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

In the Matter of	)	
	)	
Gogo LLC	)	File No. SES-AMD-_____
	)	Call Sign E120106
Amendment to Application for Blanket Authority	)	
for Operation of 1000 Technically Identical	)	
Ku-Band Transmit/Receive Earth Stations in the	)	
Aeronautical Mobile Satellite Service	)	

AMENDMENT

Gogo LLC ("Gogo") hereby amends its pending application for a blanket license to operate 1000 technically identical Ku-band transmit/receive earth stations for the provision of Aeronautical Mobile Satellite Service ("AMSS") on domestic and international flights.[1] Specifically, Gogo is updating the information in the Gogo AMSS Application to: (1) clarify the technical characteristics of Gogo's proposed operations using the NSS-703 spacecraft; (2) add the Intelsat 22 and SES-4 satellites as requested points of communication for the Gogo AMSS network; (3) request authority for the use of additional downlink spectrum on Intelsat 21 in the 11.45-11.7 GHz band; and (4) confirm that the Gogo AMSS Application is limited to services that are covered by the World Trade Organization Agreement on Basic Telecommunications Services ("WTO Basic Telecom Agreement").

A narrative description of the relevant changes is provided here, and Gogo is attaching an FCC Form 312 and Schedule B reflecting the new points of communication.

[1] *Gogo LLC*, Call Sign E120106, File Nos. SES-LIC-20120619-00574 & SES-AMD-20120731-00709 (the "Gogo AMSS Application").

Supplemental technical information and copies of the relevant coordination agreements are attached as well.

I. OPERATIONS WITH NSS-703

The Gogo AMSS Application sought authority to operate with a number of spacecraft, including the NSS-703 satellite located at 47.05° W.L.[2] Gogo indicated that the three NSS-703 Ku-band spot beams would provide coverage of the North Atlantic, using conventional Ku-band uplink frequencies and a combination of conventional Ku-band, extended Ku-band, and international Ku-band downlink frequencies.[3] Specifically, Gogo indicated that the 10.95-11.2 GHz and 11.45-11.7 GHz bands will be used for spot beam 1 downlinks, the 11.7-11.95 GHz band for spot beam 2 downlinks, and the 12.5-12.75 GHz band for spot beam 3 downlinks.[4]

Because NSS-703 is a foreign-licensed satellite, Gogo provided information pursuant to the Commission's *DISCO II* policies as codified in Section 25.137 of the Commission's rules.[5] Gogo noted that NSS-703 has been added to the Commission's Permitted Space Station List for communications with U.S.-licensed terminals in the conventional C- and Ku-band frequencies.[6] Although the Permitted Space Station List is limited to conventional C-

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[2] *See Gogo LLC,* Call Sign E120106, File No. SES-AMD-20120731-00709, Narrative ("Amended Narrative") at 4-5; Technical Appendix ("Amended Technical Appendix") at 7.

[3] Amended Technical Appendix at 7.

[4] *Id.*

[5] Amended Narrative at 17-18, *citing Amendment of the Commission's Policies to Allow Non-U.S. Licensed Space Stations providing Domestic and International Service in the United States,* Report & Order, 12 FCC Rcd 24094 (1997) ("*DISCO II*"); and 47 C.F.R. § 25.137.

[6] Amended Narrative at 17, *citing SES Satellites (Gibraltar) Limited,* Call Sign S2818, File Nos. SAT-PPL-20101103-00230 and SAT-APL-20110120-00015, grant-stamped Oct. 31, 2011 ("*NSS-703 Grant*").

and Ku-band operations, Gogo noted that the Commission applies the same legal framework to determine U.S. market access eligibility for other bands.[7] In addition, Gogo stated that the technical documentation filed in support of the NSS-703 market access request had included information regarding the full Ku-band payload.[8] Gogo argued that this information supported a grant of authority for the Gogo AMSS network to use the NSS-703 extended and international Ku-band capacity.

Gogo provides below supplemental information regarding the planned use of the NSS-703 spacecraft for Gogo's AMSS network.

General Technical Information on Non-Conventional Ku-Band Operations: Gogo has confirmed with the operator of the NSS-703 satellite, SES Satellites (Gibraltar) Limited, that the three Ku-band spot beams described in the request for NSS-703 market access are capable of using any of the spacecraft's Ku-band downlink band segments: 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-11.95 GHz, and 12.5-12.75 GHz. Because the downlink spectrum is interchangeable, the statements in the NSS-703 market access request regarding the technical characteristics of the Ku-band payload are accurate with respect to all of the downlink spectrum bands.

Thus, for example, the Ku-band beam parameters described in the NSS-703 filing,[9] including the maximum antenna gain and maximum EIRP, are the same regardless of the specific Ku-band downlink spectrum segment used. Similarly, the technical materials

[7] Amended Narrative at 18, *citing DISCO II* at ¶ 192.

[8] Amended Narrative at 18, *citing NSS-703 Grant*, Attachment to Grant at 1 n.3.

[9] *See SES Satellites (Gibraltar) Limited*, Call Sign S2818, File Nos. SAT-PPL-20101103-00230 and SAT-APL-20110120-00015, Technical Appendix ("NSS-703 Technical Appendix") at Section 5.2, Table 5-1.

demonstrate compliance with power flux density limits for all the Ku-band downlink segments to which such limits apply.[10] Finally, the interference analysis provided for the NSS-703 Ku-band payload is not dependent on the specific downlink frequencies used, but applies to all the downlink band segments.[11]

The Schedule S that was submitted with the NSS-703 market access request also expressly incorporates information regarding the non-conventional Ku-band downlink band segments. These bands were listed in Section S2 of the Schedule S, and beam characteristics for the three Ku-band spot beams, which can use any of the downlink band segments, were submitted under Section S7. Further, the center frequencies for the extended Ku-band transponders were captured in Section S9 for each of the three Ku-band spot beams.

In short, the technical data regarding the NSS-703 Ku-band payload that is on file with the Commission is not specific to the conventional Ku-band frequencies. Instead, all the information provided regarding the NSS-703 Ku-band payload is accurate without regard to which downlink band segment is used. Furthermore, the technical data on file regarding the NSS-703 Ku-band payload satisfies each of the applicable information requirements in Section 25.114 of the Commission's rules. Specifically, the information responsive to the applicable provisions of Section 25.114(c) is found in the Schedule S database as supplemented by sections 1 through 3 of the NSS-703 Technical Appendix, and the information responsive to

[10] *See id.*, Technical Appendix at Section 11.

