

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

In the Matter of Application by )  
 )  
SES AMERICOM, INC. ) File No. SAT-STA-\_\_\_\_\_  
 ) Call Sign S2826  
For Special Temporary Authority to Activate a C-band )  
Transponder on SES-2 During its Drift to 87° W.L. )

**REQUEST FOR SPECIAL TEMPORARY AUTHORITY**

By this application, SES Americom, Inc. (doing business as “SES”), respectfully requests space station special temporary authority (“STA”) to permit SES to activate a C-band transponder on its SES-2 spacecraft during the satellite’s drift to 87° W.L. Authority is sought for up to 7 days commencing no earlier than October 21, 2011, during the period when the satellite is at or west of 83° W.L. and terminating upon arrival of the satellite at its assigned 87° W.L. orbital location. Grant of the requested authority will serve the public interest by allowing SES to accommodate a U.S. government customer request relating to activation of the Commercially Hosted Infrared Payload (“CHIRP”) on SES-2.

SES-2 is a replacement satellite assigned to 87° W.L.<sup>1</sup> that was successfully launched on September 21, 2011. The spacecraft is currently undergoing in-orbit testing (“IOT”) at 77.25° W.L. pursuant to Commission authority.<sup>2</sup> IOT is scheduled to be completed within the next week, and SES plans to commence the drift of the satellite from 77.25° W.L. to 87° W.L. on

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<sup>1</sup> See File Nos. SAT-RPL-20110429-00082 (“SES-2 Application”) & SAT-AMD-20110613-00107, Call Sign S2826, grant-stamped Sept. 1, 2011.

<sup>2</sup> See File No. SAT-STA-20110726-00133, Call Sign S2826 (the “SES-2 IOT STA”), grant-stamped Sept. 1, 2011.

or about October 18, 2011. This drift has been authorized already by the Commission as part of the SES-2 IOT STA.<sup>3</sup> SES-2 carries CHIRP, a hosted payload for the U.S. Air Force.<sup>4</sup>

In the SES-2 IOT STA, SES requested authority to operate the C-band payload of the satellite to enable testing of and data download from CHIRP while the satellite was positioned at 77.25° W.L. SES stated that during the drift of the satellite to 87° W.L. following completion of IOT, only the satellite's telemetry, tracking and command ("TT&C") frequencies would be active.<sup>5</sup>

SES now proposes to modify this testing and drift plan in order to accommodate its U.S. government customer. Specifically, the Air Force has requested that SES-2 be in position at 87° W.L. with the CHIRP payload active and the associated C-band transponder operational before October 27. In order to accommodate this request while minimizing the impact on the spacecraft's operational lifetime, SES is seeking authority to activate the CHIRP payload and the associated C-band transponder (channel 8) several days prior to the spacecraft's arrival at its assigned 87° W.L. to ensure that the sensor and associated transponder are ready upon arrival.

Grant of the requested authority will serve the public interest by enabling the Air Force to gather additional data using its experimental payload without significantly affecting the fuel life of the spacecraft.

***No Harmful Interference to Other Spacecraft.*** Grant of the requested authority will not adversely affect any other authorized operations. The proposed C-band operations

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<sup>3</sup> *Id.*

<sup>4</sup> See SES-2 Application, Technical Narrative at 21-22.

<sup>5</sup> See SES-2 IOT STA, Narrative at 3.

during the final stage of the drift will not cause harmful interference to the operations of any other spacecraft due to orbital angular separation, frequency diversity and/or geographically diverse beam coverage.

The SES-2 spacecraft will pass the following satellites with C-band capacity during its drift from 77.25° W.L. to 87° W.L.: Venesat-1 at 78° W.L., AMC-2 at 79° W.L., AMC-9 at 83° W.L., Brasilsat B4 at 84° W.L., and AMC-3 at 87° W.L. The Venesat-1 and AMC-2 satellites will not be affected as SES is seeking authority to activate C-band channel 8 when SES-2 is two-degrees or more away from those satellites, *i.e.*, when SES-2 is at 83° W.L. or further west. SES has coordinated its operations internally to ensure that the proposed activation of C-band channel 8 on SES-2 will have no impact on C-band traffic on AMC-9 at 83° W.L. or AMC-3 at 87° W.L.

