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June 27, 2011

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

Re: *Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band* (WT Docket No. 07-293) and *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band* (IB Docket No. 95-91) -- WRITTEN EX PARTE PRESENTATION

Dear Ms. Dortch:

On June 14, 2011, representatives of Sirius XM Radio Inc. ("Sirius XM") met with staff from the Office of Engineering and Technology, the Wireless Telecommunications Bureau and the International Bureau to press for a variety of changes in the Part 25 and Part 27 rules governing coexistence of the Wireless Communications Service ("WCS") and the satellite Digital Audio Radio Service ("SDARS").[1] Adoption of Sirius XM's proposals will condemn WCS licensees to the provision of sub-optimal services that do not meet America's long-term need for mobile broadband, undermining the objective of the National Broadband Plan. We are writing on behalf of the WCS Coalition to briefly identify for the convenience of the staff the overwhelming record evidence against adoption of Sirius XM's proposals.

WCS Mobile Broadband Operations

At the meeting, Sirius XM again advanced its oft-discredited claim that a 70+10log(P) out-of-band emission ("OOBE") limit is required at 2320 MHz and 2345 MHz to protect SDARS from harmful interference.[2] It did so, notwithstanding the detailed findings in the *Report and Order* that such an onerous OOBE limit is "not necessary to protect satellite radio operations,"[3] and overwhelming evidence in the record (including real world testing conducted in Ashburn,

[1] *See* Letter from Michael A. Lewis, Consultant to Sirius XM Radio Inc., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 07-293 (filed June 16, 2011) ["Sirius XM *Ex Parte*"].

[2] *See id.* at 2.

[3] Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band, *Report and Order and Second Report and Order*, 25 FCC Rcd 11710, 11757 (2010) ["*Report and Order*"].

VA with Sirius XM's participation) supporting the Commission's finding.[4] The WCS Coalition addressed Sirius XM's proposal in detail in its October 18, 2010 opposition to Sirius XM's petition for reconsideration, and Sirius XM has yet to provide any meaningful response.[5]

In addition, Sirius XM again called for the Commission to reduce the newly-adopted duty cycle restrictions on mobile and portable devices – to, in effect, further reduce the broadband speeds that can be made available to consumers served by WCS.[6] The record before the Commission is devoid of any support for Sirius XM's advocacy of reducing the standard duty cycle from 38 percent to 35 percent.[7] To the contrary, the record cries out for a reduction in the duty cycle burden by, at a minimum, establishing a special duty cycle for Long Term Evolution ("LTE") systems (which operate at a lower peak-to-average power ratios than permitted under the rules and thus would be less prone to interfere with SDARS even at a higher duty cycle) and eliminating the rule's bias against frequency division duplex technologies.[8]

Sirius XM also reiterated its support for the Commission's imposition of a 50 mW per MHz power spectral density limit on mobile devices, which AT&T Inc. ("AT&T) and the WCS Coalition have petitioned to eliminate.[9] The record establishes that this limit – which was not proposed in the staff's April 2, 2010 *Public Notice* soliciting comment on proposed technical rules and the inclusion of which was not explained in the *Report and Order*[10] -- "will have a

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[4] *See id.* at 11746-58.

[5] *See* Opposition of the WCS Coalition to Petition of Sirius XM Radio Inc. for Partial Reconsideration and Clarification, WT Docket No. 07-293, at 1-5 (filed Oct. 18. 2010) ["WCS Coalition Opposition"]. Indeed, Sirius XM appears to be resting its case on flawed testing that the *Report and Order* actually did fully consider (*see Report and Order*, 25 FCC Rcd at 11752) and its false assertion that the WCS industry has failed to consider the use of better filters to limit OOBE. *See* Reply of Sirius XM Radio Inc. to Oppositions of the WCS Coalition and AT&T Inc., WT Docket No. 07-293, at 3 (filed Nov. 2, 2010) ["Sirius XM Reply"]. In addition, Sirius XM trots out its threadbare claim that if WCS can satisfy a 70+10log(P) OOBE standard to protect the Aeronautical Mobile Telemetry allocation above 2690 MHz, it can meet that same standard at 2320 MHz and 2345 MHz. *See id.* The WCS Coalition has fully addressed the serious problems associated with Sirius XM's arguments regarding filtering, and need not repeat them here. *See* WCS Coalition Opposition at 5.

[6] *See* Sirius XM *Ex Parte* at 2.

[7] *See e.g.*, WCS Coalition Opposition at 6-8; Opposition of AT&T Inc. to Petition for Partial Reconsideration and Clarification of Sirius XM Radio Inc.; Petition for Reconsideration of Green Flag Wireless, LLC, *et al.*; and Petition for Clarification or Partial Reconsideration of ARRL at 8, WT Docket No. 07-293 (filed Oct. 18, 2010) ["AT&T Opposition"].

