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

REPLY TO OPPOSITION

HNS License Sub, LLC ("Hughes"), by counsel and pursuant to Section 25.154(d) of the Commission's Rules (47 C.F.R. § 25.154(d)), hereby replies to the "Opposition of Iridium Constellation LLC" ("Iridium Opposition") filed on November 15, 2012 in the above-captioned application modification proceeding. In the pending 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 "as the functional equivalent of one satellite." Iridium has further stated 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.

In its "Petition to Deny or Dismiss, In Part," filed on October 31, 2012, Hughes urged the Bureau to deny the requested modification with respect to the 29.25-29.3 GHz portion of

the broader 29.1-29.3 GHz band in which Iridium seeks to operate MSS feeder links.[1] Hughes first noted that 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.[2] In addition, Hughes argued that Iridium failed to articulate any clear public interest benefits that would otherwise support favorable action on its request.[3]

I. Iridium Has Failed to Address the Central Spectrum Sharing Issue Posed by Its Modification Application.

In its Opposition, Iridium asserts that "only one of the two satellites in each co-located pair will utilize the Ka-band feeder link to receive telemetry, tracking and control ("TT&C") communications."[4] It then claims that because its planned operations "will not require ***more bandwidth*** in the 29.25-29.3 GHz shared with GSO FSS networks," this "moots the ***limited concern*** raised by Hughes."[5] This line of argument is a straw man, responding to only a single sentence of Hughes Petition in which it stated that Iridium would likely "require more feeder link telemetry, tracking and control bandwidth because spectrum reuse is not an option."[6] But

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[1] The NGSO MSS feeder link uplink spectrum at 29.1-29.3 GHz that is used by Iridium overlaps with the 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.

[2] Hughes Petition to Deny, FCC File No. SAT-MOD-20120813-00128, at 4-6 (filed October 31, 2012).

[3] *Id.* at 6-7.

[4] Iridium Opposition at 1.

[5] *Id.* (emphasis added).

[6] Hughes Petition at 6.

Hughes' Petition actually made a much broader point – that Iridium has failed to show that its interference concerns with respect to Hughes operations were grounded in Iridium operations consistent with the assumptions underpinning GSO FSS and NGSO MSS sharing in the 29.25-29.3 GHz band, and further, that Iridium's concerns were linked to its own unilateral operational changes, including the co-location of multiple satellites within a single orbital plane slot within the Iridium NGSO MSS constellation, as proposed in the Iridium MOD Application.[7] Given the issues that Iridium has raised highlighting its inability to share with the GSO FSS in this band, the burden is on Iridium to demonstrate conclusively by means of a detailed technical showing that any alterations in its spectrum use in the 29.1-29.3 GHz feeder link band, beyond those contemplated when its current system license was issued, will not undermine the established Ka-band sharing environment.[8] To date, Iridium has not only failed to do so, but has not even attempted to offer a salient response to this question.

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[7] Hughes Petition at 5-6.

[8] Iridium's assertion that the Hughes Petition should be treated as an informal objection because it does not include an affidavit supporting "specific allegations of fact" is without merit. *See* Iridium Opposition at 2 n.6, *citing* 47 C.F.R. § 25.154(a)(4) & (b)(1). The Commission's rules expressly exempt from the affidavit requirement those circumstances in which "official notice may be taken" of the facts at issue. *See* 47 C.F.R. § 25.154(a)(4). This is such a case. Iridium has confirmed in its Opposition that it seeks to use spectrum in the shared 29.25-29.3 GHz band to control two times as many spacecraft as it had previously used. In addition, as Hughes noted in its Petition, neither the Iridium MOD Application nor the International Bureau's public notice were clear on exactly to what extent – or even whether – the shared band was to be used. Iridium is increasing its shared use of the 29.25-29.3 GHz band with additional transmission time and higher throughput without offering a scintilla of detail as to how this increased use is consistent with the policy and rules that allow Iridium access to the band. The rules and policies for Ka-band sharing with which Iridium is required to comply are a matter of public record. Section 25.154(a)(4) is clearly applicable. Indeed, Iridium itself has made this identical argument in support of its own affidavit-free Petition to Deny in an unrelated proceeding. *See* Reply of Iridium Satellite LLC, FCC File Nos. SES-LIC-20120426-00397 and SES-AMD-20120823-00781, at 3 n.2 (dated October 16, 2012).