[11] *See id.* at Section 17. The interference analysis was performed using the carrier characteristics of the Intelsat 14 spacecraft, which is the closest adjacent satellite to NSS-703. Intelsat 14 is licensed to operate in the 11.45-11.7 GHz and 11.7-11.95 GHz downlink frequencies. *See PanAmSat Licensee Corp.*, Call Sign S2785, File No. SAT-RPL-20090123-00007, grant-stamped Oct. 1, 2009. There is no satellite within two degrees of NSS-703 that uses the other NSS-703 Ku-band downlink frequencies.

the applicable provisions of Section 25.114(d) is found in sections 4 through 18 and Exhibits A through D of the NSS-703 Technical Appendix.

The Commission has already evaluated the sufficiency of the materials regarding the NSS-703 Ku-band payload and determined that the information supported a grant of market access for the conventional Ku-band frequencies under the Commission's rules.[12] The same determination is justified with respect to the non-conventional Ku-band frequencies.

Beam repointing: The technical data already on file with respect to the NSS-703 Ku-band payload needs to be updated in one respect. The NSS-703 market access filing included beam contours for the three steerable Ku-band spot beams, but noted that the data was based on nominal pointings of the beams.[13] In the Gogo AMSS network, all three beams will be used to provide North Atlantic coverage. Gogo is providing here new beam data in the form of contour maps and .gxt files to reflect the NSS-703 beam configurations for the Gogo AMSS network.[14]

The new beam configuration maps do not change the substance of the application and do not require further coordination. Gogo has previously provided documentation to show that the proposed operations of the Gogo AMSS network using NSS-703 have been coordinated with adjacent satellite operators.[15] Gogo's planned use of the NSS-703 Ku-band spot beams for service over the North Atlantic was taken into account during coordination, as reflected in the

[12] *See NSS-703 Grant* at 1.

[13] NSS-703 Technical Appendix at 3.

[14] The NSS-703 contour maps are attached hereto as Annex 1. The .gxt files are being submitted separately via e-mail to the "IBFSINFO@fcc.gov" address to be associated with the instant amendment.

[15] *See* File No. SES-AMD-20120731-00709, Amendment Exhibit A.

coordination letter.[16] Thus, the coordination of NSS-703 for the Gogo network was not based on the nominal beam pointings included in the NSS-703 market access request, and no further coordination is expected or required.

Use of the 12.5-12.75 GHz Downlink Band: As described in the Gogo AMSS Application, Gogo proposes to use the 12.5-12.75 GHz downlink spectrum on spot beam 3 of the NSS-703 Ku-band payload.[17] As shown in the attached contour map, the spot beam 3 will provide coverage of Europe and the adjacent portion of the North Atlantic. This coverage area is within ITU Region 1, consistent with the Ku-band FSS allocation for the 12.5-12.75 GHz band in that Region. Gogo is not seeking authority to use the 12.5-12.75 GHz frequencies on NSS-703 for operations in ITU Region 2.

Gogo also hereby corrects a typographical error relating to its proposed use of the 12.5-12.75 GHz downlink frequencies on NSS-703. Specifically, on page 18 of the Amended Narrative, the upper band limit was erroneously identified as 12.7 GHz. The correct upper band limit is 12.75 GHz.

II. ADDITIONAL SATELLITES AND FREQUENCIES

Gogo amends its application to add the Intelsat 22 and SES-4 satellites as points of communication for the Gogo AMSS network and identify the associated ground stations. In addition, Gogo requests authority to add downlink frequencies using the Intelsat 21 spacecraft. The tables with spacecraft and teleport information that were included in Section 2.3.1 of the Amended Technical Appendix have been updated to reflect these changes and are attached hereto as Annex 2.

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[16] *See id.*

[17] Amended Technical Appendix at 7.

Intelsat 22: Intelsat 22 is a U.S.-licensed satellite positioned at the 72.1° E.L. orbital location.[18] Gogo seeks authority to use Intelsat 22 capacity in the 14-14.5 GHz uplink spectrum and the 12.25-12.5 GHz downlink spectrum for coverage of the Middle East, Asia, and Australia, consistent with the satellite's license terms.

SES-4: SES-4 is a Netherlands-licensed satellite positioned at the 22° W.L. orbital location. The Commission placed SES-4 on the Permitted Space Station List for operations in the conventional Ku-band and has granted U.S. market access for SES-4 in the extended Ku-band.[19] Gogo seeks authority to use SES-4 capacity in the 14-14.5 GHz uplink spectrum and the 12.5-12.75 GHz downlink spectrum for coverage of ITU Region 1.

The licensee of SES-4, New Skies Satellites, B.V. ("New Skies"), did not seek U.S. market access for the 12.5-12.75 GHz frequencies on SES-4 because those frequencies are used only in ITU Region 1.[20] Nevertheless, grant of authority for the Gogo AMSS terminals to communicate with SES-4 using this band is consistent with the Commission's *DISCO II* policies. As noted above, the legal framework for evaluating requests to use foreign-licensed satellite capacity is the same for all bands, and the Commission has already granted U.S. market access for SES-4 under this standard.

Furthermore, although New Skies was not seeking authority to serve the U.S. using the 12.5-12.75 GHz frequencies, Gogo has confirmed with New Skies that the SES-4

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[18] *See Intelsat License LLC,* Call Sign S2846, File No. SAT-LOA-20110929-00193, grant-stamped March 15, 2012.

[19] *See New Skies Satellites, B.V.,* Call Sign S2828, File Nos. SAT-PPL-20110620-00112, grant-stamped March 15, 2012, & SAT-MPL-20120406-00065, grant-stamped Sept. 5, 2012 ("*SES-4 Grant*").

