

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

Application of	)	
	)	
Iridium Constellation LLC	)	Call Sign: S2110
	)	
For Special Temporary Authority	)	File No. SAT-STA-2013_____
	)	

**APPLICATION FOR SPECIAL TEMPORARY AUTHORITY**

On November 13, 2012, the International Bureau granted Iridium Constellation LLC (“Iridium”) special temporary authority (“STA”) for 30 days—until December 12, 2012—to modify its authorization for its “Big LEO” band non-geostationary satellite orbit (“NGSO”) constellation (call sign S2110).<sup>1</sup> Specifically, the Bureau granted Iridium STA to keep spare satellite SV023 at its former mission altitude and move it to a parking orbit approximately 300 kilometers behind the center of plane 2, slot 2 rather than the spare satellite orbit.<sup>2</sup> On December 19, 2012,<sup>3</sup> February 7, 2013,<sup>4</sup> April 25, 2013,<sup>5</sup> and again on June 13, 2013,<sup>6</sup> the International

---

<sup>1</sup> See *Motorola Satellite Communications, Inc. for Authority to Construct, Launch, and Operate a Low Earth Satellite System in the 1616-1626.5 MHz Band*, 10 FCC Rcd 2268 (1995) (“*Motorola Order*”).

<sup>2</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121108-00195 (filed Nov. 8, 2012). On November 13, 2012, Iridium brought in-orbit spare satellite SV094 into operation in its mission constellation and replaced SV023 in plane 2, slot 2. See Letter from Donna Bethea Murphy, Iridium Constellation LLC, to Marlene H. Dortch, Federal Communications Commission (filed Nov. 14, 2012); 47 C.F.R. § 25.143(d).

<sup>3</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121207-00210 (filed Dec. 7, 2012). Along with the December 7, 2012 STA application, Iridium filed a modification application seeking regular authority, which remains pending. See Iridium Constellation LLC, Application of Iridium Constellation LLC for Modification of Authorization, File No. SAT-MOD-1207-00211 (filed Dec. 7, 2012) (“Iridium Modification Application”). On January 22, 2013, HNS License Sub, LLC (“Hughes”) filed a Petition to Deny, Dismiss or Defer the Iridium Modification Application. 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”). On February 6, 2013, Iridium filed an Opposition to the Hughes Petition. Opposition of Iridium Constellation LLC, File No. SAT-MOD-20121207-

Bureau granted Iridium STA for additional 60-day periods—until February 10, 2013, April 11, 2013, June 10, 2013, and August 9, 2013, respectively. Iridium hereby requests STA for an additional sixty (60 days)—from August 10, 2013 through October 8, 2013—to continue to keep spare satellite SV023 positioned in a parking orbit approximately 300 kilometers behind the center of plane 2, slot 2.<sup>7</sup> Such positioning will serve the public interest by reducing the amount of fuel that SV023 expends and extending the satellite’s operational life.

**I. BACKGROUND AND REQUEST FOR SPECIAL TEMPORARY AUTHORITY**

On January 1, 1995, the FCC authorized Iridium’s predecessor in interest to launch and operate an NGSO mission constellation of 66 satellites in the Big LEO band along with 12 in-orbit spares “in accordance with the technical specifications set forth in its applications . . . .”<sup>8</sup>

---

00211 (filed Feb. 6, 2013). On February 19, 2013, Hughes filed a Reply, which completed the pleading cycle. Reply to Opposition, File No. SAT-MOD-20121207-00211 (filed Feb. 19, 2013).

<sup>4</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20130131-00012 (filed Jan. 31, 2013).

<sup>5</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20130401-00055 (filed Apr. 1, 2013).

<sup>6</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20130522-00072 (filed May 22, 2013).

<sup>7</sup> On November 14, 2012, Iridium began to drift SV023 to the parking orbit. SV023 reached the parking orbit on December 13, 2012.

