

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

In the Matter of)	
)	
EchoStar Satellite Operating Corporation)	File No. SAT-LOA-2011_____
)	
Application for Authority to Launch and Operate the EchoStar 16 Satellite at 61.5° W.L.)	
)	
and)	
)	
Application to Modify Authority at 61.5° W.L. to Substitute Channels 23 and 24 for Channels 1 and 2)	
)	
and)	
)	
Application for Special Temporary Authority to Operate on Channels 1 and 2 at 61.5° W.L.)	
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APPLICATION

Pursuant to Sections 308, 309 and 319 of the Communications Act of 1934, as amended, and Part 25 of the Commission’s rules, EchoStar Satellite Operating Corporation (“EchoStar”) files this application (A) for authority to launch and operate the EchoStar 16 satellite on the Direct Broadcast Satellite (“DBS”) channels already licensed to EchoStar at the 61.5° W.L. orbital location;¹ (B) to modify its authority at 61.5° W.L. by swapping the channels on which it

¹ EchoStar currently operates over all 32 DBS channels at the 61.5° W.L. orbital location and holds a standard authorization for 30 of the 32 channels. Specifically, EchoStar holds standard authority to operate over channels 1-22 and 25-32. Originally, channels 2-22 (even) were licensed to Direct Broadcasting Satellite Corporation. Application of Direct Broadcasting Satellite Corp., *Memorandum Opinion and Order*, 8 FCC Rcd. 7959 (1993). Those 11 channels were then assigned to EchoStar’s predecessor-in-interest. See Application of Direct

is authorized to operate from channels 1-22 and 25-32, to channels 3-32;² and (C) to operate on channels 1 and 2 at the nominal 61.5° W.L. orbital location under Special Temporary Authority (“STA”).³

The modification of EchoStar’s authority at 61.5° W.L. to exchange EchoStar’s assigned channels 1 and 2 for the unassigned channels 23 and 25 (the “swap”) will increase satellite operational efficiencies and will better protect any future third party that may use the unassigned channels at 61.5° W.L. from adjacent channel interference. Specifically, the swap will eliminate one of the two edges of the current unassigned channel cluster where there is spectrum overlap with the assigned channel cluster. This is because, under this proposal, channel 1 will not overlap with any DBS channel licensed to EchoStar. Since this is a like-for-like exchange, it does not implicate the moratorium on applications for new DBS spectrum.

I. INTRODUCTION AND BACKGROUND

EchoStar is a leading satellite services provider. EchoStar uses its six owned or leased in-orbit satellites, among other things, to provide DBS and Fixed-Satellite Service capacity to its customer, DISH Network L.L.C. (“DISH Network”), which is the operator of the DISH Network television service, the nation’s third largest subscription television service with over 14.1 million subscribers. EchoStar currently operates the EchoStar 3, EchoStar 12, and EchoStar 15 satellites

Broadcasting Satellite Corp. for Assignment of Direct Broadcast Satellite Orbital Positions and Channels, *Order*, 11 FCC Rcd. 10494 (1996). Channels 1-21 (odd) were assigned to EchoStar by Rainbow DBS, and channels 25-32 were assigned by Dominion in 2006. *See* Rainbow DBS Company, LLC, *Memorandum Opinion and Order*, 20 FCC Rcd. 16868 (2005); Stamp Grant, EchoStar Satellite Operating Corporation, File No. SAT-ASG-20070608-00081 (granted Sept. 27, 2007), respectively.

² 47 U.S.C. §§ 308, 309, 319; 47 C.F.R. Part 25.

³ EchoStar also currently uses the remaining two channels, channels 23 and 24, under Special Temporary Authority. *See* Stamp Grant, EchoStar Satellite Operating Corporation, File No. SAT-STA-20110525-00096 (granted May 25, 2011) (STA valid until October 13, 2011) (“EchoStar 15 STA”).

in the 61.5° W.L. orbital cluster. The EchoStar 3 satellite, launched in 1998, has experienced failures in a number of its traveling wave tube amplifiers (“TWTAs”), and concomitant reduction in the number of transponders available for use. The satellite is, moreover, naturally approaching the end of its useful life. EchoStar 12 was designed to allow access to only 13 of the frequencies at the 61.5° W.L. orbital slot (specifically, channels 1-23 (odd) and channel 24). EchoStar now seeks to launch and operate an additional satellite at the 61.5° W.L. orbital location.

