24 GHz BSS end-user terminals would be comparable to those for blanket licensing of Ka-band FSS earth stations. See 47 C.F.R. § 25.138.

licensees/applicants to be able to modify their systems for broadband deployment in a timely manner.

Xanadoo foresees no legitimate objections to the proposal. 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.²⁴

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.²⁵ Further, as part of the due diligence in preparation of these Comments, Xanadoo 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.

Moreover, there is no shortage of spectrum allocated for RNS. The Table of Allocations allows for the provision of RNS in a number of frequency bands, including the 32.3-33.4 GHz and the 15.4-15.7 GHz bands.²⁶ 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

²⁴ 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).

²⁵ See *supra* notes 14-19 and accompanying text.

²⁶ See 47 C.F.R. § 2.106; see also 47 C.F.R. § 87.173.

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.²⁷ With respect to the 15.4-15.7 GHz RNS allocation, the ULS database shows there is a single licensee located in Redmond, WA operating in 200 MHz of that band.

Xanadoo's proposal is also fully consistent with the ITU Region 2 Table of Frequency Allocations for the 24.75-25.05 GHz band, pursuant to which the band is allocated solely to FSS with priority to BSS feeder links over other FSS uses.²⁸ Xanadoo does not object to a similar domestic priority preference for 17/24 GHz BSS feeder link stations. 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. Accordingly, there are no international bars to Xanadoo's proposal.

²⁷ 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).

²⁸ See *17/24 GHz NPRM*, at ¶ 93; see also 47 C.F.R. § 2.106 n. 5.535. Indeed, it is the present domestic RNS allocation in the 24.75-25.05 GHz band and feeder link limitation that are non-conforming.

Conclusion

For the reasons stated above, Xanadoo respectfully requests that the Commission incorporate the proposal discussed above, as part of its National Broadband Plan.

Respectfully submitted,

/s/

Scott A. Blank
Senior Vice President of Legal and Corporate
Affairs
Xanadoo Company
225 City Line Avenue, Suite 100
Bala Cynwyd, PA 19004

Bruce D. Jacobs
Tony Lin
Pillsbury Winthrop Shaw Pittman LLP
2300 N Street, NW
Washington, DC 20037-1128
(202) 663-8000

January 21, 2010