[20] *See New Skies Satellites, B.V.,* Call Sign S2828, File No. SAT-PPL-20110620-00112 ("SES-4 Petition"), Narrative at 4.

market access request contains complete information regarding operations of the satellite in this band. Specifically, two of the Ku-band beams described in the SES-4 market access request use the 12.5-12.75 GHz band: the Europe ("EU") beam and the West Africa ("WA") beam.[21] Information regarding these beams in the SES-4 market access request accurately reflects the characteristics of the satellite's operations in the 12.5-12.75 GHz band.[22]

Thus, for example, the Ku-band downlink transmission parameters described in the SES-4 filing for the Europe and West Africa beams are accurate with respect to the 12.5-12.75 GHz band.[23] Similarly, the technical materials demonstrate compliance with power flux density limits for all the Ku-band downlink segments to which such limits apply, including the 12.5-12.75 GHz band.[24] The link budgets and contour maps submitted for the Europe and West Africa beams depict the service characteristics for the SES-4 downlink operations in the 12.5-12.75 GHz band.[25] Finally, the interference analysis provided for the SES-4 Europe and West Africa Ku-band beams is not dependent on the specific downlink frequencies used, but applies to the 12.5-12.75 GHz band operations also.[26]

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[21] *See* SES-4 Petition, Technical Appendix at 2-3. The other two Ku-band beams described in the SES-4 Petition, the North American beam and the Southern Cone beam, do not use the 12.5-12.75 GHz band.

[22] The SES-4 Europe and West Africa beams have coverage that is limited to ITU Region 1. Gogo is not seeking authority to use the 12.5-12.75 GHz frequencies on NSS-703 for operations in ITU Region 2.

[23] *See* SES-4 Petition, Technical Appendix at Section 5.2.2.

[24] *See id.*, Technical Appendix at Section 10.

[25] *See id.*, Technical Appendix at Appendix A (link budgets) and Appendix B (beam diagrams).

[26] *See id.* at Section 17. The interference analysis was performed both for the case of a hypothetical adjacent satellite and considering the carrier characteristics of the NSS-5 spacecraft, which is the closest adjacent satellite to SES-4. NSS-5, like SES-4, operates in the 12.5-

The Schedule S that was submitted with the SES-4 market access request also expressly incorporates information regarding the 12.5-12.75 GHz Ku-band downlink band segment. This band was listed in Section S2 of the Schedule S, and beam characteristics for the Europe and West Africa beams that use the 12.5-12.75 GHz band were submitted under Section S7. Further, the center frequencies for the transponders for the Europe and West Africa beams in the band 12.5-12.75 GHz were captured in Section S9.

In short, the technical data that is on file with the Commission regarding the Europe and West Africa beams of the SES-4 Ku-band payload accurately reflects the characteristics of operations in the 12.5-12.75 GHz band. Furthermore, the technical data on file regarding these beams satisfies each of the applicable information requirements in Section 25.114 of the Commission's rules. Specifically, the information responsive to the applicable provisions of Section 25.114(c) is found in the Schedule S database as supplemented by sections 1 through 3 of the SES-4 Technical Appendix, and the information responsive to the applicable provisions of Section 25.114(d) is found in sections 4 through 18 and Appendices A and B of the SES-4 Technical Appendix.

The Commission has already evaluated the sufficiency of the materials regarding the SES-4 Ku-band payload and determined that the information supported a grant of market access for the conventional and extended Ku-band frequencies under the Commission's rules.[27] The same determination is justified with respect to the 12.5-12.75 GHz band.

Additional Downlink Spectrum on Intelsat 21: Gogo also seeks authority to use an additional downlink spectrum band, 11.45-11.7 GHz, on the Intelsat 21 spacecraft. Gogo's

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12.75 GHz downlink frequencies. *See New Skies Satellites B.V.*, Call Sign S2802, File Nos. SAT-PPL-20091208-00142 & SAT-APL-20100219-00034, grant-stamped June 4, 2010.

[27] *See SES-4 Grant* at 1.

use of this spectrum will be in accordance with the terms of the Intelsat 21 license.[28] No additional coordination is required for use of this spectrum.[29]

Waiver Requests: Gogo requests waivers of the Table of Allocations in Section 2.106 of the Commission's rules to permit Gogo to use the 12.25-12.5 GHz downlink spectrum on Intelsat 22, the 12.5-12.75 GHz downlink spectrum on SES-4, and the 11.45-11.7 GHz spectrum on Intelsat 21 for AMSS operations on a non-interference basis. Gogo incorporates by reference the justification for this waiver provided in the Gogo AMSS Application.[30]

In addition, Gogo requests a waiver of Section 25.202(a)(1) and footnote NG104 to the Table of Allocations to permit use of the 11.45-11.7 GHz band on Intelsat 21 for U.S. domestic service on an unprotected basis. Gogo incorporates by reference the justification for this waiver provided in the Gogo AMSS Application.[31]

Coordination Letters: Attached as Annex 3 are copies of affidavits demonstrating that Gogo's proposed operations with the Intelsat 22 and SES-4 satellites have been coordinated with operators of adjacent satellites.

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[28] *See Intelsat License LLC,* Call Sign 2863, File No. SAT-RPL-20120326-00061, grant-stamped July 12, 2012. Intelsat recently advised the Commission that Intelsat 21 has begun operations pursuant to the terms of its license. *See* Letter from Susan H. Crandall, Assistant General Counsel, Intelsat Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission, File No. SAT-RPL-20120326-00061, dated Oct. 4, 2012.

[29] *See* File No. SES-AMD-20120731-00709, Amendment Exhibit A (Intelsat has coordination agreements with the only non-Intelsat spacecraft within six degrees of Intelsat 21 that use the same frequency bands as the Gogo system).

[30] *See* Amended Narrative at 11-12.

[31] *See* Amended Narrative at 14-16.

III. WTO COVERED SERVICES

Gogo hereby confirms that it seeks authority to use non-U.S.-licensed satellites to provide only services that are covered by the U.S. commitments made pursuant to the WTO Basic Telecom Agreement. Gogo will not be providing any of the services for which the U.S. took an exemption under that agreement.[32]

IV. CONCLUSION

Gogo amends the Gogo Application to update the record and reflect the changes described herein. Gogo respectfully requests that the Commission expeditiously consider and grant the Gogo Application as amended in order to allow introduction of new AMSS competition.

Respectfully submitted,

GOGO LLC

By: */s/ William J. Gordon*_____

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Dated: October 8, 2012

[32] *See DISCO II* at ¶ 30 (U.S. commitments under the WTO Basic Telecom Agreement cover fixed satellite and mobile satellite services) and ¶ 13 (non-covered services are Direct-to-Home services, Direct Broadcast Satellite services, and Digital Audio Radio Services).

