

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

| | | |
|---|---|---------------------|
| In the Matter of |) | |
| |) | |
| Amendment of Parts 2 and 25 of the |) | IB Docket No. 17-95 |
| Commission's Rules to Facilitate the Use of Earth |) | |
| Stations in Motion Communicating with |) | |
| Geostationary Orbit Space Stations in Frequency |) | |
| Bands Allocated to the Fixed Satellite Service |) | |

REPLY OF SES AMERICOM, INC., O3B LIMITED, AND INTELSAT LICENSE LLC

SES Americom, Inc. and its affiliate O3b Limited (collectively, "SES") and Intelsat License LLC ("Intelsat") hereby reply to the comments of other parties regarding the Commission's proposals to allow Earth Stations in Motion ("ESIMs") to operate with geostationary orbit ("GSO") fixed-satellite service ("FSS") spacecraft in additional spectrum bands.¹ The record strongly supports expanding the frequencies available for GSO ESIM networks and confirms that doing so will allow more intensive spectrum use and is fully consistent with other authorized operations in these bands. Accordingly, the Commission should expeditiously adopt the proposals in the Further Notice.

As the comments of SES and other parties emphasize, authorizing GSO ESIM use of the bands identified in the Further Notice – the 10.7-10.95 GHz, 11.2-11.45 GHz, 17.8-18.3 GHz, 18.8-19.3 GHz, 19.3-19.4 GHz, 19.6-19.7 GHz, and 28.6-29.1 GHz segments – will better equip

¹ *Amendment of Parts 2 and 25 of the Commission's Rules to Facilitate the Use of Earth Stations in Motion Communicating with Geostationary Orbit Space Stations in Frequency Bands Allocated to the Fixed Satellite Service*, Report and Order and Further Notice of Proposed Rulemaking, IB Docket No. 17-95 (rel. Sept. 27, 2018) (the "Order" and "Further Notice"). Unless otherwise specified, all citations herein are to comments filed on April 8, 2019, in IB Docket No. 17-95.

satellite operators to meet customer demand in the “growing ESIMs market.”² Moreover, the successful history of mobility services using FSS spectrum supports the Commission’s view that “operation of earth stations in motion should not introduce a material change to the interference environment created or to the protection required” as compared to communications between GSO spacecraft and terminals at fixed locations.³ Viasat, for example, notes that it “is well-established that ESIMs can perform within the same technical envelope as fixed earth stations through highly accurate antenna pointing mechanisms and compliance with appropriate power limits.”⁴ Adding spectrum bands to the revised framework set forth in the Order for GSO ESIM networks will allow the Commission to build on this success without any adverse impact on service to fixed earth stations.⁵ In the frequency segments where non-geostationary orbit (“NGSO”) FSS networks have sole primary status, 18.8-19.3 GHz and 28.6-29.1 GHz, parties agree that allowing GSO ESIMs on a secondary basis is appropriate subject to provisions to preserve NGSO systems’ protected access to this critical spectrum.⁶

² Further Notice at ¶ 90; *see, e.g.*, Comments of SES Americom, Inc. and O3b Limited (“SES Comments”) at 2; Boeing Comments at 2; Inmarsat Comments at 1-2; Panasonic Comments at 2; Viasat Comments at 1-3.

³ Further Notice at ¶ 91; *see* Boeing Comments at 1; Inmarsat Comments at 2; Panasonic Comments at 2; Viasat Comments at 3.

⁴ Viasat Comments at 3.

⁵ In its comments, Hughes Network Systems, LLC (“Hughes”) expresses support for expansion of the frequencies available for GSO ESIM terminals provided that use of the additional bands would be subject to the ESIM rules adopted in the Order. *See* Hughes Comments at 3. That is very clearly what the Commission has proposed in the Further Notice, as the rule changes set forth would simply add the relevant band segments to the frequencies available for use under the ESIMs regulatory framework. *See* Further Notice at Appendix E, proposed revisions to Section 25.202.

⁶ *See, e.g.*, SES Comments at 2; Boeing Comments at 6-8.

Similarly, the record confirms that GSO ESIM terminal operations can co-exist with terrestrial fixed service (“FS”) use in band segments where such networks are primary. Satellite operators in the 17.8-18.3 GHz band are already subject to power-flux density (“pfd”) limits designed to protect terrestrial systems, and reception of satellite signals by ESIMs has no effect on pfd levels.⁷ Commenters also emphasize that if an ESIM experiences interference due to FS transmissions, the effects would be transitory and could be effectively addressed by the ESIM network operator.⁸

Finally, the record makes clear that there is no justification for the Commission to implement special protections for Radio Astronomy Service (“RAS”) or Earth Exploration-Satellite Service (“EESS”) operations. SES and other parties have previously responded to the concerns regarding these services raised by the National Academy of Sciences’ Committee on Radio Frequencies (“CORF”), and the Commission has addressed them in the Order.⁹ Because all the band segments of concern to CORF are used only in the space-to-Earth direction, making them available for ESIMs operations will have no effect on the interference environment for RAS or EESS, since ESIMs will only be receiving signals from GSO FSS satellites already

⁷ See Boeing Comments at 4; Viasat Comments at 4.

⁸ See SES Comments at 2-3; Boeing Comments at 3-4; Inmarsat Comments at 2-3; Viasat Comments at 3-4. As a result, GSO ESIMs need not be protected from interference caused by primary FS transmissions, and SES and Intelsat do not object to the request by the Fixed Wireless Communications Coalition (“FWCC”) that the Commission specify that ESIMs’ use of the 10.7-10.95 GHz, 11.2-11.45 GHz, 19.3-19.4 GHz, and 19.6-19.7 GHz bands be on a non-interference basis with respect to FS networks. See FWCC Comments at 1, 3.

⁹ Order at ¶ 63 & nn.164-168, *citing* Boeing Reply Comments, IB Docket No. 17-95, filed Aug. 30, 2017, at 5-6; *see also* Reply Comments of SES S.A. and O3b Limited, IB Docket No. 17-95, filed Aug. 30, 2017 (“SES 2017 Reply Comments”) at 7-8.

allowed to operate in this spectrum.¹⁰ Thus, CORF's references to "ESIM downlinks"¹¹ are inaccurate, and its concerns regarding the difficulty of addressing interference from "moving targets"¹² are misplaced – the only transmissions in the frequency ranges discussed by CORF will be from GSO satellites, not from ESIM terminals.

Given the substantial support in the comments for the proposals in the Further Notice, SES and Intelsat urge the Commission to promptly adopt revisions to Part 25 making the additional frequency bands discussed herein available for ESIM operations with GSO FSS systems.

Respectfully submitted,

SES AMERICOM, INC.

By: /s/ Petra A. Vorwig
Senior Legal and Regulatory Counsel
1129 20th Street, NW
Suite 1000
Washington, DC 20006

INTELSAT LICENSE LLC

By: /s/ Cynthia J. Grady
Senior Counsel
Intelsat US LLC
7900 Tysons One Place
McLean, VA 22102

O3b LIMITED

By: /s/ Suzanne Malloy
Vice President of Regulatory Affairs
1129 20th Street, NW
Suite 1000
Washington, DC 20006
May 8, 2019

¹⁰ See, e.g., SES 2017 Reply Comments at 8.

¹¹ CORF Comments at 8-9.

¹² *Id.* at 9-10.