

AMENDMENT TO MODIFICATION APPLICATION

Gogo LLC (“Gogo”), which holds a license to operate an earth station aboard aircraft (“ESAA”) network,¹ hereby amends its pending Commission application to modify its ESAA license.² Specifically, Gogo is filing to specify the correct downlink frequencies to be used on the Eutelsat 172A spacecraft and to add a downlink frequency band for use with the SES-6 spacecraft. Pursuant to Section 25.117(c) of the Commission’s rules, Gogo is providing herein information that is changing as a result of the amendment. Gogo certifies that the remaining information provided in support of the Gogo Modification has not changed. Gogo seeks expedited action on the modification as amended herein to allow Gogo to expand the authorized scope of its ESAA operations.

Background: Gogo holds a Commission blanket license granted in May authorizing it to operate up to 1000 Ku-band terminals with seven specified satellites for ESAA service in U.S. airspace, foreign airspace, and the airspace over international waters. Last month Gogo applied to modify the Gogo ESAA License. The modification seeks to add four satellites as points of communication for the Gogo network, to modify the technical parameters for operations with two satellites already authorized for use by Gogo, and to conform the terms and conditions of Gogo’s license to the rules and policies adopted in the Commission’s *ESAA Order*.³

Eutelsat 172A Frequencies: One of the new satellites identified in the Gogo Modification is the U.S.-licensed Eutelsat 172A spacecraft. However, the information supplied in the Gogo Modification erroneously indicated that Eutelsat 172A would communicate with Gogo terminals using the 11.7-12.2 GHz downlink frequencies.⁴ Because that band is not included on the Eutelsat 172A license and no other downlink band was specified, the Commission dismissed the portion of the Gogo Modification that requests authority to communicate with Eutelsat 172A.⁵

¹ See *Gogo LLC*, Call Sign E120106, File Nos. SES-LIC-20120619-00574, SES-AMD-20120731-00709 & SES-AFS-20121008-00902, granted May 1, 2013 (the “Gogo ESAA License”).

² See *Gogo LLC*, Call Sign E120106, File No. SES-MFS-20131114-01015 (the “Gogo Modification”).

³ *Revisions to Parts 2 and 25 of the Commission’s Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14-14.5 GHz Frequency Bands*, Notice of Proposed Rulemaking and Report and Order, IB Docket Nos. 12-376 & 05-20, 27 FCC Rcd 16510 (2012) (“*ESAA Order*”).

⁴ See *Gogo Modification*, Narrative at 3 & Annex 2.

⁵ Letter of Paul E. Blais, Chief, Systems Analysis Branch, to William J. Gordon, Vice President, Regulatory Affairs, Gogo LLC, DA 13-2417 (Dec. 18, 2013).

By this amendment, Gogo corrects the requested downlink frequencies for Eutelsat 172A to specify the 10.95-11.2 GHz, 11.45-11.7 GHz, and 12.2-12.75 GHz bands and requests that the Commission reinstate the portion of the Gogo Modification that seeks to add Eutelsat 172A as an authorized point of communication.

SES-6 Frequencies: The Gogo Modification also seeks to add the Netherlands-licensed SES-6 spacecraft, specifying downlink frequencies in the 10.95-11.2 GHz band.⁶ Gogo proposes to add a second downlink frequency band, 11.2-11.45 GHz, for use in the East Atlantic Ocean beam of the SES-6 spacecraft.

Waiver Requests: Some of the frequency bands being sought in this amendment have not been authorized for ESAA service. Accordingly, Gogo seeks a waiver of the Table of Frequency Allocations in connection with the amendment. Gogo also requests any necessary waiver of footnote NG52.

In order to effectuate these changes, Gogo requests that the Commission replace sections of the Gogo Modification with corrected language or add language, as follows.

1. Modification Narrative

- (a) Please replace the first paragraph of Page 3 with the following corrected paragraph:

Eutelsat 172A: Eutelsat 172A is a U.S.-licensed satellite positioned at the 172° E.L. orbital location.⁴ Gogo seeks authority to use Eutelsat 172A capacity for ESAA operations on a secondary basis in the 14-14.5 GHz uplink spectrum and on an unprotected basis in the 10.95-11.2 GHz and 11.45-11.7 GHz downlink spectrum, consistent with the *ESAA Order* and the terms of the satellite license. Gogo also seeks authority to use Eutelsat 172A capacity for ESAA operations on a nonconforming basis in the 12.2-12.75 GHz downlink spectrum, consistent with the terms of the satellite license. Eutelsat 172A will provide coverage of the Pacific Ocean Region.

