APPLICATION FOR SPECIAL TEMPORARY AUTHORITY
Call Sign E020071
** Expedited Processing Requested **

SES Americom, Inc. ("SES") respectfully requests expedited grant of Special Temporary Authority ("STA"), for a period of 30 days beginning on or about April 4, 2012, to conduct TT&C operations between the earth station with call sign E020071 and SES-4 (call sign S2828) during the drift from the satellite's current location at 26° W.L. to and at its operating location, 22° W.L.[1] Grant of the STA will serve the public interest by facilitating the orbital relocation of SES-4 and supporting the safe collocation of SES-4 with NSS-7, at 22° W.L. Because in-orbit testing ("IOT") of SES-4 will be completed soon, SES respectfully requests expeditious grant of this STA.

Background. The SES-4 satellite is currently undergoing IOT by the satellite manufacturer Space Systems/Loral at 26° W.L. Once IOT has been completed on or about April 4, 2012, the satellite will be relocated to 22° W.L., where it will replace NSS-7, at 22° W.L.[2] The SES-4 satellite is expected to arrive at 22° W.L. on or about April 16, 2012.

Earth station E020071 will serve as the long-term Ku-band TT&C and communications antenna in the United States for the SES-4 satellite at 22° W.L. and the backup TT&C and communications antenna for NSS-7. SES recently received FCC authority permitting such operations.[3]

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[1] New Skies Satellites B.V., an affiliate of SES Americom, will take in-orbit delivery of SES-4 at 22° W.L., where it has been granted U.S. market access. *See* Stamp Grant, File No. PPL-20110620-00112 (granted March 15, 2012) ("*SES-4 Access Order*").

[2] *See* Application, File No. SAT-PPL-20110620-00112 (filed June 20, 2011).

[3] *See* Stamp Grant, File No. SES-MFS-20110715-00822 (granted in part March 21, 2012), as corrected by Letter from Robert G. Nelson, Chief, Satellite Division, International Bureau, FCC to Daniel Mah,

Proposed Operations. SES respectfully requests STA to use E020071 to help relocate SES-4 from its IOT location at 26° W.L. to its authorized orbital location at 22° W.L. and support the safe collocation of SES-4 with NSS-7, at 22° W.L. The TT&C frequencies and relevant operating parameters to be used by earth station E020071 pursuant to this STA are specified below in Table 1. Except for the 12.5 GHz telemetry signals, all of these frequencies were authorized in the *E020071 Modification Grant* for TT&C operations by earth station E020071 with SES-4 at 22° W.L. The drift will be coordinated with all affected satellite operators, and TT&C during the drift will be on a non-harmful interference, non-protected basis.

Regulatory Counsel, SES Americom, Inc., DA 12-478 (March 27, 2012) ("*E020071 Modification Grant*").

Table 1. TT&C frequencies on which E020071 will operate pursuant to the STA

Carrier	Frequency, MHz	Emission Designator	Max. EIRP, dBW	Max. EIRP Density (dBW/4kHz)
Telecommand 1	14496.0	800KF9D	79.88[4]	55.9
Telecommand 2	14499.0	800KF9D	79.88	55.9
Telemetry 1 (used during drift and on-station operations)	11451.0	300KF9D	N/A[5]	N/A
Telemetry 2 (back-up frequency for Telemetry 1)	11454.0	300KF9D	N/A	N/A
Telemetry 3 (back-up frequency for Telemetry 4)	12500.5	300KF9D	N/A	N/A
Telemetry 4 (used during drift operations)	12502.0	300KF9D	N/A	N/A

SES is requesting authority to receive telemetry on 11451.0 MHz (and 11454.0 MHz as a back-up frequency) and 12502.0 MHz (and 12500.5 MHz as a back-up frequency) during the drift.[6] Additionally, SES is requesting authority to receive telemetry on the 11451.0 MHz (and 11454.0 MHz as a back-up frequency) once SES-4 is on-station at 22° W.L.[7] SES does not seek authority in this application to receive telemetry on the 12502.0 MHz and 12500.5 MHz frequencies once all drift maneuvers have been completed.

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[4] Max. EIRP and Max EIRP Density values are the same as those stated in the responses to items 48 and 49 of Schedule B, File No. SES-MFS-20110715-00822 (filed July 15, 2011) and are listed solely for the International Bureau's convenience.

