Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of Eutelsat S.A. Petition for Declaratory Ruling for EUTELSAT 133WA To Access the U.S. Market and To Be Added to the Permitted Space Station List at the Nominal 133° W.L. Orbital Location	File No.: SAT-PPL-20180302-00018 Call Sign: S3031

OPPOSITION AND RESPONSE OF EUTELSAT S.A.

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Eutelsat S.A. ("Eutelsat") hereby opposes the petition to deny filed by Intelsat License LLC ("Intelsat")[1] and responds to comments filed by SES Americom, Inc. ("SES")[2] regarding the above-referenced petition for declaratory ruling (the "EUTELSAT 133WA Petition").

In the EUTELSAT 133WA Petition, Eutelsat seeks to add the EUTELSAT 133WA satellite to the Permitted Space Station List at the nominal 133° W.L. orbital location for the 10.95-11.2 GHz, 11.45-11.7 GHz and 13.75-14.0 GHz bands (space-to-Earth), as well as the 14.0-14.5 GHz band (Earth-to-space), to meet near-term service needs in the United States – particularly for Ku-band mobility operations. As discussed in the EUTELSAT 133WA Petition and underscored herein, grant of the requested authority is consistent with the Commission's rules and policies and would unquestionably serve the public interest.

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1 Petition to Deny of Intelsat License LLC, File No. SAT-PPL-20180302-00018, Call Sign S3031 (filed May 08, 2018) ("Intelsat Petition").

2 Comments of SES Americom, Inc., File No. SAT-PPL-20180302-00018, Call Sign S3031 (filed May 07, 2018) ("SES Comments").

The Intelsat Petition should be rejected because interim access to the nominal 133° W.L. orbital location is consistent with longstanding Commission precedent and because the recent Galaxy 15R License decision essentially renders Intelsat's concerns moot. Furthermore, although Eutelsat provides updated information regarding protection of the AMC-1 satellite consistent with the Commission's two-degree spacing rules, the issues raised by SES reveal no basis to defer action on the EUTELSAT 133WA Petition. Thus, the Commission should expeditiously add the EUTELSAT 133WA satellite to the Permitted Space Station List in Ku-band frequencies at the nominal 133° W.L. orbital location, with appropriate conditions that reflect the interim nature of Eutelsat's proposed operations.

I. Background and Recent Developments

At the 133° W.L. orbital location, U.S. satellite network filings have International Telecommunication Union ("ITU") date priority at C-band, while French satellite network filings have ITU date priority at Ku-band and Ka-band. Intelsat currently operates the Galaxy 15 satellite in C-band frequencies[3] and, in mid-2017, Intelsat sought Commission authority to launch and operate the Galaxy 15R C/Ku/Ka-band satellite at 133° W.L. commencing in Q2 2022.[4] Eutelsat's subsequent request for interim authority to serve the U.S. market from 133° W.L. in Ku-band frequencies using the in-orbit, French-licensed EUTELSAT 133WA satellite commencing in mid-2018 is the subject of this proceeding.[5] Eutelsat separately sought long-term

[3] *See* Policy Branch Information; Actions Taken, Public Notice, Report No. SAT-00233, SAT-LOA-19991207-00119, Call Sign S2387 (releasedAugust 13, 2004).

[4] *See* Intelsat License, LLC, Application for Authority to Launch and Operate Galaxy 15R, a Replacement Satellite With New Frequencies, at 133.0º W.L. (227.0º E.L.), File Nos. SAT-LOA-20170524-00078 and SAT-AMD-20170613-00086, Call Sign S3015.

[5] Eutelsat S.A., Petition for Declaratory Ruling for EUTELSAT 133WA To Access the U.S. Market and To Be Added to the Permitted Space Station List at the Nominal 133° W.L.

market access from this location for the purpose-built, Ku-band/Ka-band EUTELSAT 133WB satellite to be deployed in the second half of 2021.[6]

On May 10, 2018, the Commission provided additional clarity at 133° W.L. by granting the Galaxy 15R satellite license application, as amended.[7] According to its license, Intelsat must begin operating the Galaxy 15R satellite in replacement C-band frequencies before Galaxy 15 ceases service.[8] To preserve its license rights in additional Ku-band and Ka-band frequencies, Intelsat must post a bond consistent with Section 25.165 of the Commission's rules on or before June 11, 2018, and must begin operating in these bands before May 10, 2023.[9] The license is subject to standard Commission conditions regarding the outcome of international coordination and compliance with the ITU Radio Regulations.[10]

During the multi-year period in which a purpose-built satellite is being developed for long-term deployment at 133° W.L., Eutelsat seeks to provide Ku-band mobility services to the U.S. market from that location using the aging EUTELSAT 133WA satellite in frequencies covered by French satellite network filings with ITU date priority. Eutelsat commenced

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Orbital Location, File No. SAT-PPL-20180302-00018, Call Sign S3031 (filed March 2, 2018) ("EUTELSAT 133WA Petition").