Moreover, even with respect to the narrower issue on which Iridium has chosen to engage, its response that "just one satellite will use Ka-band frequencies to receive TT&C communications"[9] does not show that its proposed operations will not worsen the spectrum sharing situation. Whether two carriers are used, one for each co-located satellite, or a single carrier with twice the TT&C traffic is employed does not materially alter the circumstances with respect to interference sensitivity. The potential impact to NGSO MSS operations is a combination of both the transmit power and the amount of time that the frequency band is in use, as Iridium itself has made clear in its own filings in other proceedings.[10] The consequence of transmitting TT&C commands to two satellites via a single Ka-band channel is effectively a doubling of the amount of time that TT&C information is transmitted via that channel. This, in turn, doubles the probability of the type of short-duration, in-line interference event that Iridium has claimed could harm its system.

As Hughes has previously detailed, when Iridium obtained its initial authorization to operate Ka-band feeder links at 29.25-29.3 GHz for its L-band NGSO MSS system, such operation was premised on Iridium's unqualified assurance that its earth stations would be able to use the band on a shared, non-harmful-interference basis with GSO FSS earth stations.[11] Coordination between NGSO MSS feeder link stations and GSO FSS networks was deemed

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[9] Iridium Opposition at 2.

[10] *See* Reply of Iridium Satellite LLC, FCC File No. SES-MOD-20120403-00326, at 3 (filed July 11, 2012).

[11] *See* Hughes' Petition at 3-4. Iridium has avowed from the outset that operational compatibility would be achieved by following "the guidelines set forth in ITU-R Recommendation S.1419." Iridium Amendment, FCC File No. SES-AMD-20070309-00334, at 1 (filed March 9, 2007), *citing* 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 29.1-29.5 GHz."

feasible in the Ka-band rulemaking proceedings, which resulted in designation of the 29.25-29.5 GHz band for ubiquitous GSO FSS earth stations.[12] This decision was premised on avoidance of main-beam coupling between the two services using the techniques outlined in Recommendation ITU-R S.1419, a document that Iridium specifically referenced in and annexed to its 2007 Amendment.

Because Iridium's recent actions have called into question its continued adherence to the spectrum sharing mechanisms underpinning the Commission's Ka-band rulemaking proceedings[13] (the same mechanisms that Iridium previously acknowledged), Iridium must be called upon to reaffirm its compliance with these long-settled norms of operation within the 29.25-29.3 GHz band by making a detailed technical showing that the changes in its operations proposed in the Iridium MOD Application will not increase the sensitivity of its network to harmful interference from other Ka-band licensees.[14] As Hughes emphasized in its Petition,

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[12] *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).

[13] For example, Iridium has strenuously opposed Hughes' application to make non-technical, administrative modifications to previously granted earth station authorizations encompassing the 29.25-29.3 GHz band. One Hughes modification application sought only to change the point of communication for earth stations already fully authorized to access Hughes' EchoStar XVII satellite in conjunction with re-flagging that satellite, yet Iridium objected to the already authorized use of the 29.25-29.3 GHz band, 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 File No. SES-MFS-20120426-00395, at 2-4 (filed June 4, 2012).

[14] Among other recent assertions, Iridium has argued that the aggregate impact of Hughes' remote terminals operating beyond the maximum coordination zone identified in ITU-R Recommendation S.1419 could impair Iridium's NGSO MSS operations – a particularly odd contention to interpose concerning a band where ubiquitous deployment of user FSS terminals has been permitted for more than half a decade. Such allegations have a "bait-and-switch"

Iridium's actions give the appearance that it is Iridium's own concerns regarding its ability to operate under the existing rules on a mutually harmful-interference-free basis that have motivated it to file objections to Hughes' applications, and that Iridium is seeking, in effect, to rewrite settled Ka-band rulemaking decisions and licensing actions.

II. The FCC Public Notice Accepting the Iridium MOD Application for Filing Failed to Provide Adequate Notice of the Spectrum Use Proposed.

