

APPLICATION TO MODIFY EARTH STATION LICENSE

Call Sign E020071

SES Americom, Inc. (“SES Americom”) hereby applies to modify the license for earth station E020071 to: (1) correct a number of errors in the International Bureau Filing System (“IBFS”) entry for this license; (2) add the soon-to-be-launched Netherlands-licensed SES-4 satellite at 22.0° W.L. as a point of communication; (3) add authority to operate on the 13.75-14.0 GHz frequency band; and (4) add emission designators. SES Americom also requests a number of limited waivers associated with these changes.

Background. Earth station license E020071 authorizes the use of a 13 meter antenna to transmit and receive in the conventional Ku-band frequencies (11.7-12.2 GHz downlink; 14.0-14.5 GHz uplink) with all U.S. domestic satellites. In addition, the license authorizes the use of the extended Ku-band downlink frequencies (10.95-11.2 GHz; 11.45-11.7 GHz) with a number of New Skies satellites, including the NSS-7 satellite.¹ The antenna serves as the primary Ku-band TT&C and communications antenna in the United States for the NSS-7 spacecraft at 22° W.L.²

Corrections to E020071 License on IBFS. The license document in IBFS that is associated with the original 2002 application for the E020071 license (File No. SES-LIC-20020328-00433) appears to be correct. Consistent with the information in the original application, this license document lists a 13 meter antenna authorized to communicate with a number of satellites in the conventional and extended Ku-band frequencies.

However, the license document in IBFS that is associated with a 2005 application to modify the E020071 license (File No. SES-MFS-20050610-00718) appears to have introduced some errors. That document lists three 9 meter antennas operating in various C-band and Ku-band frequencies and omits mention of any 13 meter antenna. The 2005 application to modify the license did not request such changes to the license.

SES Americom respectfully requests that the Commission correct the IBFS database entry for the E020071 license to reflect the technical and other parameters actually applied for by the licensee. SES Americom would also request that the corrected license details reflect the current orbital location of NSS-7 at 22° W.L., rather than 21.5° W.L. as indicated in the original 2002 license document. As the Commission is aware and has approved, the NSS-7 satellite moved from 21.5° W.L. to 22° W.L. back in 2003 and has been operating at that location ever since.

Addition of SES-4 Satellite as a Point of Communication. As the Commission is aware, SES Americom’s sister company, New Skies Satellites B.V. (“New Skies”), is planning to replace the existing Netherlands-licensed NSS-7 satellite with the new Netherlands-licensed SES-4 satellite. SES-4 is scheduled to be launched by the end of September

¹ See File Nos. SES-LIC-20020328-00433; SES-MFS-20050610-00718.

² See *New Skies Satellites N.V.*, FCC 02-1256, Order (rel. May 28, 2002); Public Notice, SPB-181, DA 02-3179 (rel. Nov. 15, 2002); Stamp Grant, File No. SAT-PDR-20020930-00179 (granted May 29, 2003) (authorizing relocation of NSS-7 from 21.5° W.L. to 22° W.L.).

2011. Because the NSS-7 and SES-4 satellites are technically similar and operate on similar frequencies, New Skies has arranged with SES Americom to use the E020071 antenna as the primary Ku-band TT&C and communications antenna in the U.S. for the SES-4 satellite when it arrives at 22° W.L. Full information on the SES-4 satellite and its eligibility to provide service to the United States is contained in New Skies's petition for U.S. market access.³ The information and associated waiver requests in that petition are hereby incorporated by reference into this application.

Like NSS-7, the TT&C frequencies for the SES-4 satellite lie in part in the extended Ku-band frequencies. Specifically, while the telecommand frequency for the satellite is in the conventional Ku-band, the telemetry frequencies useable in ITU Region 2 are in the extended Ku-band frequencies (11451 MHz and 11454 MHz).⁴ The E020071 license already includes authority to operate in the extended Ku-band downlink frequencies with the NSS-7 satellite at 22° W.L., including for TT&C. Use of the extended Ku-band downlink frequencies has also been coordinated with co-primary terrestrial services. As a result, the modification of this license to add SES-4 at that orbital location should raise no interference concerns.

Grant of this modification to add SES-4 as a point of communication is in the public interest as it will ensure continuity of service and a smooth transition for NSS-7 customers when that satellite is replaced by SES-4 later this year.

Limited Waiver of International Service Restriction. SES Americom notes that Sections 2.106 (footnote NG104) and 25.202(a) (Note 2) of the Commission's rules restrict the use of the 11450-12200 MHz band to international service only. Except for the limited purpose of TT&C, SES Americom will abide by this restriction. To the extent that use of a portion of this band to perform TT&C with SES-4 and NSS-7 constitutes domestic service (*i.e.* non-international service), SES Americom respectfully requests a limited waiver of the international-service-only restriction. A waiver is warranted in the circumstances. As the Commission has recognized, TT&C operations generally require uplink and downlink capability from the same earth station. For this reason, the Commission has previously granted waivers of the international service restriction to enable TT&C to be performed in the U.S. using the extended Ku-band.⁵

Grant of the requested waiver would not undermine the purpose of the restriction, which is to ensure that earth station deployments in the extended Ku-band do not negatively impact the deployment of fixed service ("FS") in the same band or cause interference to such operations. The telemetry downlink from SES-4 will comply with the power flux density limits in the Commission's rules and, thus, will not interfere with FS station operations. Moreover, only a small number of U.S. earth stations will be used to

³ See File No. SAT-PPL-20110620-00112 (re-filed Jun. 20, 2011; on public notice July 8, 2011) (pending). The information in the Petition for Declaratory Ruling requesting U.S. market access for the Netherlands-licensed SES-4 satellite is hereby incorporated by reference.