[8] *See e.g.*, Petition of AT&T Inc. for Partial Reconsideration, at 16-19, WT Docket No. 07-293 (filed Sept. 1, 2010) ["AT&T Petition"]; Petition of the WCS Coalition for Partial Reconsideration, at 7, WT Docket No. 07-293 (filed Sept. 1, 2010) ["WCS Coalition Petition"]; WCS Coalition Opposition at 6; Reply of AT&T Inc. to Oppositions of Sirius XM Radio Inc., Aerospace and Flight Test Radio Coordinating Council, and the Boeing Company to the Petition for Partial Reconsideration, at 5-7, WT Docket No. 07-293 (filed Nov. 1, 2010) ["AT&T Reply"]; Reply of the WCS Coalition, at 9-10, WT Docket No. 07-293 (filed Nov. 1, 2010) ["WCS Coalition Reply"].

[9] *See* Sirius XM *Ex Parte* at 2.

[10] Commission Staff Requests that Interested Parties Supplement the Record on Draft Interference Rules for Wireless Communications Service and Satellite Digital Audio Radio Service, *Public Notice*, 25 FCC Rcd 3319 (2010) ["*Technical Public Notice*"]. As AT&T has previously noted, "[t]he 50 mW/MHz PSD limit was mentioned,

devastating impact on the usability of WCS spectrum."[11] Among other things, AT&T has demonstrated that the 50 mW/MHz power spectral density limit is inconsistent with the manner in which wireless equipment is designed, as current and forecast mobile devices lack the capability to adjust power proportionally with occupied bandwidth.[12] As such, the record in this proceeding – which Sirius XM has not even attempted to refute – illustrates that retention of this power spectral density limit on mobile and portable devices will increase infrastructure costs at least fourfold and reduce the quality, throughput and efficiency of mobile WCS networks, hampering their ability to provide meaningful competitive mobile broadband services to the American public.[13]

Fixed CPE

Sirius XM's continued advocacy for new restrictions on WCS fixed consumer premises equipment ("CPE") is impossible to square with either the history of the WCS and SDARS bands or the *Report and Order*. Sirius XM continues to ignore that under the WCS rules in effect when the SDARS spectrum was auctioned, WCS licensees were permitted to operate fixed CPE across the entire WCS band at power levels far in excess of the maximum imposed by the *Report and Order* and with no limitation on the use of outdoor antennas.[14] Indeed, the current claim by Sirius XM that new guardbands, further power reductions and a ban on outdoor antennas are all necessary to protect SDARS reception from fixed CPE cannot be squared with its predecessor's 2008 admission that:

> The technical parameters imposed on WCS transmitters by the FCC were based on sound physics whose principles remain unchanged. Satellite radio operators relied on those policies and standards. *Both satellite radio licensees designed, built and deployed their systems to withstand interference that could be anticipated from Part 27-compliant systems*.[15]

The *Report and Order*'s rejection of Sirius XM's call to bar WCS fixed CPE from 2317.5-1320 MHz and 2345-2347.5 MHz is amply supported by the factors identified in Paragraphs 140-142 of that document. There, the Commission correctly recognizes that even without the guardband applied to mobile uses, the potential for harmful interference to SDARS from fixed CPE is quite limited.[16] Sirius XM has yet to present any credible evidence to support its assertion that SDARS receivers will suffer harmful interference from fixed WCS CPE absent

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but not sought, by Sirius XM [in its comments on the *Technical Public Notice*], and only in connection with the WCS C and D Blocks." AT&T Petition at 14 (citation omitted).

[11] AT&T Reply at 3. *See also* AT&T Petition at 14-16.

[12] *See* AT&T Petition at 15.

[13] *See id*. at 15-16; WCS Coalition Petition at 14; AT&T Opposition at 3-4; AT&T Reply at 3-4.

[14] *See e.g*., WCS Coalition Opposition at 10-11.

[15] *Id*. at 11, *quoting* Comments of Sirius Satellite Radio Inc., WT Docket No. 07-293, at 17 (filed Feb. 14, 2008).

[16] *See Report and Order*, 25 FCC Rcd at 11768-69.

either the imposition of guardbands[17] or a power spectral density limit on fixed CPE.[18] As the *Report and Order* recognizes:

> Authorized WCS fixed CPE devices have been operating at EIRPs up to 20 W for some time in the 2.3 GHz band, but SDARS licensees have not reported any instances of interference. We expect that if we were to continue to allow WCS fixed CPE devices to use up to 20 W per 5-megahertz peak EIRP, SDARS operations would not experience any appreciable increase in interference from these WCS operations. Moreover, continuing to allow WCS fixed CPE devices to use up to 20 W per 5-megahertz EIRP will enhance the provision and quality of service in rural areas, where subscribers are often located significant distances from WCS licensees' serving base stations.[19]