Limitation of any modified Iridium authority to the portion of the band below 29.25 GHz, as Hughes has requested in its Petition, would also be fully consistent with the actual modification request placed on Public Notice by the FCC. As Hughes noted in its Petition, the Public Notice released by the FCC incorrectly identified the spectrum sought for feeder uplinks as only 29.1-29.25 GHz band.[15] Thus, the Public Notice did not provide adequate notice to all potentially interested parties of the request for expanded authority throughout this Earth-to-space band. Contrary to Iridium's implication,[16] the fact that Hughes correctly assumed that the scope of Iridium's actual request was co-extensive with its current license (29.1-29.3 GHz) does not remedy the facial deficiency in the September 28th Public Notice.[17] Other parties that

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quality to them; they reveal that Iridium has abandoned the premise of sharing upon which the Commission based its decision to grant Iridium access to 29.25-29.3 GHz with blanket-licensed GSO FSS earth stations and raise questions regarding Iridium's capability to operate successfully under the existing rules and ITU recommendations that govern spectrum sharing in the 29.25-29.3 GHz band segment. *See, e.g.*, 47 C.F.R. §§ 25.203(k) & 25.258.

[15] *See* Hughes Petition at 2 n.4, *citing* Public Notice, "Policy Branch Information: Satellite Space Applications Accepted for Filing," Report No. SAT-00901, at 1 (released Sept. 28, 2012).

[16] *See* Iridium Opposition at 2 n.4.

[17] Commission precedent establishes that effective public notice must include an accurate identification, *inter alia*, of the frequencies proposed for use. *See, e.g., Central Mobile Radio Phone Service*, 65 FCC 2d 648, 651 (1977) (notice omitting the frequency applied for did not give sufficient public notice as required by Section 309(b) of the Communications Act); *see*

may be adversely impacted by Iridium's proposed operation above 29.25 GHz cannot be said to have received fair notice of the scope of Iridium's request.[18] Accordingly, as a practical matter, the Bureau is limited, in the absence of the release of a corrective notice and a further 30-day comment and petition period, from granting to Iridium additional rights to use the 29.25-29.3 GHz portion of the band.

III. Iridium Has Failed to Demonstrate that Its Requested "Flexibility" Will Produce a Net Public Interest Benefit.

Finally, Iridium persists in arguing that there is a public interest dimension to granting it the expanded spectrum use that it seeks. Once again, the principal argument that it makes is that its more intensive use will afford it "the necessary flexibility to react to technological changes."[19] Greater flexibility for a single Commission licensee, however, will not serve the public interest – and may actually produce a net harmful impact – if the flexible use impinges upon or otherwise upsets the settled expectations of other spectrum users.[20] Having previously raised the issue of a potential impact upon the Iridium system from Hughes' continued operation of its GSO FSS system in a manner consistent with its license and FCC rules and policies, any Iridium public interest showing in support of the proposed changes to its network must include an affirmative demonstration that grant of the relief requested would not

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also Radio Athens, Inc. (WATH) v. FCC, 401 F.2d 398, 404 (D.C. Cir. 1968) ("full and explicit notice is the heart of administrative fairness").

[18] More than half a dozen other entities are licensed to use frequencies that overlap the 29.25-29.3 GHz portion of the band.

[19] Iridium Opposition at 3.

[20] The line of cases in which the Commission has sensibly found that "design decisions should be left to each space station licensee" is inapposite here as the issues raised by the Iridium Application relate to spectrum use not system design. *Cf.* Iridium Opposition at 4, *citing DigitalGlobe, Inc.*, 20 FCC Rcd 15696, 15700 (¶ 9) (Sat. Div. 2005).

undermine the public interest benefits provided by Hughes and other licensed spectrum users operating in the shared bands. "Flexibility" accorded to one licensee cannot come at the expense of settled spectrum sharing rules and policies and the legitimate operations of Commission licensees established thereunder.

IV. Conclusion

For all of the foregoing reasons, as articulated here and in its Petition, Hughes respectfully urges the Bureau to deny or dismiss the portion of the Iridium MOD Application seeking to expand its NGSO MSS feeder link use of the 29.25-29.3 GHz band.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Sharon A. Krantzman, do hereby certify that on this 27th day of November 2012, I sent a copy of the foregoing "Reply to Opposition" via first-class mail to:

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