ANNEX 1:

Antenna Beam Diagrams

NSS-703 Ku-band Spot Beams

Fig. 1
KSpot 1 Downlink Beam, Ku-band
Peak EIRP = 51.5 dBW
Peak Beam Gain = 35.9 dBi
Polarization Vertical
Schedule S beam designator: KS1D

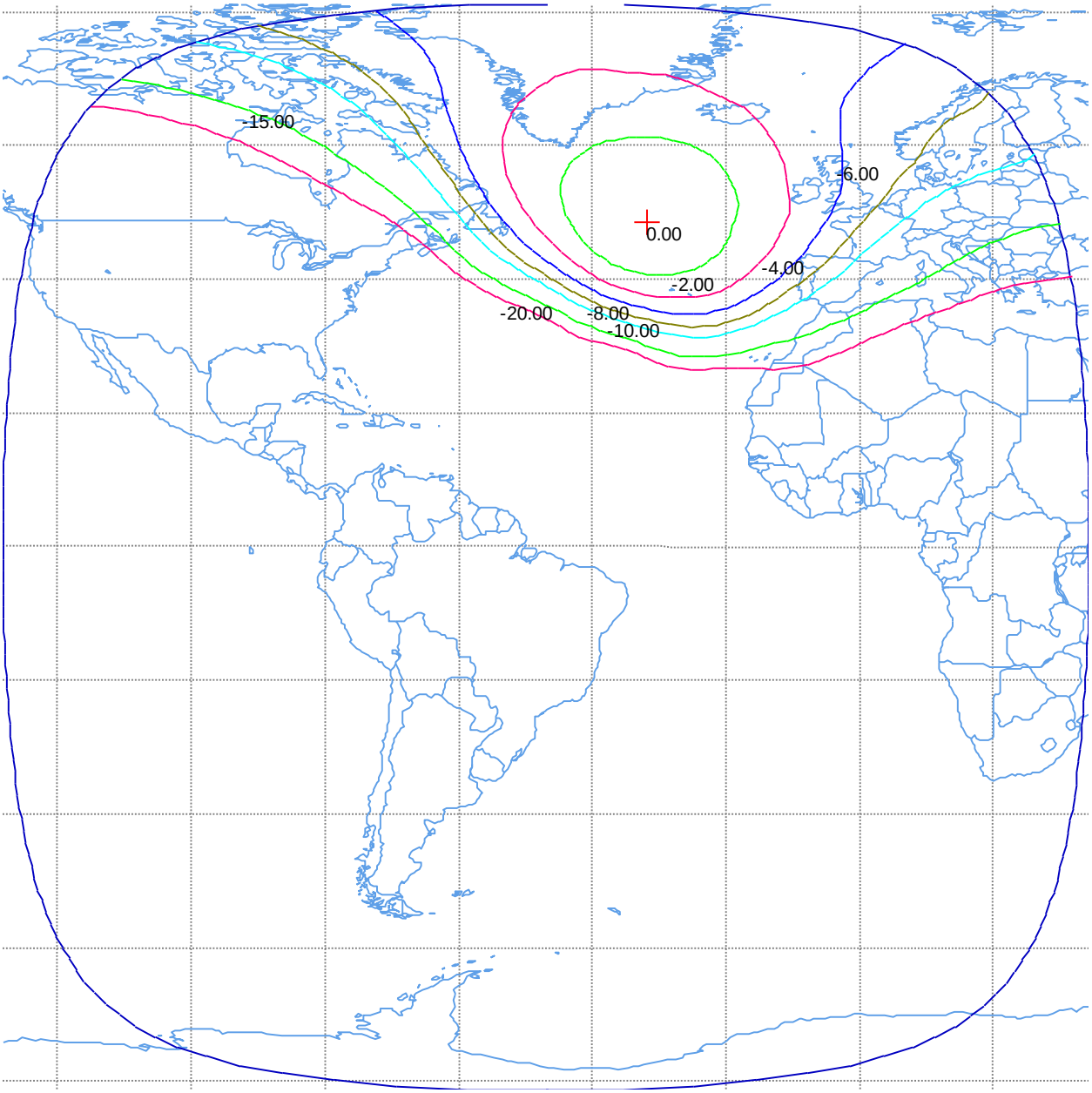


Fig. 2
KSpot 2 Downlink Beam, Ku-band
Peak EIRP = 48.2 dBW
Peak Beam Gain = 34.4 dBi
Polarization Horizontal
Schedule S beam designator: KS2D

Fig. 3
KSpot 3 Downlink Beam, Ku-band
Peak EIRP = 51.1 dBW
Peak Beam Gain = 36.6 dBi
Polarization Horizontal
Schedule S beam designator: KS3D

