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September 24, 2012

EX PARTE PRESENTATION

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

Re: Ex Parte Presentation in WT Docket No. 12-70, *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*; ET Docket No. 10-142, *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*; and WT Docket No. 04-356, *Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands*

Dear Ms. Dortch:

Pursuant to Section 1.1206 of the Commission's rules, 47 C.F.R. § 1.1206, DISH Network Corporation ("DISH") submits this response to the lengthy *ex parte* letters ("Letters"), dated September 17, 2012, from Sprint Nextel Corporation ("Sprint"), who attempts to introduce at this late juncture a number of new technical claims and arguments to delay or muddle the issues related to final AWS-4 rules, and to try to force DISH to move up 5 MHz.¹ Ultimately, despite numerous misrepresentations and inaccuracies, the Sprint Letters do not alter the basic facts at issue.

First, a forced shift of the AWS-4 band would require the necessary 3rd Generation Partnership Project ("3GPP") standard-setting process to start over again for the modified AWS-4 band. Sprint never suggests otherwise. Rather, Sprint's Letters attempt to mislead by characterizing band maintenance efforts ongoing at 3GPP as modifications to an already-adopted standard. Any such remaining maintenance items for AWS-4 will have no bearing on whether or not the three-year old 3GPP process would have to start anew if the AWS-4 band plan were altered.

Second, DISH has throughout this proceeding agreed to adhere to the relevant emission limits captured in the 3GPP standard to protect Sprint's G block operations, and Sprint has agreed that those limits offer sufficient protection. In an eleventh-hour reversal, Sprint now suggests that no such limits exist, that the limits should be far more stringent, and that one of DISH's predecessor companies agreed to different limits in a single email exchange and an offline meeting. None of

¹ See Letter from Lawrence R. Krevor, Sprint, to Marlene H. Dortch, Secretary, FCC, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142 (Sept. 17, 2012) ("Sprint Letter"); Letter from Rafi Martina, Sprint, to Marlene H. Dortch, Secretary, FCC, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142 (Sept. 17, 2012).

these claims are true or relevant. The already-adopted 3GPP standard controls, and the standard outlines the appropriate levels of protection for G block operations from AWS-4 and reflects the mutual agreement among Sprint, DISH, and other 3GPP members.

Third, Sprint has failed to produce analysis to the 3GPP group or the Commission that would indicate that Sprint requires protection beyond the levels adopted by 3GPP or specified under the Commission's ancillary terrestrial component ("ATC") rules. Further, if Sprint's claim for greater protection were to be accepted now, then 3GPP would have to revisit the limits established to protect both AWS-4 and G block operations, thus jeopardizing Sprint's own deployment in the G block in reliance on the existing limits.

Fourth, the Commission's ability to auction the H block for robust LTE operations is constrained by a number of technical and operational issues. Sprint's suggestion that the H block is ready for immediate wireless broadband use grossly simplifies those challenges and is contrary to the concerns of numerous stakeholders in this proceeding.

Lastly, the Sprint Letters are silent on the significant *new* interference issues that would be created by shifting the AWS-4 band up 5 MHz. DISH has filed an extensive technical paper detailing the dramatic impact on uplink operations in the AWS-4 band that would be caused by adjacent government and broadcast facilities under a modified AWS-4 band.²

Sprint's silence on the key timing and interference issues related to any changes to the AWS-4 band plan underscores that there is no public policy benefit to Sprint's self-serving proposals, and the Commission should expeditiously move forward to adopt final AWS-4 rules based on the existing band plan. To ensure a complete and accurate record in this rulemaking, an appendix is attached responding to Sprint's faulty analysis in greater detail.

Respectfully submitted,

/s/ Jeffrey H. Blum

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² See Letter from Jeffrey H. Blum, DISH, to Marlene H. Dortch, Secretary, FCC, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142 (Sept. 17, 2012) (attaching study on S-band interference from 2025-2110 MHz).