EchoStar 16 will further supplement the service provided from 61.5° W.L. and ensure the continued full utilization of the DBS spectrum at that orbital location. As the Commission is aware, EchoStar had intended to replace EchoStar 3 with the AMC-14 satellite in 2008; that satellite, however, failed to launch properly and did not reach its intended orbit.⁴ Instead, EchoStar replaced EchoStar 3 with EchoStar 15. EchoStar seeks authority to launch and operate the EchoStar 16 satellite at the 61.5° W.L. orbital location to supplement EchoStar 12 and EchoStar 15. The EchoStar 16 satellite is a state-of-the art satellite manufactured by Space Systems/Loral on its 1300 platform and is scheduled to be launched in 2012. EchoStar 16 will operate in the 12.2-12.7 GHz band using: (1) a single large downlink broadcast beam encompassing the continental United States (“CONUS”) and Puerto Rico (“CONUS-plus beam”),⁵ and (2) 71 downlink spot beams, 67 of which serve local markets in CONUS. EchoStar

⁴ See Letter from Pantelis Michalopoulos, Counsel for EchoStar Corporation, to Marlene H. Dortch, Secretary, FCC, *filed in* File No. SAT-STA-20070926-00133 (Mar. 25, 2008).

⁵ Like other satellites operating from 61.5° W.L., reception from the satellite will be at low elevation angles in certain western parts of CONUS.

requests herein a waiver for certain downlink beams that do not meet the 30 dB cross-polarization requirement. Six uplink spot beams will be operated in the 17.3-17.8 GHz bands.⁶

The CONUS-plus capability of EchoStar 16 will serve the public interest by increasing the capacity of EchoStar's customer, DISH Network, to provide high definition ("HD") programming to subscribers, and its advanced spot-beam technology will enhance DISH Network's ability to provide local-into-local stations across the country.⁷ The requested authorization will continue to ensure improved services are available to DISH Network's subscribers.

II. THE PUBLIC INTEREST WARRANTS GRANT OF THIS APPLICATION

Grant of this application will serve the public interest because it will allow EchoStar and its customer DISH Network to expand and improve the video programming services offered to American consumers.

This state-of-the-art satellite will permit EchoStar to utilize fully the 61.5° W.L. orbital location. Competitive developments have placed a strain on the limited bandwidth available to DBS operators and have made it imperative to maximize the available capacity from licensed spectrum. DISH Network must be able to provide all local broadcast stations into all 210 local markets as a result of its certification as a qualified carrier under the Satellite Television Extension and Localism Act of 2010 and the Commission's carry-one, carry-all requirements.⁸ DISH Network also remains subject to a demanding HD must-carry schedule imposed on

⁶ EchoStar will file separately a request for STA to test the satellite at 61.5° W.L. after launch and before commencement of operations.

⁷ See File No. SAT-STA-20100615-00134, Narrative at 2 (filed June 15, 2010).

⁸ See 47 U.S.C. § 338(a)(1); 47 C.F.R. § 76.66.

satellite carriers by the Commission. The grant of the requested authorities will allow DISH Network to meet this schedule.⁹

The competitive and regulatory need for more satellite capacity requires satellite operators constantly to increase throughput. Within a finite spectrum assignment, however, power must be allocated to increasing throughput. This means that less power remains available to preserve the quality of reception and link availability that customers have come to expect. Consequently, DISH Network needs satellite capacity capable of providing additional power to respond to consumer demand and competitive pressures without sacrificing reception quality. EchoStar 16 will aid in the effort to achieve this result. The operation of EchoStar 16 at 61.5° W.L. may also permit EchoStar 3, EchoStar 12, or EchoStar 15 to deploy to other orbital locations to act either as in-orbit spares in the event of satellite equipment difficulties, or as supplemental capacity.

EchoStar 16 also will better enable EchoStar's customer DISH Network to continue to provide meaningful competition to terrestrial providers – both cable operators and telephone companies. By increasing competition in the multichannel video programming distributor (“MVPD”) market, consumers will benefit through greater choice, more services, and lower rates.

III. THIS APPLICATION IS LEGALLY AND TECHNICALLY COMPLETE

EchoStar hereby submits all of the technical information required by Part 25 of the Commission's Rules in the accompanying Technical Annex (Attachment A), Form 312, and Schedule S, including an orbital debris mitigation plan. Because the satellite will operate on the

⁹ Carriage of Digital Television Broadcast, *Memorandum Opinion and Order and Second Further Notice of Proposed Rulemaking*, 23 FCC Rcd. 5351 (2008).

channels already assigned to and used by EchoStar at 61.5° W.L., this application is not subject to the “freeze” on new DBS applications currently in place.¹⁰

EchoStar intends to operate all the transponders on this DBS satellite on a non-broadcast, non-common carrier basis.¹¹ Ultimately, the capacity will be used by DISH Network to provide multichannel video programming services across the United States. DISH Network’s services will be offered to consumers on a subscription basis.