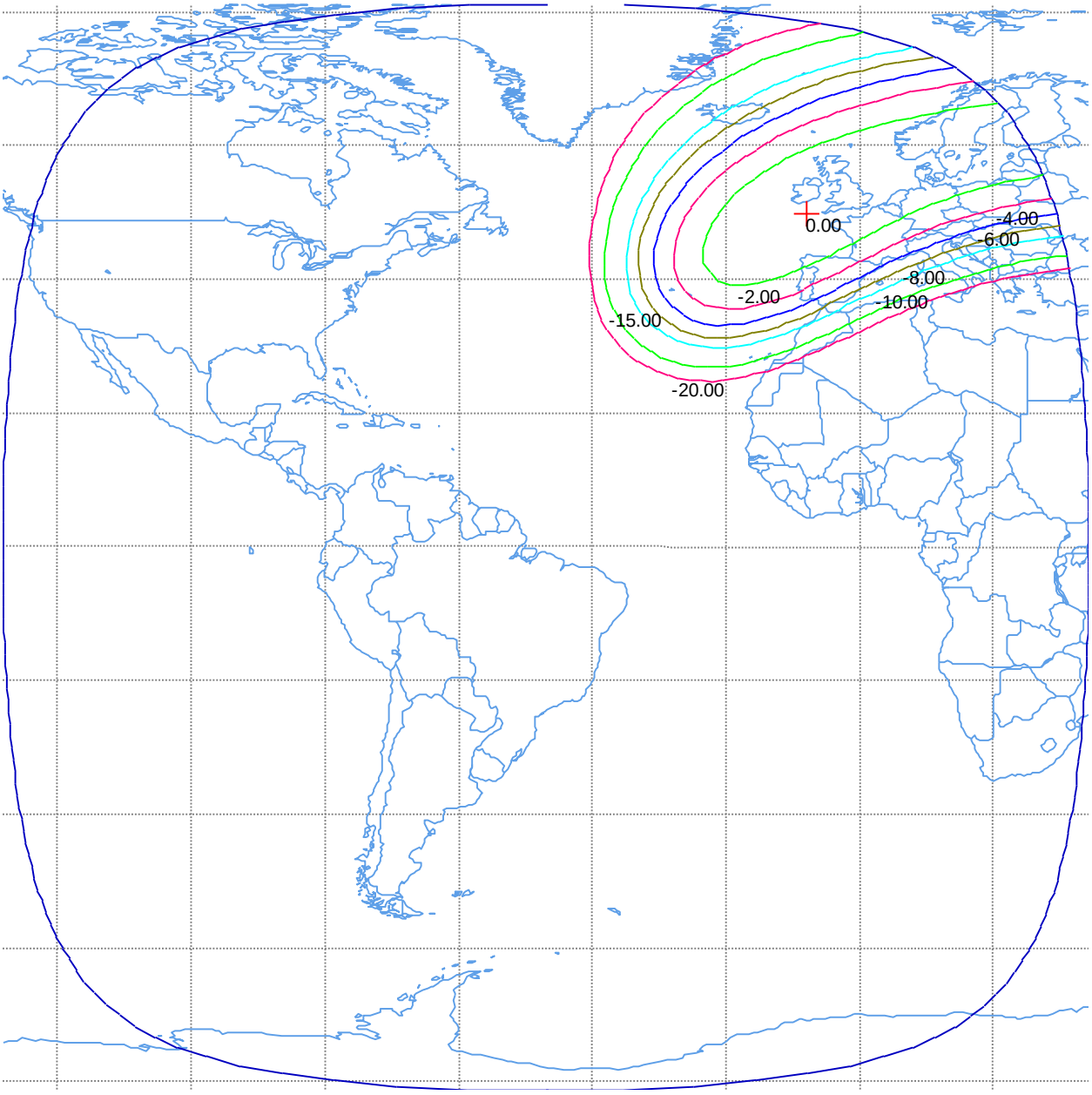


Fig. 4
KSpot 1 Uplink Beam, Ku-band
Peak G/T = 8.9 dB/K
Peak Beam Gain = 36.9 dBi
Min. Saturation Flux Density = -94 dBW/m^2
Polarization Horizontal
Schedule S beam designator: KS1U

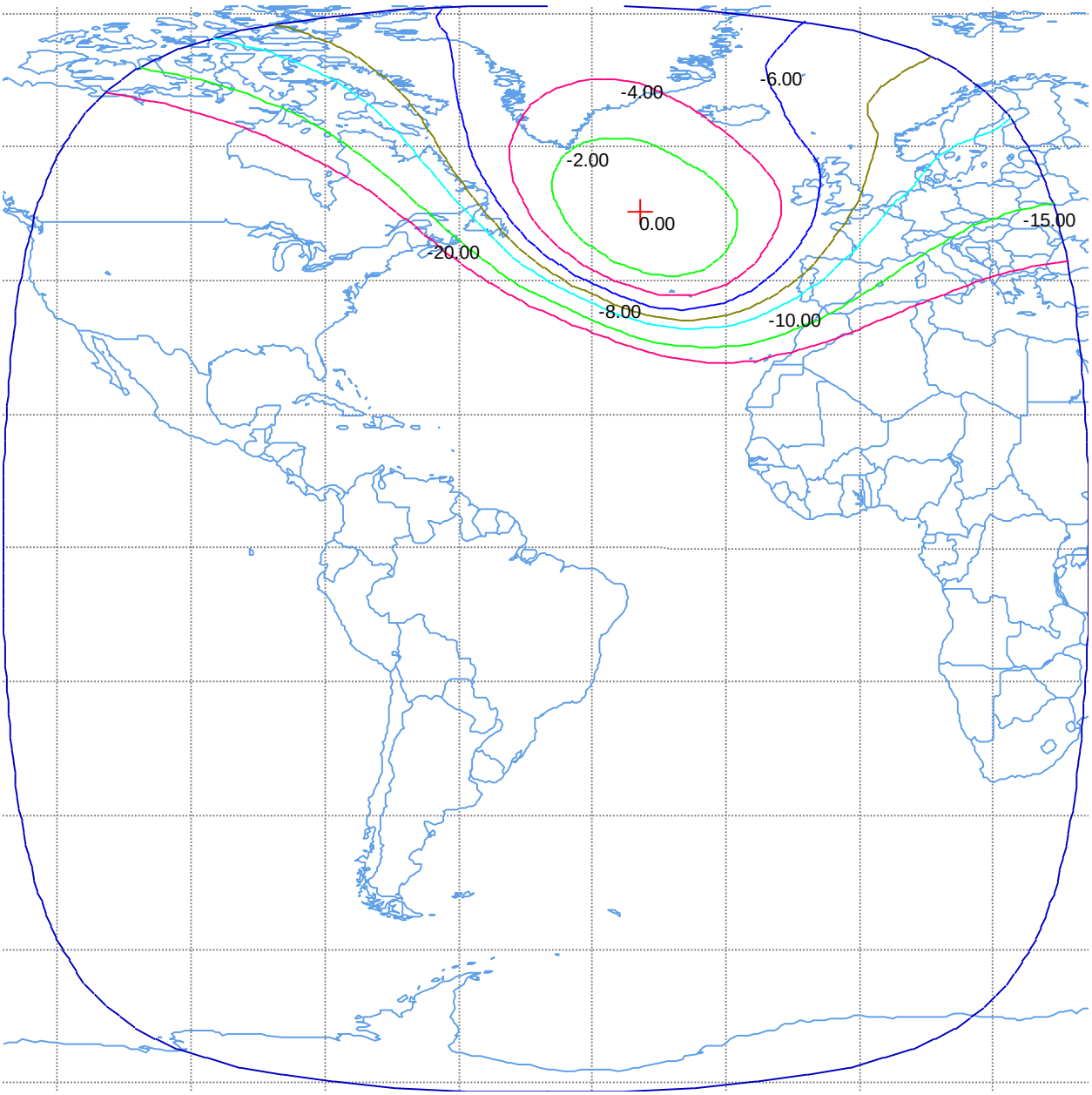


Fig. 5
KSpot 2 Uplink Beam, Ku-band
West Hemi Uplink Beam
Peak G/T = 6.6 dB/K
Peak Beam Gain = 34.9 dBi
Min. Saturation Flux Density = -92 dBW/m^2
Polarization Vertical
Schedule S beam designator: KS2U

