

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

In the Matter of)	
)	
ECHOSTAR SATELLITE OPERATING L.L.C.)	File No. SES-LFS-2009 _____
)	
Application for Blanket Earth)	
Station License To Operate with EchoStar 1,)	
Operating as a Mexican-Licensed Satellite)	
at 77.15° W.L.)	
)	

APPLICATION FOR BLANKET EARTH STATION AUTHORITY¹

EchoStar Satellite Operating L.L.C. (“DISH”) seeks authority to operate 1,000,000 receive-only earth stations in the United States to receive Direct Broadcast Satellite (“DBS”) service from the 77° W.L. orbital location allotted by the International Telecommunication Union (“ITU”) to Mexico.² Specifically, DISH seeks authority to provide service to the U.S.

¹ Along with this application, DISH will also be requesting (1) space station special temporary authority (“STA”) to move the EchoStar 1 satellite to 77.15° W.L. and (2) STA to operate it at 77.15° W.L. pending the re-flagging of EchoStar 1 as a Mexican-licensed satellite. DISH will also file an application to transfer the EchoStar 1 satellite to QuetzSat for operation under Mexican-authority. In addition to the subject application, DISH’s sister company, EchoStar Corporation (“EchoStar”), also will be requesting: (1) earth station STA to support the relocation of the EchoStar 1 satellite to 77.15° W.L.; (2) earth station STA to support temporary space station operations at 77.15° W.L. pending the re-flagging of EchoStar 1 as a Mexican-licensed satellite; and (3) the modification of three existing earth station licenses (Call Signs E080058, E980118 and E020233) to perform feeder link and TT&C operations with EchoStar 1 at 77.15° W.L. EchoStar has received temporary authority to operate the EchoStar 8 satellite at 77.0° W.L. under U.S. authority, File No. SAT-STA-20080616-00121 (granted Nov. 7, 2008), and has requested a modification to its blanket earth station license to operate with the EchoStar 8 satellite after it is re-flagged under Mexican authority, File No. SES-MFS-20080724-00977 (filed Jul. 24, 2008).

² Similar authority was previously granted to DISH’s sister company, EchoStar, to provide service from the Mexican-licensed EchoStar 4 satellite. *See EchoStar Satellite L.L.C.*,
(Continued ...)

from the EchoStar 1 satellite once it is moved from its current licensed orbital location at 148° W.L.³ to 77.15° W.L. Once there, the satellite will be operated by QuetzSat, S. de R.L. de C.V. (“QuetzSat”) as a Mexican-licensed satellite.

As the Commission is aware, QuetzSat is an affiliate of SES Latin America, S.A. (SES-LA) and SES S.A. (collectively, “SES”), with which EchoStar has entered into an agreement for the development of the Mexican BSS location at 77° W.L. The EchoStar 1 satellite will replace the EchoStar 4 satellite – which is nearing the end of its life – at the 77° W.L. Mexican BSS location after the EchoStar 5 satellite is relocated to 148° W.L. and traffic is transferred from EchoStar 1.⁴ Pursuant to a recent Satellite Services Agreement between EchoStar’s wholly-owned subsidiary, EchoStar 77 Corporation (“EchoStar 77 Corp.”), and SES-LA, and a separate Satellite Services Agreement between EchoStar 77 Corp. and DISH,⁵ EchoStar 1 will provide service to the United States and Mexico from 77.15° W.L., as further described in the attached

DA 06-868, Order and Authorization, 21 FCC Rcd 4077 (2006) (“77° W.L. Order”), assigned and transferred to EchoStar Corporation, File Nos. SES-ASG-20071108-01575, SES-T/C-20071108-01566 (consummated Jan. 1, 2008). DISH is requesting a partial waiver of the processing fees payable for this application. See Attachment 1.

³ See File No. SAT-MOD-20061020-00125, Call Sign DBS8801 (granted Oct. 1, 2007).

⁴ DISH has filed separate applications requesting authority to move EchoStar 5 from 129° W.L. to 148° W.L. and to operate it from that location. File Nos. SAT-STA-20081003-00201 (granted Jan. 7, 2009); SAT-A/O-20081003-00215 (originally filed as File Nos. SAT-MOD-20081003-00199, SAT-MOD-20081003-00200 (filed Oct. 3, 2008)).

⁵ See Section 2.H(5) of the Satellite Services Agreement between EchoStar 77 Corporation and SES Latin America S.A., and Section 2.H(5) of the Satellite Services Agreement between DISH Network Corporation and EchoStar 77 Corporation (collectively (“EchoStar 77 SSAs”)), attached hereto as Attachment 2. The remaining provisions of the agreements have been redacted because they do not pertain to the EchoStar 1 satellite. DISH requests that certain provisions of this agreement be treated as confidential. Concurrently, DISH is submitting a redacted version of the agreement to be included in the public record.

Technical Annex⁶ and Schedule S. DISH's current expectation is that the satellite will operate at 77.15° W.L. until the planned launch of the QuetzSat-1 satellite to that orbital location in 2011.

QuetzSat, which pursuant to the BSS Concession was authorized by Mexico to use the BSS frequencies at the 77° W.L. slot,⁷ has advised the Mexican Administration of its plan to replace the EchoStar 4 satellite with EchoStar 1 for service to Mexico and the United States, and DISH understands that the Mexican Administration has no objection to this plan. The two Administrations have already exchanged letters regarding the use of EchoStar 4, formerly a U.S.-licensed satellite, at 77° W.L.⁸ Nevertheless, to the extent that the "reflagging" of EchoStar 1 is subject to the additional exchange of letters between the two administrations, DISH respectfully requests that the Commission proceed with the necessary preparation for the exchange. The letters can be solidly anchored on the precedent of the letter exchange concerning EchoStar 4.⁹

For the reasons set forth herein, grant of this Application will serve the public interest and will not cause harmful interference to any authorized user of the spectrum. Allowing DISH to bring the EchoStar 1 satellite, along with the EchoStar 8 satellite, into service at 77.15° W.L. will augment the capacity that DISH and EchoStar will have available to serve the United States from that Mexican 77° W.L. slot and result in a greater variety and quality of programming services, including high definition programming and local channels.

⁶ The Technical Annex is attached hereto as Attachment 3.

⁷ Secretariat of Communications and Transportation Vice-Ministry of Communications, Concesion Para Ocupar La Posicion Orbital Geoestacionaria 77° Oeste Asignada al Pais y Explotar Sus Respektivas Bandas de Frecuencias 12.2 – 12.7 GHz y 17.3-17.8 GHz, Asi como los Derechos de Emision y Recepcion de Señales, granted February 2, 2005 ("BSS Concession"), filed in File No. SAT-STA-20080616-00121, Attachment 2 ("*EchoStar 8 Application*").

⁸ See 77° W.L. Order at Appendix A.

⁹ *Id.*

I. BACKGROUND

On April 18, 2006, the Commission approved the relocation of EchoStar 4 from the 157° W.L. orbital location to the 77° W.L. orbital location, where it has been operating as a Mexican-licensed BSS satellite.¹⁰ As the Commission is aware, the operation of EchoStar 4 at 77° W.L. is governed by a commercial agreement between EchoStar and SES.¹¹ The parties have now amended their agreement to replace EchoStar 4 with the EchoStar 1 satellite at 77.15° W.L., where it will be operated by QuetzSat pursuant to the BSS Concession.¹²

EchoStar 77 Corp., a wholly-owned subsidiary of EchoStar, recently entered into Satellite Service Agreements with SES-LA and DISH.¹³ Under those agreements, QuetzSat will provide service to EchoStar 77 Corp. on its future QuetzSat-1 satellite over all 32 available channels at 77° W.L. subject to the receipt of all required approvals.¹⁴ EchoStar 77 Corp., in turn, will provide service to its parent, EchoStar, and its sister company, DISH. The EchoStar 77 SSAs also allow either DISH or EchoStar to move an “Interim Satellite” to the 77° W.L. orbital location and use up to all 32 channels available at that location subject to the BSS Concession.¹⁵

¹⁰ See 77° W.L. Order.

¹¹ See *id.* at ¶¶ 2-3. See Satellite Relocation and Use Agreement for the 77° W.L. Orbital Location (“77° W.L. Agreement”), filed in *EchoStar 8 Application*, Attachment 3.

¹² See Amendment #4 to Satellite Relocation and Use Agreement for the 77° W.L. Orbital Location (effective November 24, 2008), attached hereto as Attachment 4. Note that EchoStar 4 and EchoStar 1 may both operate at 77° W.L. for a short period prior to the end-of-life disposal of the EchoStar 4 satellite. This Amendment is being filed under a request for confidentiality. A redacted version is being submitted for the public record.

¹³ See note 5, *supra*.

¹⁴ See *EchoStar 77 SSAs*.

¹⁵ *Id.* DISH understands that the use of the EchoStar 1 satellite at 77° W.L. is directly encompassed within the authority granted in QuetzSat’s existing concession. That concession is
(Continued ...)

DISH will move the EchoStar 1 satellite to 77.15° W.L. once it receives authority from the Commission and will provide DBS programming to consumers in the U.S. over the requested blanket earth station license. The EchoStar 4 satellite will be temporarily moved to 77.3° W.L., subject to Commission approval, which will be requested separately.

II. THIS APPLICATION IS LEGALLY AND TECHNICALLY COMPLETE

The legal qualifications of DISH to receive the requested authority are a matter of record with the Commission. DISH is hereby submitting all of the technical information required by Sections 25.137 and 25.114 of the Commission's rules¹⁶ in the accompanying Schedule S and attached Technical Annex (*see* Attachment 3).

In addition, except as noted below, the proposed operation of EchoStar 1 at 77.15° W.L. to provide service to the United States is fully compliant with the Commission's technical rules. With respect to the geographic service requirements in Section 25.148(c) of the Commission's rules,¹⁷ the Commission has already held that DBS service to Alaska and Hawaii is not technically feasible from the 86.5° W.L. orbital location. It follows that service from the 77.15° W.L. orbital location, which is even further east than 86.5° W.L., is also not technically feasible (as demonstrated in the Technical Annex).

not limited to the operations of any particular satellite at 77° W.L. *See BSS Concession* at 4 (defining the satellite system as "one or more satellites with associated frequencies and their control centers operating in an integral manner to make satellite capacity available for the rendering of satellite services").

¹⁶ 47 C.F.R. § 25.137; 47 C.F.R. § 25.114.

¹⁷ 47 C.F.R. § 25.148(c) (requiring service to Alaska and Hawaii "where such service is technically feasible").

