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VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands, WT Docket No. 12-70; Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz, ET Docket No. 10-142; and Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands, WT Docket No. 04-356

Dear Ms. Dortch:

Pursuant to Section 1.1206 of the Commission's rules,¹ AT&T Services Inc. ("AT&T") submits this letter to offer its views on how the Commission should address important issues raised in the above-captioned Notice.² AT&T continues to support the Commission's efforts to re-purpose the 2000-2020 MHz/2180-2200 MHz MSS band for terrestrial mobile broadband. As AT&T has counseled previously, however, any Commission action in this proceeding should seek to maximize the utility of all affected mobile broadband spectrum allocations and to harmonize regulatory treatment of similarly situated bands. To this end, AT&T offers three recommendations:

- The Commission should adopt the five megahertz shift of the AWS-4 uplink spectrum proposed in the Notice;
- If the Commission elects to auction the H Block, existing PCS operations must be protected by establishing rigorous and appropriate technical rules; and

¹ 47 C.F.R. § 1.1206.

² Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands, WT Docket Nos. 12-70, 04-356, ET Docket No. 10-142, Notice of Proposed Rulemaking and Notice of Inquiry, 27 FCC Rcd 3561 (2012) ("Notice").

- The Commission should harmonize regulatory treatment of the Lower 700 MHz E Block.

If the Commission moves forward with plans to issue AWS-4 terrestrial wireless licenses in the 2 GHz MSS band, it should shift the AWS-4 uplink band up by five megahertz to 2005-2025, as proposed in the Notice.³ Adopting this shift would help mitigate concerns about the potential for interference from AWS-4 devices to PCS devices due to the proximity of the AWS-4 uplink band to the Broadband PCS downlink band at 1930-1995 MHz. As Sprint Nextel, holder of the closest active PCS downlink band, the PCS G Block at 1990-1995 MHz, has stated, its “concern about the likelihood of MSS causing harmful out-of-band emissions interference into PCS G Block is well documented.”⁴ PCS devices are highly susceptible to interference from mobile transmitters operating in spectrum near to the PCS downlink band because the design of their filters is based upon the band plan in place at the time Broadband PCS was created.⁵ Sprint Nextel has explained that “[f]ilters may be able to ameliorate some of these concerns; others may require the Commission to establish guard bands or transition bands between prospective 2 GHz terrestrial broadband operations and existing PCS networks.”⁶ Shifting the AWS-4 uplink band by five megahertz will create ten megahertz of separation from the PCS G Block. This shift will reduce the likelihood that the large embedded base of PCS devices experiences harmful interference caused by AWS-4 mobile device transmissions.

Auctioning the H Block would be inconsistent with protecting PCS and maximizing the utility of 2005-2025 MHz for mobile broadband. In the Middle Class Tax Relief and Job Creation Act of 2012 (“Spectrum Act”), Congress instructed the Commission to allocate the H Block for commercial use and grant flexible use licenses through a system of competitive bidding unless the Commission determines that this spectrum band “cannot be used without causing harmful interference to commercial mobile service licensees in the frequencies between 1930 megahertz and 1995 megahertz.”⁷ AT&T and others have explained previously that the significant risk of

³ Notice, ¶ 42.

⁴ See Letter from Lawrence R. Krevor, Sprint Nextel to Marlene H. Dortch, Secretary, Federal Communications Commission at 5, WT Docket Nos. 12-70, 04-356, ET Docket No. 10-142 (filed Sept. 17, 2012) (“Sprint Letter”) (*citing* Comments of Sprint Nextel Corporation, ET Docket No. 10-142, WT Docket Nos. 04-356, 07-195 (July 8, 2011) (“Sprint 2 GHz Public Notice Comments”).

⁵ See, e.g., Comments of AT&T at 6, WT Docket No. 12-70, ET Docket No. 10-142, WT Docket No. 04-356 (filed May 17, 2012) (“AT&T AWS-4 Comments”); Comments of AT&T at 4-7, WT Docket Nos. 07-195, 04-356 (filed July 25, 2008) (“AT&T H Block Comments”).

⁶ Sprint 2 GHz Public Notice Comments at 4.

⁷ See Middle Class Tax Relief and Job Creation Act of 2012, Pub. Law 112-96, §§ 6401(b)(2)(A), (b)(4).

harmful interference to existing PCS operations suggests that this spectrum is not appropriate for widespread terrestrial mobile use.⁸

The technical limitations necessary to protect PCS devices from harmful interference would compromise use of the H Block for commercial mobile service. To protect PCS devices from interference, an H Block operator would need to significantly lower the power of its transmissions. Additionally, even with the shift of the AWS-4 uplink band, H Block devices would experience interference from AWS-4 operations. The combination of interference concerns on both the transmit and receive ends would limit the utility of the H Block for commercial mobile use. Moreover, it is not possible to provide adequate protection against self-interference and separation from the AWS-4 band in a single duplexer that would cover the entirety of the PCS band, including the G and H Blocks.⁹ Accordingly, operating across the entire extended PCS band would require multiple duplexers, adding to device size, cost, and complexity.

Because of the serious interference concerns and the significant operational challenges involved, the H Block should not be used for commercial mobile service. As AT&T has suggested, the Commission should initiate a proceeding to consider alternative uses for this spectrum compatible with surrounding mobile broadband operations.¹⁰ For example, the upper H Block could be combined with the 2000-2005 MHz spectrum vacated by AWS-4 as a result of the shift to create a 10 megahertz band for the introduction of new low power, unlicensed services. Alternatively, because the most significant concern of interference to existing PCS operations relates to mobile use of the lower H Block, the Commission could proceed with an auction of just the upper H Block (1995-2000 MHz) for supplemental downlink use.

