NOTIFICATION OF REPOSITIONING OF NGSO SPACE STATIONS

Globalstar, Inc., and its subsidiary Globalstar Licensee LLC (together "Globalstar"),[1] pursuant to Section 25.118(f) of the Federal Communications Commission's ("Commission's") rules,[2] hereby notify the Commission of orbital adjustments to non-geostationary mobile satellite service ("NGSO MSS") space stations in Globalstar's Big LEO MSS constellation. Globalstar's planned adjustments to the phasing of its first-generation Big LEO satellites will optimize the use of Globalstar's orbital assets and augment the quality of its safety-of-life services to consumers and other customers in the United States and elsewhere. As indicated below, attached to this notification is an exhibit containing the certifications required by Section 25.118(f).

Globalstar and Its MSS Constellation. Globalstar is a leading provider of global mobile satellite voice and data services. On January 31, 1995, the Commission authorized Globalstar to construct, launch, and operate a "Big LEO" MSS system, and Globalstar initiated commercial service in 2000.[3] Globalstar is licensed for uplink transmissions (mobile earth stations to satellites) in the Lower Big LEO band at 1610-1618.725 MHz, and for downlink transmissions (satellites to mobile earth stations) in the Upper Big LEO band at 2483.5-2500 MHz.[4] Having invested over $5 billion to develop its global NGSO MSS network, Globalstar today uses its constellation of satellites and 23 ground stations on six continents to provide affordable, high-quality MSS to over 700,000 customers in over 120 countries around the world. Globalstar is dedicated to providing mission-critical, emergency, and safety-of-life satellite services to consumers, public safety personnel, businesses, and other customers in remote, unserved, and underserved areas not reached by terrestrial deployments.

Globalstar's global MSS constellation consists of first-generation Big LEO satellites licensed by the Commission and second-generation space stations licensed by the Republic of France. Globalstar launched the majority of its first-generation Big LEO satellites in the late 1990s, and then deployed eight additional first-generation satellites in 2007. Globalstar launched its second-generation Big LEO satellites in a series of launches from October 2010 to February

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1 Globalstar Licensee LLC is the authorized licensee of the first-generation Globalstar satellite constellation (call sign S2115).

2 47 C.F.R. § 25.118(f).

3 *Application of Loral/Qualcomm Partnership, L.P. For Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, Order and Authorization, 10 FCC Rcd 2333 (1995); *see also Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking, 22 FCC Rcd 19733, ¶¶ 8, 18-20 (2007).

4 Iridium is authorized to share spectrum with Globalstar at 1617.775-1618.725 MHz.

2013, and all 24 of these satellites are now in service.[5] In March 2011, the Commission issued an order authorizing Globalstar's U.S. gateway earth station facilities and mobile earth terminals to communicate with its French-licensed second-generation Big LEO satellites.[6]

In the *March 2011 Modification Order*, the Commission permitted Globalstar to make the modifications necessary to operate a balanced 32-satellite Walker configuration over 8 orbital planes, utilizing Globalstar's 24 second-generation satellites and 8 first-generation satellites.[7] The Commission also authorized Globalstar to operate a separate 16-satellite Walker configuration consisting entirely of its first-generation satellites, primarily for use in providing simplex services.[8] In the years since that modification order and the completion of its second-generation deployment, Globalstar has retired a number of first-generation satellites at the end of their useful lives, in accordance with its approved orbital debris mitigation plan. Currently, seven of Globalstar's first-generation satellites continue to operate without impairment in the L band at 1610-1618.725 MHz, providing simplex services to consumers and other customers around the world.[9]

Previous Notice for Repositioning of Second-Generation Satellites. In January 2017, Globalstar notified the Commission regarding certain orbital adjustments to its second-generation satellites that were intended to enhance Globalstar's global MSS coverage.[10] Specifically, Globalstar informed the Commission of its plan to transition to a balanced 24-satellite Walker configuration operating over eight orbital planes, utilizing all of its second-generation satellites. These adjustments to Globalstar's second-generation satellites were initiated on January 22, 2017 and completed on April 8, 2017. Globalstar's first-generation satellites were unaffected by this activity and continued to operate in their existing orbital configurations.

