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June 3, 2013

Mignon Clyburn
Chairwoman
Federal Communications Commission
445 Twelfth Street SW
Washington, DC 20554

Re: *Globalstar, Inc. Petition for Rulemaking to Reform the Commission's Regulatory Framework for Terrestrial Use of the Big LEO MSS Band* – RM-11685
Ex Parte Notice

Dear Chairwoman Clyburn:

Globalstar, Inc. (Globalstar) filed a petition for rulemaking with the Federal Communications Commission in Novemb2012 seeking greater flexibility to utilize its licensed Mobile Satellite Service (MSS) spectrum for terrestrial mobile broadband applications.[1] Because Globalstar's licensed spectrum at 2.4 GHz is contiguous to the Industrial Scientific and Medical (ISM) band that presently carries most of the Nation's public Wi-Fi traffic, Globalstar is uniquely capable of offering a Wi-Fi-like service over 22 MHz of spectrum that includes both spectrum licensed to Globalstar (2483.5-2495 MHz) as well as unlicensed spectrum existing in the ISM band (2473-2483.5 MHz). As described below, this innovative "Terrestrial Low Power Service" (TLPS) can help alleviate the growing Wi-Fi congestion elsewhere in the ISM band.

The Commission has previously recognized that the public Wi-Fi band at 2.4 GHz is at or nearing saturation in many areas of the country, negatively impacting consumers' broadband experience. Former-Chairman Genachowski called this problem the "Wi-Fi Traffic Jam" and frequently pointed out the diminished quality of Wi-Fi service at high-traffic 802.11 "hotspots."[2] As one response to this problem,

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1 Petition for Rulemaking of Globalstar, Inc., RM-11685 (Nov. 13, 2012).

2 *See, e.g., Winning the Global Bandwidth Race: Opportunities and Challenges for Mobile Broadband*, Prepared Remarks of FCC Chairman Julius Genachowski, University of Pennsylvania – Wharton, Philadelphia, PA, at 3 (Oct. 4, 2012) ("Wi-Fi

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the Commission earlier this year initiated a proceeding to expand Wi-Fi use of the 5 GHz band.[3] Numerous commenters in that proceeding – including cable operators, Cisco, Google, and Microsoft – recently described in detail the increasing congestion in the 2.4 GHz ISM band.

The cable industry appears uniformly concerned with spectrum exhaustion at 2.4 GHz and the imminent harms from Wi-Fi congestion. In addition to analysis from major cable operators Comcast, Cablevision, and Time Warner Cable,[4] the National Cable and Telecommunications Association (NCTA) points out that "the remarkable growth of Wi-Fi consumer demand is beginning to overwhelm unlicensed spectrum designations – the 2.4 GHz band is already saturated in many locations."[5] To demonstrate the need for additional Wi-Fi spectrum, NCTA attaches a study from CableLabs which finds that the 2.4 GHz Wi-Fi band will reach exhaustion by 2014, with a spectrum deficit of approximately 10 megahertz.[6] As a

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networks [are] get[ting] more and more congested – have you tried using Wi-Fi in a busy airport recently?").

3 *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Notice of Proposed Rulemaking, 28 FCC Rcd 1769 (2013). Globalstar's recent comments in this proceeding expressed support for most of the Commission recommendations, but sought to ensure that Globalstar's critical satellite services operating in a small portion of the 5 GHz band are protected. Comments of Globalstar, Inc., ET Docket No. 13-49 (May 28, 2013).

4 Comments of Cablevision Systems Corporation, ET Docket No. 13-49, at-3-4 (May 28, 2013) ("[The 2.4 GHz] band is congested and facing exhaustion. The 2.4 GHz band consists of only 83.5 MHz of spectrum, comprising three non-overlapping channels that are not wide enough for the next generation of technologies"); Comments of Comcast Corporation, ET Docket No. 13-49, at 14-17 (May 28, 2013) ("In densely populated areas, increased use of Wi-Fi . . . has created congestion in the 2.4 GHz band, reducing the utility of this spectrum particularly for high-throughput and latency-sensitive applications. . . . Even in less crowded markets, the 2.4 GHz band may be congested by 2015."); Comments of Time Warner Cable Inc., ET Docket No. 13-49, at 7 (May 28, 2013) ("[T]he 2.4 GHz band already is nearing capacity exhaustion, which is already leading to high levels of congestion and interference in many areas").