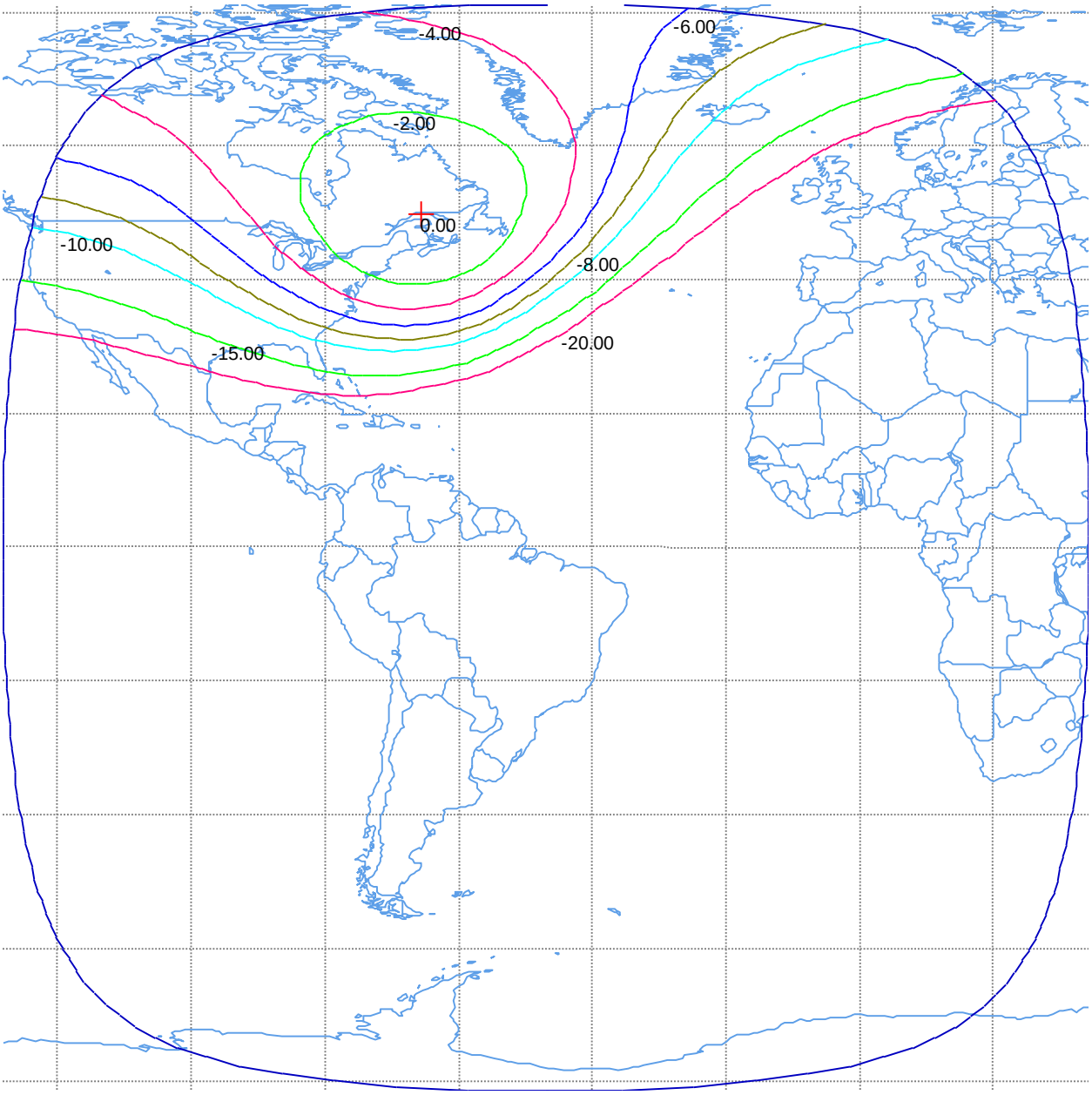
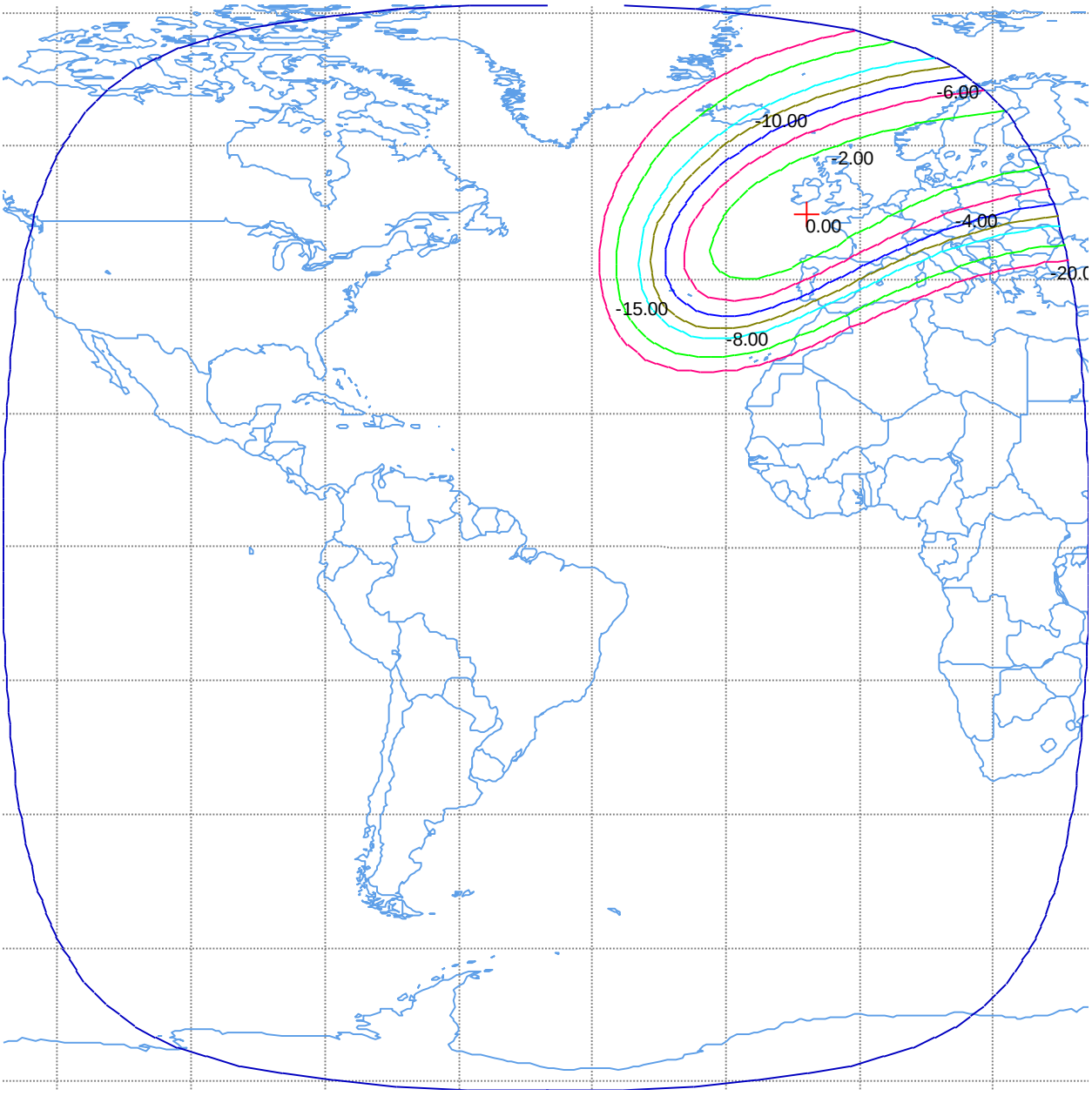


