

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
O3b Limited)	Call Sign E100088
Application for Modification of)	File No. SES-MOD-20190207-00084
Fixed Earth Station in the Fixed-Satellite)	
Service in Haleiwa, HI)	
)	

PETITION TO DENY

Iridium Constellation LLC (“Iridium”), pursuant to 47 C.F.R. § 25.154, hereby petitions to deny in part the above-captioned gateway earth station application (“Application”) filed by O3b Limited (“O3b”).

I. INTRODUCTION AND SUMMARY

In the Application, O3b proposes to modify the license for its Hawaii gateway earth station (the “Hawaii Earth Station”) by adding frequencies, including the 29.1-29.3 GHz and 19.4-19.6 GHz bands. Under the Commission’s band plan, O3b’s non-geostationary satellite orbit (“NGSO”) system may use the 29.1-29.3 GHz and 19.4-19.6 GHz bands only for mobile satellite service (“MSS”) feeder links.¹ O3b’s request to use these bands should be denied without prejudice for the following reasons:

¹ See *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report & Order and Further Notice of Proposed Rulemaking, IB Docket 16-408, FCC 17-122 (rel. Sept. 27, 2017) (“*NGSO Report & Order*”) at Appendix B.

(i) Section 25.203(k)² of the Commission's rules requires O3b to show either that it will not cause unacceptable interference to Iridium's feeder links or that it has coordinated its proposed feeder link operations with Iridium's feeder links. O3b has done neither. Its application, therefore, is incomplete on its face.

(ii) The ostensible purpose of O3b's request to operate in the 29.1-29.3 GHz and 19.4-19.6 GHz bands is to provide feeder links to support MSS communications. As best as Iridium can determine, however, O3b has not been authorized to operate or applied to operate any MSS earth stations. Accordingly, O3b's application to operate NGSO MSS feeder links lacks an essential element.

II. INTEREST OF IRIDIUM

Iridium operates a constellation of 66 NGSO, mobile satellite service ("MSS") space stations in low earth orbit. Because of the unique capabilities of the Iridium network, commercial, military, and civilian government users depend on Iridium for mission-critical communications needs. In addition to supporting the missions of the Department of Defense, Iridium supports the core commercial operations of large and economically significant industrial sectors, and a diverse set of civilian public safety functions, including the efforts of our first responders. In February 2019, Iridium completed the replacement of its first-generation satellites with the Iridium[®] NEXT satellite constellation, which supports higher data speeds for new products and services.

² 47 CFR § 25.203(k).

Every user communication on the Iridium satellite system is routed through a gateway earth station. Iridium's gateways operate on feeder link frequencies in the 29.1-29.3 GHz and 19.4-19.6 GHz bands O3b proposes to use at its Hawaii Earth Station.³ Iridium also employs these bands for the TT&C links that control and command its space stations.

III. O3b's APPLICATION IS FACIALLY INCOMPLETE.

In keeping with the Iridium system's status as a global network, multiple NGSO MSS feeder link terminals around the world communicate with Iridium's space stations in the 29.1-29.3 GHz and 19.4-19.6 GHz bands. The majority of these feeder link terminals are located in the United States. One of them is located in Wahiawa, Hawaii, at a site that is 17 kilometers from the site of O3b's Hawaii Earth Station.

Section 25.203(k) of the Commission's rules⁴ gives O3b two options for showing Iridium's feeder link earth stations will be sufficiently protected from the operation of O3b's Hawaii Earth Station. It can "demonstrate in its application[] that its proposed earth station will not cause unacceptable interference" to Iridium.⁵ Or it can "certify that the operation of its earth station" will conform to the terms of an "established coordination agreement[]" with Iridium.⁶

³ The 19.3-19.4, 19.6-19.7 and 29.3-29.5 GHz bands, which Iridium does not use, also are available under the FCC's band plan for NGSO MSS feeder links. *See NGSO Report & Order* at Appendix B.

⁴ 47 CFR § 25.203(k). *See also* 47 CFR §§ 25.257(d) and 25.258(c).

⁵ *Id.*

⁶ *Id.*

O3b has done neither. It has not made a showing as to the potential for its Hawaii Earth Station to cause interference to the feeder link earth station located in Wahiawa. And it has not certified that it will operate in accordance with the terms of an established coordination agreement that is designed to protect the Wahiawa feeder link earth station. It could not have made this certification, because there is no such coordination agreement.

O3b states it “will coordinate with Iridium prior to commencing operations in the 29.1-29.3 GHz band segment Iridium uses.”⁷ This promise to coordinate is necessary, but it is insufficient. Section 25.203(k) mandates that O3b first complete coordination, and only then file an application. O3b has jumped the gun.

