L. Barbee Ponder IV
General Counsel & Vice President Regulatory Affairs

November 24, 2015

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:

Globalstar, Inc. ("Globalstar"), appreciates the November 19, 2015 *ex parte* letter submitted by Public Knowledge in the above-captioned proceeding.[1] Consistent with key points made by Public Knowledge, the Commission should expeditiously adopt its proposed rules permitting Globalstar's planned Terrestrial Low Power Service ("TLPS").

Since the Commission proposed rules in this proceeding two years ago, Globalstar has made it a priority to meet with interested parties to find common ground. In particular, Globalstar has enjoyed a productive dialogue with the public interest community, and our September 10, 2015 *ex parte* filing contained proposals resulting from those cooperative discussions, including commitments (i) to employ a network operating system ("NOS") as part of any commercial TLPS offering, and (ii) not to deploy LTE-U in the 2.4 GHz band until the Commission has otherwise allowed LTE-U deployment to proceed in unlicensed spectrum.[2]

Public Knowledge offers creative and thoughtful insights in its November 19 *Ex Parte*, and recognizes the substantial consumer benefits that will result from Globalstar's planned TLPS operations on IEEE Channel 14. Public Knowledge states that TLPS "potentially confer[s] significant benefit to the unlicensed space" and notes "the evidence

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[1] Letter from Harold Feld, Public Knowledge, to Marlene Dortch, FCC Secretary, IB Docket No. 13-213 (Nov. 19, 2015), attached to Letter from Harold Feld, Public Knowledge, to Marlene Dortch, FCC Secretary, IB Docket No. 13-213 (Nov. 20, 2015) ("November 19 *Ex Parte*" or "Public Knowledge November 19 *Ex Parte* ").

[2] Letter from L. Barbee Ponder IV, Globalstar, Inc., to Marlene Dortch, FCC Secretary, IB Docket No. 13-213, at 4-5 (Sep. 10, 2015) ("Globalstar September 10 *Ex Parte*").

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submitted by Globalstar that TLPS systems relieve local traffic congestion on existing Part 15 Wi-Fi systems – in some cases quite significantly."[3]

Globalstar has vividly demonstrated the public interest benefits of TLPS operations on Channel 14 with its recent deployments under experimental licenses. Its TLPS deployment at the Washington School for Girls ("WSG") has been extremely successful, relieving congestion and significantly boosting throughput for students using TLPS and the other IEEE channels simultaneously.[4] Initial measurements to ensure proper operations and assess the performance of WSG's enhanced network showed that downlink throughput increased 45% and uplink throughput increased 34% when the school's access points were tuned to a fourth channel, Channel 14, in addition to Channels 1, 6 and 11.[5]

Globalstar's TLPS deployment at a Chicago university in May-August 2015 yielded similar public interest benefits.[6] The integration of TLPS Channel 14 into the university's existing Wi-Fi network relieved congestion immediately and improved the experience of all the network's users, without disruption. In fact, when client devices were set to maximize the use of Channel 14, the throughput on the devices operating on all four non-overlapping 802.11 channels increased by over 90%.[7]

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[3] Public Knowledge November 19 *Ex Parte* at 4.

[4] Letter from L. Barbee Ponder IV, Globalstar, Inc., to Marlene Dortch, FCC Secretary, IB Docket No. 13-213 (Nov. 18, 2015). Globalstar's technical consultant, AT4 wireless ("AT4"), seamlessly integrated TLPS into WSG's existing wireless network. AT4 installed TLPS during two lunch hours on consecutive school days, ensuring minimal disruption to the school's daily activities while boosting the school's network from three to four channels in the 2.4 GHz band.

[5] *Id*. at 3.

[6] *See*, *e.g*., Globalstar September 10 *Ex Parte.*

[7] In its recently released "Coexistence Guidelines for LTE in Unlicensed Spectrum Studies," the Wi-Fi Alliance states that "a deployed system transmitting in an unlicensed channel is operating fairly to Wi-Fi if the impact of the system on Wi-Fi users in the channel is no worse than the impact that would result from an additional Wi-Fi network introduced into the channel supporting the same traffic load as the system." *Coexistence Guidelines for LTE in Unlicensed Spectrum Studies*, WI-FI ALLIANCE, at 6 (rel. Nov. 4, 2015), https://www.wi-fi.org/download.php?file=/sites/default/files/private/Coexistence_Guidelines_v1.0.pdf. TLPS at 2473-2483.5 MHz meets the Wi-Fi Alliance's "fairness" standard for unlicensed spectrum use. Regardless of whether Globalstar agrees with this standard, the evidence in the record demonstrates that additional Wi-Fi access points on Channels 1, 6 and 11 have a more detrimental impact on existing Wi-Fi systems than TLPS access points operating on non-overlapping Channel 14.

In its November 19 *Ex Parte*, Public Knowledge also acknowledges Globalstar's robust mitigation plan, stating that "Globalstar has offered a workable mitigation measure to protect the unlicensed space[.]"[8] As Globalstar explained in its September 10 *Ex Parte*, TLPS will be managed with networked access points controlled through a carrier-grade NOS analogous to those used to manage pico- and femto-cells. Globalstar's NOS will be used not only to authenticate users on the TLPS network and ensure the security of TLPS operations, but also will be capable of mitigating harmful interference to other licensed or unlicensed services in the highly unlikely event that it occurs.[9] Given the deployment of this NOS, the Commission should move forward in this proceeding without requiring additional testing.

We believe Public Knowledge's November 19 *Ex Parte* provides additional support for the Commission to adopt the rules it proposed over two years ago. These rules will relieve significant wireless congestion and increase broadband capacity quickly throughout the United States, while protecting and enhancing existing Wi-Fi services in the 2.4 GHz band. We urge the Commission to enable these dramatic consumer benefits without further delay.

Respectfully submitted,

/s/ L. Barbee Ponder IV
L. Barbee Ponder IV
General Counsel & Vice President
Regulatory Affairs

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[8] Public Knowledge November 19 *Ex Parte* at 4.

[9] With its NOS, Globalstar will have a rapid means of eliminating interference to its own MSS offerings if necessary in a particular location. Globalstar's control of the TLPS network through its NOS would be particularly critical during and after disasters when terrestrial facilities can be rendered unavailable and citizens and public safety personnel must rely on satellite services.

In contrast, if the Commission adopted one of Public Knowledge's briefly described proposals for either (i) unlimited, shared public use of Channel 14 or (ii) a "use or share" condition on Channel 14 (Public Knowledge November 19 *Ex Parte* at 3), it would jeopardize Globalstar's MSS business. Without a NOS, these *ad hoc* Channel 14 operations could seriously degrade and disrupt Globalstar's licensed MSS offerings in affected areas. In this scenario, the Commission could not assure consumers that their mobile satellite services would be free from harmful interference from unlicensed operations or that their MSS voice and data services would be available when needed.