

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

In the Matter of Application by)
)
SES AMERICOM, INC.) File No. SAT-MOD-_____
) Call Sign S2156
For Modification of AMC-5)
Fixed-Satellite Space Station License)

APPLICATION OF SES AMERICOM, INC.

SES Americom, Inc. (“SES Americom,” doing business as “SES”), respectfully requests a modification of its license for the AMC-5 fixed-satellite space station to change slightly the station-keeping box for the satellite from 80.9° W.L. (+/- 0.1° east-west tolerance) to 80.85° W.L. (+/- 0.15° east-west tolerance). SES will continue to operate AMC-5 at this location in accordance with the International Telecommunication Union (“ITU”) filings of the Argentine Administration. Grant of the requested authority will enable SES to safely operate a second satellite (AMC-2) at the nominal 81° W.L. orbital location¹ while conserving fuel for the provision of service. SES also requests an extension of the AMC-5 license term to July 31, 2015.

A completed FCC Form 312 is attached, and SES incorporates by reference the technical information previously provided in support of AMC-5.² In addition, SES is providing information relating to the proposed modification to the AMC-5 license in the attached technical appendix.

¹ SES has separately requested Commission authority to relocate AMC-2 to 80.85° W.L. and operate it there with a +/- 0.15° east-west tolerance. See Call Sign S2134, File Nos. SAT-MOD-20130225-00024 (the “AMC-2 Modification”) and SAT-STA-20130225-00025.

² The most recent technical information regarding AMC-5 is found in File No. SAT-MOD-20110929-00192. See also File Nos. SAT-MOD-20110714-00126; SAT-MOD-20100706-00154; SAT-MOD-20050609-00117; & SAT-MOD-19980113-00002.

Background. SES is currently authorized by the Commission to operate the AMC-5 satellite at the nominal 81° W.L. orbital location (at 80.9° W.L. to be precise) pursuant to the ITU satellite network filings of Argentina and under an agreement with SES's customer, Empresa Argentina de Soluciones Satelitales S.A. ("AR-SAT").³ SES recently applied for authority to relocate its hybrid AMC-2 spacecraft from 19.0° E.L. to the nominal 81° W.L. orbital location under a similar arrangement with AR-SAT.⁴ SES intends to operate both AMC-5 and AMC-2 within the same east-west stationkeeping box of 80.85° W.L. +/- 0.15°.

Request for Modification of License. Accordingly, SES requests authority to modify the stationkeeping box of AMC-5 from 80.9° W.L. +/- 0.1 degrees to 80.85° W.L. +/- 0.15 degrees to accommodate the proposed relocation of AMC-2 to the same location. This relaxed stationkeeping tolerance will enable both spacecraft to be operated safely in their inclined orbits while conserving fuel for future operations. It will also make it possible for SES's customer, AR-SAT, to deploy another satellite to 81.1° W.L., as it has indicated it intends to do. SES herein seeks a waiver of Section 25.210(j) of the Commission's rules to permit AMC-5 to operate with a +/- 0.15 degree stationkeeping tolerance at 80.85° W.L.

Grant of the requested authority will serve the public interest by enabling SES to safely co-locate a second satellite at the nominal 81° W.L. orbital location in order to expand service to its customer AR-SAT while conserving fuel for future operations. Moreover, as demonstrated in the technical appendix, the proposed modification will not adversely affect any other operators. The proposed stationkeeping volume for AMC-2 and AMC-5 will not overlap

³ See Stamp Grant, Call Sign S2156, File No. SAT-MOD-20110929-00192 (granted Feb. 24, 2012).

⁴ See Letter of N. Pablo Tognetti, AR-SAT, to Suzanne Malloy, SES, dated Feb. 25, 2013, attached to AMC-2 Modification narrative as Annex 1. The letter contemplates operation of both AMC-5 and AMC-2 at the nominal 81° W.L. location.

with the stationkeeping volume of any other spacecraft. In addition, the small proposed shift in AMC-5's orbital location and stationkeeping box will have not cause harmful interference to adjacent satellites. SES will coordinate internally to ensure compatibility of Ku-band operations between AMC-5 and AMC-2. AMC-5 will also be operated consistent with existing and future coordination agreements of the Argentine Administration relating to its ITU filings at 81° W.L.

