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Via Electronic Filing

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

Re: Written *Ex Parte* Filing, *Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks*, IB Docket No. 13-213

Dear Ms. Dortch:

This responds to recent *ex parte* submissions by WCA/Sprint/Globalstar, Hughes, WISPA, Microsoft, Wi-Fi Alliance and Bluetooth SIG.[1] It is noted that Globalstar recently revised its request to a narrowed proposal that provides flexible "ATC" operations only in its licensed S band spectrum.[2] In large part, it seems clear this occurred because of the change in policy position or other reasons attributable to two out of the three Commissioners who approved the TLPS NPRM three years ago. In any event, I can only hope that the Commission will be ready soon to put the remaining underutilized 2.4 GHz to its highest value use while retaining compatibility at the appropriate OOBE levels associated with unlicensed and licensed operations.

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[1] My comments are offered for the Commission's review and represent the personal views and opinions of the undersigned counsel. This letter does not represent the views of undersigned counsel's firm, or any of its clients, or necessarily any particular stakeholder or party in this proceeding.

[2] *See* Letter from L. Barbee Ponder to Marlene Dortch, Secretary, FCC (11/9/16), *IB Docket No. 13-213*.

Supportive Filings for the Revised Globalstar Proposal

The positive filings by WCA/Sprint/Globalstar, Hughes and WISPA are a breath of fresh air to this lengthy proceeding.[3] The joint filing made by WCA, Sprint and Globalstar is especially heartening as it shows that parties can come together and reach agreement. I might suggest that such agreements would be even more likely under light touch regulation and free market conditions as opposed to the situation where each party believes the "overseer" may swoop in and solve the disagreement *for* them. Nevertheless, at least one real or perceived technical issue in this proceeding is finally behind the parties and the Commission.

The Microsoft "Xbox" Demonstrations to Commissioners Clyburn and Pai

My *ex parte* filing dated September 19, 2016 addressed Microsoft's "worst case scenario" test report.[4] Globalstar's technical experts then convincingly showed that Microsoft's test conditions were extremely contrived and, in fact, worse than even the most realistic worst case scenario in the band.[5] Shortly after issuing its Sept. 12th Test Report, Microsoft hosted two of the five Commissioners for Xbox "demonstrations."[6] In contravention to FCC Ex Parte Rules,[7] Microsoft filed *ex parte* notices of these demonstrations that failed to present any

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[3] *See* Letters from Mary N. O'Connor, L. Barbee Ponder IV and Richard Engelman (11/16/16); Jennifer A. Manner and Jodi Goldberg (11/18/16); and Stephen E. Coran (11/21/16) to Marlene Dortch, Secretary, FCC, *IB Docket No. 13-213*.

[4] *See* Letter from Kevin G. Rooney to Marlene Dortch, Secretary, FCC (9/19/16), commenting on Letter from Paula Boyd, Director, Government Relations and Regulatory Affairs and Michael Daum, Technology Policy Strategist, Microsoft Corp., to Marlene Dortch, Secretary, FCC (9/12/16) ("Sept. 12th Test Report"), *IB Docket No. 13-213*.

[5] *See* Letter (and Exhibits) from L. Barbee Ponder to Marlene Dortch, Secretary, FCC (10/14/16), *IB Docket No. 13-213*.

[6] Although Microsoft provided no indication on the record regarding the location of these demonstrations, it is presumed they occurred at Microsoft's Seattle corporate facilities while the Commissioners were visiting the area for the Competitive Carriers Association Annual Convention.

[7] 47 C.F.R. **§** 1.1206 states, in part:

"(b) The following disclosure requirements apply to ex parte presentations in permit but disclose proceedings

(1) Oral presentations. A person who makes an oral ex parte presentation subject to this section shall submit to the Commission's Secretary a memorandum that . . . summarizes all data presented and arguments made during the oral ex parte presentation . . . More than a one or two sentence description of the views and

technical details. Moreover, the *ex* parte filings failed to state whether the demonstrations were carried out under precisely the same conditions as previously reported by Microsoft in its Sept. 12th Test Report.[8]