⁶ See Gogo Modification, Narrative at 4 & Annex 2.

(b) Please replace the first full paragraph of Page 4 with the following corrected paragraph:

SES-6: SES-6 is a Netherlands-licensed satellite positioned at the 40.5° W.L. orbital location. The Commission placed SES-6 on the Permitted Space Station List for operations in the conventional Ku-band and has granted U.S. market access for SES-6 in the extended Ku-band and Appendix 30B Ku-band.⁷ Gogo seeks authority to use SES-6 capacity for ESAA operations on a secondary basis in the 14-14.5 GHz uplink spectrum and on an unprotected basis in the 10.95-11.2 GHz downlink spectrum, consistent with the *ESAA Order* and the terms of the satellite's U.S. market access. Gogo also seeks authority to use SES-6 capacity for ESAA operations on a nonconforming basis in the 11.2-11.45 GHz downlink spectrum, consistent with the terms of the satellite's U.S. market access. SES-6 will provide coverage of the Atlantic Ocean Region.

(c) Please add the following paragraphs at the top of page 5 (prior to heading II):

Waiver Requests: Gogo requests waiver of the Table of Allocations in Section 2.106 of the Commission's rules to permit use of the 11.2-11.45 GHz and 12.2-12.75 GHz downlink frequency bands for ESAA operations. In addition, Gogo seeks any necessary waiver of footnote NG52 to permit ESAA operations in the 11.2-11.45 GHz band. Grant of the requested waivers is consistent with Commission precedent and will serve the public interest.

Prior to adoption of the ESAA Order, the Commission granted waivers for downlink operations in the 11.7-12.2 GHz conventional Ku-band downlink spectrum "based upon either a showing that the proposed AMSS downlink transmissions will not exceed the 10 dBW/4 kHz limit for routine processing in Section 25.134(g)(2) of the Commission's rules or proof that

adjacent satellite operators have consented to the operations.”⁷ ESAA operators were also permitted to use extended Ku-band frequencies for ESAA downlinks pursuant to the same rationale.⁸ The Commission has recognized that “AES terminals on U.S.-registered aircraft may need to access foreign satellites while traveling outside of the United States (*e.g.*, over international waters), and therefore may need to downlink in the extended Ku-band in certain circumstances.”⁹

As discussed above, the *ESAA Order* modified the Table of Allocations to permit ESAA operations in the conventional Ku-band, as well as in the 10.95-11.2 GHz and 11.45-11.7 GHz segments of the extended Ku-band. The Commission acknowledged that ESAA operators may also wish to use other downlink spectrum, particularly for reception of transmissions from space stations with little or no U.S. coverage.¹⁰ Although the Commission had not requested comment on changing the allocation status of other these downlink bands, it specifically contemplated that access to such spectrum could be granted “on a case-by-case basis under Part 25 licensing

⁷ See, *e.g.*, *Panasonic Avionics Corporation, Application for Authority to Operate Up to 50 Technically Identical Aeronautical Mobile-Satellite Service Aircraft Earth Stations in the 14.0-14.4 GHz and 11.7-12.2 GHz Frequency Bands*, Order and Authorization, 26 FCC Rcd 12557 (Int’l Bur. and OET 2011) at ¶ 11.

⁸ See *Row 44 Inc.*, File No. SES-MFS-20100715-00903, Call Sign E080100, Attachment at 3 (requesting extension of the waiver of Section 2.106 that Row 44 was granted for conventional Ku-band downlinks to cover the proposed use of the 11.45-11.7 GHz band), granted Dec. 23, 2010.

⁹ *Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service*, IB Docket No. 05-20, Notice of Proposed Rulemaking, 20 FCC Rcd 2906 (2005) at ¶ 18 (footnote omitted).