Waiver Requested. The operation of the EchoStar 16 satellite is consistent with the technical requirements of Part 25 of the rules in all but one respect – the cross-polarization isolation over Bermuda, the Caribbean, and Mexico is 27 dB, which is less than the minimum 30 dB required by Section 25.215 of the Commission’s rules.¹² Accordingly, EchoStar hereby requests a waiver of Section 25.215 of the rules to the extent required.

Commission rules may be waived if there is good cause to do so.¹³ Here, there is good cause, and the International Bureau has already granted similar waivers when the impact on neighboring satellite networks is negligible and the only party suffering increased interference is the satellite operator itself.¹⁴ As the Bureau explained in one case, “[I]icensees may use cross-

¹⁰ See Public Notice, Direct Broadcast Satellite (DBS) Auction Nullified: Commission Sets Forth Refund Procedures for Auction No. 52 Winning Bidders and Adopts a Freeze on All New DBS Service Applications, FCC 05-213, at 2 (rel. Dec. 21, 2005) (“*DBS Freeze*”).

¹¹ See 47 C.F.R. §§ 25.114(c)(11), 25.114(d)(11).

¹² 47 C.F.R. § 25.215 (“Space station antennas operating in the Direct Broadcast Satellite Service must be designed to provide a cross-polarization isolation such that the ratio of the on-axis co-polar gain to the cross-polar gain of the antenna in the assigned frequency band shall be at least 30 dB within its primary coverage area.”).

¹³ See *id.* § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

¹⁴ DIRECTV Enterprises LLC, *Order and Authorization*, 20 FCC Rcd. 15778 ¶ 7 (2005) (“*DIRECTV 5 Order*”) (waiving Section 25.215 when the cross-polarization isolation of DIRECTV 5’s DBS antennas was typically 27 dB over the satellite’s primary coverage area); see also EchoStar Satellite Operating Corporation, *Order and Authorization*, 21 FCC Rcd. 14780 ¶ 8

polarization isolation different from that specified for the Region 2 BSS Plan if they demonstrate that such a difference does not result in interference to other operational or planned systems, including U.S. licensed systems.”¹⁵

This is the case here. All beams on EchoStar 16 have cross-polarization performance that meets or exceeds 30 dB over most of the broadcast coverage area. There are three regions outside of CONUS, however, where the cross-polarization may reach, in the worst case, 27 dB. The slight 3.0 dB shortfall creates insubstantial amounts of self-interference that have already been factored into the link budgets submitted with Schedule S.

The shortfall will create negligible interference to adjacent DBS satellites. The only U.S. satellite networks that may be affected by EchoStar 16 are assigned to, or filed on behalf of, EchoStar. None of those satellites, however, provide service to Bermuda, the Caribbean, or Mexico, where the shortfall will occur. Therefore, there will be no interference to those satellites. EchoStar will coordinate with the Mexican Administration regarding any negligible interference with the QuetzSat-77 network. The 3dB difference of cross-polarization isolation would increase QuetzSat-77’s OEPM degradation by 0.003 dB, which is considered negligible.

Accordingly, consistent with past precedent, a waiver of Sections 25.210(i)(1) and 25.215 of the Commission’s rules is warranted here.

(2006); *Star One S.A.*, *Order*, 19 FCC Rcd. 16334 ¶ 12 (2004); *New Skies Satellites N.V.*, *Order*, 17 FCC Rcd. 10369 ¶ 19 (2002).

¹⁵ *DIRECTV 5 Order*, 20 FCC Rcd. at 15779 ¶ 7.

IV. REQUEST TO MODIFY AUTHORIZATION TO PERMIT PERMANENT OPERATION OVER DBS CHANNELS 23 AND 24 AND TO OPERATE UNDER SPECIAL TEMPORARY AUTHORITY OVER CHANNELS 1 AND 2

A. Swap of Assigned Frequency Channels

EchoStar hereby requests a minor technical change to its authorization: the swap of the unassigned DBS channels 23 and 24 with its assigned channels 1 and 2. Specifically, EchoStar requests swapping the channels it holds under its permanent authorization at the nominal 61.5° W.L. orbital location from channels 1-22 and 25-32, to channels 3-32. EchoStar also requests STA to operate channels 1 and 2.