Appendix: Response to Sprint Letters

A 5 MHz Upward Shift Would Create Substantial Delays in the 3GPP Standards-Setting Process

Sprint incorrectly alleges that substantial additional international standards-setting work is required to support LTE operations in the existing AWS-4 band (or Band 23), regardless of whether the Commission adopts a 5 MHz upward shift in the band plan.¹ In fact, 3GPP Band 23 has been approved by the group for well over a year, and the remaining maintenance items do not revisit coexistence agreements, as Sprint suggests.

The 3GPP process of standardizing Band 23 began in December 2009, and the band was finalized by 3GPP in June 2011, after extensive effort among 3GPP vendors and operators (including Sprint) to reach an agreement for coexistence requirements between adjacent bands as currently configured.² 3GPP operates based upon consensus of its members, and any member can object to a contribution. Sprint did not object to 3GPP approval of Band 23 and, in fact, actively participated in the process, which led to mutually agreed-upon standards for coexistence between Band 23 and Band 25 (*i.e.*, PCS band plus G block).

Sprint grossly overstates the outstanding issues related to Band 23. The 3GPP group is expected, by December 2012, to complete additional work on Band 23 including maintenance required to harmonize the band to accommodate a single operator (rather than two separate operators) in the band. This additional work does *not* entail any revisiting of coexistence requirements between Band 23 and Band 25 operations, which were established when Band 23 was finalized in June 2011. In fact, 3GPP adoption of coexistence standards for Band 23 and Band 25 has allowed Sprint to deploy base stations and user equipment in Band 25. This would not have been possible had these standards remained subject to further significant revisions as Sprint now suggests.

If a 5 MHz upward shift in the AWS-4 band plan is mandated, the lengthy 3GPP process would have to be repeated before DISH could start user equipment development. Nowhere in its Letters does Sprint dispute that a shift would require a new 3GPP process. Restarting this process would significantly delay the expected completion of LTE Advanced specifications for the band and severely jeopardize DISH's commercial plans.

¹ See Letter from Lawrence R. Krevor, Sprint, to Marlene H. Dortch, Secretary, FCC, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142, at 2 (Sept. 17, 2012) (“Sprint Letter”); Letter from Rafi Martina, Sprint, to Marlene H. Dortch, Secretary, FCC, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142 (Sept. 17, 2012).

² See Letter from Jeffrey H. Blum, DISH, to Marlene H. Dortch, Secretary, FCC, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142, at 2 (Aug. 28, 2012).

By Sprint's Own Admission, an AWS-4 Emissions Limit of -40 dBm/MHz Is Sufficient to Protect G Block Operations and Consistent with 3GPP Coexistence Standards and FCC Rules

The 3GPP standard in place today provides for an emissions limit of -40 dBm/MHz (or attenuation of $70+10*\log(P)$ dB, using a 1 MHz measurement procedure) at the upper edge of Band 25 (*i.e.*, 1995 MHz), as DISH has explained throughout this proceeding. Only a few months ago, Sprint filed reply comments stating that it “continues to support this attenuation standard [of $70+10*\log(P)$ dB], *which should provide adequate interference protections and is in accordance with the recommendation of [3GPP] and existing [ATC] rules.*”³ Moreover, during the final stages of the 3GPP process in February 2011, Sprint stated that it had no issue with -40 dBm/MHz.⁴

Furthermore, the Commission adopted the MSS/ATC rules for emissions below 2000 MHz following a lengthy comment and review process. The Commission deemed that the protection criteria for frequencies below 1995 MHz were an appropriate balance of protection to the G block, on the one hand, and penalty to the AWS-4 devices, on the other. Until this month, Sprint was in agreement that -40 dBm/MHz provided sufficient protection to their LTE operations in the G block. The 3GPP standard for Band 23 is consistent with the FCC rules for linear interpolation across the H block and supplies the required -40 dBm/MHz level at 1995 MHz for the protection of G block.