III. GRANT OF THIS APPLICATION IS IN THE PUBLIC INTEREST

Granting DISH's Application is in the public interest. DISH and EchoStar will be able to take advantage of the greater capabilities that EchoStar 1 brings to bear compared to EchoStar 4 to provide increased programming to U.S. consumers from 77° W.L. while QuetzSat constructs the QuetzSat-1 satellite. EchoStar 4 suffers from two infirmities: limited capacity and limited scope of coverage over the U.S. The Commission found that even this limited service from the Mexican orbital slot at 77° W.L. "could serve the public interest by providing service to areas in the Southern U.S., including additional Spanish language programming to areas with significant Spanish-speaking populations."¹⁸ The redeployment of EchoStar 1, alongside EchoStar 8, to 77° W.L. will achieve this and more, as it will ameliorate both of EchoStar 4's defects. It will greatly enhance the programming available from 77° W.L. to U.S. customers, and it will also enhance the scope of U.S. coverage beyond the southern states. By operating both EchoStar 1 and EchoStar 8 at 77° W.L., DISH and EchoStar will have greater operational flexibility to maximize the amount of service available to U.S. consumers than if either satellite operated at 77° W.L. alone. This greater operational flexibility will provide the companies with expanded capacity to provide high-definition services and additional high-definition local-into-local markets.

All of this can be achieved without any disruption in service. All programming carried by EchoStar 1 at 148° W.L. today can be switched to another DISH satellite or the EchoStar 5 satellite once that spacecraft has been transferred from 129° W.L. to 148° W.L., which is

¹⁸ See 77° W.L. Order at ¶ 8.

planned to occur this March.¹⁹ Moreover, the public interest benefits from increasing the capacity and the scope of the U.S. DBS service provided from 77° W.L. can be achieved without causing harmful interference to other satellites. There is no DBS orbital location in the vicinity of 77° W.L. that is assigned to the United States (the closest U.S. location is 61.5° W.L.). There will likewise be no harmful interference from the operation of an additional satellite at 77° W.L. into Canada's DBS allotments at 72.5° W.L. and 82° W.L. In that respect, DISH notes that Canada has modified the coverage of its 72.5° W.L. orbital location to include the United States, and DIRECTV is authorized to serve the United States from its DIRECTV 1R satellite operating at that slot.²⁰ There is, however, an existing coordination agreement between Mexico and Canada to address interference issues between 77° W.L. and 72.5° W.L. DISH will comply with that agreement and/or any future coordination agreements. Similarly, with respect to Canadian operations at 82° W.L., DISH will operate in full conformity with the 1996 Mexican ITU modification over all points in Canada and the United States, as well as with the existing coordination agreements between the Administrations of Canada and Mexico and/or any future coordination agreements.

IV. USE OF C-BAND FREQUENCIES FOR TT&C

As the Commission is aware, the EchoStar 1 satellite is equipped with telemetry, tracking and command ("TT&C") beacons in the conventional C-band frequencies (specifically, 5926-

¹⁹ The Commission has granted DISH authority to move the EchoStar 5 satellite to 148° W.L., and DISH's application for modification of its authority to operate EchoStar 5 at 148° W.L. is pending. See File Nos. SAT-STA-20081003-00201 and SAT-A/O-20081003-00215 (originally filed as File Nos. SAT-MOD-20081003-00199, SAT-MOD-20081003-00200 (filed Oct. 3, 2008)).

²⁰ EchoStar also recently received authority to provide service from the EchoStar 6 satellite located at 72.7° W.L. File No. SES-LFS-20080512-00595 (granted July 28, 2008).

5927 MHz and 6423-6424 MHz for command, and 4198.4-4198.6 and 4199.4-4199.6 MHz for telemetry and tracking). The Commission has already authorized the use of those frequencies to perform TT&C operations with EchoStar 1 at 148° W.L. on a non-protected, non-harmful interference basis.²¹ DISH requests authority for use of the same frequencies with the same satellite at 77.15° W.L. on exactly the same basis.

Consistent with this precedent, DISH respectfully requests a waiver of Section 25.202(g) (in-band TT&C) to the extent necessary to permit such operations. Just as when the Commission authorized use of these frequencies at 148° W.L., there is good cause for such a waiver.²² First, the continued use of these frequencies for the conduct of TT&C with the EchoStar 1 satellite is essential, as the satellite is not equipped to receive commands or transmit telemetry and tracking information on any other frequencies. In addition, the continued use of these command frequencies on a non-protected, non-harmful interference basis will not increase the potential for interference with any lawful users of spectrum, as it will not conflict with the operations of any adjacent C-band satellite operators. The closest C-band satellite that will operate near the 77° W.L. orbital location when EchoStar 1 is transferred to that location is Brasilsat B3 operating at 75° W.L.²³ The closest C-band satellite to the west of 77° W.L. is Brasilsat B4 operating at 84° W.L. Thus, proposed operations of EchoStar 1's TT&C communications in two slivers of the

²¹ See *EchoStar Satellite Corporation et al.*, 13 FCC Rcd 8595, at ¶ 23 (Sat. & Radiocom. Div. 1998).

²² See *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *aff'd*, 459 F.2d 1203 (D.C. Cir. 1972), *cert. denied*, 409 U.S. 1027 (1972).

²³ While PanAmSat's Galaxy 4R satellite currently operates at 76.8° W.L., PanAmSat has recently submitted an application to deorbit the satellite in March 2009 and to transfer all C-band traffic to its Galaxy 2R satellite located at 93.10° W.L. See File No. SAT-STA-20090123-00008 (filed Jan. 23, 2009). As EchoStar 1 will not reach 77° W.L. until on or around May 22, 2009, its limited C-band operations will not interfere with Galaxy 4R.

conventional C-band will not cause any interference into the operations of either of these satellites.

To the extent necessary, DISH is also requesting from the Commission a limited waiver of the Trilateral Arrangement Regarding Use of the Geostationary Orbit reached by Canada, Mexico, and the United States as EchoStar 1 will be a Mexican-licensed satellite in the portion of the C-band arc reserved to the U.S. under that agreement.²⁴ For the reasons set forth above, there is good cause for such a waiver. In addition, DISH notes that Mexico and Canada have both consented to EchoStar 1's limited use of the C-band when the satellite was operating at 119° W.L., in these countries' portion of the C-band arc.²⁵

V. 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, DISH 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.

VI. CONCLUSION

For the foregoing reasons, DISH respectfully requests that the Commission grant this application for blanket earth station authorization to communicate with EchoStar 1 operating from 77.15° W.L. as a Mexican-licensed satellite.

²⁴ See Public Notice, Trilateral Arrangement Regarding Use of the Geostationary Orbit Reached by Canada, Mexico, and the United States, *available at* <http://www.fcc.gov/ib/sand/agree/files/satellite/trilat.pdf> (rel. Sept. 2, 1988).

²⁵ *Id.*

Respectfully submitted,

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January 30, 2009

ATTACHMENT 1

REQUEST FOR PARTIAL FEE WAIVER

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

_____))
In the Matter of))
))
DISH NETWORK CORPORATION))
))
Petition for Waiver of))
Application Fees Pursuant to))
Section 1.1117 of the Commission's Rules))
_____))

To: Office of the Managing Director

PETITION FOR WAIVER OF APPLICATION FEES

DISH Network Corporation (“DISH”) respectfully requests that, pursuant to Sections 1.3 and 1.1117 of the Commission’s Rules,¹ and the Communications Act of 1934, as amended (the “Act”),² the Commission waive to the extent necessary certain application fees associated with its concurrently filed application for a blanket earth station license to operate 1,000,000 receive-only earth stations in the United States to receive Direct Broadcast Satellite (“DBS”) programming from the EchoStar 1 satellite, operating as a Mexican satellite at 77° W.L.³ The Commission’s Rules and the Act specifically provide that such fees may be waived where good cause is shown and the public interest would be served.⁴ As demonstrated below, good cause exists for, and the public interest would be served by, waiver of fees in this case because the

¹ 47 C.F.R. §§ 1.3 and 1.1117.

² 47 U.S.C. § 158(d)(2).

³ See File No. SES-LFS-2009 _____ (filed January 30, 2009) (“Application”). For convenience, this petition is being attached as an Attachment to this application.

⁴ 47 C.F.R. § 1.1117; 47 U.S.C. § 158(d)(2).

application fee that may otherwise be payable would not be commensurate with the Commission's actual costs of processing DISH's Application and would represent a regulatory barrier to DISH's proposed provision of service. If the Commission determines that a fee is required, DISH requests that the Commission find that the "VSAT" initial application fee is appropriate. DISH has already paid the \$8,895 fee for such applications, to which the instant request for a license is similar.

I. BACKGROUND

DISH is requesting authorization to operate 1,000,000 receive-only earth station antennas in order to expand its provision of multichannel video services to consumers in the United States. The Commission's Rules do not designate any specific charges for the type of application being filed in the DBS service. The following schedule of charges for applications for the types of services which could be applied to DISH's Application include:

- Initial Application for a Fixed Satellite Very Small Aperture Terminal (VSAT) System = \$8,895 per system⁵
- Initial Application for Receive-Only Earth Stations = \$365.00 per station⁶

DISH's proposed network of DBS earth stations is most like a VSAT system; therefore, it should be subject to at most the \$8,895.00 application fee for an initial application for a VSAT system.

DISH's proposed system architecture consists of as many as 1,000,000 technically identical earth stations operating in the DBS portion of the Ku-band. This architecture is consistent with the FCC's definition of VSAT networks, which are networks of technically

⁵ See *International and Satellite Services Fee Filing Guide* at 13 (effective Feb. 14, 2008) ("*Fee Filing Guide*").

⁶ *Fee Filing Guide* at 12.

identical small antennas that generally communicate with a larger hub station and operate in the 12/14 GHz frequency bands.⁷ Because DISH believes that its system is most like a VSAT network, it has paid the \$8,895.00 application fee. However, if the Commission determines that the \$365.00 per-station fee for receive-only earth stations applies to each of DISH's 1,000,000 consumer units, DISH seeks a waiver of that \$365 million application fee.

II. GOOD CAUSE EXISTS FOR, AND THE PUBLIC INTEREST WOULD BE SERVED BY, WAIVER OF THE RECEIVE-ONLY EARTH STATION APPLICATION FEE

The Commission has the authority to waive application fees where -- such as here -- good cause is shown and the public interest would be served.⁸ As demonstrated below, a fee of up to \$365 million would be prohibitively high for DISH, would deny competitive service offerings to the public, and would not be commensurate with FCC processing resources.

