

EXHIBIT 1

REQUEST FOR SPECIAL TEMPORARY AUTHORIZATION FOR CONVENTIONAL EXPERIMENTAL OPERATIONS

Introduction. Pursuant to Section 5.61 of the Commission’s rules,¹ EchoStar Global Australia Pty Ltd (“EchoStar Global”), a wholly owned subsidiary of EchoStar Corporation, requests a six-month special temporary authorization (“STA”) for conventional experimental operations of a gateway earth station in Germantown, MD, for feeder link communications with its Australian-licensed non-geostationary orbit (“NGSO”) mobile satellite service (“MSS”) system (“EG System” or “System”). Grant of this application will serve the public interest by facilitating testing and development of new MSS equipment and technology that ultimately will be deployed to support mobile communications, public safety, and other services worldwide.

Background. With its parent company’s extensive experience in the satellite industry, EchoStar Global is in the process of designing, constructing, and launching a new NGSO MSS system to provide narrowband data services, including machine-to-machine and Internet of things communications, throughout the globe. Pursuant to Australian authorization and International Telecommunication Union filings for the SIRION-1 network,² the EG System is licensed to provide MSS on S-band frequencies at 2000-2020 MHz (uplink) and 2180-2200 MHz (downlink). The System will consist of a constellation of approximately 28 satellites in low Earth orbit, the first of which was successfully launched in August 2020, with the remaining satellites to be launched in the near future.

Purpose and Scope of Experimental STA Operations. The proposed STA operations will allow EchoStar Global to test, develop, and demonstrate the technical operations of the first satellite in its System, together with associated user terminals.³ Specifically, EchoStar Global seeks STA operations of a gateway earth station in Germantown, MD, for feeder link communications with the first satellite in the System on the following frequencies:⁴

¹ 47 C.F.R. § 5.61.

² See ITU, Space Network List Part B Query Results, https://www.itu.int/net/ITU-R/space/snl/bresult/radvance.asp??sel_type=C&sel_satname=SIRION-1 (last visited Jan. 8, 2021).

³ EchoStar Global also has a pending related application for a two-year experimental license to test and develop prototype user terminals for operations with its System. See EchoStar Global, Application for Experimental License, File No. 0539-EX-CN-2020 (July 8, 2020) (“EG Experimental User Terminal Application”).

⁴ As additional satellites are successfully launched to operate in the System, EchoStar Global will seek additional authorization, as required, for gateway feeder link communications with the expanding satellite constellation.

Frequencies (MHz)	Function
5150 – 5250	Feeder uplink
7025 – 7075	Feeder downlink (on unprotected interference basis)

The 5150-5250 MHz band is allocated domestically on a primary basis to commercial (*i.e.*, non-federal government) NGSO MSS feeder uplinks, and thus the proposed use of the spectrum for feeder uplink transmissions to the EG System is consistent with the Commission’s allocation rules.⁵ In the United States, the 5150-5250 MHz band also is shared on a co-primary basis with federal government aeronautical radionavigation service (“ARNS”) operations,⁶ and thus the proposed spectrum use is subject to Commission coordination with the National Telecommunications and Information Administration.⁷ Additionally, the 5150-5250 MHz band (or a portion thereof) is shared on a co-primary basis with commercial ARNS and radiodetermination-satellite service (“RDSS”) downlink operations,⁸ but a search of the Commission’s license databases shows no licensed ARNS or RDSS systems.

Furthermore, the 7025-7075 MHz band is allocated domestically on a primary basis to commercial FSS downlinks.⁹ The FSS allocation, however, is limited to two grandfathered NGSO MSS systems and associated grandfathered earth stations in Brewster, WA, Clifton, TX, and Finca Pascual, PR, to preserve sufficient spectrum for TV broadcast auxiliary service and electronic newsgathering use.¹⁰ Nonetheless, the Commission has licensed a number of non-grandfathered gateway earth stations to receive NGSO MSS feeder downlinks in the 7025-7075 MHz band on an unprotected interference basis.¹¹ Accordingly, consistent with Commission precedent, EchoStar Global seeks gateway authorization (including, to the extent required, a waiver of the Commission’s allocation rules) to receive feeder downlink transmissions in the 7025-7075 MHz band from the EG System on an unprotected interference basis.

