



Federal Communications Commission
Washington, D.C. 20554

August 15, 2017

Jennifer A. Manner
Hughes Network Systems, LLC
11717 Exploration Lane
Germantown, MD 20876

Re: Hughes Network Systems, LLC, IBFS File No. SAT-LOA-20170621-00092 (Call Sign S3017)

Dear Ms. Manner:

On June 21, 2017, Hughes Network Systems, LLC (Hughes) filed the above-captioned application for authority to construct, deploy, and operate a geostationary-satellite orbit (GSO) fixed-satellite service (FSS) satellite system. To aid the Commission's evaluation of the application, please provide the following additional information:¹

1. Hughes states in its narrative that it expects its telemetry, tracking and command (TT&C) center frequencies to be 29.401 GHz (Earth-to-space), 29.403 GHz (Earth-to-space), 19.701 GHz (space-to-Earth), and 19.703 GHz (space-to-Earth).² However, the Schedule S provided with Hughes' application indicates that TT&C center frequencies will be 29.898 GHz (earth-to-space) and 40.002 GHz (space-to-Earth). Please clarify the center frequencies that Hughes intends to use for TT&C.
2. Hughes provides a two-degree compatibility analysis in its technical exhibit for the Q/V band component of its proposed space station based on operations at 95° W.L.³ As Hughes seeks to operate at 95.2° W.L., please confirm that this analysis was conducted with regard to 95.2° W.L., or submit a comparable analysis with regard to operations at the 95.2° W.L. orbital location.
3. Hughes provides a safe flight profile analysis in its technical exhibit based on operations at 95° W.L.⁴ As Hughes seeks to operate at 95.2° W.L., please confirm that this analysis was conducted with regard to 95.2° W.L., or submit a comparable analysis with regard to operations at the 95.2° W.L. orbital location.
4. The .gxt files that Hughes submitted with its application contain several errors. Specifically:
 - a. The title block for each antenna gain contour diagram does not indicate the appropriate satellite name, satellite orbital location, and beam name information. In addition, the antenna gain contour diagrams are not plotted with the -2, -4, -6, -8, -10, -15, and -20 contour lines visibly identified. Please resubmit the .gxt files with these issues corrected.
 - b. Where spot beams are small, gain contour diagrams are not magnified such that the contour lines are clearly distinguishable from one another. In addition, when enlarging

¹ 47 CFR § 25.111(a).

² Hughes Narrative at 15.

³ Hughes Technical Exhibit at 19.

⁴ Hughes Technical Exhibit at 26.

the spot beam in GIMS, the resulting contours do not show sufficient geographic detail to determine the actual size of the spot beam. Please provide spot beam diagrams that are magnified to show the contours overlaid onto a map displaying state/county borders such that the size of the spot beam can be determined.

Please resubmit the .gxt files addressing these issues.

5. Hughes requests a waiver of the general requirements to provide a map of the isolines formed by combining all the spot beams into one or more composite beams as provided in Section 25.114(c)(4)(vii) of the Commission's rules, 47 CFR § 25.114(c)(4)(vii), and to instead allow submission of a single isoline map representing the combination of all spot beams.⁵ The isoline map provided shows what appears to be a composite of all of the spot beams at the 0 dB contour. This is not sufficient to determine the power level that will be produced across the entire service area, as well as the associated antenna gain rolloff. Please provide either a diagram containing the composite of the spot beams depicted on the surface of the earth with the satellite's peak antenna gain pointed to a selected latitude and longitude within the service area, or a table identifying the maximum antenna gain point(s) in latitude and longitude to the nearest 0.1 degree for each spot beam as well as the 3 dB beamwidth.
6. Hughes requests a waiver of the Table of Frequency Allocations to operate on a non-conforming basis in the 18.8-19.3 GHz frequency band outside the United States.⁶ In the United States, this band is allocated on a primary basis to the non-geostationary-satellite orbit (NGSO) FSS and is currently the subject of a processing round for NGSO FSS systems.⁷ Although Hughes states that it will protect NGSO operations by avoiding in-line interference and that it will coordinate with NGSO operators in this band, we request further clarification on how Hughes proposes to avoid in-line interference events or a more detailed discussion of the general approach that Hughes will use to ensure protection of U.S.-licensed NGSO FSS systems.

Hughes must file a letter providing the additional information by **September 14, 2017**. Failure to do so may result in the dismissal of Hughes' pending application pursuant to Section 25.112(c) of the Commission's rules, 47 C.F.R. § 25.112(c).

Sincerely,



Jose P. Albuquerque
Chief, Satellite Division
International Bureau

⁵ Hughes Narrative at 16-17.

⁶ Hughes Narrative at 10-12.

⁷ *Cut-off Established for Additional NGSO-Like Satellite Applications or Petitions for Operations in the 10.7-12.7 GHz, 14.0-14.5 GHz, 17.8-18.6 GHz, 18.8-19.3 GHz, 27.5-28.35 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz bands*, Public Notice, DA 16-804 (July 15, 2016).