A. FCC Application Fees are Intended to Recover the Costs of Standard Application Processing

The Commission's schedule of application fees is intended to reimburse the government for the work involved in providing certain regulatory services associated with processing applications. In setting the fees, the Commission has noted that "the charges represent a rough approximation of the Commission's actual cost of providing the regulatory actions listed" and that "the very core of this effort is to reimburse the government -- and the general public -- for

⁷ See *Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures*, Order, 11 FCC Rcd. 21581, 21592 (1996).

⁸ See *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *aff'd*, 459 F.2d 1203 (D.C. Cir. 1972), *cert. denied*, 409 U.S. 1027 (1972).

the regulatory services provided to certain members of the public.”⁹ However, in certain instances, the Commission’s schedule of filing fees may not reasonably approximate the costs involved in handling a particular application or may not otherwise serve the public interest. For this reason, the Commission’s Rules and the Act allow for parties to seek a waiver of the application fees.¹⁰

A filing fee waiver is warranted here because many of the processing activities required to modify individual earth station licenses -- the costs of which the receive-only earth station application fees are designed to recover -- are simply not required in reviewing DISH’s Application for a blanket earth station license to operate with EchoStar 1. The Commission has previously accepted the VSAT application fees for similar networks and applications.¹¹ Consistent with these rulings, the VSAT fee of \$8,895 per system should apply to the instant request as well.

B. The Public Interest Would Be Served by Granting the Requested Fee Waiver

In addition to being supported by the requisite good cause, granting DISH’s request for a waiver of application fees for its Application is also consistent with the public interest. As described in detail in the Application, grant of the authority requested by DISH to provide DBS

⁹ *Establishment of a Fee Collection Program to Implement the Provisions of the Consolidated Omnibus Budget Reconciliation Act of 1985*, Report and Order, 2 FCC Rcd 947, 948 (1987).

¹⁰ *See supra* note 4.

¹¹ *See, e.g., Application of EchoStar Satellite Operating Corporation for Pro Forma Assignment of Blanket Earth Station License*, File No. SES-ASG-20071108-01575, (granted Nov. 19, 2007) (fee waiver granted in a letter from Mark Stephens, CFO, FCC, to Pantelis Michalopoulos and Petra A. Vorwig, Counsel for EchoStar, dated Apr. 4, 2008); *Application of DIRECTV Enterprises, LLC*, DA 04-2526 (rel. Aug. 13, 2004) (approving application in which applicant paid VSAT application fee for 1,000,000 receive-only terminals to be used for DBS service from a Canadian satellite).

services in the United States using the EchoStar 1 satellite at 77° W.L. will further a number of compelling public interest objectives.

DISH should not be required to pay a \$365.00 fee for each of its 1,000,000 earth stations merely because it is providing service from a non-U.S. satellite when an operator providing an identical service using a U.S.-licensed satellite would not need to apply for licenses for each of its consumer dishes.¹² The result would be overtly discriminatory treatment among DBS and Direct-to-Home (“DTH”) providers serving the United States. Moreover, in its recent *Space Station Licensing Order*, the Commission concluded that there is no need for a satellite operator to seek separate authorization for routinely-licensed receive-only earth station antennas -- or to pay a separate fee -- if the Commission has concluded that the public interest is served by that provider’s satellite being added to the Permitted Space Station List, including providers authorized to provide DTH services.¹³

III. CONCLUSION

Under current Commission fee guidelines, DISH could potentially be required to pay a fee of \$365.00 to license each of its 1,000,000 receive-only earth stations. That would amount to a total fee of up to \$365 million. Clearly, the imposition of such a high fee was not what Congress or the Commission intended when the fee guidelines were adopted. Such an

¹² Except for the fact that DISH will be using a Mexican orbital location, DISH would not have to file an application for these earth stations. *See* 47 C.F.R. § 25.131(j); *see also In the Matter of Telesat Canada Petition for Declaratory Ruling for Inclusion of ANIK F1 on the Permitted Space Station List*, Order, 16 FCC Rcd 16365, 16369 (2001) (holding that “receive-only earth stations receiving transmissions from any non-U.S. licensed satellite, regardless of whether the satellites is on the Permitted List, must be licensed”).

¹³ *See Amendment of the Commission’s Space Station Licensing Rules and Policies*, Second Report and Order in IB Docket No. 02-34, Second Report and Order in IB Docket No. 00-248, and Declaratory Order in IB Docket No. 96-111, 18 FCC Rcd 12507, 12516-17 (2003).

astronomical application fee would be a barrier to any operator that desires to offer an innovative, competitive service to the public, as proposed by DISH.

The financial hardship that a \$365 million filing fee would impose on DISH, or indeed any other entity, would clearly preclude an application from being filed at all. Filing fees should reimburse the government for the costs of processing applications, not act as a regulatory barrier to entry for competitive services. For all of the aforementioned reasons, DISH respectfully requests that the Commission grant the requested fee waiver to the extent necessary in conjunction with its Application to provide DBS service from EchoStar 1 at the 77° W.L. orbital location.

Respectfully submitted,

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Counsel for DISH Network Corporation

Dated: January 30, 2009

cc: Anthony Dale, Managing Director, Office of the Managing Director (via hand delivery)

ATTACHMENT 2

**SECTIONS 2.H(5) OF THE SATELLITE SERVICES AGREEMENT BETWEEN
ECHOSTAR 77 CORPORATIONS AND SES LATIN AMERICA, S.A. AND THE
SATELLITE SERVICES AGREEMENT BETWEEN ECHOSTAR 77 CORPORATION
AND DISH NETWORK CORPORATION**

REDACTED – FOR PUBLIC INSPECTION

SATELLITE SERVICE AGREEMENT FOR QUETZSAT-1

THIS AGREEMENT between SES Latin America S.A. (“SES-LA”) and SES S.A. (solely as to the obligation set forth in Section 3.D of this Agreement), on the one hand, and EchoStar 77 Corporation (“Customer”), on the other hand, is made effective as of 24 November 2008 (the “Effective Date”). Defined terms used in this Agreement have the meanings specified herein. This Agreement constitutes the “New Satellite Agreement” contemplated by the 77° W.L. Agreement.



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2.H(5) *Interim Satellites.* Subject to receipt of all necessary Authorizations, (x) DISH Network and its Affiliates shall be permitted to place one or more satellites of their choosing that uses some or all of the 77° W.L. Frequencies utilized by the DISH Payload and/or the EchoStar Payload (each an “Interim Satellite”) at the Orbital Location and use the Interim Satellite(s) for the Intended Purpose (provided that DISH Network and its Affiliates shall only be permitted to use the 77° W.L. Frequencies utilized by the EchoStar Payload on a non-interference basis with the use of such frequencies by EchoStar), and (y) EchoStar and its Affiliates shall be permitted to place one or more satellites of their choosing that uses some or all of the 77° W.L. Frequencies utilized by the EchoStar Payload and/or the DISH Payload (each



REDACTED – FOR PUBLIC INSPECTION

also an “Interim Satellite”) at the Orbital Location and use the Interim Satellite(s) for the Intended Purpose (provided that EchoStar and its Affiliates shall only be permitted to use the 77° W.L. Frequencies utilized by the DISH Payload on a non-interference basis with the use of such frequencies by DISH Network), and further provided that (i) Customer is proceeding with reasonable diligence to support the construction and launch of the QuetzSat-1 Satellite that is substantially similar to the satellite described in Attachment E in accordance with the terms of this Agreement, or (ii) a satellite that is substantially similar to the satellite described in Attachment E has been launched and placed In-Service.

[REDACTED]

2.H(5)(a) In accordance with requests made and instructions given by Customer, SES-LA agrees to use commercially reasonable efforts [REDACTED] to pursue, secure, as soon as reasonably practicable, and maintain all Authorizations necessary for the relevant period from SCT, COFETEL, all other Mexican Governmental Entities and the ITU to (a) locate and operate one or more Interim Satellites at the Orbital Location, and (b) permit (i) TT&C functions for the Interim Satellites at the Orbital Location to be uplinked from an earth station in Mexico, (ii) DISH Network and its Affiliates to uplink video, data and audio services from the United States to, and downlink video, data and audio services into the United States, Mexico and Central America from, one or more Interim Satellites using the 77° W.L. Frequencies at the Orbital Location, (iii) EchoStar and its Affiliates to uplink video, data and audio services from the United States to, and downlink video, data and audio services into the United States, Mexico and Central America from, one or more Interim Satellites using the 77° W.L. Frequencies at the Orbital Location, (iv) DISH Network and its Affiliates to use one or more Interim Satellites at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose, and (v) EchoStar and its Affiliates to use one or more Interim Satellites at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose (collectively, a “Non-US Interim Satellite License”). (The parties acknowledge and agree that the reference in the foregoing clauses (iv) and (v) to the Intended Purpose is not intended and shall not be construed to foreclose Customer, DISH Network and EchoStar from use of an Interim Satellite for other authorized purposes.) In connection with the foregoing and in consultation with Customer, DISH Network and EchoStar, SES-LA agrees to file all documents and take all actions reasonably necessary to obtain the Non-US Interim Satellite License as soon as reasonably practicable. SES-LA agrees to use commercially reasonable efforts to respond promptly to requests for further information from SCT, COFETEL, other Mexican Governmental Entities and the ITU. SES-LA agrees to consult regularly with Customer during the regulatory process for a Non-US Interim Satellite License, and shall advise Customer on a timely basis of all material developments concerning such process.

[REDACTED]

Upon the request of SES-LA, Customer agrees to provide reasonable support, and to use commercially reasonable efforts to cause DISH Network and EchoStar to provide reasonable support, in each case as soon as reasonably practicable, to assist SES-LA in the regulatory process for a Non-US Interim Satellite License. In connection with the relocation to, or operation of an Interim Satellite at, the Orbital Location, Customer agrees not to (i) act or fail to act in such a way as to jeopardize SES-LA’s rights to the Orbital Location, (ii) cause any interference to any of SES-LA’s operations at the Orbital Location or at any other orbital location, or (iii) make any claim as to entitlement to the Orbital Location as a result of placement of an Interim Satellite in such location.

[REDACTED]

2.H(5)(b) [Reserved]

[REDACTED]

2.H(5)(c) [Reserved]

2.H(5)(d)



2.H(5)(e) [Reserved]

2.H(5)(f) [Reserved]

2.H(5)(g) [Reserved]

2.H(5)(h) All additional obligations arising out of placement of Interim Satellites in the Orbital Location shall be the Customer's responsibility.

