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SUBMITTED ELECTRONICALLY

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

RM-11750, Amendment to Commission Rules Concerning Adjudication of Spectrum Interference Disputes

Dear Ms. Dortch:

On August 7, 2015, Sirius XM Radio Inc. (“Sirius”) submitted a letter in response to the reply comments of T-Mobile USA, Inc. (“T-Mobile”) in the above-referenced proceeding.^{1/} Sirius misrepresents the record and the numerous parties that agree with T-Mobile, makes baseless claims, and fails to provide an adequate explanation of why the ALJ Option is the better approach to resolving interference disputes. Sirius’ own actions abusing the Commission’s processes – by injecting an engineering problem of its own creation into a transactional proceeding – makes T-Mobile’s point.^{2/} Creating a complicated trial-type process is exactly the wrong way to resolve engineering-based issues and would only open the door to further abuse. A far more productive path would be for the Commission to require licensees to deploy receivers that can account for the readily calculable, mathematical effects of transmitter products *before* technical problems emerge and to address a root cause of conflicts between services – namely the poor design of certain radio receivers that leave them vulnerable to muting. The

^{1/} See Letter from John P. Janka and Jarrett S. Taubman, Latham & Watkins LLP, Counsel to Sirius, to Marlene H. Dortch, Secretary, FCC, RM-11750 (filed Aug. 7, 2015) (“Sirius Letter”); Reply Comments of T-Mobile USA, Inc., RM-11750 (filed July 28, 2015) (“T-Mobile Reply Comments”). In this proceeding, the Commission seeks comment on the Petition for Rulemaking (“Petition”) filed by Samuelson-Glushko Technology Law & Policy Clinic and J. Pierre de Vries urging the FCC to adopt an adjudication process – herein referred to as the “ALJ Option” – for spectrum interference disputes. See Petition for Rulemaking: Spectrum Interference Dispute Resolution of Samuelson-Glushko Technology Law & Policy Clinic (TLPC) and J. Pierre de Vries, RM-11750 (filed May 28, 2015).

^{2/} See *Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, and Accepted for Filing De Facto Transfer Lease Applications, and Designated Entity Reportable Eligibility Event Applications Accepted for Filing*, Public Notice, Report Number: 10676 (July 22, 2015); Response to Objection of Sirius XM Radio, Inc. and Motion to Dismiss, ULS File Nos. 0006867447, *et al.* (filed Aug. 26, 2015).

Commission should also strengthen engineering resources dedicated to resolving interference issues.

The Commission has already begun, through its Technological Advisory Council (“TAC”), to consider receiver design and the use of a harm claim threshold.^{3/} The Commission should continue those efforts and address them *ex ante* rather than allow poorly designed receivers to become a justification for a wasteful trial-type process. Similarly, the Commission’s Enforcement Bureau has taken steps to improve the interference complaint process.^{4/} These are the productive steps that the Commission should be taking to more effectively address interference issues – not the bloated and expensive mechanisms that Sirius supports.

Sirius Seeks to Shift the Blame Away from Failure to Use of Sound Engineering Practices

Sirius makes much about the difficulty of operating in an increasingly crowded RF environment and of predicting potential interference scenarios from intermodulation effects. Yet these effects are well understood and Sirius must accept responsibility to manage its service in that environment. Sirius cannot be permitted to shift the responsibility for managing the environment to others – who operate wholly in compliance with the rules – and then seek to drag compliant licensees through an expensive and time consuming trial-type process that will potentially result in diminished service to customers. Responsible management of the RF environment must include designing a receiver that provides protection from readily anticipated intermodulation effects. Doing so is simply sound engineering practice, a practice in which Sirius, as a Commission licensee, is obligated to engage.^{5/}

^{3/} See generally Spectrum / Receiver Performance Working Group, FCC Technological Advisory Council, *Interference Limits Policy and Harm Claim Thresholds: An Introduction* (Mar. 5, 2014), <https://transition.fcc.gov/oet/tac/tacdocs/reports/TACInterferenceLimitsIntro1.0.pdf> (“TAC Paper”).