6 Eutelsat S.A., Petition for Declaratory Ruling for EUTELSAT 133WB To Access the U.S. Market Using a Non-U.S. Licensed Satellite and To Be Added to the Permitted Space Station List at the Nominal 133°W.L. Orbital Location, File No. SAT-PPL-20180129-00012, Call Sign S3029 (filed January 29, 2018) ("EUTELSAT 133WB Petition").

7 Intelsat License, LLC, File Nos. SAT-LOA-20170524-00078 and SAT-AMD-20170613-00086, Call Sign S3015 (grant stamp May 10, 2018) (authorizing the satellite to operate in the 3700-4200 MHz; 5925-6425 MHz; 10.95-11.2 GHz; 11.45-11.7 GHz; 11.7-12.2 GHz; 13.75-14.5 GHz; 17.8-19.3 GHz; 19.7-20.2 GHz; 27.5-29.1 GHz; 29.25-30.0 GHz bands) ("Galaxy 15R License").

8 *Id.* at Condition 23.

9 *Id.* at Condition 24.

10 *Id.* at Conditions 1 and 3.

relocation of EUTELSAT 133WA from its prior location on May 1, 2018; the satellite is expected to reach its planned operational position at 132.85° W.L. by the end of August 2018; and it could begin providing commercial service by early September 2018. Once operational, the EUTELSAT 133WA satellite will support Ku-band aeronautical and maritime operations that can take advantage of the satellite's Permitted List status in relevant bands.[11]

II. The Commission Should Dismiss or Deny the Intelsat Petition

The Commission requires a petition to deny to demonstrate that "a grant of, or other Commission action regarding, the application would be prima facie inconsistent with the public interest" (*see* 47 C.F.R. § 25.154(a)(4)). The Intelsat Petition fails to do this. Rather, it conflates the EUTELSAT 133WA and EUTELSAT 133WB proceedings and raises no substantial public interest challenge to the EUTELSAT 133WA Petition. Moreover, the Commission's recent grant of the Galaxy 15R License renders moot all of the Intelsat objections relating to the Commission's satellite application processing queue. Longstanding Commission precedent – permitting interim access to available spectrum and orbital resources to enable satellite services to the U.S. market – strongly favors grant of the EUTELSAT 133WA Petition.

A. Grant of the EUTELSAT 133WA Petition Does Not Undermine the Commission's Satellite Application Processing Rules

The availability of the aging, in-orbit EUTELSAT 133WA satellite to provide interim service at the nominal 133° W.L. orbital location until the launch of a successor satellite is an unquestionable benefit to the U.S. public, enabling customers to obtain service far earlier than would otherwise be possible. Intelsat's concern that proposed, interim operations of EUTELSAT 133WA constitute a "false promise" made merely to further a "broader strategy to

[11] *See* EUTELSAT 133WA Petition at Exh. 1 (link budgets for aeronautical and maritime terminals).

secure the 133˚ W.L. orbital location," or otherwise "circumvent" the Commission's satellite authorization rules and policies,[12] is belied by Eutelsat's commitment to providing near-term service at this location despite recent grant of the Galaxy 15R License. Further, Eutelsat hereby expressly commits to terminate the EUTELSAT 133WA mission at 133° W.L. on or before the commencement of Galaxy 15R's operations.