Customer, DISH Network and/or EchoStar, as applicable, shall have the right to remove Interim Satellite(s) from the Orbital Location at any time prior to an obligation to do so (e.g., pursuant to notice received from SES-LA). In the event that Customer would otherwise be obligated to remove an Interim Satellite from the Orbital Location (e.g., pursuant to Subsection 2.J(2)) but the necessary Authorizations have not been secured to do so, Customer shall terminate operation and use of the communications payload of the Interim Satellite at the Orbital Location pending receipt of such Authorizations.



SATELLITE SERVICE AGREEMENT FOR QUETZSAT-1

THIS AGREEMENT between EchoStar 77 Corporation (“EchoStar 77”), on the one hand, and DISH Network L.L.C. (“Customer”) and DISH Network Corporation (solely as to the obligation set forth in Section 3.C of this Agreement), on the other hand, is made effective as of 24 November 2008 (the “Effective Date”). Defined terms used in this Agreement have the meanings specified herein.



2.H(5) Interim Satellites. Subject to receipt of all necessary Authorizations, Customer and its Affiliates shall be permitted to place one or more satellites of their choosing that uses some or all of the 77° W.L. Frequencies utilized by the DISH Payload and/or EchoStar Payload (each an “Interim Satellite”) at the Orbital Location, and to use each such Interim Satellite for the Intended Purpose (provided that Customer and its Affiliates shall only be permitted to use the 77° W.L. Frequencies utilized by the EchoStar Payload on a non-interference basis with the use of such frequencies by EchoStar Corporation), and further provided that (i) EchoStar 77 is proceeding with reasonable diligence to support the construction and launch of the QuetzSat-1 Satellite that is substantially similar to the satellite described in Attachment E in accordance with the terms of this Agreement, or (ii) a satellite that is substantially similar to the satellite described in Attachment E has been launched and placed In-Service. [REDACTED]

2.H(5)(a) In accordance with requests made and instructions given by Customer, EchoStar 77 agrees to use commercially reasonable efforts to cause SES-LA [REDACTED] to pursue, secure, as soon as reasonably practicable, and maintain all Authorizations necessary for the relevant period from SCT, COFETEL, all other Mexican Governmental Entities and the ITU to (a) locate and operate one or more Interim Satellites at the Orbital Location, and (b) permit (i) TT&C functions for the Interim Satellites at the Orbital Location to be uplinked from an earth station in Mexico, (ii) Customer to uplink video, data and audio services from the United States to, and downlink video, data and audio services into the United States, Mexico and Central America from, one or more Interim Satellites using the 77° W.L. Frequencies at the Orbital Location, and (iii) Customer to use one or more Interim Satellites at [REDACTED]

REDACTED – FOR PUBLIC INSPECTION

the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose (collectively, a “Non-US Interim Satellite License”). (The parties acknowledge and agree that the reference in the foregoing clause (iii) to the Intended Purpose is not intended and shall not be construed to foreclose Customer from use of an Interim Satellite for other authorized purposes.) In connection with the foregoing and in consultation with Customer, EchoStar 77 shall cause SES-LA to file all documents and take all actions reasonably necessary to obtain the Non-US Interim Satellite License as soon as reasonably practicable. EchoStar 77 shall use commercially reasonable efforts to cause SES-LA to respond promptly to requests for further information from SCT, COFETEL, other Mexican Governmental Entities and the ITU. EchoStar 77 agrees to consult regularly with Customer during the regulatory process for a Non-US Interim Satellite License, and shall advise Customer on a timely basis of all material developments concerning such process.

[REDACTED]

Upon the request of EchoStar 77, Customer agrees to provide reasonable support, as soon as reasonably practicable, to assist EchoStar 77 and SES-LA in the regulatory process for a Non-US Interim Satellite License. In connection with the relocation to, or operation of an Interim Satellite at, the Orbital Location, Customer agrees not to (i) act or fail to act in such a way as to jeopardize EchoStar 77’s rights under the SES-LA Agreement and/or SES-LA’s rights to the Orbital Location, (ii) cause any interference to any of EchoStar 77’s and/or SES-LA’s operations at the Orbital Location or at any other orbital location, or (iii) make any claim as to entitlement to the Orbital Location as a result of placement of an Interim Satellite in such location.

[REDACTED]

2.H(5)(b) Customer agrees to use commercially reasonable efforts, [REDACTED], to pursue, secure, as soon as reasonably practicable, and maintain all Authorizations necessary for the relevant period from United States Governmental Entities (including without limitation the FCC and Department of State) to (i) locate and operate one or more Interim Satellites at the Orbital Location, and (ii) permit (X) Customer to uplink video, data and audio services from the United States to, and downlink video, data and audio services into the United States, Mexico and Central America from, one or more Interim Satellites using the 77° W.L. Frequencies at the Orbital Location, and (Y) Customer to use one or more Interim Satellites at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose (collectively, a “US Interim Satellite License”). (The parties acknowledge and agree that the reference in the foregoing clause (Y) to the Intended Purpose is not intended and shall not be construed to foreclose Customer from use of an Interim Satellite for other authorized purposes.) In connection with the foregoing and in consultation with EchoStar 77 and SES-LA, Customer agrees to file all documents and take all actions reasonably necessary to obtain the US Interim Satellite License as soon as reasonably practicable. Customer agrees to use commercially reasonable efforts to respond promptly to requests for further information from United States Governmental Entities (including without limitation the FCC and Department of State). Customer agrees to consult regularly with EchoStar 77 and SES-LA during the regulatory process for a US Interim Satellite License, and shall advise EchoStar 77 and SES-LA on a timely basis of all material developments concerning such process.

[REDACTED]

Upon the request of Customer, EchoStar 77 agrees to provide reasonable support (and EchoStar 77 shall use commercially reasonable efforts to cause SES-LA to provide reasonable support), as soon as reasonably practicable, to assist Customer in the regulatory process for a US Interim Satellite License, [REDACTED]

[REDACTED]

[REDACTED] In connection with the relocation to, or operation of an Interim Satellite at, the Orbital Location, Customer agrees not to (i) act or fail to act in such a way as to jeopardize SES-LA's rights to the Orbital Location, (ii) cause any interference to any of SES-LA's operations at the Orbital Location or at any other orbital location, or (iii) make any claim as to entitlement to the Orbital Location as a result of placement of an Interim Satellite in such location. [REDACTED]

2.H(5)(c) [Reserved]

2.H(5)(d) [REDACTED]

2.H(5)(e) [Reserved]

2.H(5)(f) [Reserved]

2.H(5)(g) [Reserved]

2.H(5)(h) All additional obligations arising out of placement of Interim Satellites in the Orbital Location shall be the Customer's responsibility. [REDACTED]

[REDACTED] Customer shall have the right to remove Interim Satellite(s) from the Orbital Location at any time prior to an obligation to do so (e.g., pursuant to notice received from EchoStar 77). In the event that Customer would otherwise be obligated to remove an Interim Satellite from the Orbital Location (e.g., pursuant to Subsection 2.J(2)) but the necessary Authorizations have not been secured to do so, Customer shall terminate operation and use of the communications payload of the Interim Satellite at the Orbital Location pending receipt of such Authorizations.

ATTACHMENT 3

TECHNICAL ANNEX

ATTACHMENT 3

Technical Information to Supplement Schedule S

1. GENERAL DESCRIPTION

The EHOSTAR-1 satellite will provide DBS services to the Southern Continental United States and Mexico from the 77.15° W.L. geostationary orbital position. The satellite can operate on up to 16 DBS frequency channels using right-hand circular polarization (RHCP).

2. SATELLITE TRANSMIT PERFORMANCE

The downlink beam coverage of the EHOSTAR-1 satellite from the 77.15°W.L. location is shown in Figures 2-1 and 2-2.^{1,2} The satellite employs two shaped reflectors, each operating in RHCP. The beams generated by each reflector are nominally the same but the pointing directions of the two reflectors are different, thereby creating two different sets of beam contours on the surface of the Earth. One reflector generates the southern CONUS beam and the other reflector generates the Mexican beam. The cross-polar isolation of the satellite transmit antennas exceeds 30 dB at all transmit frequencies. The peak antenna gain is 36.1 dBi.

Each transponder uses a single 130 Watt Traveling Wave Tube Amplifier (TWTA). The losses between the TWTA output and the antenna input amount to 2.1 dB. The maximum beam peak saturated EIRP level for the transponders is 55.1 dBW.

¹ EHOSTAR-1 was originally designed for operation at the 119°W.L. orbital location to provide CONUS coverage from the 119° W.L. orbital location. The proposed beam coverage is achieved by applying appropriate pointing bias to the EHOSTAR-1 spacecraft itself and also to its antenna reflectors. The coverage also takes into account international coordination requirements applicable to the Mexican registered satellite network filing for 77°W.L.

² Note that service to Hawaii and Alaska is not possible using EHOSTAR-1 from the 77.15°W.L. orbital location owing to the fact that Hawaii will be at an elevation angle of less than 3° and the highest elevation angle towards Alaska from the 77.15°W.L. orbital location will be less than 10°.

Figure 2-1: ECHOSTAR-1 Downlink Southern CONUS Beam Coverage from 77.15°W.L.