Finally, there will be no impact on Brasilsat B4 at 84° W.L., which serves South America. SES will roll the SES-2 spacecraft to the north prior to commencement of drift to provide additional geographic separation between the C-band beams of SES-2 and Brasilsat B4. The attached Technical Exhibit demonstrates the extent of geographic separation of the two beams and the low interference levels expected when the two satellites are closest to each other. SES has notified Star One, the operator of Brasilsat B4, of the details of its proposed operations.

***No Harmful Interference to Terrestrial Services.*** Transmissions associated with activation of this capacity on SES-2 also will not cause harmful interference to any co-primary terrestrial services in the conventional C-band. The C-band earth station to be used for communications with SES-2 during the drift has been coordinated to communicate with satellites in an arc that includes the segment between 77.25° W.L. and 87° W.L. The operation of the C-

band frequencies for CHIRP testing will be at power levels that comply with the PFD limits specified in Section 25.208(a).<sup>6</sup>

In addition, and in any event, SES will conduct all operations during the drift on a non-harmful interference basis, and will cease transmissions promptly in the event any harmful interference is caused by such operations. The 24/7 SES contact number for any issues arising during the period of the STA is (410) 970-7580.

***Protective Conditions.*** SES seeks STA to activate the SES-2 C-band transponder during the drift as described herein but will otherwise comply with the conditions imposed in the grant of the SES-2 IOT STA, including the requirement to coordinate its drift and other operations with all potentially affected operating satellite networks.

SES hereby certifies that no party to this application is subject to a denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862.

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<sup>6</sup> See SES-2 Application, Technical Narrative at 17, Table 16 (demonstrating compliance with Section 25.208 at the maximum EIRP). As discussed in the attached Technical Appendix, the peak EIRP of the C-band operations during the drift will be 37.3 dBW, corresponding to an output back-off of 6.3 dB.

For the foregoing reasons, SES respectfully requests special temporary authority to permit SES to activate a C-band transponder on its SES-2 spacecraft during the satellite's drift to 87° W.L.

Respectfully submitted,

SES AMERICOM, INC.