Fig. 6
KSpot 3 Uplink Beam, Ku-band
Peak G/T = 9.4 dB/K
Peak Beam Gain = 37.8 dBi
Min. Saturation Flux Density = -90 dBW/m^2
Polarization Vertical
Schedule S beam designator: KS3U



Engineering Declaration

DECLARATION OF Kimberly Baum

I, Kimberly Baum, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information regarding the NSS-703 and SES-4 spacecraft contained in the foregoing amendment; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information regarding the NSS-703 and SES-4 spacecraft contained in the amendment and that it is complete and accurate to the best of my knowledge, information and belief.

_/s/_ Kimberly M. Baum

Vice President, Spectrum Management & Development Americas
SES Americom, Inc.

Dated: October 8, 2012

ANNEX 2:

Updated Spacecraft and Teleport Tables

Satellite	Location	Beam Coverage Area	Tx (GHz)	Rx (GHz)	Satellite Operator
SES 1	101W	North America	14-14.5	11.7 – 12.2	SES
SES 4	338E	Europe	14-14.5	12.5-12.75	
NSS 703	313E	S2 - North Atlantic	14-14.5	11.7 – 11.95	
		S1 - North Atlantic	14-14.5	10.95 – 11.2; 11.45-11.7	
		S3 - North Atlantic	14-14.5	12.5-12.75	
IS 14	315E	So America	14-14.5	11.7 – 12.2	Intelsat
IS 27	304.5E	North Atlantic	14-14.5	11.45 – 11.7	
IS 21	302E	Brazil	14-14.5	11.7 – 12.2	
		Mobility South Atlantic	14-14.5	11.45 – 11.7	
IS 22	72.1E	Mobility: Mid-East to Japan & Australia	14-14.5	12.25 – 12.5	
IS 19	166E	Northeast Pacific	14-14.5	12.25-12.75	
		Northwest Pacific	14-14.5	12.25-12.75	
		Australia	14-14.5	12.25-12.75	
		Southwest Pacific	14-14.5	12.25-12.75	

Satellite	Teleport Location	FCC Call Sign
SES 1	Woodbine, MD	E920698
SES 4	Bristow, VA	E020071
	Bristow, VA	E000696
NSS 703	Woodbine, MD	E070181
IS 14	ATL teleport ATL-C06	E940333
	ATL teleport ATL-K15	E090093
IS 27	MTN teleport MTN-K02	E030051
IS 21	Rio de Janiero, Brazil	N/A
	Mobility: MTN teleport MTN-K02	E030051
IS 22	Kumsan, Korea	N/A
IS 19	Perth, Australia	N/A
	Napa teleport NAP-K31	E980460
	Napa teleport NAP-C30	E980467

ANNEX 3:

Satellite Company Letters

20th August 2012

Federal Communication Commission
International Bureau
445 12th Street SW
Washington, D.D. 20554

INTELSAT

Re: Engineering Certification of Intelsat

To Whom It May Concern:

This letter certifies that Intelsat is aware that Gogo LLC. ("Gogo") is seeking a blanket authorization from the Federal Communications Commission ("FCC") for authority to operate, on a non-conforming basis transmit/receive antennas for aeronautical mobile-satellite services ("AMSS") using fixed-satellite service ("FSS") frequencies pursuant to ITU RR 5.504A. Gogo is seeking an FCC authorization to utilize Intelsat's IS-22 satellite at 72°E. Intelsat operates the IS-10 satellite at 68.5°E and has coordination agreements with the operators of the other satellites using the same bands as Gogo within +/- 6 degrees of IS-22 at 72°E. The Gogo system parameters are within the constraints of all of these agreements.

Intelsat understands that Gogo's transmit/receive antenna is an AMSS steerable antenna manufactured by Aerosat Corporation that is designed to provide bi-directional broadband services to aircraft in flight. It supports reception and transmission in the 10.7-12.75 GHz/14.0-14.5 GHz bands respectively, with linear polarized array antennas to and from a geostationary satellite in space. The antenna is two rows of 32 element array with each lensed-horn element being 3.4 X .75 inches. The antenna operates under gimbaled motor control to orient the antenna in azimuth, elevation and polarization and achieves better than a ± 0.2 degree rms pointing accuracy during active tracking of the intended satellite. All emissions automatically cease at pointing errors greater than 0.5°, and transmission is not resumed until the angle is verified to be less than 0.2°. The antenna complies with the off-axis EIRP density level requirements specified in Sections §25.222 and §25.226 of the Commission's Rules, at all off-axis angles up to and including 6 degrees off-axis angle. This compliance will be maintained by signal spreading and power adjustments made into the antenna.

When communicating with the IS-22 satellite, Gogo will operate its antenna within the 14.00-14.5 GHz FSS uplink band and the 12.20-12.75 GHz FSS downlink band with a maximum equivalent isotropically radiated power (EIRP) of 44.61 dBW and the maximum power density at the antenna flange is -15.85 dBW/4kHz and is compliant with FCC rules.