⁵ See 47 C.F.R. § 2.106 n.5.447A (limiting the fixed-satellite service (“FSS”) uplink allocation of the 5150-5250 MHz band on a primary basis to NGSO MSS feeder uplinks).

⁶ See *id.* § 2.106.

⁷ See *id.* § 2.106 n.US344.

⁸ See *id.* § 2.106 & n.US307.

⁹ See *id.* § 2.106.

¹⁰ See *id.* § 2.106 nn.5.458B & NG172; see also *GUSA Licensee, LLC*, Order and Authorization, 22 FCC Rcd 65, ¶¶ 8-9 (IB 2007); *GUSA Licensee, LLC*, Order and Authorization, 22 FCC Rcd 70, ¶¶ 8-9 (IB 2007).

¹¹ See *GUSA Licensee LLC*, Applications for Modification, IBFS File Nos. SES-MFS-20101108-01412 *et al.* (granted June 6, 2011) (authorizing NGSO MSS feeder downlinks for gateway earth station in Sebring, FL on an unprotected basis under license condition No. 512); see also *Globalstar Licensee LLC*, Order, 26 FCC Rcd 3948, ¶ 3 nn.3 & 4 (IB 2011).

The proposed gateway earth station employs a full-tracking directional 2.4-meter antenna that will follow the trajectories of the NGSO satellites above the horizon by pointing in the vertical plane at 10° to 90° and horizontal plane at 0° to 360°. The gateway antenna meets applicable antenna gain standards specified in Sections 25.209(a)(1) and (b)(1) of the Commission's rules.¹² EchoStar Global certifies that, based on its review of the results of a series of radiation pattern tests performed by the antenna manufacturer, the test results demonstrate that the gateway equipment meets applicable off-axis gain standards specified in Section 25.209 of the Commission's rules.¹³

The technical parameters of the proposed gateway earth station are provided in the accompanying STA Form. Additionally, an orbital debris mitigation plan for the EG System is set forth in Appendix B, filed in support of the related Experimental User Terminal Application.¹⁴ Pursuant to Section 5.64(a) of the Commission's rules, EchoStar Global hereby notifies the Commission that it has commenced construction of the proposed gateway earth station at its own risk.¹⁵

No Harmful Interference: The proposed operations will not cause harmful interference to other authorized services. As discussed above, there are no licensed commercial ARNS or RDSS systems in the 5150-5250 MHz band, and the proposed gateway operations will be coordinated with any authorized federal government ARNS systems in the band. Additionally, the proposed gateway downlink operations in the 7025-7075 MHz band will be on an unprotected interference basis.

Hours of Operation: The proposed gateway earth station may operate 24 hours per day, seven days per week. The following contact is available 24 hours per day, seven days per week, to address interference or other operational issues:

Name: Darren Hamilton
Phone: (303) 519-8168
Email: Darren.Hamilton@echostar.com

¹² See 47 C.F.R. § 25.209(a)(1) and (b)(1).

¹³ See 47 C.F.R. § 25.132(a)(1).

¹⁴ See 47 C.F.R. § 5.64(b); see also EG Experimental User Terminal Application, File No. 0539-EX-CN-2020, Appendix B (revised) (Aug. 14, 2020). EchoStar Global submitted information showing compliance with the Commission's orbital debris mitigation requirements in an abundance of caution, notwithstanding an exemption from those requirements by virtue of the Australian Space Agency's direct and effective regulatory oversight, as demonstrated by EchoStar Global's submission of both an English language copy of Australia's *Space (Launches and Returns) (General) Rules 2019*, and a statement of the status of the Australian licensing authority's review. See Letter from Jennifer A. Manner, EchoStar Global, to Nimesh Sangani, FCC, File No. 0539-EX-CN-2020, Correspondence Ref. No. 57969, at 1 (Nov. 16, 2020).

¹⁵ See 47 C.F.R. § 5.64(a).