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## TECHNICAL APPENDIX

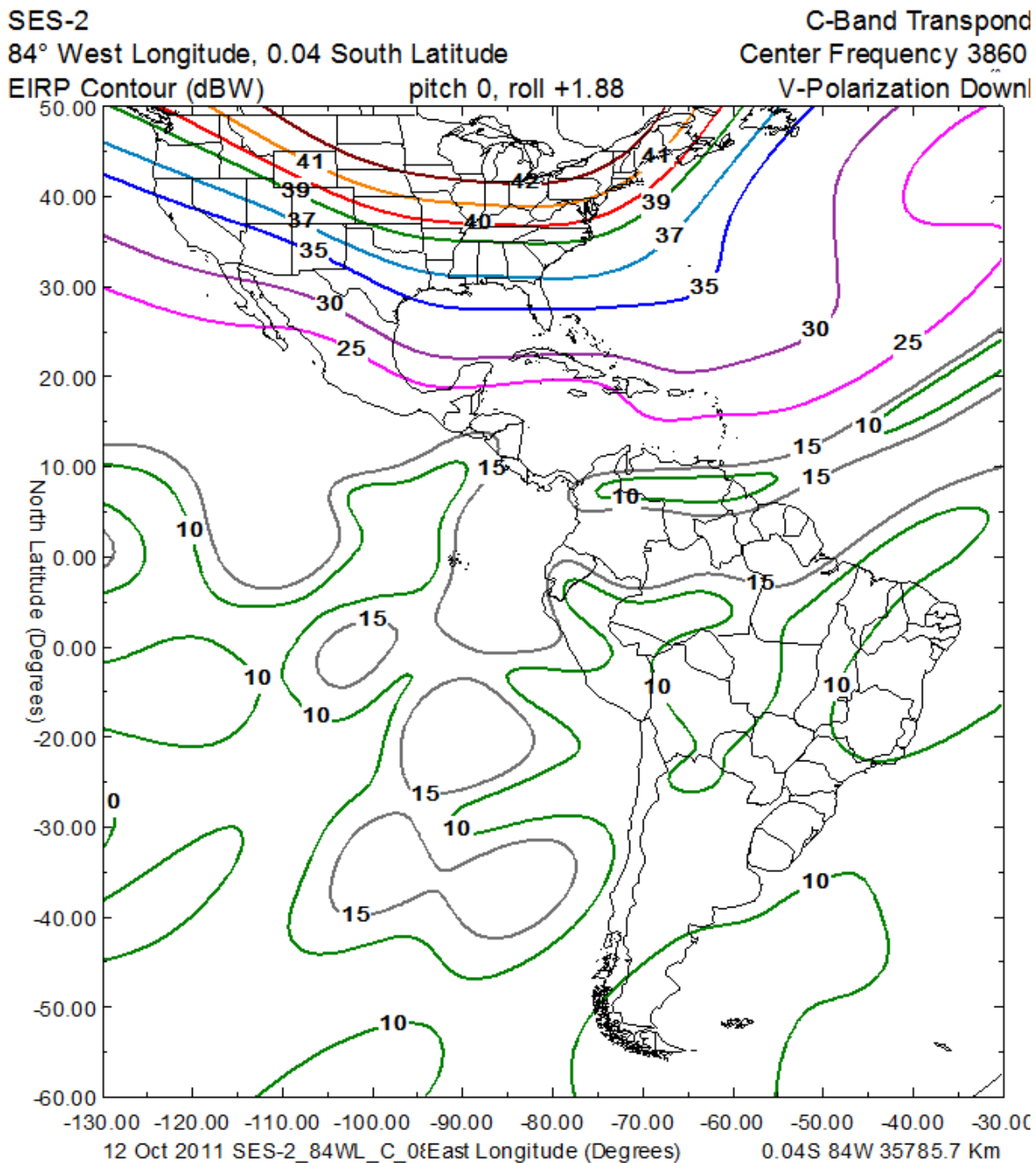
Following the completion of in-orbit testing at 77.25° W.L., SES will begin drifting SES-2 to its assigned position at 87° W.L. starting on or about October 18, 2011. SES plans to activate SES-2 transponder number 8 (C-band) during the last portion of the drift. The transponder will operate with an experimental wideband carrier at a peak EIRP of 37.3 dBW, corresponding to an output back-off of 6.3 dB. All other transponders will be turned off during the drift.

The SES-2 drift will be at a rate of 1.3 degrees per day. SES-2 will be within +/- 1 degree of Brasilsat B4 at 84°W during the period from approximately October 21-23.