Intelsat Corporation
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Intelsat further accepts that the forward downlink (hub to Aircraft Earth Station) maximum EIRP density at the beam peak is 9.18 dBW/4kHz, which is routinely used at 2-degree spacing without causing unacceptable interference to adjacent satellite operators. Gogo will maintain the forward downlink EIRP density and the off-axis EIRP spectral density by tight control of system operation that includes:

1) maintaining rms pointing error to be ≤ 0.2 degrees relative to the intended satellite;
2) fault detection that terminates transmissions when out of tolerance conditions (including the antenna pointing error) are detected; and
3) continuous monitoring/oversight by the ground network operations center (NOC).

Intelsat acknowledges that the use of the above referenced transmit/receive antenna by Gogo, installed and operated in accordance with the above conditions should not cause unacceptable interference into an adjacent satellite operating in accordance with the FCC's two-degree spacing policy, and is consistent with existing coordination agreements with all adjacent satellite operators. If the FCC authorizes the operations proposed by Gogo in its application, Intelsat will include the antenna, as described above, in all future satellite network coordinations with other adjacent satellite operators. Gogo shall comply with all such coordination agreements reached by the satellite operators.

In order to prevent unacceptable interference into adjacent satellites, Intelsat has been informed, and Gogo acknowledges, that the antennas will be installed and operated in accordance with the above conditions and/or any other operational requirements specified in the FCC license ultimately granted to Gogo. If the use of this antenna should cause unacceptable interference into other systems, Gogo has agreed it will terminate transmissions immediately upon notice from the affected parties.

Sincerely,

20th August 2012

Alan Yates,
Senior Technical Advisor, Spectrum Strategy
Intelsat, LLC

Date

Acceptance by Gogo, LLC:

Gogo affirms that the information provided reflected in this coordination letter is true and accurate to the best of Gogo's knowledge, information and belief, and that it shall comply with all relevant coordination agreements, as provided herein.

Timothy Joyce
VP of RF Engineering
Gogo LLC

9/21/12
Date

13 September 2012

Federal Communications Commission
International Bureau
445 12th Street, S.W.
Washington, DC 20554

Re: Engineering Certification of New Skies Satellites B.V.

To Whom It May Concern:

This letter certifies that New Skies Satellites B.V. ("SES") is aware that Gogo LLC ("Gogo") is seeking a blanket authorization, from the Federal Communications Commission ("FCC"), to operate technically identical non-conforming Ku-band transmit/receive earth stations for the provision of Aeronautical Mobile Satellite Service (AMSS), pursuant to ITU RR 5.504A, on domestic and international flights. Gogo also seeks authorization, from FCC, for these non-conforming aeronautical Ku-band earth stations to communicate with (e.g., points of communication) SES-4 at 22.0 WL.

In its FCC application, Gogo stated that their AMSS aircraft remote terminals use the AeroSat HR6400 antenna model which supports reception and transmission in the 10.95-11.2, 11.45-12.0 and 12.5-12.75 GHz and 14.0-14.5 GHz bands respectively, with linear polarized array antennas to and from a geostationary satellite in space. The HR6400 antenna is two rows of 32 element array with each lensed-horn element being 3.4 X .75 inches. The antenna operates under gimbaled motor control to orient the antenna in azimuth, elevation and polarization and achieves better than a ± 0.2 degree rms pointing accuracy during active tracking of the intended satellite. All emissions automatically cease within 100 ms if the pointing error exceeds 0.5°, and transmission is not resumed until the angle is verified to be less than 0.2°. In its application, Gogo indicated that the AMSS antenna complies with the off-axis EIRP density level requirements specified in Sections §25.222 and §25.226 of the Commission's Rules, at all off-axis angles up to and including 6 degrees off-axis angle.

Gogo stated in its application and also informed SES that when their AMSS aircraft remote terminals communicate with SES-4 satellite, using the 14.0-14.5 GHZ band, the maximum EIRP equal to 44.5 dBW and the corresponding maximum power density, at the antenna flange, is -14.0 dBW/4kHz. In addition, Gogo also informed SES that when Gogo operates its AMSS antennas within the 10.95-11.2, 11.45-12.0 and 12.5-

12.75 GHz band, it will maintain the forward downlink EIRP density at beam peak equal to, or less than 9.5 dBW/4 kHz, which is routinely used at 2-degree spacing without causing unacceptable interference to adjacent satellite operators, at the spacecraft downlink-beam peak.

SES acknowledges that the use of the above referenced AMSS transmit/receive antenna by Gogo, installed and operated in accordance with the Gogo application and the above conditions should not cause unacceptable interference into an adjacent satellite operating in accordance with the FCC's 2-degree spacing policy, and is consistent with existing coordination agreements with all adjacent satellite operators, within +/- 6 degrees of SES-4.

In order to prevent unacceptable interference into adjacent satellites, SES has been informed, and Gogo acknowledges, that the AMSS antennas will be installed and operated in accordance with the above conditions and/or any other operational requirements specified in the FCC license ultimately granted to Gogo. If the use of this antenna should cause unacceptable interference into other systems, Gogo has agreed it will terminate transmissions immediately upon notice from the affected parties.

Sincerely,

Kimberly M. Baum
Vice President
Spectrum Management & Development Americas
New Skies Satellites B.V.

9/13/12
Date

Acceptance by Gogo, LLC:

Gogo affirms that the information provided to SES and reflected in this coordination letter is true and accurate to the best of Gogo's knowledge, information and belief, and that it shall comply with all relevant SES coordination agreements, as provided herein.

Timothy Joyce
VP of RF Engineering
Gogo LLC

9/21/12
Date

Acceptance by Intelsat:

Intelsat agrees to the operation of the above Gogo AMSS antenna with the technical parameters described herein with respect to Intelsat 901 at 18.0 WL, Intelsat 905 at 24.5 WL and Intelsat 907 at 27.5 WL which are operating within 6 degrees of SES-4 at 22.0 WL.

Alan Yates
Senior Technical Advisor, Spectrum Strategy
Intelsat, LLC

9/13/2012
Date

Engineering Declaration

Declaration of Timothy Joyce

I, Timothy Joyce, hereby certify under penalty of perjury that I am the technically qualified person responsible for the preparation of the technical materials contained in the Gogo Application for Aeronautical Mobile Satellite Service as amended and the Technical Appendix, that I am familiar with Part 25 of the Commission's Rules (47 C.F.R. Part 25), and that I have either prepared or reviewed the technical information submitted in this application and found it to be complete and accurate to the best of my knowledge and belief.

By: */s/ Timothy Joyce*

Timothy Joyce

VP of RF Engineering

Gogo LLC

October 8, 2012