¹⁰ See *ESAA Order* at n.43.

rules.”¹¹ For example, ESAA operators including Gogo have been authorized to receive downlinks in all or parts of the 12.2-12.75 GHz band.¹²

Consistent with these past rulings, Gogo requests a waiver of the Table of Allocations to permit its terminals to receive transmissions from the Eutelsat 172A spacecraft in the 12.2-12.75 GHz band and from SES-6 in the 11.2-11.45 GHz band. Neither band is proposed to be used in U.S. airspace. The 12.2-12.75 GHz band is included in the Eutelsat 172A license issued by the Commission, and the Commission has granted market access for the 11.2-11.45 GHz Appendix 30B Ku-band payload on SES-6. As noted above, the satellite operators that will provide capacity to Gogo have coordinated the ESAA operations with satellites within six degrees. Authorizing Gogo to receive signals from these satellites will not alter the technical characteristics of the satellites’ operations in any way, and therefore will not create harmful interference to other authorized users of the spectrum. Furthermore, Gogo will not claim interference protection from such authorized users. Under these circumstances, grant of a Section 2.106 waiver is justified to permit use of the 12.2-12.75 GHz band and 11.2-11.45 GHz band for downlinks as part of the Gogo ESAA network.

Out of an abundance of caution, Gogo also requests any necessary waiver of footnote NG52 to permit use of the 11.2-11.45 GHz band for ESAA operations. NG52 is the successor to former footnote NG104, which specified that use of the 10.7-11.7 GHz band by the fixed-satellite service is limited to international operations. In the ESAA Order, the Commission made clear that ESAA operations in the 10.95-11.2 GHz and 11.45-11.7 GHz band were permitted on

¹¹ *Id.*

¹² See, e.g., Gogo Blanket License, Section B (authorizing use of the 12.25-12.75 GHz band); *Panasonic Avionics Corporation*, File No. SES-MFS-20120913-00818, Call Sign E100089, granted July 24, 2013, Section B (authorizing use of the 12.2-12.75 GHz band).

an unprotected basis and did not require a waiver of new footnote NG52, but that express carve-out does not extend to the 11.2-11.45 GHz band.¹³ However, as noted above, Gogo does not propose to use the 11.2-11.45 GHz band for domestic ESAA operations. As a result, Gogo's proposed operations appear to be consistent with the terms of NG52. In any event, if NG52 is triggered here, grant of a waiver to permit use of the 11.2-11.45 GHz band on an unprotected basis is clearly warranted pursuant to the finding in the *ESAA Order* that reception of transmissions "by U.S. authorized ESAA operations outside of U.S. airspace over international waters is fully consistent [with] NG104 and is unlikely to cause interference to or restrict current or future FS operations in the United States."¹⁴

(d) On page 6, please replace the suggested language for condition 90056 with the following:

90056 --- Reception of downlink transmissions is on a non-interference, non-protected basis from the following geostationary-orbit space stations: Eutelsat 172A (Call Sign S2610) at 172° E.L. in the 10.95-11.2 GHz, 11.45-11.7 GHz, and 12.2-12.75 GHz frequency bands; SES-4 (Call Sign S2828) at 22° W.L. in the 12.5-12.75 GHz frequency band; SES-6 (Call Sign S2870) at 40.5° W.L. in the 10.95-11.2 GHz and 11.2-11.45 GHz frequency bands; ~~Intelsat 14 (Call Sign S2785) at 45° W.L. in the 11.7-11.95 GHz frequency band~~; NSS-703 (Call Sign S2818) at 47.05° W.L. in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-11.95 GHz, and 12.5-12.75 GHz frequency bands; Intelsat 21 (Call Sign S2863) at 58° W.L. in the 11.45-11.7 GHz and 11.7-12.2 GHz frequency bands; ~~SES-1 (Call Sign S2807) at 101° W.L. in the 11.7-12.2 GHz frequency band~~; Intelsat 19 (Call Sign S2850) at 166° E.L. in the 12.25-12.75 GHz frequency band; ~~and Intelsat 22 (Call Sign S2846) at 72.1° E.L. in the 12.25-12.5 GHz frequency band~~; and Intelsat 904 (Call Sign S2408) at 60° E.L. in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency bands. When communicating with these satellites in these frequency bands, the aircraft earth station operations authorized herein must accept interference from any radio station operating in conformance with the U.S. Table of Frequency Allocations.

