

BEFORE THE
Federal Communications Commission
WASHINGTON, D.C. 20554

In the Matter of)
)
Iridium Constellation LLC) File No. SAT-MOD-20120813-00128
) Call Sign S2110
Application for Modification of Non-Geostationary)
Mobile-Satellite Service Authorization)

To: Chief, Satellite Division
International Bureau

PETITION TO DENY OR DISMISS, IN PART

HNS License Sub, LLC (“Hughes”), by counsel and pursuant to Section 25.154 of the Commission’s Rules (47 C.F.R. § 25.154), hereby petitions to deny, in part, the above-captioned application of Iridium Constellation LLC (“Iridium”), filed on August 13, 2012.¹ In the application (“Iridium MOD Application”), Iridium seeks to modify its current non-geostationary mobile-satellite service (“NGSO MSS”) “Big LEO” authorization to permit it “periodically to co-locate and operate additional satellites” within the Iridium satellite network

¹ The application appeared on the International Bureau’s “Accepted for Filing” Public Notice released on Friday, September 28, 2012. *See* Public Notice, “Policy Branch Information: Satellite Space Applications Accepted for Filing,” Report No. SAT-00901, released Sept. 28, 2012 (“*Accepted for Filing PN*”). Accordingly, a deadline of October 29, 2012 was established for comments and petitions concerning the application. *See* 47 C.F.R. § 25.154(a)(2). Because the FCC was closed on both October 29th and 30th due to the impact of Hurricane Sandy, this Petition is timely-filed today, October 31, 2012, the next business day following the previously established due date. *See* 47 C.F.R. § 1.4(j) (if “the filing date falls on a holiday, the document shall be filed on the next business day”) and § 1.4 (e)(1) (a “holiday” includes, in addition to Saturdays, Sundays and recognized federal legal holidays “any other day on which the Commission's Headquarters are closed and not reopened prior to 5:30 p.m.”).

“as the functional equivalent of one satellite.”² Iridium further states that each such co-located satellite would be placed approximately 100 kilometers from one of the existing satellites operating as part of one of Iridium’s six orbital planes.³

Hughes urges the Commission to reject, or to dismiss without prejudice, the requested modification to the extent that Iridium seeks access to the 29.25-29.3 GHz portion of the band. The NGSO MSS feeder link uplink spectrum at 29.1-29.3 GHz that is used by Iridium overlaps with the broader 29.25-29.5 GHz frequency band that is available for use by both high-density and low-density uplinks of geostationary-orbit fixed-satellite service (“GSO FSS”) networks. The addition of a second co-located satellite in the configuration proposed by Iridium appears to increase the sensitivity of Iridium’s NGSO MSS feeder uplinks to geostationary fixed-satellite service (“GSO FSS”) transmissions in the 29.25-29.5 GHz band in a manner inconsistent with the terms upon which Iridium was granted access to this band in the first instance.⁴ Moreover, Iridium has failed to articulate any clear public interest benefits that would otherwise support favorable action on its request. Hughes emphasizes that its request for relief is limited to the 29.25-29.3 GHz segment of the broader 29.1-29.3 GHz band that Iridium seeks to use for MSS feeder links.

² Iridium MOD Application at 1.

³ *Id.* at 2-3.

⁴ Hughes notes that the *Accepted for Filing PN* states that the bands sought for feeder uplinks are 29.1-29.25 GHz; however, Iridium’s current license actually covers the 29.1-29.3 GHz band for feeder uplinks, and it is presumed that Iridium is seeking to make use of the entire band for which it is licensed. *See Accepted for Filing PN* at 1. Nonetheless, it is not clear whether the *Accepted for Filing PN* has provided adequate notice to all potentially interested parties of the request for expanded authority throughout this Earth-to-space band.

STATEMENT OF INTEREST

As the Commission is aware, Hughes is keenly interested in any proposed changes in spectrum use affecting the 29.25-29.5 GHz band in which it currently operates gateway earth stations and user terminals as part of its Ka-band broadband GSO FSS network.⁵ Accordingly, Hughes is an interested party with respect to any application that proposes a modified use of the 29.1-29.3 GHz band, which has a 50 MHz overlap with the Hughes uplink band. As detailed herein, Hughes is concerned that Iridium's recent objections to Hughes' operations in this portion of the Ka-band are born of the increased sensitivity of its own system as a result of the major changes in space station deployment that are proposed here.⁶

DISCUSSION

When Iridium was granted initial authorization to operate feeder links for its L-band system in the Ka-band spectrum at 29.25-29.3 GHz, such operation was premised on its assurance that its earth stations would be able to use the 29.25-29.3 GHz band segment on a shared basis with GSO FSS earth stations by following "the guidelines set forth in ITU-R Recommendation S.1419, 'Interference Mitigation Techniques to Facilitate Coordination Between non-GSO MSS Feeder links and GSO FSS networks in the bands 19.3-19.7 GHz and

⁵ See HNS License Sub, LLC, Call Signs E060445 and E110149 and associated file numbers.