Iridium stands ready to coordinate in good faith. That said, O3b’s choice of location is a concern.

As O3b has recognized, the distance between feeder link terminals is critical in evaluating the potential for interference. O3b’s market access request was premised on there being “enough geographic separation” between O3b and Iridium feeder link earth stations to avoid interference.⁸ And yet O3b has chosen a location in Hawaii that is only 17 kilometers from the feeder link earth station in Wahiawa. That distance is a small

⁷ O3b Limited, Application for Modification, FCC call sign E100088, IBFS File No. SES-MOD-20190207-00084 (*O3b Application*), Exhibit 1: Description of Modification, p. 3.

⁸ O3b Limited, Amendment to Modification of License to Allow Market Access of the O3b Ka-band NGSO System, FCC call sign S2935, IBFS File No. SAT-AMD-20161115-00116, Attachment A: Technical Annex at p. 23.

fraction of the 800 km coordination trigger that is specified in Section 25.250(b) of the rules.⁹

In furtherance of Section 25.203(k) of the rules, the Commission should dismiss O3b's request to operate in the 29.1-29.3 GHz and 19.4-19.6 GHz bands without prejudice, to give the parties an opportunity to coordinate. And it will be incumbent upon O3b to demonstrate in coordination why it believes it can protect the feeder link earth station at Wahiawa even though O3b's Hawaii Earth Station is only 17 kilometers away.

IV. O3b's APPLICATION LACKS AN ESSENTIAL ELEMENT.

NGSO operation in the 29.1-29.3 GHz and 19.4-19.6 GHz bands is limited to NGSO MSS feeder links.¹⁰ This limitation is in keeping with the definitions in Part 25 of the rules, which state that "feeder link[s]" must not be used to support Fixed-Satellite Service communications.¹¹

O3b seeks to use the 29.1-29.3 GHz and 19.4-19.6 GHz bands to operate NGSO MSS feeder links.¹² And per the Commission's band plan and the definition of "feeder links," that means O3b would need to operate its Hawaii Earth Station in these bands to support MSS communications.

⁹ 47 CFR § 25.250(b).

¹⁰ See *NGSO Report & Order* at Appendix B.

¹¹ See 47 CFR § 25.103.

¹² *O3b Application*, Exhibit 1: Description of Modification, at p.3.

It is self-evident one cannot have MSS communications without MSS earth stations. As best as Iridium can determine, however, O3b's earth station licenses are exclusively FSS. Although O3b's space stations have been granted MSS authority for the 19.7-20.2 and 29.5-30 GHz bands, Iridium can find no evidence of O3b holding an MSS earth station license or having applied for one.¹³

O3b's application, therefore, lacks an essential element. O3b seeks to operate NGSO MSS feeder links to support MSS communications, but it lacks the authority required to operate a key component of an MSS network.

Any O3b application seeking to operate MSS earth stations in the 19.7-20.2 and 29.5-30 GHz bands would require careful scrutiny, because the Commission has not adopted service rules for MSS earth stations in these bands. In fact, although there is an MSS allocation in the bands, the Commission's band plan for the bands is limited to FSS stations.¹⁴

In sum, O3b's application lacks an essential element because it proposes to operate NGSO MSS feeder links that would support MSS communications, but there is no evidence O3b has the authority required to operate an MSS network.

¹³ O3b does have authority to communicate with earth stations on maritime vessels, but that authority is on a non-conforming basis under an FSS license, not an MSS license. *See* FCC call sign E130098.

¹⁴ *See NGSO Report & Order* at Appendix B.

V. CONCLUSION

In view of the forgoing, the Commission should deny without prejudice the portion of O3b's application that proposes to use the 29.1-29.3 GHz and 19.4-19.6 GHz bands for NGSO MSS feeder links.

Respectfully submitted,

IRIDIUM CONSTELLATION LLC

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September 20, 2019

DECLARATION OF MAUREEN C. MCLAUGHLIN

1. I am Vice President Public Policy for Iridium Constellation LLC.
2. I have reviewed the foregoing Petition to Deny. All statements made therein are true and correct to the best of my knowledge, information, and belief.

I declare under penalty of perjury that the foregoing is true and correct.

By: /s/Maureen C. McLaughlin

Date: September 20, 2019

CERTIFICATE OF SERVICE

I hereby certify that on September 20, 2019, a copy of the foregoing Petition to Deny was sent by first-class, United States mail to the following:

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