

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”)<sup>1</sup> filed on November 19, 2013 in the above-captioned application modification proceeding. In the pending application (“Iridium MOD Application”), Iridium seeks to modify its 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.”<sup>2</sup>

In its “Supplemental Petition to Deny, Dismiss, or Defer, In Part,” filed on November 4, 2013 (“Supplemental Petition”),<sup>3</sup> Hughes urged the Bureau not to grant the requested license modification with respect to the 29.25-29.3 GHz portion of the band in which Iridium seeks to

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<sup>1</sup> See Opposition of Iridium Constellation LLC, SAT-MOD-20120813-00128 (filed on November 19, 2013).

<sup>2</sup> Iridium MOD Application at 1.

<sup>3</sup> See Hughes’ Supplemental Petition to Deny, Dismiss, or Defer, In Part, SAT-MOD-20120813-00128 (filed on November 4, 2013).

operate NGSO MSS feeder links (29.1-29.3 GHz) until the Commission has examined and rejected Iridium's claims that continued operation of Hughes' licensed geostationary fixed-satellite service ("GSO FSS") uplinks could be incompatible with Iridium's MSS feeder links in the shared band. Hughes noted that it was taking the opportunity of the Iridium MOD Application's second appearance on Public Notice to update the record in this matter with developments that have occurred during the past year.<sup>4</sup>

The Iridium Opposition is non-responsive to the concerns that Hughes has raised. It asserts simply that its proposed operations "will not require additional bandwidth in the 29.25-29.3 GHz band,"<sup>5</sup> and more generally, that there will be "no additional strain" on the current spectrum sharing environment.<sup>6</sup> Iridium does not offer any affirmative demonstration that the system modification that it proposes will remain consistent with FCC Rules and policies. In fact, Iridium does not even attempt to show that the proposed changes will not increase its sensitivity to co-primary GSO FSS earth station transmissions.

Hughes' proposed earth station operations in the 29.25-29.3 GHz band will continue to operate in accordance with the FCC's Rules and ITU Recommendations that govern inter-system sharing in this band.<sup>7</sup> Iridium, on the other hand, has failed again to show that its operations are consistent with the assumptions underpinning GSO FSS and NGSO MSS sharing in the 29.25-29.3 GHz band. This only exacerbates Hughes' concern that Iridium's opposition to recent Hughes earth station applications may be linked to Iridium's own

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<sup>4</sup> Supplemental Petition at 5-6.

<sup>5</sup> Iridium Opposition at 1.

<sup>6</sup> *Id.* at 2.

<sup>7</sup> See FCC File Nos. SES-MFS-20120322-00290 & SES-AFS-20120426-00396 (Call Sign E060445), and SES-MFS-20120426-00395 (Call Sign E110149).

unilateral operational changes.<sup>8</sup> Absent an affirmative demonstration from Iridium, it is possible that the addition of a second co-located satellite, as Iridium now proposes, may increase the sensitivity of its NGSO MSS feeder uplinks to GSO FSS transmissions in the 29.25-29.5 GHz shared band in a manner that is inconsistent with the terms upon which Iridium was granted access to this band in the first instance.<sup>9</sup>

Given Iridium's assertion in the Hughes earth station application proceedings that it will have difficulty operating with Hughes' FCC-compliant GSO FSS uplinks in the shared band, Iridium has an obligation to demonstrate conclusively that any alterations in its own spectrum use are not at the root of its interference concerns. The Iridium Opposition does not include any demonstration that its proposed constellation changes are unrelated to its claimed need for vastly greater interference protection.<sup>10</sup> Its assertion that just "one satellite will use Ka-band frequencies to receive TT&C communications"<sup>11</sup> does not show that its proposed operations will not worsen the spectrum sharing situation. The consequence of transmitting TT&C commands to two distinct satellites via a single Ka-band channel is a doubling of the amount of time that TT&C information is transmitted via that channel.<sup>12</sup> This, in turn,

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<sup>8</sup> See Hughes Supplemental Petition at 5-6.

<sup>9</sup> See Hughes Petition to Deny, FCC File No. SAT-MOD-20120813-00128, at 4-6 (filed October 31, 2012) ("Hughes 2012 Petition").