The Galaxy 15R License grant also definitively establishes that the pending EUTELSAT 133WA Petition has no impact on the long-term operating rights conferred by the Commission at 133˚ W.L. The EUTELSAT 133WA Petition is wholly separate and independent from long-term proposals at that location, and the Commission's decision to grant or deny one does not necessitate any particular decision on another. Furthermore, there is no basis to suggest that grant of the EUTELSAT 133WA Petition undermines the Commission's application processing rules, particularly because Eutelsat is now the only applicant in the queue at 133˚ W.L.[13]

B. Grant of the EUTELSAT 133WA Petition Would Serve the Public Interest

Intelsat's claim of public harm resulting from grant of the EUTELSAT 133WA Petition and potential customer confusion or unmet expectations is entirely unsupported and inconsistent with longstanding Commission precedent. The Commission has routinely recognized that large satellite service customers (such as satellite mobility providers that are the target market for

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12 *See* Intelsat Petition at 1-2.

13 The EUTELSAT 133WA Petition was initially filed before the EUTELSAT 133WB Petition, but electronic filing difficulties necessitated dismissal of the original petition. *See* File No. SAT-PPL-20180122-00008, Call Sign S3026 and File No. SAT-PPL-20180122-00009, Call Sign S3027. This administrative background, the need for near-term consideration of the EUTELSAT 133WA Petition (which involves the relocation of an in-orbit satellite rather than long-term deployment of a new, purpose-built satellite), and the lack of mutual exclusivity between the then-pending Galaxy 15R application and the EUTELSAT 133WA Petition (given the temporal difference in their proposed operations) support placement of the EUTELSAT 133WA Petition on public notice consistent with the Commission's rules.

EUTELSAT 133WA) are sophisticated and knowledgeable consumers who have the resources and expertise to understand their services and negotiate on an equal footing with satellite capacity providers.[14] These entities have an in-depth understanding of the satellite capacity marketplace and the applicable regulatory environment, including the Commission's satellite licensing activities, and thus are well aware of the interim nature of EUTELSAT 133WA's proposed operations and the implications of the Galaxy 15R License. Therefore, there is little danger of confusion or unmet expectations arising in this context.

In addition, the Commission has consistently permitted satellite operators to provide interim services to prevent valuable spectrum and orbital resources from lying fallow, including:

- Authorizing PanAmSat Corporation to operate an existing in-orbit satellite on an interim basis at a location where the United States did not have ITU date priority, because "the public interest would be served by permitting PanAmSat to continue to use the 60˚ W.L. orbital location until a satellite from another administration is brought into use...in accordance with their respective ITU filings."[15]

- Authorizing Columbia Communications Corporation to offer Ku-band service from an orbital location at which the Commission had previously licensed a satellite operated by Loral Space & Communications Ltd. "until Loral's next-generation Ku-band satellite… is ready to be launched, or when Loral coordinates Ku-band service to the Southern Hemisphere and signifies its intent to provide such service from its existing satellite, whichever is first" because such actions would "increase the service options for Ku-band customers in the Southern Hemisphere, without impacting the operations of the satellite operator regularly licensed to provide Ku-band service from 37.5˚ W.L."[16]

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[14] *See, e.g.,* Third Report and Analysis of Competitive market Conditions with Respect to Domestic and International Satellite Communications Services, FCC 11-183, (released December 13, 2011), at ¶150 (a wholesale customer, such as one leasing transponder services is "usually highly knowledgeable concerning both the satellite communications industry and satellite technology," "generally well-known to the satellite operator," and often has "a long-term, established business relationship with the satellite operator").

[15] *PanAmSat Corporation Request for Special Temporary Authority to Operate a Space Station at 60˚ W.L.*, File No. SAT-STA-19990407-00036, Order and Authorization, FCC 99-2220, 15 FCC Rcd 21802 (Int'l Bur. 1999) at ¶ 7 ("*PanAmSat*").

[16] *Application of Columbia Communications Corporation for Modification of Authorization to Permit Operation of Ku-band Satellite Capacity on the Columbia 515 Satellite Located at*

- Authorizing Star One, S.A. to provide interim C-band service to the United States from the 68° W.L. orbital location by adding the Star One B1 satellite to the Permitted List at that location on a conditional basis, noting the Commission has granted applications for aging in-orbit satellites to operate on a temporary basis where spectrum and orbital resources "[are] not now being used to serve the United States."[17]

Decades of consistent Commission decisions have granted authority for interim satellite operations because "[a]llowing the temporary use of unused orbital resources permits the public to receive services that would not otherwise be available" provided such "temporary operations do not adversely impact regularly licensed satellite systems."[18] In addition, the Commission's *Columbia* decision establishes that it can permit interim use of spectrum and orbital resources even when it has already granted a license to use such resources to another entity.[19] The Commission has also recognized that, while it could achieve the same result through a series of 180-day special temporary authorizations, it is simpler to issue a conditional grant that will automatically terminate when the relevant conditions are met.[20]

