

TECHNICAL APPENDIX
REPOINTING NSS-10 AT 37.45° W.L.

1.0 Overall Description: §25.114(d)(1)

This technical appendix is submitted in support of the application of SES Americom, Inc. (“SES”) to modify its license for the NSS-10 C-band fixed satellite service (“FSS”) space station at the 37.45° W.L. orbital location¹ to permit SES to repoint the North American and South American beams on the satellite to provide coverage of the Caribbean and for limited flexibility for future adjustments in the orientations of these beams. SES incorporates by reference the technical information it has already provided with respect to NSS-10² and provides here technical information relating to the proposed modification.

2.0 Telemetry, Telecommand and Control Facilities

Telemetry, telecommand and control (TT&C) for the NSS-10 satellite will be carried out from SES earth stations in the United States identified on the most recent SES report pursuant to §25.172.³

The TT&C beams GBLR, BCAR, GBLH, BCAT, BTX1 and BTX2 have gain contours that vary by less than 8 dB across the surface of the Earth, and accordingly the gain at 8 dB below the peak falls beyond the edge of the Earth. Therefore, pursuant to Section 25.114(c)(4)(vi)(A)

¹ The Schedule S rounds the NSS-10 orbital location to 37.0° W.L., but the requested orbital location is 37.45° W.L.

² See File Nos. SAT-LOA-20000407-00080, granted Nov. 13, 2001; File No. SAT-MOD-20191108-00129, granted April 29, 2020. See also Letter from Karis A. Hastings, Counsel for SES Americom, Inc. to Marlene H. Dortch, Secretary, FCC, File No. SAT-MOD-20191108-00129 (filed Feb. 28, 2020).

³ See Report of SES Americom, Inc., submitted in File Nos. SAT-MOD-20170810-00115 *et al.*, June 30, 2021.

of the Commission's rules, contours for these beams are not required to be provided, and the associated GXT files have not been included in Schedule S.

3.0 Schedule S (§25.114(c))

The Schedule S includes GXT files depicting the nominal contours of the North and South American beams following the proposed reorientation, but SES also seeks limited flexibility to depart from the nominal beam pointings in order to address changing customer requirements. Specifically, SES seeks authority to repoint the North and South American beams within the envelope defined by the red line in Figure 1, which provides a composite isoline of the 8 dB below peak contour of all prospective pointings of the beams.



Figure 1

4.0 Certification with respect to two degree spacing levels (§25.140)

SES certifies that the NSS-10 downlink EIRP density will not exceed 3 dBW/4kHz for digital transmissions or 8 dBW/4kHz for analog transmissions in the C-band unless higher levels are coordinated with the operators of authorized co-frequency space stations at assigned locations within six degrees of 37.45° W.L. and except under the provisions of §25.140(a)(3)(i) and notified as described in §25.140(d).

SES also certifies that the levels of the uplink emissions in the C-band will not exceed the limits in §25.218 unless appropriately coordinated with operators of authorized co-frequency space stations at assigned locations within six degrees of 37.45° W.L. and except as provided in §25.140(a)(3)(i) and notified as described in §25.140(d).

DECLARATION

I, Yuan Yan Tay, 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/ Yuan Yan Tay

Engineer, Spectrum Management and Development
SES

Dated: March 3, 2022