Request for Extension of License. The current license term for AMC-5 expires on November 30, 2013. However, SES estimates that the satellite has sufficient fuel to continue operating until at least the middle of 2014, taking into account continued operation of AMC-5 in inclined orbit⁵ and the drift of the satellite from 80.9° W.L. to 80.85° W.L. Accordingly, SES requests an extension of the AMC-5 license term to July 31, 2014. At end-of-life, SES will deorbit the spacecraft consistent with the orbital debris mitigation plan previously authorized by the Commission.⁶

Request for Waiver of 47 C.F.R. § 25.210(j). Section 25.210(j) specifies that geostationary space stations “must be maintained within 0.05° of their assigned orbital longitude in the east/west direction, unless specifically authorized by the Commission to operate with a different longitudinal tolerance.”⁷ Here, SES is seeking authority to operate AMC-2 together with AMC-5 in an expanded stationkeeping box of +/- 0.15 degrees. The Commission has previously waived Section 25.210(j) based on a finding that allowing an increased stationkeeping volume would “not adversely affect the operations of other spacecraft, and would conserve fuel

⁵ The AMC-5 satellite has been operating in inclined orbit since mid-2010. See Letter of Karis A. Hastings, Counsel for SES Americom, Inc., to Marlene H. Dortch, Secretary, FCC, regarding AMC-5 (Call Sign S2156) dated June 16, 2010.

⁶ See Stamp Grant, File No. SAT-MOD-20100706-00154, Call Sign S2156, conditions 4 and 5 (granted Jan. 20, 2011).

⁷ 47 C.F.R. § 25.210(j).

for future operations.”⁸ Indeed, it has granted SES a previous waiver of this rule to allow AMC-2 and AMC-4 to operate together at 100.95° W.L. within a total east-west stationkeeping range of 0.15 degrees.⁹

The facts here fit squarely within this precedent. As discussed above, allowing AMC-5 to be maintained within an increased stationkeeping volume together with AMC-2 will not harm other operators. AMC-5’s stationkeeping volume will not overlap with that of any other satellites except for AMC-2.¹⁰ Allowing AMC-2 and AMC-5 to be flown at 80.85° W.L. in an expanded east-west stationkeeping volume of +/-0.15 degrees will facilitate safe co-location of the satellites in their inclined orbits and help conserve fuel for the spacecraft. SES and its affiliates have significant experience in flying multiple spacecraft in close formation and will carefully control the two satellites to ensure their safe joint operation. Under these circumstances, grant of any necessary waiver of Section 25.210(j) will serve the public interest.

⁸ See, e.g., *SES Americom, Inc. Application for Modification of Satcom SN-4 Fixed Satellite Space Station License*, 20 FCC Rcd 11542, 11545 (Sat. Div. 2005).

⁹ See File Nos. SAT-MOD-20080124-00030, SAT-AMD-20080311-00070, grant-stamped May 19, 2008, Attachment at ¶ 1.

¹⁰ As noted above, AR-SAT has informed SES that it intends to arrange for another satellite to be deployed to the 81.1° W.L. orbital location later this year. AR-SAT has indicated that the stationkeeping volume for that satellite will not overlap with the requested stationkeeping volume for AMC-2 and AMC-5.

For the foregoing reasons, SES Americom seeks a modification of the AMC-5 license to reassign the spacecraft to 80.85° W.L. +/- 0.15 degrees and to extend the satellite's license term.

Respectfully submitted,

SES AMERICOM, INC.

By: /s/ Daniel C.H. Mah

Of Counsel

Karis A. Hastings
SatCom Law LLC
1317 F Street, N.W., Suite 400
Washington, D.C. 20004-1109
Tel: (202) 599-0975

Daniel C. H. Mah
Regulatory Counsel
SES Americom, Inc.
Four Research Way
Princeton, NJ 08540

Dated: March 25, 2013

Technical Appendix

1. Introduction

This technical appendix is submitted in support of the application of SES Americom, Inc. (“SES Americom,” doing business as “SES”) for a modification of its license for the AMC-5 Ku-band spacecraft. SES seeks permanent assignment of the spacecraft to 80.85° W.L. instead of 80.9° W.L. and requests authority to operate with an east-west stationkeeping tolerance of +/- 0.15 degrees. SES incorporates by reference herein the technical information it has already provided with respect to AMC-5,¹ and provides here technical information that is changing as a result of the proposed modification.

2. Gain Contours

SES is not submitting new contour maps with this application. The proposed shift in orbital location from 80.9° W.L. to 80.85° W.L. will produce no visible change in the gain contours from the maps already on file.

3. Link Budgets and Interference Analysis

An interference analysis was submitted to the FCC in connection with the initial operation of AMC-5 at 80.9° W.L. demonstrating that operation of AMC-5 was compatible with adjacent satellites and with the Commission’s two-degree spacing requirements.² The proposed relocation of AMC-5 will not cause any material change to the interference environment. Specifically, SES has calculated that operation of AMC-5 at 80.85° W.L. rather than at the current licensed 80.9° W.L. position translates into a change of approximately 0.6 dB in the interference environment of two-degree compliant earth stations communicating with a spacecraft at 79° W.L.³ or at 83° W.L.,⁴ as shown in the table below. The peak EIRP density of AMC-5 in Ku-band is 7.7 dBW/4 kHz, which is notably lower than the FCC’s 2 degree spacing rules and compensates for any change in earth station off-axis discrimination by the change in orbit location.