The same public interest considerations apply here. The benefits of making service available via otherwise unused spectrum and orbital resources are as compelling here as in

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37.7G West Longitude, File No. SAT-MOD-19990128-00017, Memorandum Opinion and Order, DA 01-1426, 16 FCC Rcd 12480 (Int'l Bur. 2001) at ¶ 1 ("*Columbia*"). Although this decision involved overlapping coverage of South America rather than the U.S. market, the same basic public interest principles of facilitating interim satellite services from unused spectrum and orbital resources still apply.

17 *See In the Matter of Star One, S.A.*, DA 10-1957, 25 F.C.C. Rcd. 14338 (adopted October 13, 2010) at ¶¶ 2, 15-16 ("*Star One*"). The Permitted List authorization did not confer any priority to Star One to serve the United States with another C-band satellite and any such proposal would necessarily be the subject of a separate application. *Id.* at ¶ 2, 16.

18 *PanAmSat* at ¶ 8.

19 *See supra* note 16.

20 *See Columbia* at ¶ 16; *see also Star One* at ¶ 32 (granting conditional authorization rather than temporary authorization).

PanAmSat, *Columbia*, *Star One*, and similar decisions. The Commission should make service available as soon as practicable at 133˚ W.L. because it can do so without adversely affecting the operations of a successor satellite or otherwise harming the public interest.

III. The Commission Need Not Defer Consideration or Seek Additional Technical Information Regarding EUTELSAT 133WA's Proposed Operations

SES requests that the Commission defer consideration of the EUTELSAT 133WA Petition and seek additional information regarding the potential for interference to the AMC-1 and AMC-4 satellites, located at the 130.9˚ W.L. and 134.9˚ W.L. orbital locations, respectively. Except as supplemented herein, Eutelsat believes that the information submitted with the EUTELSAT 133WA Petition is consistent with the Commission's rules, is sufficient to evaluate the impact of Eutelsat's proposed operations on neighboring satellites, and provides an adequate basis to appropriately condition EUTELSAT 133WA operations to the extent necessary to ensure compatibility with incumbent satellite operations. Eutelsat further believes that compliance with the Commission's two-degree spacing rules, as adjusted to compensate for 1.95˚ spacing and a relaxed station-keeping tolerance for EUTELSAT 133WA, will ensure compatible operations. Thus, there is no need for deferral or additional information for the Commission to grant the EUTELSAT 133WA Petition in due course.

A. No Further Interference Analysis Is Necessary with respect to the AMC-1 or AMC-4 Satellites

SES questions the adequacy of information submitted in the EUTELSAT 133WA Petition regarding compatibility with the AMC-1 and AMC-4 satellites. However, this objection does not offer a legitimate basis for delaying grant of the EUTELSAT 133WA Petition.

SES first suggests that it cannot validate Eutelsat's analysis of the compatibility of EUTELSAT 133WA's operations with AMC-1 and AMC-4 because the EUTELSAT 133WA Petition contains insufficient information regarding Eutelsat's assumptions about the operating

parameters of AMC-1 and AMC-4.[21] As noted in the SES Comments, however, Eutelsat in fact assumed that the satellites are operating consistent with the Commission's two-degree spacing requirements.[22] If higher-power operations with adjacent SES satellites are permitted, then Eutelsat will adjust its operations to accept additional interference from such operations.

The EUTELSAT 133WA Petition contains all the information required for SES and the Commission to assess whether Eutelsat's proposed operation at 133˚ W.L. would interfere with AMC-1 and AMC-4. Eutelsat also has demonstrated the potential for EUTELSAT 133WA to operate successfully at the nominal 133˚ W.L. orbital location consistent with the Commission's rules and Eutelsat's understanding of SES's currently authorized operational parameters. Eutelsat welcomes the opportunity for additional coordination discussions with SES but, in the meantime, the Commission can permit EUTELSAT 133WA operations consistent with its two-degree spacing policies (including an appropriate adjustment for 1.95˚ orbital spacing and relaxed station-keeping tolerance for the satellite).