And, contrary to Sprint's contention (*see* Sprint Letter at 4), the November 2011 private settlement agreement between DISH and Sprint expressly addressed agreements made in 3GPP regarding emission limits. Indeed, Sprint's letter to the Commission on November 17, 2011 said the following:

Based on Sprint's understanding of Gamma's and DISH's planned operations as described in the applications, and assuming that Gamma and DISH will fully comply with all applicable Commission rules and policies, and final and pending specifications set forth by the 3rd Generation Partnership Project, and further assuming that the Applicants will seek no change to the applicable power limits for 2000-2020 MHz, or out-of-band emission limits applicable to operations at 2000-2020 MHz, *Sprint has concluded that the protections set forth in the applicable Commission rules and policies, and in the final and pending specifications set forth by the 3rd Generation Partnership Project, in addition to*

³ *See* Reply Comments of Sprint, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142, at 8-9 (June 1, 2012) (emphasis added).

⁴ *See* RAN-4 #58 Meeting Report (Taipei, Taiwan) at 99 (Feb. 2011), http://www.3gpp.org/ftp/tsg_ran/WG4_Radio/TSGR4_59/Docs/R4-112412.zip (with respect to the 36.101 CR presented by DBSD, Sprint states “the issue is that A-MPR values do not provide sufficient protection,” and when asked to clarify if it is with the A-MPR or the -40 dBm/MHz emission requirement, it reiterates the issue is “with A-MPR. There can be an issue with Blocking specs for Band 25.”).

*DISH's and Sprint's mutual willingness to engage in good faith coordination, are sufficient to address harmful interference from MSS/Ancillary Terrestrial Component Services operations in the 2000-2020 MHz band into current or planned Personal Communications Services ("PCS") operations in the G Block and other PCS bands*⁵

Yet, in a sudden, inexplicable reversal of position, Sprint now suggests that the 3GPP Band 23 standard did not include the proper emission level for Band 25 or is insufficient to protect the G block.⁶ This is contradicted by the following technical chart that Sprint provided in its own Letter:

23	E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 23, 24, 41	F _{DL_low}	-	F _{DL_high}	-50	1	
	E-UTRA Band 2	F _{DL_low}	-	F _{DL_high}	-50	1	14, 15
	Frequency range	1998	-	1999	-21	1	14, 15
	Frequency range	1997	-	1998	-27	1	14, 15
	Frequency range	1996	-	1997	-32	1	14, 15
	Frequency range	1995	-	1996	-37	1	14, 15

NOTE 14: To meet this requirement NS_11 value shall be signalled when operating in 2000-2010 MHz

NOTE 15: These requirements also apply for the frequency ranges that are less than Δf_{OOB} (MHz) in Table 6.6.3.1-1 and Table 6.6.3.1A-1 from the edge of the channel bandwidth.

This chart was a result of multiple discussions and agreements on how to capture both regulatory requirements and 3GPP coexistence requirements properly. Consistent with the $70+10*\log(P)$ regulatory requirements at 1995 MHz, and the linear interpolation regulatory requirements,⁷ the above chart specifies emissions limits that decrease from -21 dBm/MHz at 1999 MHz to -37 dBm/MHz at 1996 MHz, defined in step functions of 1 MHz with a mid-point value for the emission limits and resulting in a value of -40 dBm/MHz at 1995 MHz. The -37 dBm/MHz value is the level at 1995.5 MHz. The chart also specifies Band 2 separately at -50 dBm/MHz at 1990 MHz (*i.e.*, the upper edge of Band 2), and other bands at -50 dBm/MHz at the defined Δf_{OOB} (MHz) frequency separation. In short, -40 dBm/MHz is implicitly defined in this table and it reflects the proper and mutually agreed to out-of-band emissions requirements at 1995 MHz.

