

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

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In the Matter of	)	
	)	
Iridium Constellation LLC	)	File No. SAT-MOD-20121207-00211
	)	
Application for Modification of	)	
Authorization (Call Sign S2110)	)	

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**OPPOSITION OF IRIDIUM CONSTELLATION LLC**

Iridium Constellation LLC (“Iridium”), pursuant to Section 25.154(c) of the rules of the Federal Communications Commission (the “Commission” or “FCC”),<sup>1</sup> hereby submits this Opposition to the Petition to Deny, Dismiss, or Defer, in Part (the “Petition”) filed by HNS License Sub, LLC (“Hughes”) in the above-captioned proceeding.<sup>2</sup>

Iridium’s modification application (the “Modification Application”) seeks authority to keep spare satellite SV023 in a parking orbit at approximately 778 kilometers, its former mission altitude, rather than the typical spare satellite storage orbit.<sup>3</sup> The feeder link operations of SV023 will be no different than those of other Iridium spares, which have utilized telemetry, tracking, and control (“TT&C”) link channels for station-keeping since their launch. Iridium gateways do not activate TT&C feeder links with spare satellites such as SV023 while simultaneously communicating with mission satellites, meaning that SV023’s proposed positioning will not increase bandwidth requirements in the

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<sup>1</sup> 47 C.F.R. § 25.154(c).

<sup>2</sup> Petition to Deny, Dismiss, or Defer, in Part of HNS License Sub, LLC, File No. SAT-MOD-20121207-00211 (filed Jan. 22, 2013) (“Hughes Petition”).

<sup>3</sup> Application of Iridium Constellation LLC for Modification of Authorization (Call Sign S2110), File No. SAT-MOD-20121207-00211 (Dec. 12, 2012) (“Modification Application”).

29.25-29.3 GHz band shared with GSO FSS networks as Hughes claims. Grant of the Modification Application will create clear public interest benefits by conserving the fuel SV023 expends and thereby extending its mission life and allowing safe deorbiting.

Accordingly, the Commission should grant the Modification Application.

**I. IRIDIUM'S PROPOSED POSITIONING OF SPARE SATELLITE SV023 WILL NOT CHANGE INTERFERENCE IN THE KA-BAND**

Iridium's proposed positioning of SV023 will not increase bandwidth use in the 29.25-29.3 GHz band. To be clear, Iridium does not seek additional interference protection from co-frequency GSO FSS operations in the 29.25-29.3 GHz band, nor will grant of the Modification Application produce any changes to the interference environment.<sup>4</sup>

*First*, Hughes acknowledges that SV023 “will no longer be operating using its mission frequencies” and will “utilize the spacecraft’s TT&C feeder link frequencies.”<sup>5</sup> As Hughes is well aware, Iridium’s in-orbit spares have used TT&C feeder link channels since their launch to determine satellite ranging and location data as well as satellite health and status. SV023 will not “exacerbate” the sharing environment with Hughes in the 29.25-29.3 GHz band. Rather, spare satellite SV023 will operate its TT&C feeder links the same as Iridium’s other in-orbit spare satellites, including previous operations of SV094, which Iridium activated in its mission constellation on November 13, 2012. The only difference between SV023 and Iridium’s other spares is its altitude of 778 km. If anything, because SV023’s higher altitude will put it slightly further away from GSO

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<sup>4</sup> Modification Application, at 4-5; Exhibit A.

<sup>5</sup> Hughes Petition, at 5.

FSS earth stations, SV023 will be less susceptible to interference than other spare satellites.

*Second*, Hughes mischaracterizes SV023’s proposed positioning approximately 300 km behind SV094 in Plane 2, Slot 2 as “co-locate[d].”<sup>6</sup> This ignores the plain language of the Modification Application, which stated that SV023 will not be co-located or operated in tandem with SV094.<sup>7</sup>

*Third*, Hughes incorrectly posits that because SV023 “is in close formation” with SV094, “more feeder link bandwidth” will be required.<sup>8</sup> Iridium’s TT&C operations for its spare satellites disprove this claim. Simultaneous communication will not occur because Iridium gateways do not attempt to activate TT&C feeder links with spare satellites, such as SV023, while in the process of communicating with mission satellites, such as SV094, through mission feeder links. Only TT&C earth stations communicate with spare satellites, including SV023. Therefore, without the possibility for simultaneous communication, a given Iridium earth station will not require expanded bandwidth. This proven TT&C operation for spare satellites clearly repudiates Hughes’ concern of additional strain on the existing spectrum sharing environment between Iridium and GSO FSS networks.

