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

In the Matter of	)	
ECHOSTAR SATELLITE OPERATING CORPORATION	)	File No. SAT-STA-2011____-_____ Call Sign S2621
Special Temporary Authority to Deorbit EchoStar 4 from 76.85° W.L.	)	

APPLICATION FOR SPECIAL TEMPORARY AUTHORITY

By this application, and pursuant to Section 25.120(b)(4) of the Commission's rules,[1] EchoStar Satellite Operating Corporation ("EchoStar") respectfully requests Special Temporary Authority ("STA") for 30 days to deorbit the EchoStar 4 satellite from its current orbital location at 76.85º 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 Satellite Orbit ("GSO"). 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.[2]

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 needed to conduct transfer orbit operations for Quetzsat-1, which is set to be launched on or

[1] 47 C.F.R. § 25.120(b)(4).

[2] *Id.* §§ 25.114(d)(14)(ii), 25.283(c).

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 76.85º 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.[3] EchoStar 4's stay at the nominal 77º 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 77º W.L. orbital location, and by agreements among EchoStar, SES Global Latin America, S.A. ("SES"), and QuetzSat.[4] 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 de-orbiting plans with Commission staff through previous confidential filings. During deorbiting, EchoStar 4 will vacate the nominal 77º W.L. orbital location, thereby triggering the need for this request in accordance with existing agreements.[5] EchoStar, moreover, understands that neither the Mexican Administration nor QuetzSat objects to the satellite's deorbit.

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

[4] *See* Satellite Relocation and Use Agreement for the 77º W.L. Orbital Location, (77º W.L. Agreement), *filed in* File No. SAT-STA-20080616-00121, Attachment 3 (granted Oct. 31, 2008) ("EchoStar 8 STA Application").

[5] *77º W.L. Order*, Appendix A at 8.

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.[6] 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.

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 77º 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

[6] *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).

measures."[7] 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."[8] The purpose of these rules, as is evident from Section 25.114(d)(14)(ii), is to "limit the probability of accidental explosions . . . after completion of mission operations."[9]

The EchoStar 4 satellite was launched in 1998, before the *Notice of Proposed Rulemaking* that led to the orbital debris mitigation rules was published.[10] 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, fuel and oxidizer tanks, will be removed or vented at the spacecraft's end-of-life by leaving all fuel lines open. Because of the design of the spacecraft bus by the satellite manufacturer, however, the small amount of oxidizer remaining in those tanks cannot be vented. Instead, this residual oxidizer will be securely sealed using pyrotechnic valves upon the completion of the satellite's transfer to its disposal orbit, and stored under conditions that would make a leak extremely unlikely, and an accidental, post-mission explosion more unlikely still.[11]

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[7] 47 C.F.R. § 25.283(c).

[8] *Id.* § 25.114(d)(14)(ii).

[9] *Id.*

[10] Mitigation of Orbital Debris, *Notice of Proposed Rulemaking*, 17 FCC Rcd. 5586 (2002).

[11] *See* EchoStar Satellite Operating Corporation, Confidential Supplemental Information Regarding the Deorbiting of the EchoStar 4 Satellite (June 15, 2011), *filed in* File No. SAT-LOA-19880128-00046. (attached hereto and filed confidentially).

In response to questions from International Bureau officials, Lockheed Martin, the satellite's manufacturer, has re-analyzed the potential for venting the remaining oxidizer by firing the Liquid Apogee Engine ("LAE"). Lockheed determined that doing so would cause a structural catastrophic failure of the satellite appendage hinges. Specifically, Lockheed Martin has opined that, at forces of 150 lbf, the hinges are certain to fail catastrophically, independent of satellite appendage angle. Lockheed Martin has also confirmed that this is a design aspect common to all Lockheed A2100 spacecraft buses. The Commission has repeatedly granted waivers in recognition of this design limitation.[12]

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."[13] 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.[14] 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.[15]

The EchoStar 4 satellite has been launched and operating for thirteen years, well before the orbital debris mitigation rules were proposed, making a design change problematic. The relevance of this fact has been recognized by the Commission even where the satellite in question has yet to be launched. Thus in March 2008, the Bureau granted a limited waiver to EchoStar Satellite Operating Company for the AMC-14 satellite, then still awaiting launch,

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[12] *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).

[13] *See* 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (1969).

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

[15] *WAIT Radio*, 418 F.2d at 1159.

which was also built on the Lockheed Martin A2100 bus, explaining that "waiver is granted because modification of the spacecraft would present an undue hardship, given the late stage of satellite construction."[16] Because EchoStar cannot change the EchoStar 4 satellite's design, good cause exists to grant the requested waiver.

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.

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.

[16] *See* Stamp Grant, File Nos. SAT-LOA-20071221-00183, SAT-STA-20080219-00048, SAT-STA-20080229-00054, Condition 4 (granted Mar. 12, 2008). *See also PanAmSat H-2 Licensee Corp*, Stamp Grant, File No. SAT-AMD-20070731-00108 at condition 5 (granted Nov. 30, 2007) ("*PanAmSat H-2*"); *PanAmSat Licensee Corp.*, Stamp Grant, File No. SAT-AMD-20070716-00102 at condition 7 (granted Oct. 4, 2007) ("*Intelsat 11*").

Respectfully submitted,

/s/

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