Especially given past admonitions by certain Commissioners concerning the "non-transparency" of Commission level activity, I am particularly disappointed that two Commissioners allowed a stakeholder to conduct technical demonstrations in their presence without following up and fully disclosing *all relevant* technical parameters needed for the *public* to ascertain the merits and veracity of those demonstrations. Advocacy before Commissioners in a rule making proceeding demands a great deal more transparency. The lack of transparency was exacerbated by the absence of FCC technical staff during the demonstrations. Such independent FCC technical staff would have been well positioned to make more informed observations, ask technical questions, and insist that technical details of the demonstrations be added to the record. Further, it should be recognized that opposition has repeatedly complained about the technical parameters and comprehensive reports filed by Globalstar. The cursory *ex parte* filings submitted by Microsoft to publicize these Commissioner visits and Xbox demonstrations make Globalstar's many technical filings look encyclopedic by comparison.

As it stands, and in view of Globalstar apparently either feeling or being instructed by the FCC that it had to narrow its request to advance this proceeding, the record unfortunately shows that a disingenuous and contrived argument concerning video game operation won out over providing an additional non-overlapping channel for 2.4 GHz broadband. The winner is anti-competition practiced by giant technology enterprises, while the apparent losers include schools, such as the Washington School for Girls, and thousands of other anchor institutions. Should the public be thankful that a majority at the Commission apparently decided not to adopt slightly loosened OOBE limits because of a fear that these will be derogatively referred to as "special rights" in 2.4 GHz? Based on the lack of policy directed or other evidence of record to change what was proposed in the NPRM, I don't believe so.

<u>Wi-Fi Alliance</u>

Subject to three "conditions," Wi-Fi Alliance does not object to Globalstar's revised proposal.[9] Perhaps in the spirit of a Commission that itself has imposed "conditions" in many Orders, a private party is now attempting to impose conditions on another party in a rulemaking proceeding. Never mind that Wi-Fi Alliance has failed in its responsibility to provide material

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> arguments presented is generally required. If the oral ex parte presentation consisted in whole or in part of the presentation of data . . . already reflected in the presenter's written comments . . . the presenter may provide citations to such data . . . in his or her prior comments."

[8] *See* Letters (2) from Paula Boyd, Director, Government Relations and Regulatory Affairs, Microsoft Corp., to Marlene Dortch, Secretary, FCC (9/21/16), *IB Docket No. 13-213*.

[9] *See* Letter from Edgar Figueroa, President and CEO, Wi-Fi Alliance, to Marlene Dortch, Secretary, FCC (11/22/16), *IB Docket No. 13-213*.

evidence of its so-called interference "concerns," and that it has likewise failed to present evidence of costs connected with those concerns.

The "conditions" demanded by Wi-Fi Alliance might be more appropriately referred to as "suggestions." The first suggestion is that proposed Section 25.149(g) be re-titled such that it is consistent with Globalstar's revised proposal. To the extent that the Commission would not have thought of this textual revision, I suppose staff should be grateful for the formal suggestion. However, one would only wish that over the course of this four-year-old proceeding, Wi-Fi Alliance would have had similar attention to detail in proving out its interference "concerns" as urged in the NPRM.

Wi-Fi Alliance's second suggestion is that the Commission require Globalstar to submit into the record a more specific subset of rules that would be adopted in accordance with its revised proposal. Wi-Fi Alliance is confused as to what subset of rules would be adopted based on Globalstar's specific proposal. Perhaps more helpful and proactive input by Wi-Fi Alliance would be to provide *its* recommended details. Other sophisticated stakeholders engaged in this proceeding, including Sprint, WCA and WISPA, are not similarly confused. Likewise, I trust the Commission and its staff are capable of drafting and adopting rules consistent with the notice and comment provided by the original NPRM.

The third and final suggestion by Wi-Fi Alliance is that "the Commission should ensure that Globalstar does not 'bond' or 'aggregate' its spectrum with frequencies below 2483.5 MHz in an attempt to provide a combined ATC/Part 15 service." [10] In other words, Wi-Fi Alliance is suggesting that the Commission issue an *ex ante* rule that discriminates against Globalstar and, as such, issue rules that are not technology neutral. I hope the Commission is instead turning the page on such a philosophy. In the spirit of promoting competition in a free market, perhaps it is more rational to suggest that Globalstar use its licensed spectrum to facilitate the highest value use. Among various possible technical and business uses, this includes utilizing unlicensed spectrum, in aggregation, segregation, or otherwise in accordance with any legal use enjoyed by other licensed and/or unlicensed operations.