[5] The maximum EIRP of the telemetry signals from SES-4 are incorrectly specified in the market access application for SES-4. *See* Application, File No. SAT-PPL-20110620-00112 (filed June 20, 2011). The correct values (as established during IOT) are 21 dBW when the satellite TT&C is in omni-mode (e.g. during drift operations), and 16 dBW when the satellite is on-station. New Skies Satellites B.V. is preparing a modification application to the *SES-4 Access Order* to, *inter alia*, makes these corrections.

[6] The back-up telemetry frequencies will be used only in the event that there are problems with the primary telemetry frequencies.

[7] *See supra* note 5.

Waiver Requests. To the extent necessary, SES requests a waiver of the international service restriction to receive telemetry on the 11451.0 MHz and 11454.0 MHz frequencies from SES-4 during the drift to and at its operating location 22° W.L.[8] SES requested and received grant of the same waiver in the *E20071 Modification Grant* and *SES-4 Access Order* with respect to the operation of SES-4 at 22° W.L. and hereby incorporates by reference the justifications provided in those proceedings.[9]

SES also requests an appropriate waiver to allow telemetry to be received from SES-4 on the 12502.0 MHz and 12500.5 MHz frequencies during the drift to 22° W.L. The telemetry information will be used for ranging to enhance the accuracy of the positional data for the SES-4 satellite, which will help ensure the safe collocation of SES-4 and NSS-7 at 22° W.L. Grant of such waiver would serve the public interest by providing frequency diversity for accurate ranging during satellite relocation.

The 12502.0 MHz and 12500.5 MHz frequencies are within the 12.5-12.7 GHz band that is allocated to the fixed-satellite service ("FSS") (space-to-Earth) in ITU Regions 1 and 3. In the United States, this band is allocated to the fixed service ("FS") and the broadcasting-satellite service ("BSS") (space-to-Earth) (also known as "Direct Broadcast Satellite" or "DBS" service).[10] Accordingly, SES respectfully requests a limited waiver of the U.S. Table of Frequency Allocations to enable the proposed use of the two frequencies for TT&C.[11]

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[8] 47 C.F.R. §§ 2.106 NG104, 25.202(a) Note 2.

[9] *See, e.g.*, Application Narrative, File No. SES-MFS-20110715-00822, at 3-4 (filed July 15, 2011) (limited waiver of the international service restriction warranted because TT&C operations generally must be conducted from the same earth station, is consistent with FCC precedent, has been coordinated with terrestrial services, and does not negatively impact deployment of fixed service).

[10] *See* 47 C.F.R. § 2.106.

[11] SES is also aware that there is a "freeze" on new DBS applications in the 12.2-12.7 GHz downlink band, as announced in Public Notice, FCC 05-213, released Dec. 21, 2005. In this application, SES is not

SES recognizes that such non-conforming use would be on a non-protected and non-harmful interference basis. There is no risk of harmful interference in granting such a waiver because the power flux density ("pfd") at the earth's surface generated by the SES-4 telemetry carrier will not exceed the pfd limits prescribed by the ITU Radio Regulations for the protection of Region 2 BSS receivers from Region 1 FSS satellites.[12]

Table 2. Determination of allowed EIRP levels pursuant to Appendix 30

Nearby Plan assignments	U.S.	Brazil	Bermuda	Guyana	Jamaica	Grenada
Wanted orbit location, degrees W.L.	61.5	45.0	31.0	33.8	33.8	42.2
Interfering orbit location, degrees W.L.	26.0	26.0	26.0	26.0	26.0	26.0
Orbital separation, incl. station-keeping tolerance, degrees	35.4	18.9	4.9	7.7	7.7	16.1
Appendix 30, An. 4 allowed pfd, dBW/m^2/27 MHz (R1 FSS into R2 BSS)	-103.6	-103.6	-112.6	-107.0	-107.0	-103.6
Allowed pfd, dBW/m^2/300 kHz	-123.1	-123.1	-132.2	-126.6	-126.6	-123.1
Allowed EIRP, dBW/300 kHz	38.9	38.9	29.8	35.4	35.4	38.9
SES-4, maximum Telemetry EIRP, dBW/300 kHz (omni-mode, drift-only)	21.0	21.0	21.0	21.0	21.0	21.0

requesting authority to provide DBS service in the United States in this band. As a result, the DBS freeze does not apply. Out of an abundance of caution, however, and to the extent necessary, SES is requesting a waiver of the DBS freeze for the limited purpose of allowing telemetry to be downlinked to a U.S. earth station from SES-4 on a non-protected, non-harmful interference basis. Grant of such a waiver would not undermine the purpose of the freeze, which is to prevent new applications for DBS service to the United States from being filed until new rules have been promulgated for the processing of such applications.