B. Eutelsat Will Account for Reduced Orbital Separation and Relaxed Station-keeping Tolerance in Protecting AMC-1 Operations

SES next suggests that the analysis of interference from EUTELSAT 133WA operations into AMC-1 must account for the additional 0.05˚ station-keeping tolerance requested in the EUTELSAT 133WA Petition (*i.e.*, a 0.1˚ station-keeping box).[23] Although Eutelsat believes its initial approach (imposing a -.32 dB mask reduction to compensate for smaller 1.95˚ orbital

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[21] SES Comments at 3.

[22] *See* SES Comments at 4; *see also* EUTELSAT 133WA Petition, Attachment C – Engineering Statement at Section 14.

[23] SES Comments at 3-4.

separation) is adequate to protect AMC-1, Eutelsat now updates its proposed operational restrictions to include the additional 0.05˚ in station-keeping relaxation as suggested by SES.

EUTELSAT 133WA has a nominal spacing that is 1.95˚ from AMC-1 and a station-keeping box of ±0.1˚ (versus the standard ±0.05˚). Thus, the minimum orbital separation will be 1.8˚ in geocentric coordinates. Applying a standard conversion factor of 1.1 to translate from geocentric to topocentric, the minimum topocentric spacing between the satellites (from the perspective of a typical earth station) becomes 1.98˚. The minimum angular separation between standard 2˚-spaced satellites, which is a 1.9˚ geocentric angle (assuming ±0.05˚ station-keeping), is 2.09˚ topocentric.

The Commission's off-axis EIRP spectral density mask for 2˚-spaced satellites is $15–25*\log_{10}(\theta)$ dBW/4 kHz for values of θ, as topocentric angle, ranging from 1.7 to 6.0 degrees. To compensate for the difference in minimum topocentric separation between EUTELSAT 133WA and AMC-1 (versus standard two-degree spacing), it is necessary to calculate the difference in permissible EIRP spectral density levels at the 1.98˚ and 2.09˚ topocentric angles. The resultant equation becomes: $(15–25*\log_{10}(1.98))-(15–25*\log_{10}(2.09))$.

The maximum allowed off-axis EIRP spectral density at an angular separation of 1.98˚ from boresight is 7.58 dBW/4 kHz. The maximum allowed off-axis EIRP spectral density at an angular separation of 2.09˚ from boresight is 7.00 dBW/4 kHz. The difference between these values – 0.58 dBW/4 kHz – reflects the EIRP spectral density that must be compensated for to protect AMC-1 to the Commission's two-degree spacing levels. To ensure that earth stations transmitting to EUTELSAT 133WA do not generate any more uplink interference into AMC-1 than contemplated by the Commission's rules, they will limit their off-axis EIRP spectral density to 0.58 dB below the applicable two-degree spacing mask for angles between 1.98° (minimum

topocentric separation) and 2.31° degrees (maximum topocentric separation), unless otherwise coordinated with SES.

By applying the foregoing operational constraint, Eutelsat will protect AMC-1 to the same extent as a two-degree spaced satellite with a standard ±0.05˚ station-keeping box. This constraint fully accounts for reduced orbital spacing and relaxed station-keeping, is appropriate in the circumstances presented here, and is consistent with the Commission's rules and policies. Because Eutelsat proposes to protect AMC-1 to the default values embodied in the Commission's two-degree spacing rules, no additional compatibility demonstration is required.

C. Eutelsat's Assessment of AMC-4's Uplink Power Levels Appears Accurate and Higher Levels, if Permitted, Would Only Affect EUTELSAT 133WA Operations

SES suggests Eutelsat incorrectly assumes that "AMC-4 is 'operating at the maximum power levels dictated for two-degree spacing as defined in 25.140.'"[24] SES further suggests that operations of AMC-4 "are not constrained by the default two-degree spacing levels. Instead, consistent with the terms of Section 25.140(d), SES notified the Commission in January that it had coordinated non-routine transmission levels for its satellites …, including AMC-4…[and] the uplink input power density level specified in the SES Section 25.140(d) Notification is -42 dBW/Hz."[25] Based on a review of the underlying authorization, as well as the purpose and requirements of Section 25.140(d), Eutelsat respectfully submits that AMC-4's Ku-band

[24] SES Comments at 4.

