

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

In the Matter of)	
)	
Thales Avionics, Inc.)	File Nos. SES-LIC-20170217-00183
)	SES-AMD-20170414-00381
Application for Blanket License to)	
Operate Earth Stations Aboard)	
Aircraft)	

PETITION TO DENY OF IRIDIUM CONSTELLATION LLC

Iridium Constellation LLC (“Iridium”), pursuant to Section 25.154 of the Commission’s rules,¹ hereby requests that the Commission deny the portion of the above-referenced application (the “Application”), filed by Thales Avionics, Inc. (“Thales”), in which Thales proposes to use the 29.25-29.3 GHz band.

I. INTRODUCTION AND SUMMARY

In its Application, Thales requests a blanket license to operate earth stations aboard aircraft that would communicate with certain geostationary satellite orbit (“GSO”) Fixed-Satellite Service (“FSS”) space stations. The earth stations would be used to provide service to commercial aircraft in the North American region. The 2175 MHz encompassed by Thales’ Application includes the 50 MHz between 29.25 GHz and 29.3 GHz band, which is 50% of the uplink portion of Iridium’s feeder link band.

¹ 47 C.F.R. § 25.154.

Thales' proposal for earth stations aboard aircraft is facially deficient for multiple reasons. The proposal conflicts with the Commission's band plan, which limits GSO FSS operations in the 29.25-29.3 GHz band to communications with earth stations at fixed locations. The proposal is unprecedented; the Commission never has authorized GSO FSS earth stations to operate on aircraft in this band. And the proposal runs afoul of the Commission's requirements for proponents of non-conforming uses, who must demonstrate they will not interfere with primary services and must agree to accept interference from primary services. Thales has done neither.

For all these reasons, the portion of Thales' Application covering the 50 MHz between 29.25 GHz and 29.3 GHz is facially deficient and should be denied. Following denial of this request, Thales would remain free to operate in the remaining 2125 MHz covered by its Application.

I. INTEREST OF IRIDIUM

Iridium operates a constellation with an architecture of 66 non-geostationary satellite orbit ("NGSO"), mobile satellite service ("MSS") space stations in low earth orbit. Through its satellite constellation, the largest in the world, Iridium delivers communication services to first responders, public safety personnel, the U.S. Department of Defense, border security officers, the aviation industry, and the energy sector in addition to providing essential backup communications across urban and rural areas alike.

The Commission has authorized Iridium to replace its initial constellation with next generation space stations known as “Iridium NEXT.”² On January 14, 2017, Iridium launched the first 10 of these replacement satellites, and Iridium is integrating the new satellites into its constellation. The next 10 replacement satellites are scheduled to be launched in late June 2017.

Once fully deployed, Iridium NEXT will enable new broadband multi-service capability while providing the technical flexibility to support innovative new services and technologies. As the Commission has stated, Iridium NEXT will “provide mobile voice and data services to end users on a network with improved voice quality and enhanced data transmission speeds.”³

The 29.25-29.3 GHz band Thales proposes to operate in is the upper half of the uplink portion of Iridium’s feeder link band. The feeder links play a central role in Iridium’s system. Iridium uses its feeder link frequencies, which have primary status, to control its satellites and to connect its customers’ voice and data transmissions with the public switched telephone network and the Internet. Interference to Iridium’s feeder links could have devastating consequences.

² *Application of Iridium Constellation LLC for Modification of License to Authorize a Second-Generation NGSO MSS Constellation*, Order and Authorization, 31 FCC Rcd 8675 (IB 2016).

³ *Id.* at ¶ 1.

II. THALES' PROPOSED OPERATION OF EARTH STATIONS ABOARD AIRCRAFT IN THE 29.25-29.3 GHz BAND IS INCONSISTENT WITH THE COMMISSION'S KA-BAND PLAN AND IS UNPRECEDENTED

The Commission has adopted a band plan that governs operations in the Ka-band. The Commission adopted the band plan based on its determinations as to which services are compatible and which are incompatible.

Thales' proposal conflicts with the Commission's band plan. Under the band plan, the 29.25-29.3 GHz band is reserved for MSS feeder links and for communications between GSO FSS space stations and earth stations in fixed locations. The band plan makes no provision for GSO FSS communications with earth stations in motion, much less for earth stations on airplanes in motion. Thales does not, however, even request a waiver of the band plan. Thales' Application, therefore, is facially deficient.

