EXHIBIT 1

DESCRIPTION OF PROPOSED MODIFICATION
(Response to Question 43, FCC Form 312)

Pursuant to Section 25.117(b)(3) of the Commission's rules,[1] HNS License Sub, LLC (together with its affiliates, "Hughes") requests a modification of its license (Call Sign E060445; File No. SES-MFS-20150401-00186) to operate certain remote earth terminals in the Ka-band fixed satellite service ("FSS") throughout the United States.[2]

Specifically, Hughes seeks authorization to add up to 5 million units of a new 74 cm. (in diameter) antenna type (*i.e.*, Antenna ID 74CM(FD)). Hughes further requests a partial waiver of the cross-polarization requirements of 47 C.F.R. § 25.209(b) for the new 74 cm. antenna type. Grant of this application, including the request for partial waiver of the cross-polarization requirements, will permit prompt deployment of new 74 cm. earth terminals to provide high-speed broadband services to consumers nationwide.

I. BACKGROUND

Hughes holds a license (Call Sign E060445) to operate a network of transmit/receive Ka-band FSS earth terminals used to provide high-speed broadband services to U.S. consumers. On August 10, 2015, the FCC granted Hughes' application to modify its license to: (i) add the Jupiter 97W (or EchoStar XIX) satellite at 97.1° W.L. as a point of communication for each antenna type;[3] and (ii) increase the number of 74 cm. (in diameter) earth station terminals

[1] *See* 47 C.F.R. § 25.117.

[2] *See* HNS License Sub, LLC, File No. SES-MFS-2015-0401-00186 (granted Aug. 10, 2015).

[3] On July 27, 2012, the FCC authorized Hughes to access the U.S. market by using Jupiter 97W, a satellite that will operate in the Ka-band and provide broadband services to U.S. consumers across the country. *See* Hughes, Letter of Intent, IBFS File No. SAT-LOI-20110809-00148 (granted Jul. 27, 2012). On June 23, 2015, the FCC granted a modification of Hughes' U.S. market access authorization for Jupiter 97W to permit the following: (i) adding the 27.85-28.35 GHz frequencies (gateway uplink); and (ii) updating the FCC licensing information associated with the satellite to reflect that it will be operated

authorized under the license.[4] Moreover, on October 2, 2015, the FCC granted Hughes' request for special temporary authorization to operate up to 100,000 74 cm (in diameter) remote earth terminals (including a partial waiver of the cross-polarization requirements), consistent with the modification proposed herein.[5]

II. DESCRIPTION OF PROPOSED MODIFICATION

Hughes requests regular authority to operate up to 5,000,000 of a new type of Ka-band FSS earth terminals **(**74 cm. in diameter), manufactured by either Skyware Global or Winegard. Except with respect to cross-polarization gain (for which a waiver is sought, as discussed below), the proposed earth terminals are technically identical to the 74 cm earth terminals identified as 74CM(FA) and 74CM(FB) under Hughes' existing license.[6] The proposed earth terminals will operate at 28.35-28.6 GHz (uplink), 29.25-30.0 GHz (uplink), 18.3-19.3 GHz (downlink), and 19.7-20.2 GHz (downlink); and will communicate with the same space stations authorized under the existing license for 74 cm earth terminals covered under Site ID TR74CM.[7] Further, Hughes will operate these terminals in accordance with applicable coordination agreements. Accordingly, there are no interference concerns with the proposed operations.

Coordination with Non-geostationary Satellite Orbit ("NGSO") Feeder Links. Hughes will operate the proposed earth terminals in the 29.25-29.50 GHz frequency band (in addition to other Ka-band frequencies specified herein). This frequency band is shared on a co-primary basis with the feeder link stations of NGSO mobile satellite service systems under 47 C.F.R. §

---

by Hughes under the International Telecommunications Union filing for the RAGGIANA-5 network, registered at the ITU by Papua New Guinea. *See* Hughes, IBFS File No. SAT-MOD-20141210-00127 (granted June 23, 2015).

[4] *See* HNS License Sub, LLC, File No. SES-MFS-20150401-00186 (granted Aug. 10, 2015).