[25] SES Comments at 5 (citing Letter from Petra A. Vorwig, SES Senior Legal & Regulatory Counsel, to Marlene H. Dortch, Secretary, Federal Communications Commission, File Nos. SAT-MOD-20170518-00073 et al., dated Jan. 10, 2018 ("SES Section 25.140(d) Notification")).

operations are in fact constrained by the Commission's two-degree spacing rules and that the SES Section 25.140(d) Notification for AMC-4 at Ku-band should be considered ineffective.

1. Neither AMC-4 Nor Any Earth Stations Communicating with the AMC-4 Appear Authorized to Operate at the Levels in the SES Section 25.140(d) Notification

In 2017, SES applied for a license to move the AMC-4 satellite to its current position at 134.9º W.L. In its application, SES indicated that "the input power density of the uplink digital carriers of earth stations operating with AMC-4 will not exceed -44 dBW/Hz."[26] SES was issued a license by the Commission based on the specific representations in its application.[27] Thus, AMC-4's operations at 134.9º W.L. are constrained by the license granted by the Commission, which is based in part on the earth station power levels stated in the underlying application.[28]

After reviewing the Commission's International Bureau Filing System ("IBFS") site, Eutelsat understands that the only earth stations that could potentially implicate higher, non-routine power levels with AMC-4 are Gogo ESAA terminals.[29] The Gogo Licenses include two ESAA terminals – the smaller HR6400 terminal (AES1) and the larger 2Ku terminal (AES2) – as

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[26] Application of SES AMERICOM, File No. SAT-MOD-20170518-00073, Call Sign S2135, Technical Appendix ¶5 (filed March 18, 2017) ("SES Narrative").

[27] SES AMERICOM License, File No. SAT-MOD-20170518-00073, Call Sign S2135 (granted June 31, 2017) ("AMC-4 License").

[28] In granting the AMC-4 License, as it does in the ordinary course, the FCC incorporated the contents of the underlying application into the grant. *See* AMC-4 License, Attachment to Grant, page 1 ("Unless otherwise specified herein, *operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission's rules not waived herein*") (emphasis added).

[29] *See* AC BIDCO Radio Station Authorization, File No. SES-MFS-20170725-00793, Call Sign E120106 (granted October 4, 2017) ("Prior Gogo License"); *see also* AC BIDCO Radio Station Authorization SES-MFS-20171220-01351, Call Sign E120106 (granted March 9, 2018), Call Sign E120106 ("Current Gogo License") (collectively, "Gogo Licenses").

well as the AMC-4 satellite as an authorized point of communication.[30] The Commission's uplink power limit is -50 dBW/Hz[31] and AES2 operates with geostationary satellites at this routine power level,[32] but the smaller AES1 might communicate at higher, non-routine power levels indicated in the SES Section 25.140(d) Notification.[33]

However, it does not appear that the AES1 terminal should be considered authorized to communicate with AMC-4.[34] Although the Prior Gogo License inadvertently includes AMC-4 as an authorized point of communication for the AES1 terminal, Gogo specifically indicated in its underlying modification application that it sought to communicate with AMC-4 using the AES2 terminal only.[35] Moreover, in the modification application associated with the Current

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30 *Id.*

31 Using the two-degree spacing mask of $15–25*\log_{10}(\theta)$ for angles between 1.5º and 7º, and assuming a Section 25.209-compliant antenna ($29–25*\log_{10}(\theta)$), this leads to routine uplink power level of $15-29-10*\log_{10}(4000) = -50.02$ dBW/Hz. (This also confirms an input power of -14 dBW/4 kHz with a Section 25.209-compliant antenna.) Antennas with "non-compliant" gain can trade input power and gain to comply with applicable off-axis EIRP spectral density masks (*e.g.*, Section 25.227(a)(1) for earth stations aboard aircraft).

32 The Current Gogo License authorizes a maximum uplink EIRP spectral density of 21.4 dBW/4 kHz for AES2 (*see* Section B, Carrier 57), with a maximum AES2 antenna gain of 36.7 dBi (*see* Section E), resulting in a maximum uplink power level of $21.40-36.7-10*\log_{10}(4000) = -51.32$ dBW/Hz.