In addition, contrary to Sprint's allegation that "3GPP has an obligation to investigate the potential for harmful interference," 3GPP in fact is an organization that provides recommendations and defines standards that facilitate interoperability and worldwide adoption of technology. 3GPP does recognize regional and regulatory requirements, but is not responsible for establishing regulatory obligations. Although 3GPP members may adopt user equipment and base station protection coexistence limits of -50 dBm/MHz and -49 dBm/MHz, respectively, to protect other 3GPP bands, these limits typically are adopted to protect operations in frequency

⁵ See Letter from Marc Martin, Counsel for Sprint, to Marlene H. Dortch, Secretary, FCC, IB Docket No. 11-150, IB Docket No. 11-149, at 1-2 (Nov 17, 2011) (emphasis added).

⁶ See Sprint Letter at 3.

⁷ See 47 C.F.R. § 25.252(c)(2) (specifying ATC user terminal emission limits as determined by linear interpolation).

bands that are not immediately adjacent, or close to, each other. For special instances where the uplink and downlink bands are close to each other, 3GPP coexistence standards typically specify footnote exceptions and *less* stringent limits than -50 dBm/MHz, contrary to Sprint's claims.⁸

In any event, contrary to Sprint's contention (*see* Sprint Letter at 3 n.1), DISH's predecessor, ICO/DBSD, did not agree to a limit of -50 dBm/MHz at 1995 MHz. Sprint's only support for this proposition is a single email exchange between ICO and multiple operators and vendors (including Sprint) during the Band 23 negotiations, in which ICO preliminarily proposed various options for the parties to consider. Under one of these options, the parties would grant "no special protection outside of what default 3GPP values would be. That is Band 23 UE will meet spurious emissions requirements at 15 MHz away," *i.e.*, at 1985 MHz.⁹ Contrary to Sprint's mischaracterization, the language in this option in no way suggests a Band 23 user equipment limit of -50 dBm/MHz at 1995 MHz, and is irrelevant to the limits captured by the final Band 23 standard.

In no event could the limit be set at -50 dBm/MHz as Sprint now suggests, because that would be inconsistent with the calculations specified in the above table as agreed by 3GPP.

The H Block Is Not Available for Immediate Wireless Broadband Use

Contrary to Sprint's contention,¹⁰ the availability of H block spectrum for immediate wireless broadband use is highly questionable. Thus, the Commission should refrain from adopting either a 5 MHz upward shift in the AWS-4 band plan or onerous AWS-4 emission limits to protect hypothetical H block operations.

As the Commission has noted, the record in the AWS-2 H block rulemaking reflects concerns regarding interference between the lower H block (at 1915-1920 MHz) and the PCS band,¹¹ and these interference concerns could preclude licensing of the lower H block under the Middle Class

⁸ For example Band 26 user equipment transmitters are required to protect Band 27 user equipment receivers with a limit of -32 dBm/MHz. Band 26 is the Sprint-proposed extended 850 MHz band, which is granting a protection level of 18 dB more lenient than the -50 dBm/MHz. *See* 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception (Release 11), at 71, Table 6.6.3.2-1 (June 2012), http://www.3gpp.org/ftp/Specs/2012-06/Rel-11/36_series/36101-b10.zip. By Sprint's own flawed reasoning, its proposed operations in Band 26 would create issues for Band 27 even under the more relaxed limit of -32 dBm/MHz.

⁹ Email from Mariam Sorond, ICO Global Communications, to Nick Baustert, Sprint, and multiple other operators and vendors. (Sept. 15, 2010).

¹⁰ *See* Sprint Letter at 1.

¹¹ *See Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Notice of Proposed Rulemaking and Notice of Inquiry, 27 FCC Rcd 3561, ¶ 147 (2012).

Tax Relief and Job Creation Act of 2012 (“Act”).¹² Moreover, the Commission has paired the lower H block with the upper H block (at 1995-2000 MHz),¹³ and has proposed service rules that would license the entire H block as “two paired channels of 5 megahertz each.”¹⁴ Thus, the Commission may be precluded from licensing the upper H block jointly with the lower H block under the Act. The Commission also may be precluded from licensing the upper H block separately from the lower H block without initiating further proceedings.