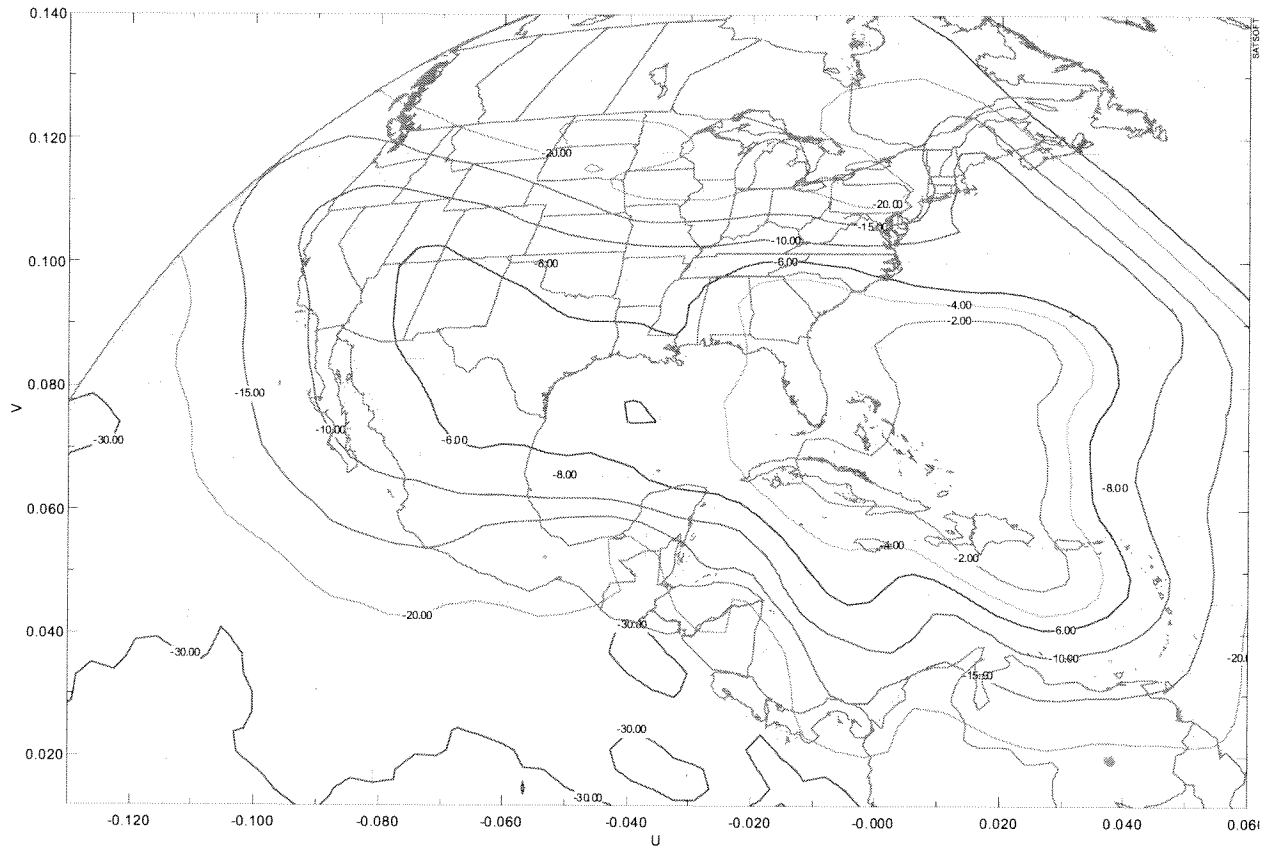
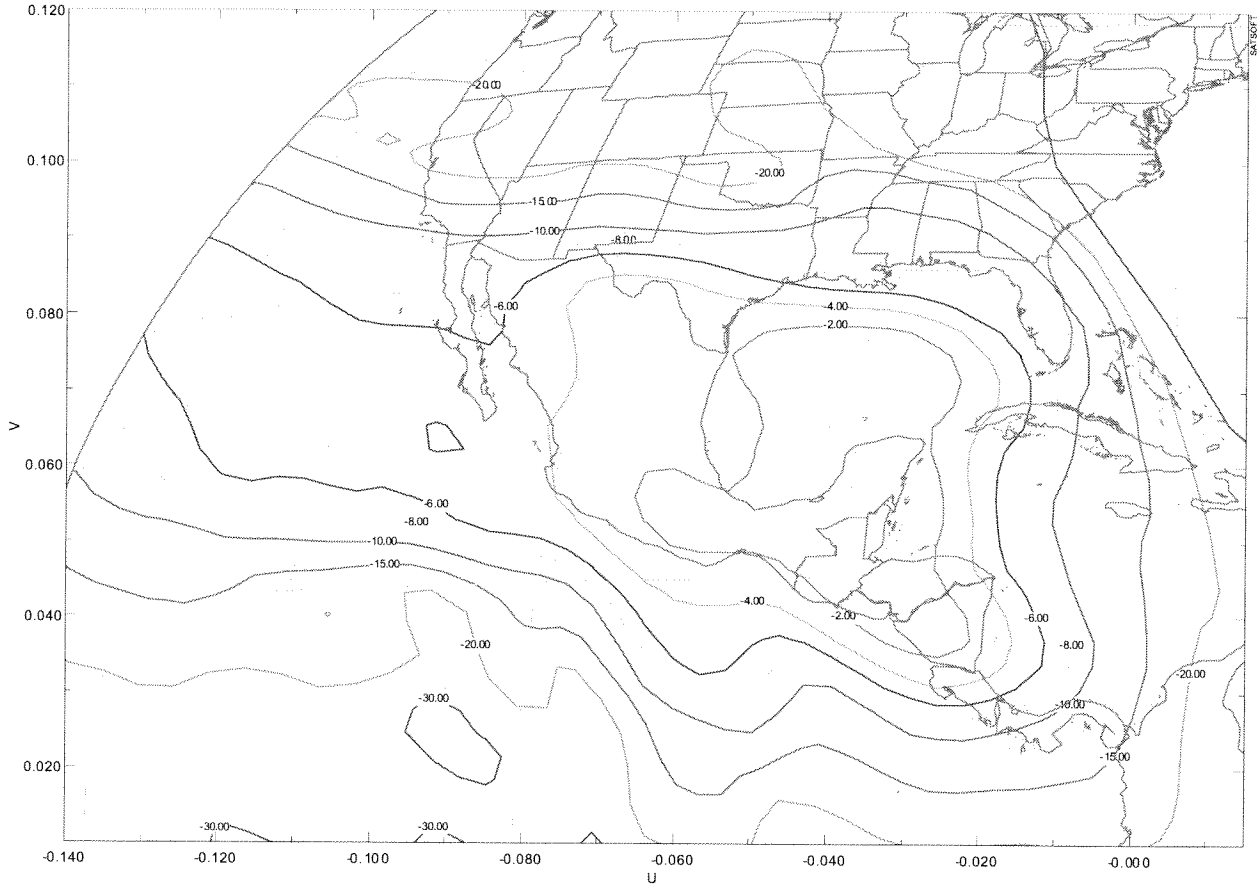


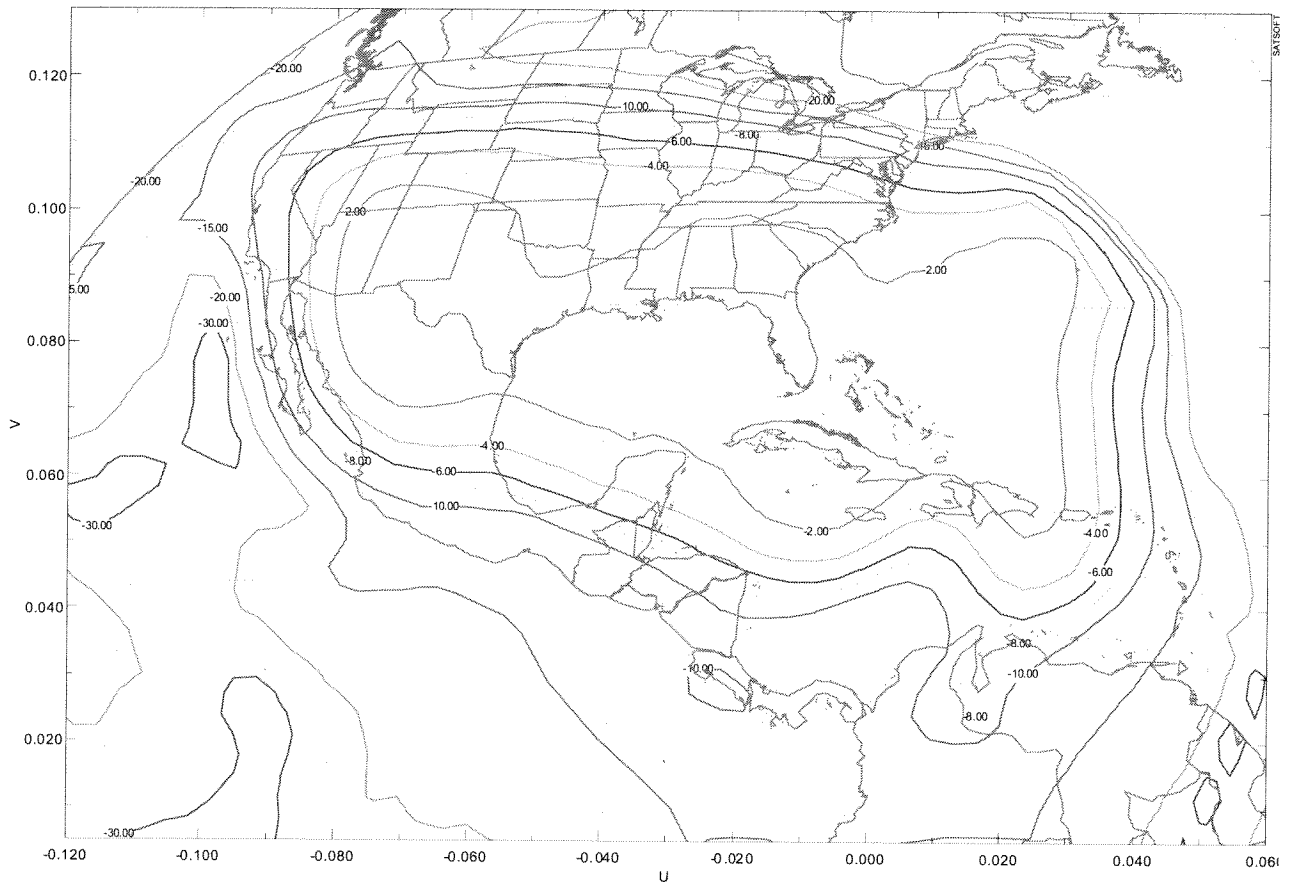
Figure 2-2: ECHOSTAR-1 Downlink Mexico Beam Coverage from 77.15°W.L.



3. SATELLITE RECEIVE PERFORMANCE

The single uplink beam is intended to receive feeder link transmissions from EchoStar Corporation's (EchoStar) uplink sites in either Gilbert, AZ or Cheyenne, WY, operating in RHC polarization. The relative gain contours are shown in Figure 3-1. The cross-polar isolation of the satellite receive antenna exceeds 30 dB at all receive frequencies. The peak gain of the beam is 31.4 dBi, with a noise temperature of 513K, for a peak G/T of 4.3 dB/K.

Figure 3-1: ECHOSTAR-1 Uplink Beam Coverage from 77.15°W.L.



4. FREQUENCY AND POLARIZATION PLANS

The ECHOSTAR-1 satellite uses the standard RHCP channel center frequencies and channel bandwidths prescribed in the ITU's Region 2 BSS Plan.³ Circular polarization is used on both the uplink and downlink.

