

WAIVER REQUEST

Under the Commission’s waiver standard, an applicant must demonstrate that there is “good cause” for granting a waiver and that the request warrants deviation from the applicable rules due to special circumstances.¹ Moreover, it must be demonstrated that any deviation from the rules will not compromise the overarching policy objectives they are designed to uphold.²

A. Section 2.106 - Table of Allocations

Oligo requests a waiver of the United States Table of Frequency Allocations set forth in Section 2.106 of the Commission’s rules.

The Commission applies a specific waiver standard to requests involving non-conforming spectrum uses. As the Commission has previously stated, it “may grant a waiver of the Table of Frequency Allocations for non-conforming uses of spectrum when there is little potential for interference into any service authorized under the Table of Frequency Allocations and when the non-conforming operator accepts any interference from authorized services.”³ This standard has been consistently applied in cases involving operations that do not conform to the U.S. Table of Allocations, as well as those that diverge from the International Telecommunication Union (ITU) Radio Regulations.⁴

¹ See 47 C.F.R. § 1.3; *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

² See *Northeast Cellular*, 897 F.2d at 1166; see also *WAIT Radio*, 418 F.2d at 1157.

³ *Application for Modification of License to Authorize a Second-Generation NGSO MSS Constellation by Iridium Constellation LLC*, Order and Authorization, 31 FCC Rcd 8676 (IB 2016) (“Iridium Order and Authorization”). See also, *Applications by Orbcomm License Corp. For Authority to Modify its Non-Voice, Non-Geostationary Satellite System et al.*, Order and Authorization, 23 FCC Rcd 4804, 4809, para. 15 (IB/OET 2008).

⁴ See *Iridium Order and Authorization* at paras 21-22.

a. **2025-2110 MHz**

Oligo requests a waiver of the U.S. Table of Frequency Allocations for use of the 2025-2110 MHz band to execute the Chimera-1 mission.

Special circumstances justify this waiver to permit Chimera-1 to conduct SOS and SRS operations in this band. Chimera-1's SOS operations are consistent with the International Table of Frequency Allocations, and its operations align with the technical parameters that are consistent with SRS operations.

Oligo's proposed uses of the band for command, spacecraft telemetry, mission telemetry and tracking are consistent with Recommendation ITU-R SA.364-6.⁵ As demonstrated in the Technical Annex, Chimera-1 will receive signals from only one U.S. earth station in the S-band uplink. The majority of transmissions in this band will originate from foreign earth stations, where such transmissions are consistent with the International Table of Frequency Allocations. Across all ground station sites, Chimera-1's spectrum use will be infrequent and limited in duration, which will facilitate the protection and coordination of other in-band operations.

Oligo will coordinate its limited use of this band with in-band primary Federal spectrum users to ensure Chimera-1's operations will not interfere with critical U.S. Government missions. Oligo will also coordinate its operations with all commercial and foreign systems as necessary. Accordingly, Chimera-1's operations in the 2025-2110 MHz band will not undermine the Commission's policy of preserving this spectrum for Federal communications, and grant of this

⁵ See Recommendation ITU-R SA.364-6 Annex, (2) "Space research missions use frequency bands allocated to the SRS to provide the space operation functions as well as the mission telemetry within a single radio system. This allows for more efficient use of the radio-frequency spectrum, as well as less stringent requirements for spacecraft power, component space, and weight."

waiver would be consistent with both domestic and international spectrum management objectives.

b. 2200-2290 MHz

Oligo requests a waiver of the U.S. Table of Allocations for use of the 2200-2290 MHz band in support of the Chimera-1 mission.

Special circumstances justify this waiver to permit Chimera-1 to conduct SOS and SRS operations within this band. Chimera-1's SOS operations are consistent with the International Table of Frequency Allocations, and its technical parameters align with those typically associated with SRS operations. Additionally, Oligo's proposed uses of the band for command, spacecraft telemetry, mission telemetry and tracking are consistent with Recommendation ITU-R SA.364-6.⁶

As detailed in the Technical Annex, Chimera-1 will transmit signals in this band only to earth stations located outside the United States, where such transmissions are consistent with the International Table of Frequency Allocations. At all ground station sites, Chimera-1's spectrum use will be infrequent and limited in scope, which will facilitate the protection and coordination of other in-band operations.