Similarly, Sirius XM has yet to provide the Commission with any sound argument for retaining the restriction on outdoor antennas for low-powered CPE.[20] As noted above, the WCS rules in place from before the SDARS auction allowed outdoor antennas with all CPE, regardless of power. The *Report and Order* provides no rationale for depriving WCS licensees of the ability to deploy outdoor antennas with low-powered CPE – a rule change that was not even proposed by the Commission in the *Technical Public Notice*. As the *Report and Order* acknowledges, "[i]n a fixed scenario, there exists an increased separation distance between WCS CPE and SDARS receivers than would exist in a vehicle-to-vehicle scenario."[21] Moreover, the *Report and Order* establishes that between a fixed WCS outdoor CPE installation and a Sirius XM receiver, there are likely to be a variety of blockages – foliage, parked cars, etc. that will tend to mitigate the potential for interference.[22] Under these circumstances, the public interest is

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[17] *See* WCS Coalition Opposition at 12. Rather, Sirius XM appears to rely on "testing" it purportedly undertook under the cloak of darkness, without giving the Commission or the WCS community advance notice or an opportunity to participate. Testing conducted in secret, without full disclosure of the details as to how the transmission and reception facilities were configured or operated, simply is not credible (particularly given Sirius XM's track record in this proceeding). *See id*.

[18] *See* AT&T Opposition at 2-5. Note that subsequent to the filing of AT&T's opposition, Sirius XM asserted that its call for a 400 milliwatts per megahertz power spectral density limit was the result of a "typographical error" and that it intended to propose a 4 watts per megahertz limit. Sirius XM Reply at 7. In any event, however, Sirius XM has yet to justify a need for a power spectral density limit, and the record demonstrates that any such limit would be problematic. The WCS Coalition is unaware of any current or projected commercial fixed system that is capable of supporting a power spectral density limit. As a practical matter, were the Commission to adopt Sirius XM's proposal, system operators would be required to reduce transmitted power levels to 4 watts per 5 MHz, since the systems are incapable of maintaining a 4 watts/MHz level. Doing so will impose a substantial performance penalty on fixed services, reducing transmit power by 7 dB and requiring approximately 5 times the number of cells to provide equivalent coverage. The cost of such additional infrastructure is likely to make fixed services in the WCS band, including smart grid applications, non-economic. *See* AT&T Opposition at 4-5.

[19] *Report and Order*, 25 FCC Rcd at 11768.

[20] *See* AT&T Petition at 23-24; WCS Coalition Petition at 8-12; AT&T Reply at 9.

[21] *Report and Order*, 25 FCC Rcd at 11768.

[22] *See id* at 11768-69. *See also* WCS Coalition Petition at 11.

not served by precluding WCS licensees from offering innovative services that require use of low-powered CPE coupled to outdoor antennas.[23]

Coordination Requirements

Sirius XM's proposal for modifying the definitions of "potentially affected WCS licensee" was fully addressed in the WCS Coalition's *ex parte* filing of May 9, 2011 and need not be addressed here.[24] Suffice it to say that Sirius XM's call for modification of Section 25.263(b)(1) of the Rules is both untimely and, if adopted, would undermine the ability of WCS licensees to meet their obligations under newly-adopted Sections 27.72(a) and 27.72(e) of the Rules.

And, finally, the record fails to demonstrate any need for the Commission to mandate a single point of contact among WCS licensees for the benefit of Sirius XM.[25] There are barely more than a dozen WCS licensees (adjusting for the fact that some entities hold licenses in more than one corporate entity), and Sirius XM has provided no explanation of why it cannot interact separately with this small number of companies. The record demonstrates that establishing a single entity to deal with Sirius XM will take time and money, resources the WCS community would prefer to devote to deploying their networks and providing broadband service as envisioned by the National Broadband Plan. Moreover, adoption of Sirius XM's proposal will be tremendously inefficient – potential interference issues will arise on a base station-by-base station basis, and are best addressed on a licensee-by-licensee basis without involvement of some third party.

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[23] *See* WCS Coalition Petition at 11. The WCS Coalition continues to believe that "[g]iven the lack of any reliable record supporting a ban on outside antennas for WCS devices operating at or below 2 watts average EIRP, the Commission should repeal the rule and return to the *status quo* under which antennas placement was dictated by technical need, not Commission fiat." *Id.* However, to the extent that the Commission believes some restrictions on outdoor antennas are necessary in light of the new reduced OOBE limits, the WCS Coalition suggested some very specific modifications to Section 27.53(a)(2)and (3) of the Rules. Sirius XM has never responded to the WCS Coalition's compromise proposal. *See* Opposition of Sirius XM Radio Inc. to Petitions for Reconsideration of the WCS Coalition and AT&T Inc., WT Docket No. 07-293, at 10-12 (filed Oct. 18, 2010).

[24] *See* Letter from Paul J. Sinderbrand, Counsel to WCS Coalition, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 07-293 (filed May 9, 2011).

[25] *See* WCS Coalition Opposition at 21-22.

Pursuant to Sections 1.1206(b)(1) and 1.49(f) of the Commission's Rules, this letter is being filed electronically with the Commission via the Electronic Comment Filing System. Should you have any questions regarding this presentation, please contact the undersigned.

Respectfully submitted,

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