¹ The most recent technical information regarding AMC-5 is found in File No. SAT-MOD-20110929-00192. See also File Nos. SAT-MOD-20110714-00126; SAT-MOD-20100706-00154; SAT-MOD-20050609-00117; & SAT-MOD-19980113-00002.

² See File No. SAT-MOD-20110929-00192, Technical Appendix, Annex 2, Interference Analysis in Support of AMC-5.

³ The 79° W.L. orbital location is currently vacant, but DIRECTV has been authorized to deploy a new spacecraft at that position to be launched by mid-2017. See Stamp Grant, *DIRECTV Enterprises, LLC*, File Nos. SAT-LOA-20120316-00051 & SAT-AMD-20120420-00071, Call Sign S2861 (granted July 12, 2012), Attachment to Grant at ¶ 6 (imposing milestones that require DIRECTV to launch and commence operations of its licensed new Ku-band satellite at 79° W.L. by July 12, 2017).

⁴ SES operates the AMC-9 spacecraft at 83° W.L. and will coordinate operations among its satellites to ensure no harmful interference occurs.

<u>Current Orbital Position (80.9° W.L. ±0.1°)</u>	<u>79</u>	<u>83</u>
Worst-case Offset Angle	1.80	2.00
Gain (1) @ Offset angle	22.6	21.5
<u>Proposed Orbital Position (80.85° W.L. ±0.15°)</u>		
Worst-case Offset Angle	1.70	2.00
Gain (2) @ Offset angle	23.2	21.5
<u>$\Delta (Gain(1) - Gain (2))$</u>	<u>0.6</u>	<u>0.0</u>

Given that the proposed offset operation of AMC-5 will not result in any material change to the existing interference environment with respect to AMC-5 and current or future adjacent satellites, no link budget analysis is provided herein. SES will operate AMC-5 in conformance with existing and future coordination agreements applicable to operations at the nominal 81° W.L. orbital location. In the unlikely event that any future concerns arise relating to operations of AMC-5 at the proposed offset location, SES will coordinate with the adjacent operators in order to arrive at a mutually satisfactory solution.

4. Schedule S

As discussed above, the proposed modification of the AMC-5 license will not result in any material changes to the spacecraft's operating characteristics or to the interference environment. As a result, the information requested in Schedule S duplicates information that is already on file with the Commission concerning the technical parameters of AMC-5's operation. In similar cases involving requests for slight offsets from the nominal orbital position, the Satellite Division has not required the submission of a new Schedule S.⁵ Accordingly, SES is not filing a new Schedule S with this application. SES Americom will nevertheless prepare and submit a Schedule S if requested to do so by the Satellite Division.

5. Orbital Debris Mitigation Statement

The information required under Section 25.114(d)(14) of the Commission's Rules for AMC-5 is already on file with the Commission.⁶ SES incorporates that information by reference and provides below a few minor updates to its previous showing.

§25.114(d)(14)(iii): SES intends to co-locate the AMC-5 satellite with the AMC-2 satellite within a single station-keeping box centered at 80.85° W.L. with a tolerance of

⁵ See, e.g., File No. SAT-MOD-20040405-00076 (PanAmSat request for authority to operate SBS-6 at 74.05° W.L. rather than 74.0° W.L.).

⁶ See File No. SAT-MOD-20100706-00154, Technical Appendix at Section 5.

+/- 0.15 degrees. Both spacecraft are in inclined orbit. In order to facilitate safe co-location of the spacecraft while minimizing fuel consumption, the two SES satellites will be operated in more eccentric and inclined orbits than are typically used, which necessitates a wider longitudinal tolerance. SES has successfully used this method to co-locate other spacecraft within its fleet.

SES understands that its customer, AR-SAT, intends to bring another satellite to the nominal 81° W.L. orbital location (to be operated at 81.1° W.L. +/- 0.1 degrees). SES will coordinate closely with the operator of that other satellite to ensure safe stationkeeping, including using accurate spacecraft ephemeris data from the Space Data Center to ensure adequate separation at all times.

6. Fuel life estimation

SES has assessed the remaining fuel onboard AMC-5 to derive the updated remaining fuel life. SES estimates that taking into account continued inclined orbit operations and the relocation to 80.85° W.L. from its current 80.9° W.L. location, there is sufficient fuel to allow continued operation of AMC-5 at least through the middle of 2014.

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 contained in the foregoing exhibit; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the exhibit and that it is complete and accurate to the best of my knowledge, information and belief.

/s/ Kimberly Baum
SES Americom, Inc.

Dated: March 25, 2013