

APPLICATION FOR NEW EARTH STATION LICENSE

SES Americom, Inc. (“SES Americom”) hereby applies for a license for a new 11.3 meter VIASAT 8013A antenna at its existing Bristow, Virginia, teleport facility. The antenna will operate in the conventional and extended Ku-band frequencies. The primary mission of the new antenna will be to perform TT&C and communicate with the Netherlands-licensed NSS-7 satellite, currently operating at 22° W.L. In addition, SES Americom is seeking flexibility in its license to allow the new earth station (1) to communicate with all satellites on the Permitted Space Station List using the conventional Ku-band, and (2) to serve as a backup TT&C and communications antenna for SES-4, the replacement satellite for NSS-7 that will be launched in September 2011.

Conventional Ku-band – Permitted List. SES Americom seeks authority to operate the new earth station in the conventional Ku-bands (11.7-12.2 GHz downlink; 14.0-14.5 GHz uplink) with all satellites on the Commission’s Permitted Space Station List. The technical parameters of the new earth station are consistent with the Commission’s rules applicable to the conventional Ku-band frequencies. Grant of such authority will serve the public interest by enabling SES Americom to communicate with NSS-7 in the conventional Ku-band frequencies. Grant of the requested authority will also provide SES Americom with the flexibility to use this antenna to communicate with other U.S. and foreign-licensed satellites on the Permitted Space Station List, as required.

Request for Waiver of Section 25.115(h) for Conventional Ku-band Command Carriers. SES Americom seeks authority to operate one megahertz wide, FM-modulated telecommand carriers in the 14000-14005 MHz and the 14495-14500 MHz frequency ranges. Such transmissions will comply with the applicable off-axis EIRP envelopes in Section 25.218(e).¹ 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),² and (ii) the maximum input power density for these telecommand transmissions will be no greater than -8 dBW/4 kHz.³

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.⁴ A waiver is 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.

¹ 47 C.F.R. § 25.218(e).

² 47 C.F.R. § 25.209(a).

³ For example, for off-axis angles between 1.5° to 7° in the geostationary plane, the off-axis EIRP density limit of $21 - 25\log\theta$ dBW/4 kHz will always be met for a transmission where the input power density is limited to -8 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.*, $-8 + 29 - 25\log\theta = 21 - 25\log\theta$ dBW/4 kHz). This is true for all other off-axis angles and planes specified in Section 25.218(e) of the Commission’s rules.

⁴ 47 C.F.R. § 25.115(h).

Request for Waiver of Section 25.115(h) for Extended Ku-band Digital Carriers. SES Americom also 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).⁵ 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),⁶ and (ii) the maximum input power density for these transmissions will be no greater than -14 dBW/4 kHz.⁷

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.⁸ A waiver is 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.

Extended Ku-band Downlink Authority – NSS-7. In addition, SES Americom seeks authority to operate the new earth station in the extended Ku-band downlink frequencies (10.95-11.2 GHz and 11.45-11.7 GHz downlink) with the Netherlands-licensed NSS-7 satellite. The NSS-7 satellite is operated by SES Americom’s sister company, New Skies Satellites B.V. (“New Skies”), and is currently authorized to serve the United States from the 22° W.L. orbital location.⁹ As the Commission is aware, the NSS-7 satellite is capable of operating in the extended Ku-band downlink frequencies and has two telemetry frequencies in the extended Ku-band at 11451 MHz and 11454 MHz.¹⁰ Use of the extended Ku-band downlink frequencies has been coordinated with co-primary terrestrial services.

The Commission has previously authorized earth station E020071 at the same teleport to communicate with the NSS-7 satellite, including use of the extended Ku-band downlink frequencies to receive communications and telemetry signals.¹¹ Grant of this request will enable SES Americom to use another antenna to perform the same function. Having an additional antenna capable of communicating with NSS-7 in the extended Ku-band frequencies provides useful redundancy and will be particularly important when New

⁵ 47 C.F.R. § 25.218(h).

⁶ 47 C.F.R. § 25.209(a).

⁷ 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.

⁸ 47 C.F.R. § 25.115(h).

⁹ 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).

¹⁰ See File No. SAT-PDR-20010309-00020, Part III, at 38 (filed Mar. 9, 2001). The telecommand frequencies for NSS-7 is in the conventional Ku-band uplink frequencies. *Id.*

¹¹ See File No. SES-LIC-20020328-00433.

Skies launches the Netherlands-licensed SES-4 satellite in September 2011 to replace NSS-7 at 22° W.L. For these reasons, grant of extended Ku-band downlink authority for the new earth station to perform TT&C and communicate with NSS-7 would serve the public interest.

Extended Ku-band Authority – SES-4. SES Americom requests authority to operate the new earth station with the Netherlands-licensed SES-4 satellite using the extended Ku-band uplink and downlink frequencies. As noted above, SES-4 is due to be launched in September 2011 and will replace NSS-7 at 22° W.L.¹² Like NSS-7, the SES-4 spacecraft is capable of operating in the extended Ku-band downlink frequencies (10.95-11.2 GHz and 11.45-11.7 GHz) and has two telemetry frequencies at 11451 MHz and 11454 MHz. Use of the extended Ku-band downlink frequencies has been coordinated with co-primary terrestrial services. Except for the limited purpose of TT&C (discussed below), the use of the extended Ku-band downlink frequencies will be restricted to international service only.¹³

The SES-4 spacecraft is also capable of operating in the extended Ku-band uplink frequencies (13.75-14.0 GHz). 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 the proposed earth station operations in this band will not interfere with ship-borne radars. In addition, SES Americom 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.¹⁴ As Comsearch's 13 GHz Study shows, there should be no interference to TDRSS links as the proposed earth station will comply with the uplink power density limits applicable in the 13.75-14.0 GHz band.¹⁵

Grant of the instant application will serve the public interest by ensuring that there is more than one antenna in the U.S. authorized to perform TT&C and communicate with the SES-4 satellite. As noted above, the new earth station will serve as a backup TT&C and communications antenna for SES-4 in the United States. The primary SES-4 antenna in the U.S. will be earth station E020071, for which SES Americom will be filing a separate modification application for the requisite authority.

Request for Limited Waiver of International Service Restriction. SES Americom acknowledges that use of the extended Ku-band frequencies in the United States is limited to international service only.¹⁶ SES Americom will abide by this restriction. However, to the extent that use of a portion of this band to perform TT&C with NSS-7 or

¹² 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.

¹³ See 47 C.F.R. §§ 2.106 NG104, 25.202(a)(1) Note 2.

¹⁴ 47 C.F.R. § 2.106 US337.

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

¹⁶ 47 C.F.R. §§ 2.106 NG104, 25.202(a) Note 2.

SES-4 constitutes a domestic (*i.e.* non-international) service, SES Americom respectfully requests a limited waiver of the international-service-only restriction.

Such 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.¹⁷

Grant of the requested waiver would also not undermine the purpose of the rule, 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 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.¹⁸

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.¹⁹ 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 2011.²⁰ 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.

¹⁷ 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).

¹⁸ 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).

¹⁹ 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).

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