^{4/} See, e.g., *Enforcement Bureau Enhances Procedures for Public Safety and Industry Interference Complaints*, Public Notice, DA 15-967 (rel. Aug. 27, 2015) (“Interference Complaints Procedures PN”).

^{5/} While there are no specific rules governing the design of satellite digital audio radio receivers, the existence of rules requiring the use of good engineering practices makes it clear that is the Commission’s strong policy. See, e.g., 47 C.F.R. § 15.15(a) (requiring Part 15 devices to be “constructed in accordance with good engineering design and manufacturing practice”); 47 C.F.R. § 18.109 (requiring industrial, scientific, and medical equipment to be “designed and constructed in accordance with good engineering practice with sufficient shielding and filtering to provide adequate suppression of emissions . . .”); 47 C.F.R. § 24.237 (requiring broadband PCS licensees to “follow generally acceptable good engineering practices” in determining appropriate interference thresholds); 47 C.F.R. § 90.219 (requiring signal boosters to use “[g]ood engineering practice. . . in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided”); 47 C.F.R. § 97.101 (requiring amateur radio stations to be “operated in accordance with good engineering”); 47 C.F.R. § 97.121 (requiring amateur radio stations to make adjustments when causing interference to broadcast transmissions using “receivers of good engineering design”). See also *Implementation of the Cable Television Consumer Protection and Competition Act of 1992; Broadcast Signal Carriage Issues*, Memorandum Opinion and Order, 9 FCC Rcd. 6723, ¶ 61 (1994) (“Cable operators are further expected to employ sound engineering measurement practices.”).

Section 27.64 supports the investment-backed expectations of commercial mobile radio service (“CMRS”) licensees operating in various spectrum bands to deploy service without fear that other licensees will deploy receivers that lack the ability to tolerate lawful and entirely predictable emissions. In particular, it provides that “stations operating in full accordance with applicable FCC rules and the terms and conditions of their authorizations are normally considered to be non-interfering.”^{6/} Section 27.64(b) encourages licensees to resolve intermodulation issues among themselves, but it does not require them to do so.^{7/} On the contrary, Section 27.64 requires modifications of lawfully transmitting stations *only* upon a finding that interference “significantly interrupts or degrades a radio service” and *only* after “notice and opportunity for a hearing.”^{8/} Section 27.64(b) thus recognizes that deploying insufficiently robust receivers can introduce inefficiency by allowing for the production of interfering products from two or more distant frequency transmissions. Sirius’ willful ignorance of the notice-and-adjudication requirements of Section 27.64 as well as its attempt to re-characterize the Commission’s stated preference for voluntary solutions as a “requirement” for transmitting licensees to resolve intermodulation interference must be rejected.

Section 27.64’s preference for voluntary solutions also does not excuse other licensees from using good engineering practices to anticipate intermodulation products and plan for them. It is not in the public interest for AWS licensees to be forced into a trial-type process under the guise of a requirement to resolve interference when it is another service’s receivers that create the interference susceptibility. The Commission should reject Sirius’ ALJ Option and make clear that when a receiver does not evidence sound engineering the receiver service must accept interference-resolution responsibility.

Ironically, that is precisely what the author of the ALJ Option has suggested. De Vries himself has recognized that “harmful interference is caused as much by insufficient interference tolerance in receivers as by undesired energy radiated by other services’ transmitters” and that there needs to be a “balance” of responsibility between receivers and transmitters when it comes to mitigating harmful interference.^{9/} De Vries has therefore recommended a “harm claim thresholds” approach under which certain interfering signal levels would have to be exceeded before a receiving system operator could claim harmful interference.^{10/} Harm claim thresholds would both “provide a statement of the radio environment that a receiver will operate within” and “preclude unexpected claims from insufficiently selective receivers.”^{11/} By clarifying radio service operators’ rights and responsibilities regarding harmful interference, harm claim

^{6/} 47 C.F.R. § 27.64.

^{7/} 47 C.F.R. § 27.64 (b)(“[l]icensees *should attempt* to resolve such [intermodulation] interference by technical means”) (emphasis added).

^{8/} 47 C.F.R. § 27.64.