[5] *See* HNS License Sub, LLC, File No. SES-STA-20150814-00524 (granted Oct. 2, 2015).

[6] *See* HNS License Sub, LLC, File No. SES-MFS-20150401-00186 (granted Aug. 10, 2015).

[7] *See id.*

25.258. Hughes previously concluded a coordination agreement with Iridium, the only NGSO licensee in this band. The proposed operations will comply with the coordination agreement, hence protecting Iridium's operations in the band.

Waiver Request. The proposed Ka-band FSS earth terminals will slightly exceed the cross-polarization gain specified in Section 25.209(b) of the FCC's rules[8] only in the elevation plane and only on one side (*i.e.,* the side higher than the main beam). Accordingly, pursuant to Section 1.3 of the FCC's rules,[9] Hughes requests a partial waiver of the cross-polarization requirements of Section 25.209(b).[10]

Except with respect to cross-polarization gain, the proposed earth terminals are technically identical to the 74 cm earth terminals that have been authorized under Hughes' existing license and are fully consistent with the FCC's technical requirements. Based upon the manufacturers' test reports,[11] the degree of non-conformance with respect to the cross-polarization antenna pattern is *de minimis*, and occurs only in the elevation plane and only on one side. Specifically, the cross-polarization pattern in the upper elevation side is higher than the FCC's cross-polarization mask ($19–25\log_{10}(\Theta)$) for $\Theta > 7$ only. At no point is the cross-polarization pattern higher than the FCC's co-polarization mask ($32–25\log_{10}(\Theta)$). Moreover, the proposed earth terminals are in compliance with the power density limits under Section 25.138

[8] 47 C.F.R. § 25.209(b).

[9] 47 C.F.R. § 1.3.

[10] A waiver of the Commission's rules is warranted when "good cause" is shown. *See* 47 C.F.R. § 1.3; *see also WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969). A waiver may be granted if the grant "would not undermine the policy objective of the rule in question and would otherwise serve the public interest." *See EchoStar KuX Corp. Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in the Fixed-Satellite Service at the 83° W.L. Orbital Location*, Order and Authorization, 20 FCC Rcd 919, ¶ 12 (2004).

[11] *See* HNS License Sub, LLC, File No. SES-STA-20150814-00524, Supplemental Letter (attaching manufacturers' test reports) (filed Sept. 18, 2015).

of the FCC's rules.[12]

III. GRANT OF THIS APPLICATION WILL SERVE THE PUBLIC INTEREST

Grant of this application will serve the public interest by allowing Hughes to quickly deploy user terminals that will provide high-speed broadband services to consumers throughout the United States without any interference concerns. Specifically, these user terminals will be deployed to meet the broadband needs of business and residential users in the United States, delivering such high demand services as high-definition video programming, on-demand entertainment, digital music, interactive television, video conferencing, and high capacity two-way communications.

Following the successful launch of EchoStar XVII in 2011, Hughes has deployed more than one million broadband user terminals throughout the United States and Canada, and demand continues to increase.[13] This increasing demand for high-speed broadband service demonstrates that there is an ample market for the types of services that Hughes provides.[14] These services include high-speed data transmission and high-speed broadband Internet access, which can be used to support Internet and content-provider offerings such as high-definition video programming, on-demand entertainment, digital music, interactive television, video conferencing, and high-capacity two-way communications.

Areas of the United States that are currently underserved or unserved by terrestrial broadband technologies will benefit from the availability of these new user terminals. Provision of broadband service to these areas will promote regional commerce while providing new job

[12] 47 C.F.R. § 25.138.

[13] *See* Hughes, Press Release, *Hughes Becomes First Satellite Internet Provider to Surpass One Million Active Users* (Sept. 8, 2014).

[14] *See* Hughes, Press Release, *Hughes to Highlight Growth in High Throughput Satellite Technology at CSAT 2014 Conference* (Sept. 8, 2014).

opportunities in the United States through launch of the satellite, development of applications and content for consumers, and deployment of gateway earth stations and user terminals. The additional high-speed capacity will improve communications links in rural and underserved areas, and create new opportunities for economic development in the United States.