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<sup>6</sup> *Id.*, at 5.

<sup>7</sup> Modification Application, at 4-5.

<sup>8</sup> Hughes Petition, at 5.

Finally, Iridium again notes that Hughes used its Petition to reargue interference issues that arose as part of prior Hughes applications. The Commission should strike those arguments from this record as superfluous.<sup>9</sup>

**II. GRANT OF IRIDIUM'S MODIFICATION APPLICATION WILL PROVIDE IMPORTANT PUBLIC INTEREST BENEFITS**

Grant of Iridium's modification application will provide clear and recognized public interest benefits by conserving satellite fuel for future mission operation and deorbit needs. Though Hughes itself recognizes this as "a not-insignificant benefit to Iridium," it willfully ignores Commission precedent in depicting fuel conservation as "a minimal public interest justification."<sup>10</sup> As documented in the Modification Application, the FCC has held that "conserv[ing] fuel for future operations" generates public interest benefits and justifies grant of a modification application.<sup>11</sup> In addition, grant of the Modification Application is united with Commission policy allowing satellite operators the flexibility "to respond promptly to changing technological . . . conditions."<sup>12</sup>

The Modification Application demonstrated the public interest benefits of SV023's fuel-saving positioning. Relying primarily on atmospheric drag, and pursuant to grant of Special Temporary Authority, Iridium began to drift spare satellite SV023 to a parking orbit at its current mission altitude.<sup>13</sup> By the time SV023 travelled 300 km and

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<sup>9</sup> See *id.*, at 4-5.

<sup>10</sup> Hughes Petition, at 5.

<sup>11</sup> *SES Americom, Inc.*, Order and Authorization, 20 FCC 11542, ¶ 14 (I.B. 2005).

<sup>12</sup> *Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service*, Memorandum Opinion and Order, 3 FCC Rcd 6972, ¶ 2 (1988); see also *DigitalGlobe, Inc.*, ¶ 9.

<sup>13</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121108-00195 (filed Nov. 8, 2012).

arrived in the parking orbit on December 13, 2012, its maneuver had expended very little fuel. Had Iridium positioned SV023 in the spare satellite orbit, the momentum necessary to lower the satellite would have required firing of the satellite's thrusters, greatly increasing fuel expense. Moreover, Iridium would need to use fuel again in order re-position the satellite back to mission altitude if the spare would be needed as a replacement. Instead, by completing the parking orbit maneuver, Iridium accomplished clear public interest benefits. The fuel savings achieved will extend the satellite's mission life and facilitate safe deorbiting in the future.

Moreover, Iridium reiterates that in the FCC's evaluation of modification applications, "the Commission has determined that spacecraft design decisions should be left to each space station licensee, because the licensee is in a better position to determine how to tailor its system to meet the particular needs of its customer base."<sup>14</sup> As a result, "[i]f a [modification] proposal will not cause interference to other licensed operations, the Commission generally authorizes it if it is otherwise in the public interest."<sup>15</sup> Similarly, grant of the Modification Application is appropriate. As demonstrated herein, the interference environment in the 29.25-29.3 GHz band will remain unchanged as a result of SV023's positioning.

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<sup>14</sup> *DigitalGlobe, Inc.*, Order and Authorization, 20 FCC Rcd 15696, ¶ 9 (I.B. 2005).

<sup>15</sup> *Id.*, ¶ 9 (citing *EarthWatch Inc.*, Order and Authorization, 16 FCC Rcd 15985, ¶ 10 (I.B. 2001)).

**III. CONCLUSION**

The positioning of SV023 will conserve fuel, generate concrete public interest benefits, and have no effect on the interference environment with co-frequency GSO FSS operations in the 29.25-29.3 GHz band. Accordingly, the Commission expeditiously should grant the Modification Application.

Respectfully submitted,

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February 6, 2013

**CERTIFICATE OF SERVICE**

I, Jackie Martin, do hereby certify that on this 6th day of February 2013, I caused copies of the foregoing “Opposition of Iridium Constellation LLC” to be delivered to the following via First Class U.S. mail:

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/s/

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