33 The Current Gogo License authorizes a maximum uplink EIRP spectral density of 22.59 dBW/4 kHz for AES1 (*see* Section B, Carrier 29), with a maximum AES1 antenna gain of 29.0 dBi (*see* Section E), resulting in a maximum uplink power level of $22.59-29.0-10*\log_{10}(4000) = -42.43$ dBW/Hz. The SES Section 25.140(d) Notification indicates a power level for non-routine earth station operations of -42 dBW/Hz.

34 Like the AMC-4 License, the Gogo Licenses are expressly conditioned on the information included in the underlying applications. *See, e.g.*, Prior Gogo License, Condition No. 90308 ("*Operations must be in accordance with* the Federal Communications Commission's rules not waived herein, *the technical specifications contained in licensee's application*, and are subject to the other conditions listed in the authorization") (emphasis added).

35 *See* AC BIDCO Modification Application, File No. SES-MFS-20170725-00793, Call Sign E120106 (filed August 16, 2017), Narrative at p. 2 and Annex 2 ("As noted in Annex 2, AC BidCo seeks authority for each of the satellites except for AMC-4 to communicate with both the AeroSat model HR6400 antennas designated as AES1 on the AC BidCo ESAA License

Gogo License (which was filed after erroneous inclusion of AMC-4 as a satellite point of communication for AES1), Gogo reaffirmed that the AES1 terminal does not communicate with AMC-4.[36] Gogo apparently has never sought to operate – and presumably has not operated – the AES1 terminal at non-routine power levels with AMC-4, and Eutelsat has discovered no earth stations authorized to communicate with AMC-4 at non-routine levels.[37]

2. A Section 25.140(d) Notification Cannot Expand Satellite Operating Authority or Preserve Unauthorized Operations

Section 25.140(d) provides that "[a]n operator of a GSO FSS space station in the conventional or extended C-bands, conventional or extended Ku-bands, or conventional Ka-band may notify the Commission of *its non-routine transmission levels* and be relieved of the obligation to coordinate such levels with later applicants and petitioners." 47 C.F.R. §25.140(d) (emphasis added). A plain reading of the rule indicates there must be actual non-routine transmissions to take advantage of the provision. Any doubt regarding this requirement is eliminated by the Commission's clear guidance that a Section 25.140(d) notification is intended to protect the public interest in continuity of *pre-existing, non-routine operations*.[38]

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and the ThinKom model 2Ku antennas designated as AES2 on the license. AC BidCo proposes to use only the ThinKom model 2Ku AES2 terminals with AMC-4.").

[36] AC BIDCO Modification Application, File No. SES-MFS-20171220-01351, Call Sign E120106 (filed December 20, 2017), Narrative, Annex 2, n.2 (AMC-4 is "only used for communications with the ThinKom 2Ku antenna system, designated AES2.").

[37] *See, e.g.*, RigNet Satcom, Inc., File No. SES-MOD-20170825-00958, Call Sign E980235 (granted Nov. 30, 2017) (Remotes 3 and 4 communicate with AMC-4 at or below two-degree spacing levels).

[38] *Comprehensive Review of Licensing & Operating Rules for Satellite Services, Second Report and Order*, IB Docket No. 12-267, Second Report and Order, FCC 15-167, 30 FCC Rcd 14713 (2015), at ¶ 105 ("we recognized that a GSO FSS space station operator could provide valuable service to users with small, non-two-degree compliant earth station antennas … [but] such an operator *might have to cease providing the service*….For this situation, we requested comment on whether the Commission should, instead, require a new entrant to

In this case, however, it is uncertain whether the claimed non-routine Ku-band earth station operations were authorized by the Commission and conducted with the AMC-4 satellite. Without appropriately authorized non-routine operations, it does not appear SES can avail itself of the Section 25.140(d) notice procedure that was specifically adopted to preserve pre-existing, non-routine operations. Furthermore, there is no basis for a new satellite neighbor to be constrained by claimed higher-power operations.