<u>Bluetooth SIG</u>

In its written *ex parte* filing this week, Bluetooth SIG raised new unsupported "concerns" and yet again states "we have not completed our technical investigations." [11] I would respectfully suggest that Bluetooth SIG has not completed any of its "preliminary" investigations over the past four years in this proceeding.

More specifically, Bluetooth SIG asks additional questions regarding Globalstar's attempt to move this proceeding along with a decidedly narrowed proposal. Globalstar's move in that regard is in the face of intransigent opposition whose primary objections have been almost

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[10] *Id*. at 2.

[11] *See* Letter from Mark Powell, Executive Director, Bluetooth SIG, to Marlene Dortch, Secretary, FCC (11/22/16), *IB Docket No. 13-213*.

exclusively based on naked "interference concerns" in a band that is not entitled to protection from harmful interference. Bluetooth SIG's new questions pertain only to OOBE because Globalstar's revised proposal renders the question of co-channel interference moot. In its latest filing, Bluetooth SIG asks, "[s]houldn't the same specification [for OOBE] be used at both ends of the band [and] [s]houldn't both blocks of adjacent spectrum be protected in the same way?" While the Commission is the "expert" on determining appropriate OOBE limits for purposes of protecting licensed and unlicensed operations (such as at the respective upper and lower ends of the proposed spectrum band here), absent evidence or at least solid technical analysis to the contrary, my suggestion would be for the technical experts at the Commission to set the appropriate levels. As always, the FCC must balance compatibility at the appropriate and expected levels with a view toward putting the affected spectrum to its most efficient and highest value use. As stated several times now in this record, there is incentive inherent in the market to ensure that users of a new service are not prevented from utilizing the vast number of devices and technology relying on nearby or even co-channel unlicensed bands. The Commission should refrain from putting its fingers on the scales and micromanaging the technology used in each band.

It is also an appropriate time in this proceeding to review the evolution of comments from Bluetooth SIG over the years in this growing record. Such a review, especially when made in a chronological manner, should inform the Commission and even help answer Bluetooth SIG's latest "concerns."

During the Petition stage of this proceeding over three years ago, Bluetooth SIG stated:

> We and our members do not agree with several important technical claims made by Globalstar in their proposal, particularly the hypothesis that their "controlled" or "managed" use of Channel 14 would have a limited if not small impact on other users of the spectrum. Bluetooth and its members own preliminary analysis would draw a different and contrary conclusion. Bluetooth therefore believes that it is premature to proceed with the Rulemaking until sufficient information and analysis has been completed. [12]

Based on the record, Bluetooth SIG never completed its alleged "preliminary analysis." Or, if it did, the completed analysis apparently wasn't helpful enough to its case to submit for public critique. If a complete analysis by Bluetooth SIG on the "full" TLPS proposal was never submitted in over three years of pendency in this rulemaking, what makes the Commission believe that this time will be different? The answer has been in front of the Commission for too long now. This "special interest group," which boasts of 23,000 members, has no interest in submitting any helpful analysis. Instead, this special interest group is likely participating in the proceeding solely at the behest of an extremely small minority of its members and has purposefully chosen to provide no robust, technical input.

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[12] *See* Letter from Mark Powell, Executive Director, Bluetooth SIG, to Chairwoman Clyburn (undated, but posted in ECFS on 8/1/13), *RM-11685*.

Shortly later in the Petition stage, Bluetooth SIG stated:

> [I]t is both puzzling and disappointing that Globalstar seeks to waste your and the commission's valuable time making a false allegation [concerning Bluetooth SIG's desire to maintain its own special rights in the 2473 - 2483.5 MHz band] and not dealing with the issue at hand, which is the impact that increased congestion will have on Bluetooth users. [13]

Again, this comment was made over three years ago, and ironically, accuses Globalstar of "not dealing with the issue at hand, which is the impact that increased congestion will have on Bluetooth users." After this comment, Globalstar conducted three extensive demonstrations and submitted comprehensive technical descriptions and analyses for the record. By comparison, what has Bluetooth SIG done to prove out its "concerns" as urged by the Commission in the NPRM?