³ Channel bandwidth is 24 MHz. Spacing between co-polar channels is 29.16 MHz.

5. COMMUNICATIONS PAYLOAD CONFIGURATION

The uplink signals are received in RHC polarization by the satellite receive beam. One active receiver is used on the satellite. After appropriate down-conversion, channel filtering and amplification the signals are transmitted from the satellite using a single 130 Watt TWTA per channel. In total, the communications payload can support 16 DBS channel frequencies. The outputs of the TWTA's are then multiplexed into the appropriate downlink antenna ports.

6. SATURATION FLUX DENSITY AND TRANSPONDER GAIN

The Saturation Flux Density (SFD) of the uplink receive beam ranges between -78 dBW/m² (low gain) to -96 dBW/m² (high gain) at receive beam peak and is adjustable in 1.5 dB steps. The transponder gain is controlled by an Automatic Level Control (ALC) system, which automatically adjusts the transponder gain to give a constant satellite transmit power level for each transponder. The maximum transponder gain is 125 dB.

7. RECEIVER AND TRANSMITTER CHANNEL FILTER RESPONSE CHARACTERISTICS

The typical receiver and transmitter frequency responses of each RF channel, as measured between the receive antenna input and transmit antenna, fall within the limits shown in Table 7-1 below.

In addition, the frequency tolerances of §25.202(e) and the out-of-band emission limits of §25.202(f) (1), (2) and (3) will be met.

Table 7-1: Typical Receiver and Transmitter Filter Responses

Offset from Channel Center Frequency (MHz)	Receiver Filter Response (dB)	Transmitter Filter Response (dB)
± 5	> -0.5	> -0.4
± 7	> -0.7	> -0.5
±9	> -1.0	> -0.8
± 11	> -1.5	> -1.7
±12	> -2.0	> -3.6
±17.5	< -18	< -8
±20.2	< -38	< -18
±27.2	< -50	< -35

8. EMISSION DESIGNATORS AND ALLOCATED BANDWIDTH OF EMISSION

The emission designators and allocated bandwidth of emission are provided in S11 and S12 of the associated Schedule S.

9. SPACECRAFT DESCRIPTION

The ECHOSTAR-1 satellite's physical characteristics, electrical characteristics, etc., are contained in the associated Schedule S form.

10. EARTH STATIONS

The primary subscriber earth station antennas to be used with the ECHOSTAR-1 satellite will range between 45 cm and 60 cm, although slightly larger antennas might be used in certain circumstances.

The feeder link earth stations will be located at EchoStar's existing facilities in Cheyenne, WY and Gilbert, AZ. EchoStar will file any necessary earth station modification applications with the FCC for the feeder link earth stations that will operate with ECHOSTAR-1 at the 77.15°W.L. orbital location.

11. TT&C

As the Commission is aware, the ECHOSTAR-1 satellite's TT&C frequencies are in the conventional C-band. In particular, EchoStar will conduct normal TT&C communications with the satellite at the 77.15° W.L. orbital position using the 5926.5 MHz telecommand carrier operating in horizontal linear polarization, operating with the higher gain horn antenna on the spacecraft. For emergency modes when the spacecraft has lost correct orientation the telecommand will operate through the low-gain omni antenna on the spacecraft using the 6423.5 MHz telecommand frequency. The closest C-band satellite that will operate near the 77° W.L. orbital location when EchoStar 1 is transferred to that location is Brasilsat B3 operating at 75° W.L.⁴ The closest C-band satellite to the west of 77° W.L. is Brasilsat B4 operating at 84° W.L. Thus, proposed operations of EchoStar 1's TT&C communications in two slivers of the conventional C-band will not cause any interference into the operations of either of these satellites. DISH is also requesting from the Commission a limited waiver of the Trilateral Arrangement Regarding Use of the Geostationary Orbit reached by Canada, Mexico, and the United States as ECHOSTAR-1 will be a Mexican-licensed satellite in the portion of the C-band arc reserved to the U.S. under that agreement.⁵

A summary of the TT&C subsystem performance is given in Table 11-1.

Table 11-1: Summary of the TT&C Subsystem Performance

⁴ While PanAmSat's Galaxy 4R satellite currently operates at 76.8° W.L., PanAmSat has recently submitted an application to deorbit the satellite in March 2009 and to transfer all C-band traffic to its Galaxy 2R satellite located at 93.10° W.L. See File No. SAT-STA-20090123-00008 (filed Jan. 23, 2009). As EchoStar 1 will not reach 77° W.L. until on or around May 22, 2009, its limited C-band operations will not interfere with Galaxy 4R.

⁵ Trilateral Arrangement Regarding Use of the Geostationary Orbit Reached by Canada, Mexico, and the United States, available at www.fcc.gov/ib/sand/agree/files/satellite/trilat.pdf.

Parameter	Performance
On-Station Command Frequency	5926.5 MHz (horn antenna) 6423.5 MHz (omni antenna)
Uplink Flux Density	Between -80 and -96 dBW/m ²
Uplink Tx Earth Station Polarization	Horizontal Linear
On-Station Telemetry Frequencies	4198.5 MHz 4199.5 MHz
Maximum Downlink EIRP	10.6 dBW at 5926.5 MHz (horn antenna) 8.9 dBW at 6423.5 MHz (omni antenna)
Downlink Polarization	Horizontal Linear

12. LINK BUDGETS

Representative link budgets for the DBS transmissions, which include details of the transmission characteristics, performance objectives and earth station characteristics, are provided in the associated Schedule S submission. Link budgets for the TT&C transmissions are also included therein.

13. ORBITAL DEBRIS MITIGATION PLAN

DISH notes that several sections of Section 25.114(d) require a statement that the station operator has made certain assessments.⁶

13.1 Spacecraft Hardware Design

⁶ 25 C.F.R. §§25.114(d)(14)(i-iii).

The ECHOSTAR-1 satellite was designed and manufactured by Lockheed Martin Astro Space and was launched in 1995. The satellite is not expected to undergo any planned release of debris during its operation.

DISH has assessed and limited the probability of the satellite becoming a source of debris by collisions with small debris or meteoroids of less than one centimeter in diameter that could cause loss of control and prevent post-mission disposal. Such probability has been limited through component placement and the use of redundant systems.

The ECHOSTAR-1 satellite has separate TT&C and propulsion subsystems that are necessary for end-of-life disposal. The spacecraft TT&C system, vital for orbit raising, is extremely rugged with regard to meteoroids smaller than 1 cm, by virtue of its redundancy, shielding, separation of components and physical characteristics. An omni-directional antenna and wide angle horn system are used during orbit raising and on-station maneuvers. The redundant command receivers and decoders and telemetry encoders and transmitters are located within a shielded area and physically separated. A single rugged thruster provides the energy for orbit raising. Otherwise, there are no single points of failure in the system.

13.2 Minimizing Accidental Explosions

DISH has assessed and limited the probability of accidental explosions during and after completion of mission operations. A Failure Mode Verification Analysis has also been conducted, and the probability of accidental explosions has been limited through extensive monitoring of the ECHOSTAR-1 satellite's batteries and fuel tanks for pressure and temperature. Furthermore, bipropellant mixing is prevented by the use of valves that prevent backwards flow in propellant lines and pressurization lines. Excessive battery charging or discharging is limited by a monitoring and control system which will automatically limit the possibility of fragmentation. Corrective action, if not automatically undertaken, will be immediately undertaken by the spacecraft operator to avoid destruction and fragmentation. Thruster temperatures, impulse and thrust duration are carefully monitored, and any thruster may be turned off via redundant valves. At the end of the satellite's life, all energy sources will be

depleted. Specifically, the batteries will be left in a permanent state of discharge, chemical propulsion systems will be depleted, and the electrical propulsion system will be disabled.

13.3 Safe Flight Profiles

In considering current and planned satellites that may have a station-keeping volume that overlaps the EHOSTAR-1 satellite, DISH has reviewed the lists of FCC licensed satellite networks, as well as those that are currently under consideration by the FCC. In addition, networks for which a request for coordination has been published by the ITU in the vicinity of 77.15°W.L. have also been reviewed.

The EHOSTAR-4 and EHOSTAR-8 satellites will be operating at or close to 77.0°W.L. when EHOSTAR-1 arrives there. Just before the EHOSTAR-1 satellite is moved to 77.15°W.L. the EHOSTAR-4 satellite will be moved from 77.15°W.L. to 77.3°W.L. to allow orderly and safe traffic transfer (subject to approval to be separately sought from the Commission). The EHOSTAR-1 satellite will then be operated at the 77.15°W.L. location, with an east-west station-keeping tolerance of $\pm 0.05^\circ$.

The orbital locations for operational satellites, authorized satellites and those for which there are pending (and future) applications before the Commission in the vicinity of 77°W.L. are summarized below:

- The GALAXY-4R satellite operates at 76.85°W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$; however, PanAmSat recently submitted an application to deorbit the satellite in March 2009;⁷
- The EHOSTAR-8 satellite operates at 77.0°W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$ upon Commission authorization;
- The EHOSTAR-1 satellite will operate at 77.15°W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$ upon Commission authorization;

⁷ .See File No. SAT-STA-20090123-00008 (filed Jan. 23, 2009).

- The ECHOSTAR-4 satellite will temporarily be operated at 77.3°W.L. with an east-west station-keeping tolerance of $\pm 0.1^\circ$ after verifying no other satellite is in operation within that tolerance, and after seeking and receiving Commission authorization;
- ViaSat is authorized to operate a Ka-band satellite at 77.3°W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$; no satellite is planned for operation there until 2011, however, by which time the ECHOSTAR-4 satellite will be de-orbited or moved to another orbital location;
- ATCONTACT has a pending application before the Commission to operate a Ka-band satellite at 77.4°W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$.
- PanAmSat has a pending application to relocate SBS-6, a Ku-band satellite operating at 80.90° W.L., to 76.85° W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$ upon Commission authorization.

Of these, only the two locations immediately adjacent to 77.15°W.L. need be considered (i.e., 77°W.L. and 77.3°W.L.). Given the east-west station-keeping of the current and future adjacent satellites, there is no possibility of any station-keeping volume overlap between these and the ECHOSTAR-1 satellite.

There are numerous FSS and BSS networks filed with the ITU in the vicinity of 77°W.L. Several of these were filed on behalf of the operational and planned satellites listed above. For the remaining ones, DISH can find no evidence that construction is progressing.