[12] *See* Annex 4 to Appendix 30 of the ITU Radio Regulations (power-flux density limits for Region 1 FSS to protect Region 2 BSS in the 12.5-12.7 GHz band). It should be noted that the power-flux density limits plateau to -103.6 dBW/m^2/27 MHz after an orbital separate of 10.57 degrees. Therefore, it is not necessary to individually analyze the Region 2 Plan assignments or filed Plan modifications that are west of 37° W.L. Table 2 includes all Plan assignments east of 45° W.L., and also the easternmost U.S. BSS Plan assignment for reference (61.5° W.L.). There are no proposed modifications to the Plan east of 37° W.L.

As shown in the above Table 2, SES-4's maximum EIRP level for its telemetry carrier (21 dBW in 300 kHz bandwidth) is well below the lowest allowed EIRP level allowed under Appendix 30 of the Radio Regulations (29.8 dBW in 300 kHz). Therefore, there will be no harmful interference caused to Region 2 BSS by SES-4's telemetry operations in the 12.5 GHz band.

Similarly, there will be no harmful interference to any co-primary FS in the 12.2-12.7 GHz band. In the U.S., the relevant fixed service is the multichannel video and data distribution service ("MVDDS"). There are no criteria in the Commission's rules for the protection of MVDDS from GSO FSS or BSS satellites operating in the 12.5 GHz band. However, the Commission has prescribed low-angle power flux density limits for NGSO FSS satellites operating in this band.[13] In addition, Section 4 of Annex 1 of Appendix 30 to the ITU Radio Regulations contains pfd limits for Region 2 BSS systems in 12.2-12.7 GHz for the protection of terrestrial systems in Region 2. There are also power flux density limits in the 12.5 GHz band in No. 21.16 of the ITU Radio Regulations for the protection of co-primary FS in Regions 1 and 3. Table 3 below demonstrates that the SES-4 telemetry emissions, even in the worst case, would not exceed any applicable limits.

[13] *See* 47 C.F.R. § 25.208(o).

Table 3. Max. PFD Levels, OMNI beam, Telemetry (300KF9D)

Angle of Arrival	Applicable PFD Limit for Angle of Arrival ($dBW/m^2/4$ kHz)	Spreading Loss (dBW/m^2)	Gain Contour (dB)	Worst Case PFD Level at Angle of Arrival ($dBW/m^2/4kHz$)	PFD Margin (dB)
0°	-150.0	-163.4	-1.0	-162.2	12.2
5°	-150.0	-163.3	-1.0	-162.1	12.1
10°	-147.5	-163.2	-1.0	-162.0	14.5
15°	-145.0	-163.0	-0.9	-161.7	16.7
20°	-142.5	-162.9	-0.8	-161.5	19.0
25°	-140.0	-162.8	-0.8	-161.4	21.4
90° (Peak)	-140.0	-162.1	0.0	-159.9	19.9

As a result, protection of any co-primary FS (such as MVDDS) is assured. Accordingly, a waiver of the FCC's rules to allow the use of the 12502.0 MHz and 12500.5 MHz frequencies for telemetry during the drift of SES-4 to 22° W.L. is warranted.

For all of the above reasons, SES requests that the FCC expeditiously grant the instant application for special temporary authority.

ENGINEERING CERTIFICATION

The undersigned hereby certifies to the Federal Communications Commission as follows:

1. I am the technically qualified person responsible for the engineering information contained in the foregoing modification;
2. I am familiar with Part 25 of the Commission's rules; and
3. I have either prepared or reviewed the engineering information contained in the foregoing modification, and it is complete and accurate to the best of my knowledge and belief.

Signed:

/s/
Patrick van Niftrik
Senior Manager, Spectrum Development

March 29, 2012
Date