As the Commission has said in approving other channel exchanges or swaps in DBS assignments, this is “a minor change [that] does not entail the use of any additional orbit/spectrum resources.”¹⁶ As a result of the swap, EchoStar will continue operating the same number of channels as it does currently, and equivalent channels will remain available for assignment once the DBS freeze is lifted. As explained below, the only substantive difference will be more efficient operation of EchoStar’s existing channel assignments and easier coordination for any operator subsequently assigned channels 1 and 2.

The proposed channel swap will better serve the Commission’s policy in favor of efficient spectrum use through improved efficiency for EchoStar’s operations and easier coordination for any subsequent operator assigned channels 1 and 2. The swap will improve the technical efficiency of EchoStar’s operations from the 61.5° W.L. slot by positioning all of EchoStar’s channels in a single block.

¹⁶ Application of United States Satellite Broadcasting Company, Inc. for Modification of Construction Permit for Direct Broadcast Satellite System, *Memorandum Opinion and Order*, 5 FCC Rcd. 7576 ¶ 3 (1990).

Assuming the permanent authorization for the final two channels is assigned to another provider, the proposed channel swap will also ensure that the third party's channels will no longer be bordered on both sides by overlapping DBS spectrum licensed to EchoStar. As the Commission is well aware, adjacent DBS channels overlap significantly under the applicable Region 2 International Telecommunication Union Broadcasting-Satellite Service plan. This would allow the new licensee and EchoStar alike to more easily protect these operations from one another than would be the case if EchoStar retained channels 23 and 24. This proposed swap would also decrease the potential harmful interference and ease coordination for the new operator both in terms of causing interference to other satellite operators or dealing with interference from other operators.¹⁷

The channel swap should not be subject to the DBS freeze because it does not increase EchoStar's assignment or change the orbital location and affects no other provider. It is essentially a minor modification that is akin to request for a replacement satellite, and EchoStar is not seeking to "add frequencies or [an] orbital location."¹⁸ Consequently, there will be no change in the number of channels available for assignment by the Commission.

Should the Commission find that the DBS freeze is applicable to this request, EchoStar requests a waiver to the extent necessary to accomplish the channel swap. The Commission may waive its rules for good cause shown, particularly where strict compliance with a rule is inconsistent with the public interest when taking "into account considerations of hardship, equity, or more effective implementation of overall policy,"¹⁹ especially when deviation on an

¹⁷ Moreover, the channel swap is not subject to the DBS freeze because as the Commission explains, "[t]he freeze does not apply to applications for replacement satellites . . . or requests for special temporary authority." *DBS Freeze* at 2.

¹⁹ 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

individual basis does not require “evisceration of a rule by waivers.”²⁰ The increased efficiencies and ease of coordination, discussed above, provide more than adequate good cause. And, as discussed above, these public benefits accrue without circumventing the Commission’s underlying policy in effecting the DBS freeze.

B. Continued Use of the Remaining Channels Under STA

In granting the spectrum swap described above, EchoStar also requests that its current STA for channels 23 and 24 at the nominal 61.5° W.L. orbital location be modified to apply to channels 1 and 2 instead of 23 and 24 as part of this application. Modification of this STA in conjunction with the relief requested above will ensure that the Commission policies – that spectrum not remain fallow and freeze on DBS assignments – remain in balance.

As EchoStar has previously described to the Commission, the nominal 61.5° W.L. DBS orbital location has a somewhat unique history.²¹ In stark contrast to the other assigned DBS orbital locations, two channels have remained unassigned and unlicensed. In fact, these channels “are the only two remaining unassigned DBS channels in the 12 GHz band that are assigned to the United States that can provide service to most of the contiguous United States.”²²

The future of these unassigned channels is, however, also subject to the uncertainty surrounding the *Northpoint* decision that vacated the Commission’s DBS auction rules, and the DBS freeze implemented by the Commission in response to that decision.²³ As a result, a new licensee will not be in a position to provide services from these channels for a number of years.

²⁰ *Id.*

²¹ See Stamp Grant, File No. SAT-STA-20110303-00048 (granted Apr. 19, 2011).

²² Rainbow DBS Company, LLC and EchoStar Satellite L.L.C., *Memorandum Opinion and Order*, 20 FCC Rcd. 16868 ¶ 29 (2005) (“*Rainbow 1 Assignment Order*”).

²³ *Northpoint Technology Ltd. v. FCC*, 412 F.3d 145 (D.C. Cir. 2005); see also *DBS Freeze*. The DBS freeze does not apply to “applications for replacement satellites.” *Id.* at 2.

