

Attachment 1
NARRATIVE EXHIBIT
(Response to Question 43)
Ka-Band Earth Station (Site-Based Authority)

Viasat, Inc. (“Viasat”) seeks authority to operate an individually licensed fixed-satellite service (“FSS”) earth station in the 17.7-18.3 GHz and 27.5-28.35 GHz band segments with the ViaSat-3 class satellite at 88.9° W.L. (referred to as “ViaSat-3F1”).¹ Grant of this application is in the public interest because it would authorize the deployment of an earth station that would serve as an interconnection point for the ViaSat-3F1 network (which the Commission has already authorized to serve the United States and thus found to be in the public interest).²

I. COMPATIBILITY WITH CO-FREQUENCY OPERATIONS

Operations of the earth station would be consistent with the technical parameters specified in the attached FCC Form 312 and Schedule B and would be compatible with co-frequency operations—including adjacent geostationary orbit (“GSO”) systems, Upper Microwave Flexible Use Service (“UMFUS”) operations, fixed service operations, and broadcasting-satellite service (“BSS”) feeder link Earth-to-space transmissions.³

A. GSO Operations

In seeking authority for the ViaSat-3F1 satellite, Viasat demonstrated two-degree compatibility in the 17.7-18.3 GHz and 27.5-28.35 GHz band segments.⁴

The antenna gain patterns with the Section 25.209 limits superimposed are included as Exhibit B. The earth station complies with the antenna performance standards in Sections 25.209(a) and (b) for all off-axis angles.

¹ Viasat has separately requested authority to operate this earth station terminal type in the 18.3-19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz band segments on a blanket basis. See Viasat, Inc., Call Sign E202143, ICFS File No. SES-LIC-20200811-00852. The earth station in this application would also operate under that blanket license once it is granted.

² See Viasat, Inc., Call Sign S2917, ICFS File Nos. SAT-LOI-20140204-00013 *et al.* (“VIASAT-3”); Call Sign S3050, ICFS File No. SAT-LOA-20190617-00048 (granted May 27, 2020) (“VIASAT-89US”). VIASAT-3 and VIASAT-89US are collectively referred to as “ViaSat-3F1” herein.

³ Non-geostationary orbit (“NGSO”) systems in the 27.5-28.35 GHz band segment operate on an unprotected, noninterference basis with respect to GSO FSS. See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 32 FCC Rcd 7809, at ¶ 23 (2017). In the 17.7-18.3 GHz band segments, NGSO systems may not claim interference protection from the GSO FSS. See 47 C.F.R. § 25.289.

⁴ See Viasat, Inc., Call Sign S2917, ICFS File No. SAT-MOD-20190617-00047, Attachment A, at 7-8 (“ViaSat-3F1 Technical Attachment”).

B. UMFUS

Viasat would operate the earth station in the 27.5-28.35 GHz band segment consistent with the provisions of Section 25.136 regarding compatibility with UMFUS operations. Specifically, the earth station meets the criteria for protection under Section 25.136(a)(4). The attached Technical Analysis in Exhibit A details the earth station's compliance with these criteria. Therefore, the earth station qualifies to operate without providing interference protection to any UMFUS stations.

C. Fixed Service and BSS

The 17.7-18.3 GHz band segment is allocated on a primary basis for fixed services. The 17.8-18.3 GHz portion of this band segment is allocated for FSS on a secondary basis with respect to fixed services. The 17.7-17.8 GHz portion of the band segment is allocated to FSS on a co-primary basis in the space-to-Earth direction with the BSS subject to the condition that receiving earth stations shall not claim protection from transmissions of non-Federal stations in the fixed service that operate in that band.⁵ The 17.7-17.8 GHz portion of the band segment is also allocated to the BSS on a co-primary basis.

In seeking market access for ViaSat-3F1, Viasat demonstrated that its FSS downlinks in the 17.7-18.3 GHz band segment are compatible with primary fixed service operations and neighboring BSS operations.⁶ More specifically, Viasat demonstrated that downlink transmissions from ViaSat-3F1 would be within the power-flux density limits at the earth's surface set forth in Article 21 of the ITU Radio Regulations and would not cause harmful interference into primary fixed service operations throughout the 17.7-18.3 GHz band segment.⁷ In addition, the half-power beam width of the subject earth station in the 17.8-18.3 GHz band is 0.57 degrees.⁸ In the 17.7-17.8 GHz band segment, Viasat seeks to operate on an unprotected, non-interference basis consistent with the Commission's authorization of the ViaSat-3F1 satellite.⁹

II. RADIATION HAZARD ANALYSIS

A radiation hazard analysis for the earth station is attached hereto as Exhibit D. As demonstrated in Exhibit D, the general population would not be exposed to RF levels in excess of the Commission's standard, and the antenna does not present a risk to trained personnel in the controlled area in the immediate vicinity of the antenna.

III. FAA NOTIFICATION

⁵ See 47 C.F.R. § 2.106 n. NG58(d). See also 47 C.F.R. § 25.115(e)(2).

⁶ See ViaSat-3F1 Technical Attachment at 13-16.

⁷ See *id.* at 6-7.

⁸ See 47 C.F.R. § 25.115(a)(9).

⁹ See *Viasat, Inc.*, Order and Declaratory Ruling, 35 FCC Rcd 5416, ¶ 32 (2020).

The antenna is exempt from notification to the FAA under Section 17.7(e)(3) of the Commission's rules because the height of the antenna is less than 6.1 meters above ground level.