Sprint’s Letters ignore altogether the challenges associated with the lower H block, including those that Sprint itself has acknowledged,¹⁵ and avoid the strong opposition of many stakeholders to LTE-type services in the H block.¹⁶ Consequently, Commission adoption of either a 5 MHz upward shift in the AWS-4 band plan or Sprint’s proposed stringent attenuation limit of $70+10*\log_{10}(P)$ dB at 2000 MHz would be excessive and would not resolve the outstanding technical challenges associated with H block.

¹² See Middle Class Tax Relief and Job Creation Act of 2012, Pub. Law 112-96, § 6401(b) (directing the Commission, within three years of enactment, to allocate, auction, and license each of the lower and upper H blocks for commercial use under flexible-use service rules, unless it determines that the respective spectrum blocks “cannot be used without causing harmful interference to [PCS operations in the 1930-1995 MHz band]”).

¹³ See *Amendment of Part 2 of the Commission’s Rules to Allocate Spectrum Below 3 GHz*, Sixth Report and Order, Third Memorandum Opinion and Order, and Fifth Memorandum Opinion and Order, 19 FCC Rcd 20720, ¶ 41 (2004).

¹⁴ See *Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, Further Notice of Proposed Rulemaking, 23 FCC Rcd 9859, ¶ 4, App. A (proposing Sec. 27.11(k)) (2008); see also *Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands*, Notice of Proposed Rulemaking, 19 FCC Rcd 19263, ¶ 1 (2004); *Spectrum Task Force Invites Technical Input on Approaches to Maximize Broadband Use of Fixed/Mobile Spectrum Allocations in the 2 GHz Range*, Public Notice, 26 FCC Rcd 7587 (2011) (seeking “technical input” on “three potential 2 GHz terrestrial spectrum concepts,” including pairing 1995-2000 MHz (as uplink) with 2170-2175 MHz (as downlink)). To date, the Commission has not proposed to license the upper H block separately from the lower H block.

¹⁵ Indeed, by Sprint’s own admission, use of the H block uplink may cause interference to adjacent downlink operations in the G block and PCS band. See Comments of Sprint, ET Dkt. No. 10-142, WT Dkt. Nos. 04-356 and 07-195, at 4 (July 8, 2011). Sprint explained that “H Block uplink operations at 1915-1920 MHz would pose a serious interference threat to G Block transmissions and other PCS operations. At a minimum, new 1917-1920 MHz users would need to be subject to restrictive transmitter power and OOB limits to protect the millions of existing PCS devices operating in the 1930-1990 MHz band from harmful intermodulation interference.” *Id.*

¹⁶ See e.g., Motorola Mobility Comments, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142, at 4 n.8 (May 17, 2012); AT&T Comments, WT Dkt. Nos. 12-70 and 04-356 and ET Dkt. No. 10-142, at 5-7 (May 17, 2012).

Not only is it unclear whether H block can ever be used for full-power broadband LTE, but making the changes Sprint proposes would sacrifice a substantial amount of AWS-4 spectrum. In the Letters, Sprint audaciously proposes an emissions level of $70+10\text{Log}P$ for AWS-4 mobiles at 2000 MHz, for an “unimpeded use of the PCS H Block downlink.”¹⁷ It also states that the Commission should “reiterate the existing requirement that MSS licensees remain responsible for eliminating harmful interference into PCS in the event that it occurs.”¹⁸ Based on the extensive 3GPP studies performed, such an emission limit on S-band mobiles would unfortunately require a minimum 5 MHz of AWS-4 spectrum to be relegated as a guard band, and would subject the entire 20 MHz to significant power limitations—all of which would have a materially detrimental impact to DISH’s entire uplink.

Finally, Sprint’s proposal to extend the H block from 1995 MHz to 2005 MHz belies its purported concerns of interference from AWS-4 uplink transmissions. If these concerns were genuine, Sprint would not propose placing the expanded H block receivers immediately adjacent to AWS-4 device transmitters.

¹⁷ Sprint Letter at 6.

¹⁸ *Id.*