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July 6, 2011

***Via IBFS***

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: **EchoStar Satellite Operating Corporation, File Nos. SAT-STA-20110627-00122, SAT-AMD-20110706-\_\_\_\_\_, Call Sign S2621**

Dear Ms. Dortch:

EchoStar Satellite Operating Corporation hereby submits for the public file a redacted version of the amendment<sup>1</sup> to its existing application for Special Temporary Authority to deorbit the EchoStar 4 satellite from its current orbital location at 76.85° W.L.,<sup>2</sup> along with redacted attachments providing information regarding the planned deorbiting. Unredacted versions are being submitted separately with a request for confidential treatment pursuant to 47 C.F.R. §§ 0.457 and 0.459.

Respectfully submitted,

/s/  
Pantelis Michalopoulos  
Christopher Bjornson  
*Counsel for EchoStar Satellite Operating Corporation*

cc: Karl Kensinger – International Bureau (via e-mail)

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<sup>1</sup> See File No. SAT-AMD-20110706-\_\_\_\_ (filed July 6, 2011).

<sup>2</sup> See File No. SAT-STA-20110627-00122 (filed June 27, 2011).

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

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In the Matter of )  
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**ECHOSTAR SATELLITE OPERATING** ) File No. SAT-AMD-2011\_\_\_\_\_-\_\_\_\_\_  
**CORPORATION** ) File No. SAT-STA-20110627-00122  
) Call Sign S2621  
Special Temporary Authority to Deorbit )  
EchoStar 4 from 76.85° W.L. )  
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**AMENDMENT TO APPLICATION FOR SPECIAL TEMPORARY AUTHORITY**

Through this amendment to its existing application for Special Temporary Authority (“STA”),<sup>1</sup> and pursuant to Section 25.120(b)(4) of the Commission’s rules,<sup>2</sup> EchoStar Satellite Operating Corporation (“EchoStar”) respectfully requests STA for 30 days to deorbit the EchoStar 4 satellite from its current orbital location at 76.85° W.L., where it is operating as a Mexican-licensed Direct Broadcast Satellite (“DBS”). The satellite will be transferred to a disposal orbit at least 300 km above the geostationary orbit. The grant of this application will not cause harmful interference to any authorized user of the spectrum and is in the public interest. To the extent necessary, EchoStar also requests a limited waiver of Sections 25.114(d)(14)(ii) and 25.283(c) of the Commission’s rules.<sup>3</sup>

EchoStar respectfully requests action on this request by July 11, 2011. The “full-motion” antennas – E980005, E070014 and E070275 – that will be required for the deorbiting are also

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<sup>1</sup> See File No. SAT-STA-20110627-00122. This amendment provides additional information and clarifies the technical issues provided in the original STA application. All of the information contained in the original application is included in this amendment as well.

<sup>2</sup> 47 C.F.R. § 25.120(b)(4).

<sup>3</sup> *Id.* §§ 25.114(d)(14)(ii), 25.283(c).

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needed to conduct transfer orbit operations for Quetzsat-1, which is set to be launched on or about August 12. Grant of the instant request by July 11, 2011 will allow this recommissioning of the full-motion antennas.

**I. BACKGROUND AND INTRODUCTION**

EchoStar 4 is currently a Mexican-licensed satellite stationed at the 76.85° W.L. orbital location. The satellite's operation at that slot under Mexican authority was made subject to an exchange of letters between the Commission and the Mexican Administration.<sup>4</sup> EchoStar 4's stay at the nominal 77° W.L. orbital location is further governed by the license granted to EchoStar's partner, QuetzSat, S. de R.L. de C.V. ("QuetzSat"), to use the nominal 77° W.L. orbital location, and by agreements among EchoStar, SES Global Latin America, S.A. ("SES"), and QuetzSat.<sup>5</sup> As the Commission is aware, EchoStar 4, having reached the end of its useful life, has been retired from commercial service and now must be deorbited. EchoStar has shared the specifics of its deorbiting plans with Commission staff through previous confidential filings. During deorbiting, EchoStar 4 will vacate the nominal 77° W.L. orbital location, thereby triggering the need for this request in accordance with existing agreements.<sup>6</sup> EchoStar, moreover, understands that neither the Mexican Administration nor QuetzSat objects to the satellite's deorbit.

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<sup>4</sup> See EchoStar Satellite LLC Application for Special Temporary Authority to Conduct Telemetry, Tracking, and Command Operations during the Relocation of EchoStar 4 to the 77° W.L. Orbital Location, *Order and Authorization*, 21 FCC Rcd. 4077, Appendix A (2006) ("77° W.L. Order").

<sup>5</sup> See Satellite Relocation and Use Agreement for the 77° W.L. Orbital Location, (77° W.L. Agreement), *filed in* File No. SAT-STA-20080616-00121, Attachment 3 (granted Oct. 31, 2008) ("EchoStar 8 STA Application").

<sup>6</sup> 77° W.L. Order, Appendix A at 8.

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**II. GRANT OF THIS APPLICATION IS IN THE PUBLIC INTEREST AND WILL NOT CAUSE HARMFUL INTERFERENCE**

The deorbiting of EchoStar 4 will not cause harmful interference to any other satellite operator, and will serve the public interest, convenience and necessity.<sup>7</sup> The satellite's communications payload has already been switched off, with only telemetry, tracking and control ("TT&C") operations being performed, and the satellite will continue to operate in this manner until it achieves its disposal orbit. During the deorbit maneuvers, EchoStar will coordinate its TT&C operations with all potentially affected operating satellite networks. EchoStar 4 also will not cause harmful interference to other authorized satellites during its deorbit because EchoStar 4 will operate on an unprotected, non-harmful interference basis. In the event that the satellite causes harmful interference, EchoStar will cease operations immediately.