Section 25.140(d) was never intended and cannot be used to expand operating authority or preserve an option to initiate future services at non-routine power levels. Use of Section 25.140(d) in this way would undermine the Commission's satellite and earth station licensing rules (*e.g.*, only a modification application can expand authorized operations) and its two-degree spacing policies that promote spectrum efficiency and enhance competition in satellite services. Such use also would run counter to the fundamental approach of Section 25.140(d) as a limited

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coordinate co-frequency, co-coverage operation with a *U.S.-licensed operator that has been providing non-two-degree-compliant GSO FSS services*…."); ¶ 106 ("Most commenters that address this issue support providing greater certainty to space station operators that they may *continue to perform coordinated, non-routine operations* upon the arrival of an adjacent, two-degree-compliant space station."); ¶107 ("As a prerequisite to any *continued non-routine operation* in the face of a non-consenting new neighbor, DIRECTV, EchoStar, and SES support a requirement that the existing operator notify the Commission of the details of its non-routine operations in a manner to enable subsequent operators to assess the potential interference environment."); ¶108 ("We substantially adopt the proposal of DIRECTV, EchoStar, and SES *to allow continued transmissions above routine levels upon notice to the Commission*, even if such levels are not coordinated with later applicants and petitioners for market access."); and ¶110 ("In any case, we expect that the procedure for *continuation of non-routine transmissions we adopt here* will encourage parties to reach coordination agreements that will *preserve to the maximum extent possible the continuity of existing services*. If difficulties arise that threaten to disrupt *an established service*, parties may always bring the matter to the Commission for assistance in finding a mutually satisfactory solution.") (emphases added) ("*Licensing & Operating Rules for Satellite Services Second Report and Order Order*").

exception to the Commission's two-degree spacing policies necessary to preserve the continuity of service associated with pre-existing, non-routine operations.

In addition, non-routine operations that provide the foundation for a Section 25.140(d) notification must be appropriately authorized by the Commission. The AMC-4 License contemplates that earth station uplink power would be limited to -44 dBW/Hz but the SES Section 25.140(d) Notification claims to protect non-routine earth station operations at -42 dBW/Hz. Moreover, an apparent mistake in the Gogo Licenses cannot be deemed to permit non-routine operations that were expressly excluded from the multiple modification applications associated with those licenses, particularly when the claimed power level exceeds that authorized for use with the AMC-4 satellite.[39]

SES's claim of protected authority to operate AMC-4 at power levels in excess of the Commission's two-degree spacing levels may be in error, inconsistent with Section 25.140(d), and contrary to the policies and purpose of that provision. Although SES suggests it has coordinated higher Ku-band power levels with adjacent operators, SES is effectively only required to coordinate with itself in this portion of the geostationary arc. Furthermore, coordination alone – without accompanying Commission authority for both the satellite and earth station(s) to conduct higher power operations – is insufficient to obtain the benefits of the Section 25.140(d) notice procedure.[40] As a result, the SES Section 25.140(d) Notification should

[39] To the extent the SES Section 25.140(d) Notification relies on the erroneous inclusion of AMC-4 as an authorized point of communications for the Gogo AES1 terminal, it is uncertain how to reconcile the claimed -42 dBW/Hz power level with the maximum -44 dBW/Hz power limit associated with the AMC-4 License, as modified.

[40] The Commission committed to placing Section 25.140(d) notices on public notice for information purposes when it adopted the rule. *Licensing & Operating Rules for Satellite Services Second Report and Order* at ¶109. Such an informative public notice, while not altering the effective date of a compliant Section 25.140(d) filing, facilitates interested party notice and review of claimed non-routine earth station operations. In this case, the SES

be considered ineffective, AMC-4 should be required to comply with two-degree spacing levels, and Eutelsat appropriately assumed these levels in assessing interference from AMC-4.

To the extent the Commission concludes otherwise, Eutelsat would note the maximum -44 dBW/Hz power limit included in the AMC-4 satellite license modification application and that any additional interference from authorized, non-routine earth station operations with AMC-4 will only affect Eutelsat operations (*i.e.*, EUTELSAT 133WA would be the victim of such interference). Eutelsat can coordinate and/or adjust its operations to accommodate any non-routine earth station operations authorized consistent with the Commission's rules.

IV. Conclusion

For all of these reasons, the Commission should dismiss or deny the Intelsat Petition, reject the request for deferral and additional information of SES, and grant the EUTELSAT 133WA Petition with appropriate conditions as soon as practicable.

Respectfully submitted,

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May 17, 2018

Section 25.140(d) Notification was not placed on public notice and questions regarding the efficacy of SES's filing with respect to AMC-4's Ku-band operations have only now arisen.

CERTIFICATE OF SERVICE

I, Jennifer White, do hereby certify that on May 17, 2018, I served a true and correct copy of the Opposition and Response of Eutelsat S.A. by first-class mail on the following:

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