However, should the Commission proceed with an auction of the entire H Block despite these concerns, it should adopt technical rules to protect PCS devices from harmful interference. In 2005, Verizon Wireless submitted to the Commission a proposal (based on testing conducted by CTIA and Motorola) that recommended staggered power levels for the H Block frequencies – a 6 dBm EIRP limit at 1917-1920 MHz and a 24 dBm EIRP limit at 1915-1917 MHz.¹¹ Verizon concluded that these limits were necessary to protect both GSM and CDMA devices from H Block interference. The 2005

⁸ See, e.g., AT&T AWS-4 Comments at 8-9; AT&T H Block Comments, Comments of SpectrumCo LLC, WT Docket No. 07-195 (filed July 25, 2008); Comments of QUALCOMM Incorporated, WT Docket No. 07-195 (filed July 25, 2008); Comments of United States Cellular Corporation, WT Docket No. 07-195 (filed July 25, 2008).

⁹ See Remarks of William Mueller, Avago Technologies at the Forum on Future of Wireless Band Plans, “Some Trends In Multi-Band Multi-Mode RF Front End Components” July 16, 2012 *available at* <http://www.fcc.gov/events/forum-future-band-plans>.

¹⁰ See AT&T AWS-4 Comments at 8-9.

¹¹ See Letter from Donald C. Brittingham, Director Wireless/Spectrum Policy, Verizon Wireless to Marlene H. Dortch, Secretary, Federal Communications Commission, Attachment at 10, WT Docket Nos. 04-356, 02-353 (filed Sept. 21, 2005).

testing upon which Verizon's proposal was based did not contemplate LTE use of the H Block. Although Sprint Nextel recently submitted information to the Commission about 3GPP standards regarding spurious emissions requirements for LTE devices,¹² there is no test data in the record quantifying the interference risk to PCS devices posed by robust LTE use of the H Block. Prior to making the H Block available at auction, the Commission should adopt power limits and any other protections testing suggests are necessary to prevent harmful interference caused by mobile broadband use of the H Block to current and future PCS band operations.

Finally, the Commission should harmonize its treatment of the Lower 700 MHz E Block licensees. In its original application for waiver of the MSS/ATC gating criteria, Dish suggested that if it were given terrestrial flexibility in the 2 GHz MSS band, it might integrate the spectrum with its other wireless holdings to "enhance the effectiveness and competitiveness of any mobile broadband services."¹³ As such, the Commission should take the opportunity to address the potential for harmful interference to other 700 MHz band operations posed by Dish's 700 MHz E Block spectrum. As detailed previously by AT&T,¹⁴ the Commission should harmonize regulatory treatment of the 700 MHz E Block by adopting for Dish's spectrum substantially the same protections as were adopted in the *Qualcomm Order*.¹⁵ Specifically, the Commission should adopt three operational requirements from the *Qualcomm Order* for Dish's use of the 700 MHz E Block:

- First, Dish's use of the Lower 700 MHz E Block should operate under the same power limits and antenna height restrictions that apply to Lower 700 MHz A and B Block licensees, as set forth in Section 27.50(c) of the Commission rules, and to AT&T's Lower 700 MHz D and E block operations under the *Qualcomm Order*.
- Second, Dish should be permitted to use the spectrum only for downlink transmissions so as to eliminate the risk of mobile-to-mobile interference to other Lower 700 MHz devices.

¹² See Letter from Lawrence R. Krevor, Sprint Nextel to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket Nos. 12-70, 04-356, ET Docket No. 10-142 (filed Sept. 17, 2012).

¹³ See ICO Global Communications (Holdings) Limited; DBSD North America, Inc. Debtor-in-Possession; New DBSD Satellite Services G.P. Debtor-in-Possession, Transferors, and DISH Network Corporation, Transferee, Consolidated Application for Authority to Transfer Control, Narrative at 15-16, IBFS File Nos. SAT-T/C-20110408-00071, SES-T/C-20110408-00424 and -00425 (filed Apr. 8, 2011)

¹⁴ See Letter from Joan Marsh, Vice President, Federal Regulatory, AT&T Services, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission at 3-6 (filed Jan. 26, 2012).

¹⁵ See Application of AT&T Inc. and Qualcomm Incorporated for Consent to Assign Licenses and Authorizations, WT Docket No. 11-18, *Order*, 26 FCC Rcd 17589, ¶¶ 59-68 (2011) ("Qualcomm Order").

- Finally, to mitigate any potential interference that could be caused to Lower 700 MHz A, B, C, D, and other E Block licensees, Dish should be required to (1) coordinate with A, B, C, D, and other E Block licensees to mitigate potential interference; and (2) mitigate interference to A, B, C, D, or other E Block operations within 30 days after receiving written notice from the licensee.

Adopting these requirements now will help prevent and resolve any issues that might otherwise result from Dish's use of the 700 MHz E Block spectrum. Additionally, harmonizing regulatory requirements across the Lower 700 MHz band will facilitate greater interoperability and increased roaming opportunities in the band.

* * *

AT&T strongly supports the Commission's efforts to address surging demand for additional mobile broadband spectrum. The Notice's proposal to re-purpose the 2 GHz MSS band for mobile broadband use could help to address this need. To this end, the Commission should only pursue the proposals suggested in the Notice if it takes appropriate steps to protect current and future mobile broadband operations, as discussed above.

Sincerely,

/s/ Joan Marsh

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