During the pleadings cycle, Bluetooth SIG submitted its Comments and stated:

> Certainly, for the most part, most Bluetooth devices can and will adapt to interference. However, the Bluetooth Low Energy (LE) devices utilize (Bluetooth) channel 39, in the 2473 to 2483 .5 MHz band, as an 'advertising' channel, and therefore would find it difficult to pair in the presence of an interferer in that band. Globalstar has chosen to ignore this fact with their 'will be able to coexist' assertion.

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> For Bluetooth low energy, channel 39, which sits at 2480 MHz is one of only three advertising channels; the other two are in Wi-Fi channels 1 and 6. Bluetooth LE, with its low power consumption, looks to become dominant, especially for mobile, battery-powered devices. A TLPS network, which operates at 2480 MHz, has a huge potential for causing catastrophic failures of Bluetooth LE devices, including the medical devices now under development and in the process of being deployed.

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[13] *See* Letter from Mark Powell, Executive Director, Bluetooth SIG, to Chairwoman Clyburn (8/7/13), *RM-11685*.

> The Commission would better serve the public good by opening the 2473 to 2483.5 MHz together with the today scantly utilized 2483.5 to 2495 MHz spectrum, for Part 15 unlicensed access.[14]

In this comment, submitted 2½ years ago, Bluetooth SIG answers its own questions from this week. First, Bluetooth SIG admits that most Bluetooth devices can and will adapt to interference. Then, Bluetooth SIG alleges that the "advertising" channel resident in the 2473 to 2483.5 MHz band will be negatively affected by "the presence of an interferer in that band" but establishes that there is a 3.5 MHz guard band between Bluetooth Channel 39 (2480 MHz) and the lower edge of Globalstar's licensed S band (2483.5 MHz). Now that Globalstar has proposed to eliminate its use of 2473 to 2483.5 MHz to move this proceeding along, Bluetooth does not admit that the "advertising" channel will be free to operate as designed. Globalstar's demonstrations repeatedly showed no user perceptible effects on Bluetooth devices operating *even in the presence of* co-channel TLPS. Bluetooth SIG has failed to prove any significant interference, let alone its hyperbolic claims of "catastrophic" interference.

Why would Bluetooth SIG continue its rhetoric despite its own past admissions and Globalstar's continued efforts to appease giant technology interests before a mostly silent decision-maker? The answer seems easy - pure anti-competitive behavior that appears to be condoned in this proceeding.

Finally, as pointed out previously, Bluetooth SIG apparently does not really know what it wants out of this proceeding. Does it want *no* further new operators in the upper portion of the ISM band (i.e., its "safe haven") or does it want millions or even billions *more* Part 15 operators in that space, or does it want something in between?

In its Reply Comments, Bluetooth SIG stated:

> Public disclosure is required to provide the FCC, 2.4 GHz band unlicensed users, and adjacent-band licensees with 'a measure of confidence' regarding the possibility of unacceptable amounts of interference from TLPS. Furthermore, Globalstar needs to provide at least an indication that it has assessed the TLPS impact on Bluetooth devices and systems. With no data, we can only assume the worst, as our years of experience operating in this unlicensed band have shown.[15]

This comment was also made almost 2½ years ago. Here, Bluetooth SIG alleged that Globalstar must provide a "measure of confidence" regarding "the possibility of unacceptable amounts of interference from TLPS." In addition, Bluetooth SIG demanded that Globalstar provide "at least an indication that it has assessed the TLPS impact on Bluetooth devices and systems." Since that time, as clearly established in prior filings, Globalstar has done the heavy lifting. Three comprehensive TLPS demonstrations, 2½ years, and almost seven months of circulation are now

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[14] *See* Comments, Bluetooth SIG (5/2/14), *IB Docket No. 13-213*.

[15] *See* Reply Comments, Bluetooth SIG (6/3/14), *IB Docket No. 13-213*.

history. Yet, Bluetooth SIG still complains. Isn't it time for the Commission to realize that Bluetooth SIG does not exactly approach this proceeding with good faith? The answer seems clear enough. The Commission has allowed the opposition to continuously delay and move the goal posts long enough in this proceeding.