^{9/} See Jean Pierre De Vries, *Optimizing Receiver Performance Using Harm Claim Thresholds*, at 1 (Jan. 1, 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2195330 (“De Vries Paper”).

^{10/} *Id.* at 1.

^{11/} TAC Paper at 3.

thresholds would encourage more efficient radio service coexistence.^{12/} Clearer operating rights would increase the value of wireless services and would allow operators to resolve disputes among themselves “without constant recourse to the regulator.”^{13/} T-Mobile supports this approach^{14/} and urges the Commission to fully evaluate both sides of the interference equation. To approach interference complaints otherwise or adopt a regime focused on *ex-post* enforcement against operators of transmitters will remove incentives for well-designed receivers, limiting the most productive use of the radiofrequency ecosystem.

The Current Dispute Resolution Procedures Better Take Into Consideration the Real-World Technical Expertise Needed to Resolve Claims of Interference

Sirius argues that real-world experience shows that existing compliance procedures are ineffective to address interference concerns.^{15/} It adds that the FCC’s rules lack a clear mechanism through which victims of interference can remedy their issues and that the FCC may be limited in its ability to enforce its rules.^{16/} The current dispute resolution processes are not, as Sirius claims, divorced from the real world. To the contrary, the existing rules focus on collaboration among parties as well as the expertise of engineers and other technical specialists. As indicated in T-Mobile’s reply comments, the existing rules provide operators the flexibility they need to work together to investigate and resolve claims of interference as well as access to skilled Field Agents to provide technical assistance.^{17/} Moreover, as noted above, the FCC has committed to upgrading its interference-complaint process.^{18/}

The ALJ Option, on the other hand, would remove interference disputes from the expert entities with real-world experience in resolving these matters and look to resolution by entities trained only to resolve legal and policy issues. That is exactly the wrong approach. As the record reflects, interference disputes are technical, rather than legal, matters that are best left to the Enforcement Bureau’s Field Offices for resolution.^{19/} Indeed, even De Vries recognizes the

^{12/} *Id.*

^{13/} De Vries Paper at 2.

^{14/} See T-Mobile USA, Inc. Response to House White Paper on Modernizing U.S. Spectrum Policy, at 16-17 (filed Apr. 25, 2014), available at http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/CommActUpdate/WP2_Responses_43-58.pdf.

^{15/} See Sirius Letter at 2.

^{16/} See *id.*

^{17/} See T-Mobile Reply Comments at 7-8.

^{18/} See, e.g., Interference Complaints Procedures PN.

^{19/} See T-Mobile Reply Comments at 8. Sirius is also wrong when it argues that the current process is “susceptible to politicization.” See Sirius Letter at 3-4. Sirius provides no evidence of this. To the contrary, the current process is driven by engineering considerations and observations. It is the ALJ Option, with its focus on endless legal processes, that will depart from “a neutral analysis of technical issues.” See *id.*

importance of having technical experts when analyzing interference issues.^{20/} And Sirius itself has acknowledged that interference disputes require “technical solutions.”^{21/}

The FCC’s current rules do not lack sufficient clarity or teeth as Sirius claims. The Commission routinely subjects those violating its rules to forfeitures and has the authority to do so where parties fail to cooperate to resolve interference. The ALJ Option, as T-Mobile pointed out, is rife with potential abuse. Not only would the ALJ Option promote instances of “efficient breach,” but it would encourage parties to do exactly as Sirius has now done – exploit the FCC’s legal processes by filing frivolous claims and engaging parties in protracted adjudication processes in one proceeding to coerce a favorable outcome in a separate, unrelated proceeding.^{22/} That is not how interference resolution should occur. It should be engineering based, with the regulatory backstop of Commission enforcement action if parties do not cooperate.

The Problems that Sirius Alleges Do Not Exist and the “Cures” Are Worse

Sirius alleges that T-Mobile is insensitive to the difficulties associated with identifying the party or parties responsible for interference because most commercial mobile radio service and mobile wireless facilities are licensed on a geographic-area basis and do not include the precise locations of transmitter sites.^{23/} *First*, this claim is illogical. Area-based licensing establishes a clear zone of operation, making it relatively *easy* to identify potential interferers. On the other hand, several site-based licensees could be located in any given area, making pinpointing the exact cause of interference much more difficult. *Second*, Sirius does not demonstrate how its approach would address this alleged difficulty.