⁶ Because both the spectrum overlap and Iridium's past participation in proceedings in which Hughes has sought to modify its authority in the 29.25-29.5 GHz Ka-band are a matter of public record at the FCC, and thus well known to the Commission, this is a circumstance in which the Bureau may take official notice that Hughes is a "party of interest." See 47 C.F.R. § 25.154(a)(4). Factual allegations contained herein concerning potential interference to Hughes' user and gateway Earth stations are appropriately supported by a technical declaration. *Id.*

29.1-29.5 GHz.”⁷ The referenced ITU guidelines rely, in part, on spatial separation of gateway earth stations used by the two types of satellite networks (225 kilometers for typical antennas, and as few as 60 kilometers for high-gain/highly-directional antennas). Coordination on such basis between NGSO MSS feeder link stations and GSO FSS networks was deemed feasible in the Ka-band rulemaking proceedings leading to designation of the 29.25-29.5 GHz band for ubiquitous GSO FSS earth stations, a conclusion that was based on the avoidance of main-beam coupling using the techniques outlined in Recommendation ITU-R S.1419, which was referenced in and annexed to the 2007 Iridium Amendment.⁸

Hughes has premised its own use of the 29.25-29.5 GHz band for gateway earth stations and user terminal operations upon these spectrum sharing techniques and the Commission’s explicit endorsement of them in its *Second Order on Reconsideration* in IB Docket No. 98-172 (permitting ubiquitous deployment of GSO FSS earth stations in the 29.25-29.5 GHz band subject to coordination with NGSO MSS feeder link operations).⁹ And Hughes has consistently acknowledged its obligations to coordinate with feeder link licensees such as Iridium under the FCC’s Rules.¹⁰

Recently, however, Iridium has called into question its continued adherence to its 2007 commitments and the spectrum sharing mechanisms underpinning the Commission’s Ka-band

⁷ Iridium Amendment, FCC IBFS File No. SES-AMD-20070309-00334, at 1 (Filed March 9, 2007).

⁸ See, e.g., *Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands*, Second Order in Reconsideration in IB Docket No. 98-172, 17 FCC Rcd 24248, 24259-61 (2002); *Local Multipoint Distribution Service and Fixed-Satellite Services*, Memorandum Opinion and Order in CC Docket No. 92-297, 16 FCC Rcd 11436, 11439-40 (2001).

⁹ *Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands*, 17 FCC Rcd at 24259-61.

¹⁰ See Hughes Opposition to “Emergency Petition to Dismiss or Deny,” FCC IBFS File No. SES-MFS-20120426-00395, at 4 (filed June 4, 2012).

rulemaking proceedings. Iridium has strenuously opposed an application in which Hughes seeks to make non-technical, administrative modifications to previously granted earth station authorizations encompassing the 29.25-29.3 GHz band.¹¹ In a second, related opposition, Iridium has asserted for the first time in any proceeding that circumstances other than main beam coupling involving GSO FSS earth terminals and Iridium's feeder link receivers could cause harmful interference to its satellite network.¹² In particular, Iridium has argued that the sidelobe signal characteristics of Hughes earth stations might interfere with NGSO MSS feeder link reception,¹³ even though these emissions were never at issue in the proceedings that led to Iridium being granted access to the 29.25-29.3 GHz band segment.¹⁴ Moreover, Iridium also has asserted for the first time that the aggregated impact of Hughes remote terminals would impair its operations – a particularly odd contention to raise after the fact concerning a band where ubiquitous deployment of user FSS terminals has been permitted for five years.

While Iridium's allegations are unsupported in its unverified and unrealistic worst-case analysis of potential interference submitted in connection with the Hughes application

¹¹ Despite the fact that one of Hughes' modification applications sought only to substitute a new satellite as a point of communication at an already authorized orbital location, Iridium objected to the already authorized use by Hughes of the 29.25-29.3 GHz band to transmit to the satellite, arguing that Hughes needed to make a new, specialized interference showing, even though no change in actual spectrum use was proposed. *See* Hughes Opposition to "Emergency Petition to Dismiss or Deny," FCC IBFS File No. SES-MFS-20120426-00395, at 2-4 (filed June 4, 2012).

