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-2012_____
	)	

APPLICATION FOR SPECIAL TEMPORARY AUTHORITY

Iridium Constellation LLC ("Iridium") hereby requests special temporary authority ("STA") for sixty (60) days—from July 18, 2012 through September 16, 2012—to add a satellite to its orbital constellation.[1] The planned operation of 67 satellites is made possible by technological developments and software upgrades allowing Iridium to co-locate two satellites. Grant of this STA request will serve the public interest because it will enable more robust flexibility in the Iridium constellation, which in turn will facilitate a more seamless transition to Iridium's planned NEXT constellation. It will also provide more dynamic L-band connectivity and improved global service to users of the Iridium constellation, including first responders and significant government users such as the Department of Defense.

I. BACKGROUND

Iridium currently operates a constellation of 66 satellites located in six orbital planes of eleven slots each in nearly circular polar orbits.[2] Iridium also has six in-orbit spares. The Iridium satellites operate in low-Earth-orbit and use spectrum in the "Big LEO" band.[3]

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[1] *See* 47 C.F.R. § 25.120(b)(2). The FCC can grant this request for special temporary authority for 60 days without Public Notice because Iridium plans to file a modification application seeking regular authority shortly.

[2] *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).

Most system processing is performed using software onboard each satellite instead of on the ground which enables engineers to develop additional functionality and software-based solutions to occasional faults and anomalies in the system.[4]

II. REQUEST FOR SPECIAL TEMPORARY AUTHORITY

This request seeks special temporary authority for Iridium to add a satellite to its orbital constellation. Specifically, Iridium plans to place one of its spare satellites, SV051, in its constellation in plane 4, slot 7.[5] That orbital position in the Iridium constellation is currently occupied by SV007, which experienced a partial technical anomaly in 2009.[6] SV051 will be kept near the center of the orbital box for slot 7 in plane 4. SV007 would be located approximately 100 kilometers behind SV051. During the co-location, communications in the Big LEO Band will be provided on the SV051 satellite while traffic routing will use the SV007 satellite. As a result of this co-location, the Iridium constellation would consist of a total of 67 satellites. The additional satellite is technically identical to the other operational satellites in the Iridium constellation and the technical information previously provided to the Commission is incorporated by reference herein.[7]

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3 *See Iridium Constellation LLC*, Order, 19 FCC Rcd 1474 (I.B. 2004).

4 *Iridium Communications Inc*., United States Securities and Exchange Commission Form 10-K for year ending Dec. 31, 2011, at 15.

5 Iridium will file a notice with the Commission within ten days of bringing the in-orbit spare SV051 into operation. 47 C.F.R. § 25.143(d).

6 *See* Iridium Communications Inc. 2009 Annual Report and Request for Confidential Treatment (filed Oct. 15, 2009).

7 *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-L/A-19941115-00068 (granted Jan. 31, 1995); *Application of Iridium Constellation LLC For Minor Modification of Mobile Satellite Service Authorization to Update Orbital Debris Mitigation Requirements*, File No. SAT-MOD-20080701-00140 (filed Jul. 1, 2008).

III. PUBLIC INTEREST STATEMENT

Grant of this STA request will serve the public interest. Co-location of these two Iridium spacecraft is made possible through technological developments. Iridium has designed software upgrades that improve communications routing and satellite tracking. Implementation of these new software changes will enable Iridium effectively to co-locate two satellites in slot 7 of plane 4. The co-location of these two satellites will demonstrate more robust flexibility in the configuration of the Iridium constellation. Such system flexibility will facilitate the seamless future transition to the planned Iridium NEXT constellation. More immediately, it will result in more consistent connectivity and improved service quality for customers.

Moreover, grant of this STA request poses no interference risk. The proposed location of SV007 approximately 100 km behind SV051 ensures safe station-keeping of both satellites without any overlap in orbital position.[8] In addition, the two satellites will operate in a complementary manner without increasing the number of satellites using Big LEO spectrum. Service link communications in the Big LEO band will be provided only on the SV051 satellite, which will be located in the station-keeping box for plane 4, slot 7 as authorized by the Commission. Finally, Iridium's software developments enable operation of both co-located satellites without harmful interference by connecting SV051 into the constellation using its forward crosslink and connecting SV007 into the constellation with its left and right crosslinks.

[8] The Iridium satellites operate with 6.0 km station-keeping. *See* Motorola November 15, 1994 Amendment, Table R-1 (Rev 1) – (Page 3 of 3).

IV. CONCLUSION

Iridium respectfully requests that the Commission expeditiously grant this STA to permit operation of 67 satellites as described for a period of sixty (60) days.

Respectfully submitted,

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