Based on the preceding, DISH concludes there is no requirement to physically coordinate the ECHOSTAR-1 satellite with another satellite operator at the present time.

13.4 Post Mission Disposal

Upon mission completion, the ECHOSTAR-1 satellite will be maneuvered to a disposal orbit at least 300 km above its operational geostationary orbit.⁸ Based on analyses performed by the satellite manufacturer, we understand that 13 kg of fuel will be reserved to achieve the disposal orbit at the end of the satellite's life. The fuel reserve was calculated using two methods. The first method applied was the pressure-volume temperature method, which uses tank pressure and temperature information to determine remaining propellant. The second method applied was the bookkeeping method, which evaluates the flow rate at average pressure and total thruster on-time of orbital maneuvers to determine the amount of propellant used. DISH has assessed fuel gauging uncertainty and has provided an adequate margin of fuel to address such uncertainty.

14. INTERFERENCE ANALYSES - ANNEXES 1 TO APPENDICES 30 AND 30A

Annexes 1 to Appendices 30 and 30A provide criteria to determine if another administration is affected by a proposed modification to the Region 2 BSS Plan. If an administration is found to be affected then the agreement of that administration is sought through the procedures of the ITU. The Mexican administration will be responsible for coordinating the operation of the ECHOSTAR-1 satellite following these ITU procedures. Nevertheless, the analyses required by Annex 1 to Appendix 30 and Annex 1 to Appendix 30A were performed and are contained in Appendix 1.

⁸ The ECHOSTAR-1 satellite was launched in 1995. Pursuant to the Commission's *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004), a calculation of the satellite's disposal orbit according to the IADC formula is not required. See Second Report and Order at ¶81 ("we will grandfather all on orbit GEO spacecraft that were launched as of the release of the *Notice* in this proceeding").

**CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING
ENGINEERING INFORMATION**

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this application, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this application and that it is complete and accurate to the best of my knowledge and belief.

/s/

Richard J. Barnett, PhD, BSc
Telecomm Strategies, Inc.
6404 Highland Drive
Chevy Chase, Maryland 20815
(301) 656-8969

Dated: January 30, 2009

Appendix 1 to
Attachment A (Technical Information to Supplement Schedule S)

Analysis of ANNEX 1 of Appendix 30

1 Limits for the interference into frequency assignments in conformity with the Regions 1 and 3 Plan or with the Regions 1 and 3 List or into new or modified assignments in the Regions 1 and 3 List

Not applicable to Region 2.

2 Limits to the change in the overall equivalent protection margin for frequency assignments in conformity with the Region 2 plan

With respect to § 4.2.3 c) of Article 4, an administration in Region 2 is considered as being affected if the overall equivalent protection margin corresponding to a test point of its entry in the Region 2 Plan, including the cumulative effect of any previous modification to that Plan or any previous agreement, falls more than 0.25 dB below 0 dB, or, if already negative, more than 0.25 dB below the value resulting from:

- the Region 2 Plan as established by the 1983 Conference; or*
- a modification of the assignment in accordance with this Appendix; or*
- a new entry in the Region 2 Plan under Article 4; or*
- any agreement reached in accordance with this Appendix. (WRC-03)*

The EHOSTAR-1 satellite will operate under Mexico's QUETZSAT-77 network filing. The Administration of Mexico is responsible for coordination of this network. The QUETZSAT-77 network is a modification to the Region 2 BSS Plan and was published in AP30-30A/E/434. Its filed beam coverage consists of a large Central and North American + Caribbean beam (excluding Canada). The results of the MSPACE analysis for this filed network, as published in AP30-30A/E/434, are contained in Annex 1 to this Appendix. As expected with such a broad filed beam, there are a number of affected networks, which will not be a problem using the smaller actual beam of the EHOSTAR-1 satellite. Note also that the closest U.S. BSS satellite network is 15.5° away (at 61.5°W), with the next closest one being 24° away at 101°W. With such large orbital separation, and bearing in mind that the EHOSTAR-1 satellite peak EIRP is only 55.1 dBW, there will be no harmful interference in practice to these U.S. BSS networks. In addition, there will be no harmful interference to any Canadian filed networks that are providing service to the U.S. because the operation of the EHOSTAR-1 satellite will be consistent with the satellite coordination agreements that are in place between Mexico and Canada.

3 Limits to the change in the power flux-density to protect the broadcasting-satellite service in Regions 1 and 2 in the band 12.2-12.5 GHz and in Region 3 in the band 12.5-12.7 GHz

With respect to § 4.2.3 a), 4.2.3 b) or 4.2.3 f) of Article 4, as appropriate, an administration in Region 1 or 3 is considered as being affected if the proposed modification to the Region 2 Plan would result in exceeding the following power flux-density values, at any test point in the service area of its overlapping frequency assignments:

$-147 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $0^\circ \leq \theta < 0.23^\circ$
$-135.7 + 17.74 \log \theta \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $0.23^\circ \leq \theta < 2.0^\circ$
$-136.7 + 1.66 \theta^2 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $2.0^\circ \leq \theta < 3.59^\circ$
$-129.2 + 25 \log \theta \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $3.59^\circ \leq \theta < 10.57^\circ$
$-103.6 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	for $10.57^\circ \leq \theta$

where θ is the minimum geocentric orbital separation in degrees between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies. (WRC-03)

No networks in the Regions 1 and 3 Plans will be affected, as demonstrated by the QUETZSAT-77W publication (AP30-30A/E/324).

4 Limits to the power flux-density to protect the terrestrial services of other administrations

With respect to § 4.1.1 d) of Article 4, an administration in Region 1, 2 or 3 is considered as being affected if the consequence of the proposed modified assignment in the Regions 1 and 3 List is to increase the power flux-density arriving on any part of the territory of that administration by more than 0.25 dB over that resulting from that frequency assignment in the Plan or List for Regions 1 and 3 as established by WRC-2000. The same administration is considered as not being affected if the value of the power flux-density anywhere in its territory does not exceed the limits expressed below.

With respect to § 4.2.3 d) of Article 4, an administration in Region 1, 2 or 3 is considered as being affected if the consequence of the proposed modification to an existing assignment in the Region 2 Plan is to increase the power flux-density arriving on any part of the territory of that administration by more than 0.25 dB over that resulting from that frequency assignment in the Region 2 Plan at the time of entry into force of the Final Acts of the 1985 Conference. The same administration is considered as not being affected if the value of the power flux-density anywhere in its territory does not exceed the limits expressed below.

With respect to § 4.1.1 d) or § 4.2.3 d) of Article 4, an administration in Region 1, 2 or 3 is considered as being affected if the proposed new assignment in the Regions 1 and 3 List, or if the proposed new frequency assignment in the Region 2 Plan, would result in exceeding a power flux-density, for any angle of arrival, at any point on its territory, of:

$$\begin{array}{ll}
-148 \text{ dB}(W/(m^2 \cdot 4 \text{ kHz})) & \text{for } \theta \leq 5^\circ \\
-148 + 0.5 (\theta - 5) \text{ dB}(W/(m^2 \cdot 4 \text{ kHz})) & \text{for } 5^\circ < \theta \leq 25^\circ \\
-138 \text{ dB}(W/(m^2 \cdot 4 \text{ kHz})) & \text{for } 25^\circ < \theta \leq 90^\circ
\end{array}$$

where θ represents the angle of arrival. (WRC-03)

No administrations in Regions 1, 2 and 3 will be affected, as demonstrated by the QUETZSAT-77W publication (AP30-30A/E/324).

5 Limits to the change in the power flux-density of assignments in the Regions 1 and 3 Plan or List to protect the fixed-satellite service (space-to-Earth) in the band 11.7-12.2 GHz in Region 2 or in the band 12.2-12.5 GHz in Region 3, and of assignments in the Region 2 Plan to protect the fixed-satellite service (space-to-Earth) in the band 12.5-12.7 GHz in Region 1 and in the band 12.2-12.7 GHz in Region 3

With respect to § 4.1.1 e) of Article 4, an administration is considered as being affected if the proposed new or modified assignment in the Regions 1 and 3 List would result in an increase in the power flux-density over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 2 or Region 3 of 0.25 dB or more above that resulting from the frequency assignments in the Plan or List for Regions 1 and 3 as established by WRC-2000.

With respect to § 4.2.3 e), an administration is considered as being affected if the proposed modification to the Region 2 Plan would result in an increase in the power flux-density over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 1 or 3 of 0.25 dB or more above that resulting from the frequency assignments in the Region 2 Plan at the time of entry into force of the Final Acts of the 1985 Conference.

With respect to § 4.1.1 e) or 4.2.3 e) of Article 4, with the exception of cases covered by Note 1 below, an administration is considered as not being affected if the proposed new or modified assignment in the Regions 1 and 3 List, or if a proposed modification to the Region 2 Plan, gives a power flux-density anywhere over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 1, 2 or 3 of less than:

$$\begin{array}{ll}
-186.5 \text{ dB}(W/(m^2 \cdot 40 \text{ kHz})) & \text{for } 0^\circ \leq \theta < 0.054^\circ \\
-164.0 + 17.74 \log \theta \text{ dB}(W/(m^2 \cdot 40 \text{ kHz})) & \text{for } 0.054^\circ \leq \theta < 2.0^\circ \\
-165.0 + 1.66 \theta^2 \text{ dB}(W/(m^2 \cdot 40 \text{ kHz})) & \text{for } 2.0^\circ \leq \theta < 3.59^\circ \\
-157.5 + 25 \log \theta \text{ dB}(W/(m^2 \cdot 40 \text{ kHz})) & \text{for } 3.59^\circ \leq \theta < 10.57^\circ \\
-131.9 \text{ dB}(W/(m^2 \cdot 40 \text{ kHz})) & \text{for } 10.57^\circ \leq \theta
\end{array}$$

where θ is the minimum geocentric orbital separation in degrees between the wanted and interfering space stations, taking into account the respective East-West station-keeping accuracies.

No administrations in Regions 1 and 3 will be affected, as demonstrated by the QUETZSAT-77W publication (AP30-30A/E/434).

6 Limits to the change in equivalent noise temperature to protect the fixed-satellite service (Earth-to-space) in Region 1 from modifications to the Region 2 Plan in the band 12.5-12.7 GHz

With respect to § 4.2.3 e) of Article 4, an administration of Region 1 is considered as being affected if the proposed modification to the Region 2 Plan would result in:

- the value of $\Delta T / T$ resulting from the proposed modification is greater than the value of $\Delta T / T$ resulting from the assignment in the Region 2 Plan as of the date of entry into force of the Final Acts of the 1985 Conference; and*
- the value of $\Delta T / T$ resulting from the proposed modification exceeds 6%, using the method of Appendix 8 (Case II). (WRC-03)*

No administrations in Region 1 will be affected, as demonstrated by the QUETZSAT-77W publication (AP30-30A/E/324).