Oligo will coordinate its limited use of this band with in-band primary Federal spectrum users to ensure Chimera-1's operations will not interfere with critical United States Government

⁶ See Recommendation ITU-R SA.364-6Annex, (2) "Space research missions use frequency bands allocated to the SRS to provide the space operation functions as well as the mission telemetry within a single radio system. This allows for more efficient use of the radio-frequency spectrum, as well as less stringent requirements for spacecraft power, component space, and weight."

missions. Oligo will also coordinate its operations with all commercial and foreign systems. Accordingly, grant of Chimera-1's waiver for the utilization of the 2200-2290 MHz band would be consistent with the Commission's policy of preserving this spectrum for Federal use while enabling innovative ISAM demonstrations.

c. 8025-8400 MHz

Oligo respectfully requests a waiver of the U.S. Table of Allocations to permit non-conforming payload and TT&C space-to-Earth transmissions in the 8025-8400 MHz band ("EESS band"). Oligo intends to conduct primary downlink operations in the X-band.

Special circumstances further justify this waiver request. Oligo, like many other U.S. operators, relies on ground-station-as-a-service providers for gateway operations. Commercially available ground-station infrastructure capable of supporting the proposed mission profile is presently concentrated in the X-band, making use of this spectrum operationally necessary for the Chimera-1 mission. As Oligo develops future missions, it will continue to explore gateway solutions that conform to the U.S. Table of Allocations. However, the current lack of commercially available alternatives constitutes a special circumstance necessary to justify a waiver. Oligo intends to utilize KSAT's commercially operated global ground station network for TT&C and payload downlink operations.

To mitigate any potential for harmful interference, Oligo will:

- limit operations to approximately five years;
- transmit only over identified ground stations; and
- maintain a minimum three-degree avoidance angle with other co-frequency satellite operators, where necessary to address coordination requests.

The proposed X-band operations would involve low duty cycles and relatively narrow channels. These characteristics, coupled with the relatively light use of the band, will facilitate coordination and ensure that Chimera-1's operations protect existing in-band and adjacent band operations.

The Commission has previously authorized similar non-conforming use of the X-band for SRS missions,⁷ recognizing the public interest benefits permitting technically and commercially important SRS missions to operate in this band where sufficient flexibility and risk mitigation protocols are in place to protect in-band users. Oligo's request is consistent with that precedent.

Accordingly, given the limited risk of harmful interference, the special circumstances driving Oligo's proposed use, and the strong public interest in enabling SRS mission development, a waiver of the Table of Allocations to permit Oligo's non-conforming use of the 8025-8400 MHz band is warranted and in the public interest.

d. 1616–1626.5 MHz

The 1616–1626.5 MHz band is allocated on a primary basis to the Mobile Satellite Service ("MSS") for communications between mobile earth stations and non-Federal space stations. Oligo seeks a limited waiver of Section 2.106 of the Commission's rules to permit Chimera-1 to operate as a space-based user terminal communicating with the Iridium satellite constellation within this band.

Chimera-1 will use the Iridium network solely to support telemetry, tracking, and command ("TT&C") functions. These communications will consist of short-duration, low-duty-

⁷ See e.g., Grant, Turion Space Corp, File No. SAT-LOA-20240516-00104, Call Sign S3198 (Dec. 26, 2024).

cycle transmissions necessary to maintain spacecraft health and safety and to support mission operations. Chimera-1 will not provide commercial MSS offerings, will not communicate with user terminals other than through the Iridium network, and will not provide inter-satellite relay or inter-satellite service functionality.

Oligo emphasizes that Chimera-1 will not operate as an independent MSS system and will not provide Inter-Satellite Service. Rather, Chimera-1 will function as a user terminal operating within the scope of Iridium's existing FCC authorization. Oligo is an Iridium customer and will coordinate all operations in this band with Iridium to ensure compliance with Iridium's network requirements and to prevent harmful interference.

Operations in the 1616–1626.5 MHz band will be conducted on a non-interference, non-protection basis with respect to all authorized services. Chimera-1 will accept any interference from authorized MSS operators, including Iridium, and will not claim protection from such interference. In the event that Chimera-1 operations are determined to cause harmful interference, Oligo will immediately cease transmissions in this band and take all necessary steps to resolve the interference.

Given that (1) Iridium is the sole licensed operator in this band for MSS space station communications, (2) Chimera-1 will operate strictly as a user terminal under Iridium's network control, (3) transmissions will be low power, infrequent, and limited in duration, and (4) Oligo will coordinate operations directly with Iridium and comply with all applicable technical constraints, grant of the requested waiver will not increase the risk of harmful interference and is consistent with Commission precedent.