<sup>8</sup> See *Motorola Order*, ¶ 25. On July 19, 2012, Iridium increased its total number of space stations and commenced operating a pair of co-located satellites in plane 4, slot 7 of its NGSO mission constellation pursuant to a grant of STA. See File No. SAT-STA-20120716-00116 (filed July 16, 2012); File No. SAT-STA-20120813-00129 (filed Aug. 13, 2012); File No. SAT-STA-20120927-00157 (filed Sept. 27, 2012). Iridium also filed a modification application seeking regular authority to periodically co-locate and operate additional satellites in its mission constellation, which remains pending. See Iridium Constellation LLC, Application for Modification of Authorization, File No. SAT-MOD-20120813-00128 (filed Aug. 13, 2012) (“Iridium Co-location Modification”). As described herein, satellite SV023 will not be co-located with satellite SV094.

The application of Iridium's predecessor in interest specified that spare satellites would "be placed in a nominal 645 km orbit."<sup>9</sup>

On November 13, 2012, Iridium brought spare satellite SV094 into operation in plane 2, slot 2 to replace satellite SV023, which then suspended mission operations in order to be maintained as a spare. On November 14, 2012, Iridium, pursuant to a grant of special temporary authority, began to drift spare satellite SV023 to a parking orbit at its current mission altitude rather than moving it to the spare satellite orbit.<sup>10</sup> SV023 reached the parking orbit on December 13, 2012. This application seeks STA to continue to position spare satellite SV023 approximately 300 kilometers behind operational satellite SV094 in a parking orbit at approximately 778 kilometers, its former mission altitude, instead of the nominal 645-kilometer orbit. SV023 will not be co-located with SV094 and will not operate as part of Iridium's mission constellation.<sup>11</sup> The technical information provided in Iridium's modification application and previously provided to the Commission is incorporated by reference herein.<sup>12</sup>

---

<sup>9</sup> See Motorola Satellite Communications, Inc., Minor Amendment to Application of Motorola Satellite Communications, Inc. for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the 1616-1626.5 MHz Band, File No. SAT-AMD-19941115-00069, at Table R-1 (Rev 1) – (Page 1 of 3) n.1 (filed Nov. 15, 1994) ("Motorola 1994 Amendment").

<sup>10</sup> See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121108-00195 (filed Nov. 8, 2012).

<sup>11</sup> Cf. File No. SAT-MOD-20120813-00128.

<sup>12</sup> See Iridium Modification Application; Motorola 1994 Amendment; Motorola Satellite Communications, Inc., Application for Minor License Modifications and Technical Waivers, File No. SAT-MOD-19960322-00047 (filed Mar. 8, 1996); Iridium Constellation LLC, Application for Minor Modification of Mobile Satellite Service Authorization to Update Orbital Debris Mitigation Requirements, File No. SAT-MOD-20080701-00140 (filed Jul. 1, 2008); Iridium Co-location Modification.

## **II. PUBLIC INTEREST STATEMENT**

Grant of this STA request will serve the public interest. By positioning SV023 in a parking orbit at its mission altitude rather than moving the satellite to the nominal 645 km orbit, Iridium will greatly minimize the amount of fuel that SV023 expends. Relying primarily on atmospheric drag to move the satellite 300 km over the course of approximately one month, very little fuel was expended to position SV023 in a parking orbit. By contrast, Iridium would have needed to fire the satellite's thrusters to establish the momentum needed to lower the orbit of the satellite to the nominal 645 km. And, Iridium would need to use fuel again in order re-position the satellite back to mission altitude if the spare is needed as a replacement. As such, grant of this STA will conserve fuel on SV023 and extend the satellite's mission life now and in the future by facilitating safe deorbiting.

In addition, grant of this STA request poses no interference risk. The proposed location of SV023 approximately 300 km behind SV094 ensures safe station-keeping of both satellites without any overlap in orbital position. Further, SV023 has suspended mission operations and will not be co-located and operated in tandem with SV094. Instead, only the satellite's TT&C frequencies will be utilized.

**III. CONCLUSION**

Iridium respectfully requests that the Commission expeditiously grant this STA to continue to permit Iridium to maintain spare satellite SV023 in a parking orbit for a period of sixty (60) days.

Respectfully submitted,

By: Donna Bethea-Murphy

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

July 30, 2013