Thales' proposal for the 29.25-29.3 GHz band also is unprecedented. Attempting to operate earth stations aboard aircraft in a band in which Iridium's gateway earth stations are in constant communication with NGSO satellites using the same frequencies raises unique and challenging interference issues. Although the Commission has authorized non-conforming uses in other bands, it never has authorized earth stations aboard aircraft in the 29.25-29.3 GHz band.

II. THALES' PROPOSED OPERATION OF EARTH STATIONS ABOARD AIRCRAFT IN THE 29.25-29.3 GHz BAND DOES NOT SATISFY THE REQUIREMENTS FOR NON-CONFORMING USES

A proposal that is inconsistent with a band plan is considered a “non-conforming use.” The proponent of a non-conforming use must accept any interference it will receive from authorized services and must demonstrate it will not interfere with authorized services.⁴

Thales has done neither. It has not agreed to accept interference from Iridium's feeder links. And it has made no effort to analyze the potential for its 29.25-29.3 GHz band earth stations aboard aircraft to interfere with Iridium's feeder links, which have primary status.

At most, Thales has implicitly acknowledged the potential for interference to Iridium's feeder links with this statement: “Thales will work closely with authorized MSS gateway service providers and respond to any requests for coordination as necessary with respect to its ESAA operations.”⁵ A statement about responding to requests for coordination, however, is no substitute for a showing of non-interference.

Thales' statement, moreover, turns the parties' responsibilities upside down. As the operator of a primary service, Iridium is not required to request coordination from

⁴ See *Application of Fugro-Chance, Inc.*, Order and Authorization, 10 FCC Rcd 2860, ¶ 2 (IB 1995). See also *Hughes Network Systems, LLC*, Declaratory Ruling, 26 FCC Rcd 8521 & n. 1, ¶¶ 12-14 (IB 2011); *Boeing Company*, Order and Authorization, 16 FCC Rcd 5864, ¶¶ 8-9, 12 (IB and OET 2001).

⁵ *Id.* at 13.

Thales. Rather, it is Thales' responsibility, as the proponent of a non-conforming use, to demonstrate it can avoid interference to Iridium's feeder links. Thales has made no such demonstration.

Thales refers to the possibility that the Commission will adopt rules for operating earth stations in motion in the Ka-band,⁶ and after Thales filed its Application the Commission adopted a Notice of Proposed Rulemaking seeking comment on this issue.⁷ The mere fact that the Commission is considering the possibility of adopting such rules, however, affords no basis for issuing Thales a license. Thales' Application needs to be judged against the rules that are in effect today, not rules that might be in effect in the future.

The Commission has recognized in its rulemaking proposal that there are special considerations associated with Iridium's feeder link band. Based on these considerations, the Commission requested comment as to "new issues" that would be implicated by including the 29.25-29.3 GHz band in rules the Commission might adopt permitting earth stations in motion in the Ka-band.⁸ The rulemaking is the appropriate vehicle for exploring these issues.

⁶ See Application, Amended Technical Showing at 4, n.2.

⁷ See *Amendment of Parts 2 and 25 of the Commission's Rules to Facilitate the Use of Earth Stations in Motion Communicating with Geostationary Orbit Space Stations in Frequency Bands Allocated to the Fixed Satellite Service*, Notice of Proposed Rulemaking, IB Docket No. 17-95 (rel. May 19, 2017).

⁸ *Id.* at ¶ 54.

CONCLUSION

The portion of Thales' Application proposing to operate earth stations aboard aircraft in the 50 MHz between 29.25 GHz and 29.3 GHz is deficient on its face. It conflicts with the Commission's band plan. It is unprecedented. And it falls short of the requirements for non-conforming use. Accordingly, the 29.25-29.3 GHz portion of the Application should be denied.

Respectfully submitted,

IRIDIUM CONSTELLATION LLC

By: /s/Maureen C. McLaughlin
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May 26, 2017

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 of Iridium Constellation LLC ("Petition"). 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: May 26, 2017

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **PETITION TO DENY OF IRIDIUM CONSTELLATION LLC** was sent by first class mail, postage prepaid, this 26th day of May, 2017, to:

Pat Amodio
Thales Avionics, Inc.
700 South Babcock St.
Melbourne, Florida 32901

/s/ Vicki Taylor