In a written *ex parte* to the record after joint TLPS demonstrations at the FCC Technology Center, Bluetooth SIG stated:

> Despite the short notice of the demonstrations, insufficient testing time, a small and crowded test facility and limited understanding of the TLPS setup, two demonstration scenarios conducted by the Bluetooth SIG successfully provided an illustration of the interference cases; Bluetooth hearing aids and Bluetooth 'Smart' Lighting.
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> The Bluetooth SIG proposed additional demonstration scenarios, but unfortunately the room was not large enough and so these demonstrations could be conducted at a later time. The Bluetooth SIG plans to file a detailed report of its findings into the record for this proceeding by 3/20/15.[16]

The so-called "detailed" report was carefully critiqued by Globalstar's experts, and shown to be cursory in nature and seriously flawed.[17] Moreover, Bluetooth SIG never followed up with any independent testing that could have overcome its complaints about the FCC test facilities. Bluetooth SIG's failures before, during and after these demonstrations have been well-documented in this record. Rightly or wrongly, Bluetooth SIG apparently believes that the Commission is receptive to complaints about test conditions that deflect from and excuse the absence of comprehensive, material test results and analysis.

In view of Bluetooth SIG's consistent record of deflecting from its own failures to establish incompatibility between TLPS and Bluetooth technology, the Commission should view Bluetooth SIG's latest complaints with great skepticism. Bluetooth SIG, or at least the small subset of this group that is engaging in this proceeding, clearly has some ulterior motive. That motive is at odds with the goal of the National Broadband Plan and the overall public interest of putting spectrum to its highest value use.

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[16] *See* Written *Ex Partes*, Bluetooth SIG, *TLPS & Bluetooth Demonstrations FCC Technology Center – March 6, 2015* (3/12/15) and *Further Comments and Detailed report from TLPS & Bluetooth Demonstrations FCC Technology Center – March 6, 2015* (3/20/15), *IB Docket No. 13-213*.

[17] *See* Letter (and attached Roberson & Associates Review) from Regina M. Keeney, Counsel for Globalstar, to Marlene Dortch, Secretary, FCC (3/27/15), *IB Docket No. 13-213*.

Conclusion

This week, Bluetooth SIG urged the Commission to "not proceed with undue haste" as it continues to deliberate in this proceeding. The Constitution of this great country was drafted and signed in less than four months. By contrast, no right-minded person familiar with this FCC proceeding will ever accuse the FCC of acting with "undue haste" after adoption of its NPRM over three years ago. At the same time, no one expects the Commission to have the unparalleled foresight, energy or motivation of the delegates to the Constitutional Convention, let alone the sense of urgency necessary at that time. Further, adoption of rules to allow flexible use of spectrum in 2.4 GHz will not solve the nation's spectrum problems. But, hasn't the time come? A failure to adopt rules to expand the inventory of mid-band spectrum will surely add to those problems.

Yesterday, on Thanksgiving, I was asked what I was thankful for this year. With tongue firmly in cheek, I answered that I was thankful our Founding Fathers did not attach a "notice and comment" period and *ex parte* practice to the draft Constitution. Having been met quickly by some strange looks, I proceeded to explain my answer in the context of this proceeding. I was then quickly met by eyes glazing over. Nevertheless, it is my hope that the Commission will consider Globalstar's revised proposal as one of the "non-controversial" items that can be completed this year.

Contrary to Bluetooth SIG and perhaps other remaining opposition, I would therefore urge the Commission to act with *due haste* to adopt rules consistent with the revised and narrowed proposal offered by Globalstar. Thereafter, I would further urge the Commission to get back to the work of promptly considering opening further spectrum in a flexible use framework, such as ancillary use of the entirety of Channel 14 and/or ATC rights in the lower Big LEO band.

Respectfully submitted,

/s/ Kevin G. Rooney

Kevin G. Rooney

cc (via e-mail only): Hon. Tom Wheeler, Chairman
Hon. Mignon Clyburn
Hon. Jessica Rosenworcel
Hon. Ajit Pai
Hon. Michael O'Rielly