⁴ See *id.*, Part III, at 38 (filed Mar. 9, 2001).

⁵ See *EchoStar KuX Corporation*, 20 FCC Rcd 919 (Int'l Bur. 2004) ("*EchoStar 83W Order*"); *EchoStar Satellite LLC*, 20 FCC Rcd 930 (Int'l Bur. 2004) ("*EchoStar109W Order*"); *EchoStar KuX Corporation*, 20 FCC Rcd 942 (2004).

perform TT&C with SES-4 and NSS-7, which means that no significant restrictions will be placed on the deployment of FS in the same band.⁶

Addition of the 13.75-14.0 GHz Frequency Band. The SES-4 satellite is capable of operating on all of the same frequencies as the NSS-7 satellite, and is additionally capable of operating in the 13.75-14.0 GHz uplink band. For this reason, SES Americom respectfully requests a modification to the E020071 license to allow the earth station to communicate with SES-4 using these additional frequencies.

SES Americom acknowledges that there are co-primary Federal government Radiolocation services (ship-borne radars) in the 13.75-14.0 GHz band. Attached to this application is a 13 GHz Study, prepared by Comsearch, which shows that proposed operations in this band will not interfere with ship-borne radars. In addition, SES Americom also acknowledges that it will need to coordinate the earth station's use of the 13.75-13.8 GHz band with NTIA on a case-by-case basis in order to minimize harmful interference to the Tracking and Data Relay Satellite System's (TDRSS) forward space-to-space link.⁷ As Comsearch's 13 GHz Study shows, there should be no interference to TDRSS links as the proposed earth station will also comply with the uplink power density limits applicable in the 13.75-14.0 GHz band.⁸

Grant of authority to operate in the 13.75-14.0 GHz will serve the public interest by increasing the satellite uplink capacity available to serve the United States from the 22° W.L. orbital location.

Request for Waiver of Section 25.115(h) for Extended Ku-band Digital Carriers. SES Americom seeks authority to operate digital carriers in the extended Ku-band uplink frequencies (13.75-14.0 GHz). Such transmissions will comply with the applicable off-axis EIRP envelopes in Section 25.218(h).⁹ This is mathematically assured because (i) the Viasat 8016A antenna is known to comply with the applicable antenna sidelobe performance standards in Section 25.209(a),¹⁰ and (ii) the maximum input power density for these transmissions will be no greater than -14 dBW/4 kHz.¹¹

Accordingly, SES Americom respectfully requests a waiver of the requirement in Section 25.115(h) to provide the three tables of off-axis EIRP levels in each of the geostationary and elevation planes, as well as the EIRP levels towards the horizon.¹² A waiver is

⁶ See *EchoStar 83W Order*, at ¶ 16 (“The Commission has waived this requirement [i.e. NG104] where the number of potential earth stations in a particular service is inherently small.”); *EchoStar 109W Order*, at ¶ 16 (same); *EchoStar 121W Order*, at ¶ 17 (same).

⁷ 47 C.F.R. § 2.106 US337.

⁸ 47 C.F.R. §§ 2.106 US356, 25.204(f).

⁹ 47 C.F.R. § 25.218(h).

¹⁰ 47 C.F.R. § 25.209(a).

¹¹ For example, for off-axis angles between 1.5° to 7° in the geostationary plane, the off-axis EIRP density limit of $15 - 25\log\theta$ dBW/4 kHz will always be met for a transmission where the input power density is limited to -14 dBW/4 kHz and the antenna sidelobe performance complies with the $29 - 25\log\theta$ dBi standard specified in Section 25.209(a) (i.e., $-14 + 29 - 25\log\theta = 15 - 25\log\theta$ dBW/4 kHz). This is true for all other off-axis angles and planes specified in Section 25.218(h) of the Commission's rules.

¹² 47 C.F.R. § 25.115(h).

warranted in this case because the purpose of rule would not be undermined by the omission of such tables. The purpose of Section 25.115(h) is to ensure compliance with the applicable off-axis EIRP envelopes in Section 25.218(e). Here, compliance is assured for the reasons given above.

Request for Waiver of Performance Bond Requirement. SES Americom respectfully requests a waiver of the Commission’s requirement to post a performance bond to secure the construction and launch of the Netherlands-licensed SES-4 satellite.¹³ SES Americom hereby incorporates by reference the identical request for a waiver submitted by New Skies in its pending Petition for Declaratory Ruling requesting U.S. market access for the SES-4 satellite. As noted in the New Skies request, construction of the SES-4 satellite is nearly complete and the satellite is scheduled to be launched from Baikonour, Kazakhstan, by the end of September 2011.¹⁴ In such circumstances, the posting of a performance bond is unnecessary to ensure timely construction and launch of the SES-4 satellite. A waiver of the bond requirement is therefore warranted.

¹³ See 47 C.F.R. §§ 25.137(d), 25.164(a), 25, 165(a). The SES-4 satellite would qualify as a replacement satellite for the existing NSS-7 satellite (for which no bond would be required), but for the fact that SES-4 is additionally capable of operating in the 13.75-14.0 GHz frequency band. See 47 C.F.R. § 25.165(a), 25.165(e) (exempting “replacement satellites” from the requirement to post a performance bond).

¹⁴ See Petition for Declaratory Ruling at 18, File No. SAT-PPL-20110620-00112 (re-filed Jun. 20, 2011).