EchoStar's objectives for the deorbiting are to achieve a 350 km minimum perigee above the geostationary orbit, permanently isolate the oxidizer tank, and dispose of the remaining hydrazine propellant to maximum extent possible.

[REDACTED]

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<sup>7</sup> See, e.g., *Newcomb Communs., Inc.*, 8 FCC Rcd. 3631, 3633 (1993); *Columbia Comms. Corp.*, 11 FCC Rcd. 8639, 8640 (1996); *Am. Tel. & Tel. Co.*, 8 FCC Rcd. 8742 (1993).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The public interest will be served by the grant of this application, as it will allow EchoStar to safely deorbit the satellite and will allow other operational satellites to be better accommodated in the vicinity of 77° W.L. Removing satellites that have reached the end of their life from the GSO reduces the risk that those satellites will cause collisions and frees up valuable orbital locations for new satellites.

### **III. LIMITED WAIVER OF THE ORBITAL DEBRIS MITIGATION RULES**

Section 25.283(c) of the Commission’s rules requires space station licensees to ensure, at spacecraft end-of-life, “that all stored energy sources on board the satellite are discharged, by venting excess propellant, discharging batteries, relieving pressure vessels, and other appropriate measures.”<sup>8</sup> Similarly, Section 25.114(d)(14)(ii) requires space station applicants to address in their applications “whether stored energy will be removed at the spacecraft’s end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other equivalent procedures specifically disclosed.”<sup>9</sup> The purpose of these

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<sup>8</sup> 47 C.F.R. § 25.283(c).

<sup>9</sup> *Id.* § 25.114(d)(14)(ii).

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rules, as is evident from Section 25.114(d)(14)(ii), is to “limit the probability of accidental explosions . . . after completion of mission operations.”<sup>10</sup>

The EchoStar 4 satellite was launched in 1998, before the *Notice of Proposed Rulemaking* that led to the orbital debris mitigation rules was published.<sup>11</sup> Nevertheless, the satellite is substantially compliant with these rules, with one qualification. At the satellite’s end of life, the batteries will be left in a permanent state of discharge and all sources of stored energy, with the exception of the helium and oxidizer will be removed so that the fuel will be expended to depletion to the fullest extent possible. [REDACTED]

[REDACTED] Lockheed Martin, the satellite’s manufacturer, strongly recommends against venting this residual oxidizer, [REDACTED]

[REDACTED] Lockheed Martin has also confirmed that these risks are a function of a design aspect common to all Lockheed A2100 spacecraft buses. Instead, Lockheed Martin proposes that this residual oxidizer be securely sealed using pyrotechnic valves upon the completion of the satellite’s transfer to its disposal orbit.

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<sup>10</sup> *Id.*

<sup>11</sup> Mitigation of Orbital Debris, *Notice of Proposed Rulemaking*, 17 FCC Rcd. 5586 (2002).

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EchoStar hereby requests a waiver of Sections 25.283(c) and 25.114(d)(14)(ii) to the extent necessary. The Commission has authority to grant waivers of its rules for “good cause shown.”<sup>12</sup> In general, good cause exists if grant of a waiver would not undermine the purposes of the rule and would otherwise serve the public interest.<sup>13</sup> A waiver of the Commission’s rules is appropriate in the circumstances once “considerations of hardship, equity, or more effective implementation of overall policy” have been taken into account.<sup>14</sup> The Commission has previously granted waivers of the venting requirement in recognition of circumstances where venting would either not be possible or would be problematic.<sup>15</sup> The plan EchoStar and Lockheed have put forth provides the most efficient means for depleting the remaining fuel and minimizing the risk of debris generation through structural failure or explosive reaction.

**IV. WAIVER PURSUANT TO SECTION 304 OF THE ACT**

In accordance with Section 304 of the Communications Act of 1934, as amended, 47 U.S.C. § 304, EchoStar hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise.

**V. REQUEST FOR EXPEDITED TREATMENT**

Because EchoStar will only have a limited amount of time to complete the deorbiting due to ground antenna resource constraints, EchoStar respectfully requests expedited processing for this request.

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<sup>12</sup> See 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (1969).

<sup>13</sup> See, e.g., *WAIT Radio*, 418 F.2d at 1157; *Intelsat North America LLC*, 22 FCC Rcd. 11989 ¶ 6 (2007); *Dominion Video Satellite, Inc.*, 14 FCC Rcd. 8182 ¶ 5 (1999).

<sup>14</sup> *WAIT Radio*, 418 F.2d at 1159.

<sup>15</sup> See, e.g., Stamp Grant, SES Americom, Inc., File No. SAT-MOD-20100324-00056, Condition 8 (granted Jun. 21, 2010); Stamp Grant, EchoStar Satellite Operating Corporation, File No. SAT-LOA-20071221-00183, Condition 4 (granted Mar. 12, 2008).

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**VI. CONCLUSION**

For the foregoing reasons, EchoStar requests that the Bureau grant STA to deorbit EchoStar 4 from 76.85° W.L. and to grant the requested waiver.

Respectfully submitted,

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/s/

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July 6, 2011



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**ATTACHMENT**

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