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5 *See* Press Release, Globalstar, Inc., *Mission Accomplished! Globalstar Announces Successful Fourth Launch of Six Second-Generation Satellites* (Feb. 6, 2013), http://www.globalstar.com/en/index.php?cid=7010&pressId=764.

6 *Globalstar Licensee LLC; Application for Modification of Non-geostationary Mobile Satellite Service Space Station License; GUSA Licensee LLC; Applications for Modification of Mobile Satellite Service Earth Station Licenses; GCL Licensee LLC; Applications for Modification of Mobile Satellite Service Earth Station Licenses*, Order, 26 FCC Rcd 3948 (2011) ("*March 2011 Modification Order*").

7 *March 2011 Modification Order* ¶¶ 7, 35.

8 *Id.*

9 The current operational status of Globalstar's first-generation satellites is described in its most recent annual satellite report. *See* Globalstar Licensee LLC, Annual Report as of May 31, 2017, attached to Letter from Stephen J. Berman, Counsel to Globalstar, to Tom Sullivan, FCC (June 30, 2017).

10 Notification of GUSA Licensee LLC, IBFS File No. SES-MOD-20170112-00029 (Jan. 12, 2017); Notification of GCL Licensee LLC, IBFS File No. SES-MOD-20170112-00030 (Jan. 12, 2017); *see also* Public Notice, *Satellite Communications Services Information re: Actions Taken*, Report No. SES-01927, at 5 (Feb. 8, 2017).

Description of Repositioning of First-Generation Satellites. In order to optimize the use of its space segment assets, Globalstar now plans to adjust the orbital parameters of its remaining seven first-generation satellites. Following Globalstar's planned orbital maneuvers, its seven first-generation satellites will operate at orbital locations that augment the balanced 24-satellite Walker configuration consisting of Globalstar's second-generation satellites over eight orbital planes. These orbital adjustments will bolster Globalstar's global satellite coverage for simplex operations and improve the quality of its services to MSS subscribers in the United States and around the world, without increasing the risk of collisions or interference to other systems. Specifically, over a transition of approximately seven weeks, Globalstar will adjust the phasing of its remaining operating first-generation satellites within these satellites' previously authorized orbital planes.

Globalstar will execute its planned orbital adjustments while complying with the Commission's rules, avoiding in-orbit collisions, and maintaining quality of service for its customers. (Globalstar provides all required certifications in the attached Exhibit A.) Globalstar plans to initiate this repositioning process for its remaining first-generation MSS space stations on or shortly after October 31, 2017.[11] Following these orbital adjustments, all of Globalstar's remaining first-generation satellites will contain sufficient fuel to complete their useful lives and be de-orbited in a manner consistent with applicable orbital debris mitigation requirements.[12]

Globalstar's planned orbital adjustments to its NGSO space station fleet will not affect the RF parameters of its individual satellites. Globalstar's remaining first-generation satellites will continue to conform to the RF parameters described by Globalstar in its applications and subsequently approved by the Commission.[13] In addition, these orbital adjustments will not result in any change to the overall geographic "footprint" of Globalstar's MSS constellation. With this notification, Globalstar includes a revised Form 312 Schedule S that presents the updated orbital parameters of Globalstar's first-generation Big LEO MSS constellation.

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[11] With the submission of this notification, Globalstar has complied with the requirement in Section 25.118(f) that it notify the Commission regarding this repositioning at least 10 days prior to the beginning of that repositioning process.

[12] Globalstar's first-generation satellites will be de-orbited in a manner consistent with the orbital debris mitigation plan approved by the Commission in 2005 (*see* Stamp Grant, SAT-MOD-20030606-00098 and SAT-AMD-20050105-00003 (granted Jan. 28, 2005)).

[13] *See Loral/Qualcomm Partnership, L.P. For Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, Order and Authorization, 10 FCC Rcd 2333 (1995) (approving technical parameters for Globalstar's first-generation satellites); Call Sign S2115, File No. SAT-MOD-20030606-00098; Public Notice, DA No. 05-316 (Feb. 4, 2005) (approving modified technical parameters for Globalstar's first-generation satellites). *See also March 2011 Modification Order* (approving technical and operational parameters for Globalstar's second-generation satellites).