¹³ See *ESAA Order* at ¶ 21.

¹⁴ *Id.*

In footnote 10, an alternative formulation of condition 90056 is provided. Please correct that suggested formulation with the following:

90056 --- Reception of downlink transmissions is on a non-interference, non-protected basis from the following geostationary-orbit space stations: Eutelsat 172A (Call Sign S2610) at 172° E.L. in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency bands; SES-6 (Call Sign S2870) at 40.5° W.L. in the 10.95-11.2 GHz frequency band; NSS-703 (Call Sign S2818) at 47.05° W.L. in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency bands; Intelsat 21 (Call Sign S2863) at 58° W.L. in the 11.45-11.7 GHz frequency band; and Intelsat 904 (Call Sign S2408) at 60° E.L. in the 10.95-11.2 GHz and 11.45-11.7 GHz frequency bands. When communicating with these satellites in these frequency bands, the aircraft earth station operations authorized herein must accept interference from any radio station operating in conformance with the U.S. Table of Frequency Allocations.

90056A --- Reception of downlink transmissions is on a non-interference, non-protected basis from the following geostationary-orbit space stations: Eutelsat 172A (Call Sign S2610) at 172° E.L. in the 12.2-12.75 GHz frequency band; SES-6 (Call Sign S2870) at 40.5° W.L. in the 11.2-11.45 GHz frequency band; SES-4 (Call Sign S2828) at 22° W.L. in the 12.5-12.75 GHz frequency band; NSS-703 (Call Sign S2818) at 47.05° W.L. in the 12.5-12.75 GHz frequency band; Intelsat 19 (Call Sign S2850) at 166° E.L. in the 12.25-12.75 GHz frequency band; and Intelsat 22 (Call Sign S2846) at 72.1° E.L. in the 12.25-12.5 GHz frequency band. When communicating with these satellites in these frequency bands, the aircraft earth station operations authorized herein must accept interference from any radio station operating in conformance with the U.S. Table of Frequency Allocations.

2. Annex 2:

Please replace the spacecraft table in Annex 2 with the corrected table that appears on the following page.

ANNEX 2:

Updated Spacecraft and Teleport Tables

Satellite	Location	Beam Coverage Area	Tx (GHz)	Rx (GHz)	Use in US airspace?	Satellite Operator
SES-1	101W	North America	14-14.5	11.7 – 12.2	Yes	SES
SES-4	22W	Europe	14-14.5	12.5-12.75	No	
SES-6	40.5W	East Atlantic Ocean	14-14.5	10.95-11.2; 11.2-11.45	No	
		West Atlantic Ocean	14-14.5	10.95-11.2	Yes	
NSS-703	47.05W	S2 - Northwestern Atlantic Ocean	14-14.5	11.7 – 11.95	Yes	
		S1 – North-central Atlantic Ocean	14-14.5	10.95 – 11.2; 11.45-11.7	No	
		S3 - Northwestern Atlantic Ocean	14-14.5	12.5-12.75	No	
IS-14	45W	North and South America excludes Brazil	14-14.5	11.7 – 12.2	Yes	Intelsat
IS-21	58W	Brazil	14-14.5	11.7 – 12.2	No	
		South Atlantic Ocean	14-14.5	11.45 – 11.7	No	
IS-22	72.1E	Mobility from Mideast to Japan and to Australia	14-14.5	12.25 – 12.5	No	
IS-19	166E	Northeast Pacific Ocean	14-14.5	12.25-12.75	Yes	
		Northwest Pacific Ocean	14-14.5	12.25-12.75	No	
		Australia	14-14.5	12.25-12.75	No	
		Southwest Pacific Ocean	14-14.5	12.25-12.75	No	
IS-904	60E	Spot 1 - Western Russia	14-14.5	10.95 – 11.2; 11.45-11.7	No	
Satmex 5	114.9W	North America	14-14.5	11.7-12.2	Yes	Satmex
		Central and South America	14-14.5	11.7-12.2	Yes	
E172A	172E	North Pacific Ocean and Northeastern Russia	14-14.5	10.95 – 11.2; 11.45-11.7; 12.2-12.75	No	Eutelsat