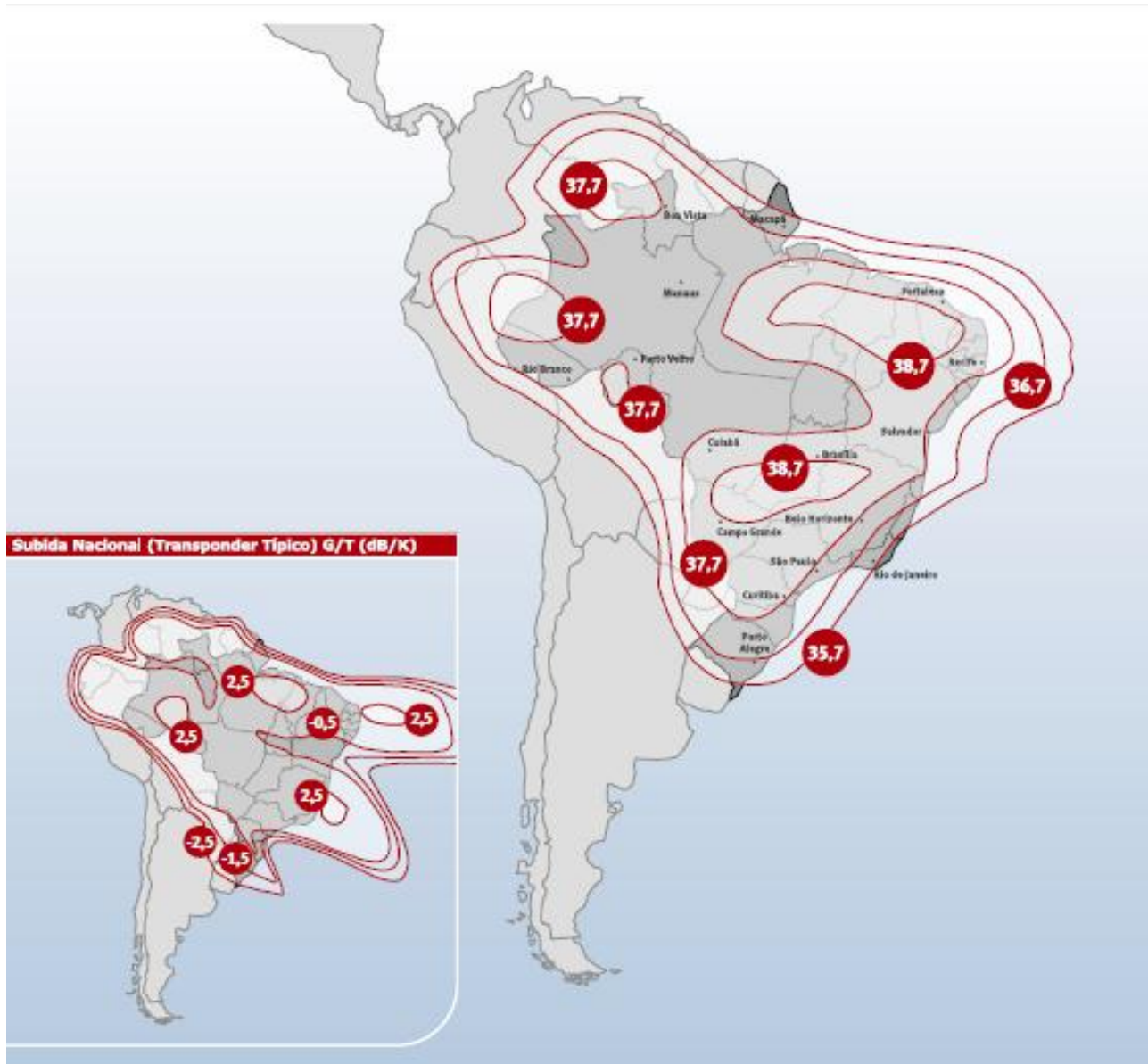
The analysis herein demonstrates that the activation of this C-band transponder will have no adverse impact on the Brasilsat B4 satellite at 84° W.L. due to geographic separation between the SES-2 beam and the Brasilsat B4 beam (*see* Figures 1 and 2). During the drift, SES-2 will exhibit a small +/- 0.04 North-South movement. When SES-2 is close to BrasilsatB4 at 84° W.L., the largest southern shift is estimated to be 0.04° South. To reduce the potential for interference into BrasilsatB4, which is already low, SES will tilt SES-2 in a Northerly direction prior to commencing the drift. As a result, the SES-2 EIRP (with 0 dB back-off) in mid-Venezuela will be about 15 dBW (see Fig. 1 on page 2). When the output back-off factor of 6.3 dB is included, the SES-2 transponder power seen by a receiver pointed at Brasilsat B4 in mid-Venezuela will be 8.7 dBW. The wanted carrier power seen by the the same receiver in one transponder is estimated to be 37 dBW (see Fig. 2 on page 3), which results in a C/I of 28.3 dB.

If the Brasilsat B4 transponder is operated in backed off mode, the C/I may decrease to 24.3 dB, which still should meet service requirements.

**Fig. 1. EIRP footprint of SES-2 at 84°W**



**Fig. 2. EIRP footprint of BrasilsatB4 at 84°W**





DECLARATION OF KRISH JONNALAGADDA

I, Krish Jonnalagadda, 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/ Krish Jonnalagadda  
SES Americom, Inc.

Dated: October 14, 2011