Required Certifications Under Section 25.118(f). In Exhibit A to this notification, Globalstar provides the certifications required by Section 25.118(f) of the Commission's rules for orbital adjustments to its NGSO space stations.

Conclusion. Globalstar hereby notifies the Commission regarding the planned orbital adjustments to its remaining seven first-generation NGSO satellites. These orbital adjustments will optimize the use of Globalstar's orbital assets and the quality of its safety-of-life services to consumers and other customers inside and outside the United States.

EXHIBIT A

REQUIRED CERTIFICATIONS UNDER SECTION 25.118(f)

Globalstar, Inc., and its subsidiary Globalstar Licensee LLC (together "Globalstar"), hereby provide the following certifications required by Section 25.118(f) of the Commission's rules, 47 C.F.R. § 25.118(f), for the notification of orbital adjustments to Globalstar's NGSO space stations:

- *Compliance with all license conditions and applicable rules*. Globalstar certifies that it will continue to comply with the conditions of its licenses and all applicable Commission rules after the orbital adjustments.

- *Compliance with geographic coverage requirement, specifically*. Globalstar certifies that, after the orbital adjustments, its NGSO system will be capable of providing MSS (i) to all locations as far north as 70º North latitude and as far south as 55º South latitude for at least 75 percent of every 24-hour period, and (ii) on a continuous basis throughout the fifty states, Puerto Rico, and the U.S. Virgin Islands, in accordance with the requirements of Section 25.143(b)(2) of the Commission's rules.[1]

- *Compliance with power flux density requirement, specifically*. Globalstar certifies that, following the orbital adjustments to its space stations, its MSS constellation will comply with the same power flux density ("pfd") levels within each geographic coverage area as those applicable to its first-generation constellation. Specifically, power into the individual downlink beams of the Globalstar system will be controlled to be consistent with the Upper Big LEO band pfd requirements at the Earth's surface. The Upper Big LEO band pfd at the Earth's surface will be generally below the approved coordination threshold levels approved at WRC-95 (Res. 46 (Rev. WRC-95) A2.1.2.3.1). The 7 GHz C-band feeder downlink pfd at the Earth's surface for each sub-band will be nominally -155 dBW/m2/4 kHz for high elevation angles and will decrease linearly as the elevation angle decreases, consistent with the limits specified by the ITU and section 25.208(n) of the Commission's rules, 47 C.F.R. § 25.208(n), with substantial margins.[2]

- *No Increased Risk of Harmful Interference.* Globalstar certifies that the orbital adjustments to its NGSO satellites will not increase the risk of harmful interference to other systems that is not permitted by coordination agreements.

- *No Request for Increased Interference Protection*. Globalstar certifies that it will not request increased interference protection because of the orbital adjustments to its NGSO satellites.

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1 47 C.F.R. 25.143(b)(2)(ii), (iii).

2 *See* Loral/Qualcomm Licensee, Inc., Application for Modification to Order and Authorization for Globalstar, FCC File Nos. 19-DSS-P-91(48) and CSS-91-014 (filed Mar. 7, 1996) at Section 3 "WRC-95 p.f.d. Levels."

- *Monitoring of Collision Risk*. Globalstar certifies that it will monitor collision risk during the orbital adjustments and take any necessary evasive measures.

- *Change of Orbital Altitude*. Globalstar certifies that any change of orbital altitude entailed by the orbital adjustments will not exceed 10 kilometers in extent or 30 days in duration, and that it has notified, or will notify, the operator(s) of any satellite within 20 kilometers of the interim orbit at least 10 days before commencing any orbital adjustments.

Under penalty of perjury, I hereby provide the above certifications and declare that the the engineering statements made therein are true and correct to the best of my knowledge.

/s/ Tom Nowitzky
Tom Nowitzky
Director of Satellite Engineering
Globalstar, Inc.

Dated: October 20, 2017