T-Mobile therefore disagrees that it is simply a cost of interference resolution for the Commission to “cast a wide net” of entities potentially involved in the process Sirius endorses. The ameliorative mechanisms that Sirius cites are insufficient to relieve the burdens associated with forced participation in an administrative proceeding, particularly when there is a better option today. It would be patently unfair to require a party to expend substantial time and resources to engage in the ALJ process when that party is in no way involved in causing the interference.^{24/} Instead, as T-Mobile notes above, Commission efforts would be better spent preventing interference in the first instance, by creating strong *ex-ante* engineering rules, including those that obligate receiver manufacturers to reasonably anticipate the RF environment.

^{20/} See Laura Littman and J. Pierre de Vries, *Risk-Informed Regulation: Lessons for FCC Spectrum Management from Nuclear Industry Policy Making*, at 1, 19 (Sept. 18, 2014), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2418699 (noting that “FCC [C]ommissioners are generally politicians and lawyers, who think in terms of public interest analysis” and that, accordingly, it may be more difficult for the FCC to implement “technically sophisticated [risk-informed decision making]” when analyzing interference).

^{21/} See Objection of Sirius XM Radio Inc., ULS File Nos. 0006868438, *et al.*, at 8 (filed Aug. 11, 2015) (“Sirius Objection”).

^{22/} See generally *id.*; Sirius Letter.

^{23/} See Sirius Letter at 2-3.

^{24/} See T-Mobile Reply Comments at 6.

Sirius argues that delays in the existing interference complaint process could harm business operations, potentially alienating existing and future customers.^{25/} T-Mobile agrees that it is important to have interference disputes timely resolved – it too is affected by interference issues from time-to-time and does not wish to lose customers as a result, and it is encouraged by the FCC’s recent announcement regarding improvements in the complaint process.^{26/} However, an ALJ Option would be worse. The ALJ Option would require parties to undergo the highly time-consuming discovery process and could potentially result in multiple reviews of disputes, which, in turn, could create delays in final resolution far beyond any delays experienced under the current rules.^{27/} *Ex-ante* service rules and cooperation between parties better ensure that interference issues are prevented in the first instance than *ex-post* enforcement and can avoid the need for complaints altogether.^{28/}

Sirius’ Claims Misrepresent the Record in This Proceeding.

Sirius’ letter makes it appear that only T-Mobile objects to the ALJ Option. To the contrary, T-Mobile is not alone in arguing that the ALJ Option is unworkable. The record clearly indicates widespread agreement that the ALJ Option would, among other things, impose substantial burdens on the FCC and private parties, needlessly implicate a wide variety of operators, and fail to produce any public interest benefits.^{29/} While Sirius cites AT&T’s statement that an effective interference dispute resolution process must be fact-based, transparent, and timely as support for its contentions,^{30/} Sirius selectively neglects that AT&T also indicated that “Enforcement Bureau Field Offices do, in fact, handle spectrum interference complaints in a fact-based, transparent, and timely manner.”^{31/}

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^{25/} See Sirius Letter at 3.

^{26/} See T-Mobile Reply Comments at 9.

^{27/} See *id.* at 3, 5.

^{28/} See *id.* at 7.

^{29/} See *id.* at 2-9.

^{30/} See Sirius Letter at 2.

^{31/} T-Mobile Reply Comments at 9 (citing Comments of AT&T, RM-11750, at 3 (filed July 13, 2015)). Sirius also argues that the FCC’s current processes lack transparency and are susceptible to politicization. See Sirius Letter at 3-4. Sirius again ignores the record. No party has found the current dispute resolution processes to be not fact-based or transparent, and, as noted above, AT&T specifically found otherwise. See T-Mobile Reply Comments at 8-9.

Pursuant to Section 1.1206 of the Commission's rules, an electronic copy of this letter is being filed for inclusion in the above-referenced docket. Please direct any questions regarding this filing to the undersigned.

Respectfully submitted,

/s/ Steve B. Sharkey

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