In fact, while the Commission initiated a proceeding in 2006 to establish the mechanism by which these channels could be ultimately licensed and operated, that proceeding is still pending.²⁴

In an effort to ensure that such valuable spectrum does not lie fallow, the Commission has provided authorization to DBS providers to operate on these channels for thirteen years subject to different conditions. The Commission initially granted EchoStar's predecessor-in-interest STA to operate on channels 23 and 24, as well as 8 channels assigned to Dominion Video Satellite, Inc. and 11 channels assigned to Rainbow DBS Company, LLC ("Rainbow") on March 21, 1998.²⁵ Rainbow subsequently operated on channels 23 and 24 pursuant to STA for a two-year period²⁶ before EchoStar's predecessor-in-interest acquired the Rainbow 1 satellite and regained authority in 2005.²⁷ On January 1, 2008, EchoStar's predecessor-in-interest assigned the STA to EchoStar as part of a *pro forma* corporate reorganization under which EchoStar

²⁴ See Amendment of the Commission's Policies and Rules for Processing Applications in the Direct Broadcast Satellite Service in the United States, *Notice of Proposed Rulemaking*, 21 FCC Rcd. 9443 (2006).

²⁵ See Direct Broadcasting Satellite Corporation, Application for Special Temporary Authority to Operate a Direct Broadcast Satellite Over Channels 1-21 (odd) and 23-32 (odd and even) at 61.5° W.L., *Memorandum Opinion and Order*, 13 FCC Rcd. 6392 (1998) ("*EchoStar 1998 STA Grant*"). For a full description of the regulatory history of these channels, see File No. SAT-STA-20090821-00092, Narrative at n.4 (granted Dec. 1, 2009).

²⁶ Rainbow received STA (the "Rainbow STA") to operate on the unassigned channels in 2003. EchoStar Satellite Corporation and Rainbow DBS Company LLC, *Order and Authorization*, 18 FCC Rcd. 19825 (2003) ("*Rainbow STA Order*").

²⁷ The Rainbow STA was assigned to EchoStar Satellite L.L.C. ("ESLLC") in October 2005 as part of the sale of the Rainbow 1 satellite to EchoStar. See Stamp Grant, File No. SAT-STA-20050926-00183 (granted Sept. 30, 2005); see also *Rainbow 1 Assignment Order*. The STA was then assigned from ESLLC to an affiliate, EchoStar Satellite Operating Corporation ("old ESOC") in September 2006. See Application for Pro Forma Assignment of Licenses from EchoStar Satellite L.L.C. to EchoStar Satellite Operating Corporation, File No. SAT-ASG-20051129-00256 (granted Sep. 13, 2006).

Communications Corporation spun off its wholly-owned subsidiary, EchoStar.²⁸ Since then, the Commission has repeatedly renewed EchoStar's STA for the two channels. The EchoStar 15 satellite currently operates on the unassigned channels 23 and 24 subject to STA.²⁹

The Commission has highlighted repeatedly "the importance of ensuring that spectrum can continue to serve the public rather than lying fallow unnecessarily, even on a temporary basis."³⁰ During the past thirteen years, the flexibility provided by this much-needed capacity has proven instrumental to DBS providers. EchoStar therefore requests that its current STA for channels 23 and 24 at the nominal 61.5° W.L. orbital location be modified to apply to channels 1 and 2 instead of 23 and 24 as part of this application. As part of this requested modification, EchoStar agrees to abide by the same conditions for channels 1 and 2 that are currently in place for channels 23 and 24.

V. ITU COST RECOVERY

EchoStar is aware that as a result of the actions taken at the 1998 Plenipotentiary Conference, as modified by the ITU Council in June 2001, processing fees are now charged by the ITU for satellite network filings. As a consequence, Commission applicants are responsible for any and all fees charged by the ITU. EchoStar affirms it is aware of, and unconditionally accepts, this requirement and its responsibility to pay any ITU cost recovery fees for the ITU filings associated with this application. Invoices for such fees may be sent to the contact representative listed in the accompanying FCC Form 312.

²⁸ See Public Notice, Policy Branch Information Actions Taken, DA 07-4655 (rel. Nov. 16, 2007) (consenting to the transfer of several authorizations as part of the spin-off).

²⁹ See EchoStar 15 STA.

³⁰ *Rainbow STA Order* ¶ 8; see also *EchoStar 1998 STA Grant* ¶ 7 ("furthering the Commission's objective to make efficient use of available spectrum").

VI. CONCLUSION

For the foregoing reasons, EchoStar respectfully requests that the Commission promptly grant this application for launch and operating authority for the EchoStar 16 satellite as in the public interest, convenience and necessity.

Respectfully submitted,

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