<sup>10</sup> See Hughes Supplemental Petition at 5-6 and Attachment.

<sup>11</sup> Iridium Opposition at 2.

<sup>12</sup> 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 contexts. See, e.g., Reply of Iridium Satellite LLC, FCC File No. SES-MOD-20120403-00326, at 3 (filed July 11, 2012).

effectively doubles the likelihood of the type of short-duration, in-line interference events that Iridium has claimed could harm its system.

As Hughes detailed once again in its Supplemental Petition, at the time Iridium obtained its initial authorization to operate NGSO MSS feeder links at 29.25-29.3 GHz, 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.<sup>13</sup> Coordination between NGSO MSS feeder link stations and GSO FSS networks was deemed feasible in the Ka-band rulemaking proceedings, which resulted in designation of the 29.25-29.5 GHz band for use by GSO FSS earth stations.<sup>14</sup> Now, however, Iridium asserts that other factors must be considered, resulting in its request for a severely restrictive coordination threshold that would be tantamount to exclusion of most GSO FSS uplinks from the 29.25-29.3 GHz portion of the band.<sup>15</sup>

In light of its failure to demonstrate that its proposed operations are consistent with the rules and policies underpinning the Commission's established Ka-band allocation plan, Iridium's assertion that the proposed modification of its authorization would have a public interest benefit is insufficient to warrant a grant of its application.<sup>16</sup> Any such benefit, even if it

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<sup>13</sup> See Hughes Supplemental Petition at 2, 3-4 & n.8. The determination that the two allocations were compatible was premised on the conclusion that avoidance of main-beam coupling between the two services could be achieved using the techniques outlined in Recommendation ITU-R S.1419, a document that Iridium specifically referenced in and annexed to its 2007 Amendment. See also Hughes 2012 Petition at 3-4.

<sup>14</sup> 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).

<sup>15</sup> See Hughes Supplemental Petition at 5-6 and Attachment 1.

<sup>16</sup> See, e.g., Iridium Opposition at 3-4.

were conclusively established, does not outweigh failure to comply with the Commission's Rules and policies. Indeed, any Iridium public interest showing in support of the proposed changes to its network must also establish that grant of the relief requested would not undermine the public interest benefits provided by Hughes and other licensed spectrum users operating on a co-primary basis in the shared bands under the FCC's Rules.

For prudential reasons, Iridium cannot be permitted freely to alter its spectrum use at 29.25-29.3 GHz while at the same time obstructing others' access to the band on long-settled terms. Hughes' applications to make minor modifications in its licensed earth station operations have now been pending for more than eighteen months, yet Iridium has not demonstrated that Hughes' continued operation poses concerns under established FCC Rules and ITU Recommendations. Given this nexus between the applications, the Commission should endeavor to resolve the insubstantial and vaguely articulated Iridium objections to the Hughes applications before further considering the instant Iridium MOD Application. If proposed or anticipated changes in Iridium's spectrum use are indeed spurring its objections to Hughes' planned GSO FSS use, then these issues need to be resolved before the Iridium MOD Application is processed. In turn, final action on the Hughes applications should facilitate the ultimate resolution of this proceeding.

#### **IV. Conclusion**

For the foregoing reasons, Hughes respectfully urges the Bureau to deny, dismiss or defer the portion of the Iridium MOD Application seeking modified use of the 29.25-29.3 GHz MSS feeder link spectrum until the Commission has been able both to determine that these operations will not impede Hughes' authorized use of this band and to grant Hughes the

authority it requests in this same frequency band in its pending earth station modification applications.

Respectfully submitted,

By: *s/ David S. Keir*  
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November 29, 2013

*Attorney for HNS License Sub, LLC*

**CERTIFICATE OF SERVICE**

I, David S. Keir, do hereby certify that on this 29<sup>th</sup> day of November 2013, I sent a copy of the foregoing "Reply to Opposition" via first-class mail to:

Donna Bethea Murphy  
Vice President, Regulatory Engineering  
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McLean, Virginia 22102

*s/ David S. Keir*

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