¹² *See* Emergency Petition to Dismiss or Deny of Iridium Satellite LLC, FCC IBFS File Nos. SES-MFS-20120322-00290 and SES-AFS-20120426-00396, at 5.

¹³ *Id.*

¹⁴ As Hughes has previously noted, Iridium's stance necessarily suggests that the ITU and the Commission failed to consider a significant interference case in proceedings that unfolded over several years, and which led to the adoption of Recommendation ITU-R S.1419, despite the participation in those proceedings of engineers representing all of the major satellite companies. *See* Hughes Opposition to "Emergency Petition to Dismiss or Deny," FCC IBFS File Nos. SES-MFS-20120322-00290 and SES-AFS-20120426-00396, at 5 n.15 (filed July 2, 2012).

proceedings,¹⁵ these filings do raise questions regarding Iridium's own capability to operate successfully under the existing rules and associated ITU recommendations that govern spectrum sharing in the 29.25-29.3 GHz band segment.¹⁶ Only concerns regarding its own ability to operate on a harmful-interference-free basis under the existing rules would appear to have motivated Iridium to file objections that seek a rewrite of the settled Ka-band rulemaking decisions and licensing actions made and taken during the last decade.

Now, Iridium seeks to exacerbate the situation with its proposed modification. When two Iridium satellites are in close formation, they will require more feeder link telemetry, tracking and control bandwidth because spectrum reuse is not an option. This will put a further strain on sharing with GSO FSS networks in the 29.25-29.5 GHz band, and make a newly difficult situation worse.

Against these evident deficiencies in the Iridium current proposal with respect to its capability to operate in the interference environment established under the existing rules, the applicant offers only vaguely described and speculative public interest benefits as supporting justifications. It states to no particular effect that grant of the application would allow it to be more "flexible" in the configuration of its constellation¹⁷ – a fact that is self-evident, but demonstrates nothing in terms of increased efficiency or public interest benefits. As noted above, inefficiency is increased with respect to the GSO FSS in the 29.25-29.3 GHz band. Moreover, flexibility for its own sake does not justify grant of a significant system modification. Iridium does state that it would be able "to provide more L-band connectivity"

¹⁵ See Emergency Petition to Dismiss or Deny of Iridium Satellite LLC, FCC IBFS File Nos. SES-MFS-20120322-00290 and SES-AFS-20120426-00396, Technical Statement, "Assessment of Interference to Iridium."

¹⁶ See, e.g., 47 C.F.R. §§ 25.203(k) & 25.258.

¹⁷ Iridium MOD Application at 4.

with an additional satellite at one of the eleven slots in one of its six orbital planes,¹⁸ but does not explain how such positioning on an ad hoc basis translates to improved overall service by the satellite constellation as a whole. Other potential benefits suggested by Iridium are purely speculative, even as Iridium itself presents them, as it asserts only generally that “engineers can develop added functionality and software-based solutions to occasional faults and anomalies in the system” and that the more flexible configuration “may facilitate” transition to its planned next generation system.¹⁹ More than these vague generalities is required before the Commission can consider the modification that Iridium proposes, particularly in light of the fact that the requested change does not appear to be consistent with established spectrum sharing requirements in the band.

¹⁸ *Id.*

¹⁹ Iridium MOD Application at 4.

CONCLUSION

For each of the foregoing reasons, Hughes urges the Bureau to deny Iridium's modification application to the extent that it seeks to use spectrum in the 29.25-29.3 GHz band. Iridium has unreasonably reneged upon the promises it made to gain access to that segment on a shared basis with GSO FSS blanket-licensed earth terminals.

Respectfully submitted,

HNS LICENSE SUB, LLC

By: Stephen D. Baruch

Stephen D. Baruch

David S. Keir

Lerman Senter PLLC

2000 K Street, NW, Suite 600

Washington, DC 20006-1809

(202) 429-8970

October 31, 2012

Its Attorneys

CERTIFICATE OF SERVICE

I, Sharon A. Krantzman, do hereby certify that on this 31st day of October 2012, I sent a copy of the foregoing "Petition to Deny or Dismiss" via first-class mail to:

Donna Bethea Murphy
Vice President, Regulatory Engineering
Iridium Satellite LLC
1750 Tysons Boulevard
Suite 1400
McLean, Virginia 22102

Sharon A. Krantzman
Sharon Krantzman