5 Comments of the National Cable &Telecommunications Association, ET Docket No. 13-49, at 1 (May 28, 2013).

6 WiFi Spectrum: Exhaust Looms, Rob Alderfer, CableLabs, at 4 (May 28, 2013) (CableLabs Study). According to the CableLabs Study, approximately 90 megahertz of W-Fi spectrum will be needed by 2015, compared to the approximately 80 megahertz of spectrum available for Wi-Fi at 2.4 GHz. CableLabs Study at 11.

result, "[c]onsumers are likely to experience reduced coverage and throughput," and "WiFi will become less useful, particularly for high bandwidth services like video."[7] The CableLabs Study concludes that "[s]ince WiFi is central to the broadband ecosystem," "[n]ew WiFi spectrum is [a] critical element of th[e] important national goal" of expanded broadband access.[8]

In its comments, Cisco confirms that "capacity constraints [are] already being felt in the 2.4 GHz band."[9] Cisco describes the exploding Wi-Fi usage causing this growing congestion, stating that "Wi-Fi is on pace to soon become the most prevalent vehicle for Internet connectivity in the United States and around the globe."[10] Meanwhile, Google and Microsoft in their joint filing state that "although 2.4 GHz unlicensed spectrum is being used very efficiently, it has become saturated during certain times of day in heavily trafficked areas such as city centers, apartment buildings, and public events. This congestion imposes a large cost on consumers because Wi-Fi is the most heavily used method of wireless broadband connectivity and the 2.4 GHz band is the core Wi-Fi band today."[11] The Wireless Internet Service Providers Association (WISPA) states that "[g]iven congestion and capacity constraints in existing unlicensed bands and the demand for fixed broadband services in rural areas where other broadband service is often not available, increasing the amount of unlicensed spectrum is perhaps the most important action the Commission can take."[12]

Consistent with these comments, Globalstar strongly believes that resolution of the Wi-Fi Traffic Jam should be a primary and immediate priority for the Commission. Since there is likely no single solution to this Wi-Fi congestion, the Commission should consider a number of regulatory approaches as it addresses this problem. In addition to its efforts at 5 GHz, the Commission should expeditiously issue a Notice of Proposed Rulemaking on expanded terrestrial use of the Upper Big LEO band (2483.5-2495 MHz). In contrast to the FCC's other regulatory options, Globalstar's proposed TLPS can be implemented almost immediately by leveraging existing investment in infrastructure and existing consumer devices. Globalstar could likely make its innovative TLPS offerings a reality this year, while the Commission's 5 GHz proceeding – as the CableLabs Study points out – will likely

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7 CableLabs Study at 12.

8 *Id.* at 22.

9 Comments of Cisco Systems, Inc., ET Docket No. 13-49, at i (May 28, 2013).

10 *Id.*

11 Comments of Google Inc. and Microsoft Corporation, ET Docket No. 13-49, at 3 (May 28, 2013).

12 Comments of the Wireless Internet Service Providers Association, ET Docket No. 13-49, at ii (May 28, 2013).

take years to complete,[13] In addition to a rapid and dramatic increase in Wi-Fi spectral capacity, TLPS implementation will have a number of other critical benefits:

- TLPS will be managed over a carrier-grade network of access points that will minimize any impact on Globalstar's continued provision of MSS services;
- TLPS will have no negative effect on existing or future unlicensed use in the ISM band, where most Wi-Fi currently exists;
- TLPS will have no impact on any government or commercial GPS interests;
- Globalstar will provide 20,000 TLPS-capable access points to schools, libraries, hospitals, and/or other special interest organizations;
- TLPS will provide additional financial support for Globalstar's continued provision of critical Mobile Satellite Services;
- Globalstar will provide its mobile satellite services free of charge to any existing subscribers in federally declared disaster areas.

Accordingly, Globalstar again urges the Commission to move forward with a Notice of Proposed Rulemaking on Big LEO reforms and expedite the availability of innovative consumer services.

Pursuant to section 1.1206(b) of the Commission's rules,[14] this *ex parte* letter is being filed electronically for inclusion in the public record of the above-referenced proceeding.

Respectfully submitted,

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13 CableLabs Study at 17-18.

14 47 C.F.R. § 1.1206(b).