Annex 1 to Appendix 1 to Attachment A
QUETZSAT-77 MSPACE Results

Notifying Admin	Network Name	Id. No.	Orbital Location (°W)	Max EPM/OEPM Degradation
ATG	ATGSJN01	86550011	79.7	7.564
BAH	BAHIFRB1	86550038	87.2	1.24
CAN	CAN01606	86550069	70.7	1.026
	CAN01606	86550070	70.3	1.325
	CAN03606	86550095	70.7	1.027
	CAN03606	86550096	70.3	1.255
	CAN-BSS1	96555002	82	5.553
	CAN-BSS1X	106555001	82	5.391
	CAN-BSS2	96555003	91.1	0.778
	CAN-BSS2X	106555002	91.1	0.798
	CAN-BSS3	96555010	72.7	5.311
	CAN-BSS6	103555006	72.7	4.79
	CAN-BSS7	105555004	129	0.259
CUB	CUB00001	86550109	89.2	0.696
DMA	DMAIFRB1	86550111	79.3	6.878
DOM	DOMIFRB2	86550112	83.3	3.538
F	SPMFRAN3	86550160	53.2	0.256
G	INTELSAT KUEXT 304.5	96555016	55.5	0.453
	INTELSAT KUEXT 304.5	97555003	55.5	0.269
	INTELSAT KUEXT 304.5	98555008	55.5	0.392
	IOMBSS-2	104555001	123.5	0.877
	MSR00001	86550147	79.7	7.295
	USAT-S3	103555003	86.5	1.056
	USAT-S3 MOD-A	103555005	86.5	0.613
	USAT-S3 MOD-B	104555004	86.5	1.347
	USAT-S3 MOD-C	106555007	86.5	1.75
	USAT-S4	104555002	68.5	3.129
	USAT-S5	104555006	66.3	0.808
	USAT-S8	106555003	133.5	0.318
	VRG00001	86550185	79.7	7.89
GRD	GRD00003	86550120	79.3	4.637
HOL	NSS-BSS 59W	106555005	59	0.619
	NSS-BSS 78W	106555004	78	16.31
HTI	HTI00002	86550128	83.3	4.074
JMC	CRBBAH01	86550103	92.3	0.489

	CRBBLZ01	86550105	92.3	0.653
	CRBJMC01	86550107	92.3	0.593
	JMC00002	86550137	92.7	0.472
KNA	KNA00001	86550158	79.7	7.708
LCA	LCAIFRB1	86550139	79.3	6.62
USA	USABSS-13	101555003	101.2	0.281
	USABSS-15	102555004	110	0.629
	USABSS-16	104555005	110	0.324
	USABSS-17	102555002	61.5	0.953
	USABSS-18	103555002	119	0.269
	USABSS-19	104555007	100.85	0.255
	USABSS-1R	99555001	101.2	0.624
	USABSS-21	105555003	101	0.281
	USABSS-25	106555008	109.8	0.346
	USABSS-26	106555009	110	0.62
	USABSS-5	97555001	109.8	0.357
	USABSS-6	97555002	110.2	0.353
	USABSS-7A	101555001	119	0.303
	USABSS-8	98555001	61.5	2.311
	USABSS-9	98555002	148	0.635
	USAEH001	86550165	61.7	0.388
	USAEH001	86550166	61.3	0.38
	USAWH101	86550177	148.2	0.258
	USAWH101	86550178	147.8	0.261
VCT	VCT00001	86550181	79.3	6.709

Appendix 2 to
Attachment A (Technical Information to Supplement Schedule S)

Analysis of ANNEX 1 of Appendix 30A

1 Limits to the change in the overall equivalent protection margin with respect to frequency assignments in conformity with the Region 2 feeder-link Plan (WRC-2000)

With respect to the modification to the Region 2 feeder-link Plan and when it is necessary under this Appendix to seek the agreement of any other administration of Region 2, except in cases covered by Resolution 42 (Rev.WRC-03), an administration is considered as being affected if the overall equivalent protection margin corresponding to a test point of its entry in that Plan, including the cumulative effect of any previous modification to that Plan or any previous agreement, falls more than 0.25 dB below 0 dB, or, if already negative, more than 0.25 dB below the value resulting from:

- the feeder-link Plan as established by the 1983 Conference; or*
- a modification of the assignment in accordance with this Appendix; or*
- a new entry in the feeder-link Plan under Article 4; or*
- any agreement reached in accordance with this Appendix except for Resolution 42 (Rev.WRC-03). (WRC-03)*

See the results described under Section 2 of the Appendix 30 Annex 1 Analysis.

2 Limits to the interference into frequency assignments in conformity with the Regions 1 and 3 feeder-link Plan or with the Regions 1 and 3 feeder-link List or proposed new or modified assignments in the Regions 1 and 3 feeder-link List (WRC-03)

Not applicable to Region 2.

3 Limits applicable to protect a frequency assignment in the bands 17.3-18.1 GHz (Regions 1 and 3) and 17.3-17.8 GHz (Region 2) to a receiving space station in the fixed-satellite service (Earth-to-space)

An administration in Region 1 or 3 is considered as being affected by a proposed modification in Region 2, with respect to § 4.2.2 a) or 4.2.2 b) of Article 4, or an administration in Region 2 is considered as being affected by a proposed new or modified assignment in the Regions 1 and 3 feeder-link List, with respect to § 4.1.1 c) of Article 4, when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link would cause an increase in the noise temperature of the feeder-link space station which exceeds the threshold value of $\Delta T / T$ corresponding to 6%, where $\Delta T / T$ is calculated in accordance with the method given in Appendix 8, except that the maximum power densities per hertz averaged over the worst 1 MHz are replaced by power densities per hertz averaged over the necessary bandwidth of the feeder-link carriers. (WRC-03)

No administrations in Regions 1 and 3 will be affected, as demonstrated by the QUETZSAT-77W publication (AP30-30A/E/324).

4 Limits applicable to protect a frequency assignment in the band 17.8-18.1 GHz (Region 2) to a receiving feeder-link space station in the fixed-satellite service (Earth-to-space) (WRC-03)

With respect to § 4.1.1 d) of Article 4, an administration is considered affected by a proposed new or modified assignment in the Regions 1 and 3 feeder-link List when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link in Region 2 of that administration would cause an increase in the noise temperature of the receiving feeder-link space station which exceeds the threshold value of $\Delta T / T$ corresponding to 6%, where $\Delta T / T$ is calculated in accordance with the method given in Appendix 8, except that the maximum power densities per hertz averaged over the worst 1 MHz are replaced by power densities per hertz averaged over the necessary bandwidth of the feeder-link carriers. (WRC-03)

Not applicable to Region 2.

ATTACHMENT 4

**AMENDMENT #4 TO SATELLITE RELOCATION AND USE AGREEMENT FOR THE
77° W.L. ORBITAL LOCATION**

**AMENDMENT #4 TO
SATELLITE RELOCATION AND USE AGREEMENT
FOR THE 77° W.L. ORBITAL LOCATION**

THIS AMENDMENT #4 (“Amendment #4”) to the Satellite Relocation and Use Agreement for the 77° W.L. Orbital Location effective as of 13 May 2005, as amended by Amendment #1 effective as of 1 July 2005, Amendment #2 effective as of 10 March 2008 and Amendment #3 effective as of 12 June 2008 (collectively, the “Original Agreement”), between EchoStar Corporation (“EchoStar”), on the one hand, and SES Latin America, S.A. (“SES”) [REDACTED] on the other hand, is made effective as of 25 September 2008 (the “Amendment #4 Effective Date”). Defined terms used in this Amendment #4 have the meanings specified herein or in the Original Agreement. The Original Agreement as amended by this Amendment #4 is referred to as the “Agreement”.

Pursuant to the terms of the Original Agreement, EchoStar: (i) relocated EchoStar IV to the Orbital Location and commenced utilizing EchoStar IV for Service; and (ii) was granted the right to move EchoStar II, EchoStar VI and/or EchoStar VIII to the Orbital Location in order to utilize EchoStar II, EchoStar VI and/or EchoStar VIII for Service incremental to the Service provided by EchoStar IV. EchoStar now desires to have the right to relocate the EchoStar I satellite (“EchoStar I”) to the Orbital Location in order to utilize EchoStar I for Service incremental to the Service provided by EchoStar IV and/or as may be provided by EchoStar II, EchoStar VI and/or EchoStar VIII. The purpose of this Amendment #4 is to specify additional terms and conditions related to the relocation and use of EchoStar I at the Orbital Location (as well as additional topics).

The parties agree to amend the Original Agreement in accordance with the terms and conditions set forth below.

(1) General. Unless otherwise stated in this Amendment #4, the terms and conditions of the Original Agreement shall apply to the relocation and use of EchoStar I at the Orbital Location, *mutatis mutandis*, as if EchoStar I is the “Satellite”. The operation of the Satellite(s) at the Orbital Location will be subject to FCC Approvals and approvals or consents of Mexican Governmental Entities as necessary. Notwithstanding anything to the contrary in the Original Agreement, including without limitation clause (c) of Subsection 1(B)(4) and Sections 1.D, 2.A and 4.A, EchoStar I will remain subject to the control and direction of EchoStar and, in EchoStar’s sole and absolute discretion subject to the Concession and Section 2.C of the Original Agreement, to the jurisdiction of either the FCC or a Mexican Governmental Entity. Subject to the Concession and Section 2.C of the Original Agreement, in the event that EchoStar elects to subject EchoStar I to the jurisdiction of the FCC, such Satellite will not be subject to the authority of any Mexican Governmental Entity (including without limitation the authority to assume and retain possession thereof) at the Orbital Location, so long as the operation of such Satellite at the Orbital Location is authorized by the FCC, or at any other orbital location(s).

As to the terms and conditions of the Original Agreement applicable to EchoStar II, EchoStar IV, EchoStar VI and/or EchoStar VIII, no changes are made by this Amendment #4 unless specifically noted. Except as expressly modified herein, the Original Agreement shall remain in full force and effect in accordance with its terms and conditions.

(2) Changes Applicable to EchoStar I (and Some Applicable to EchoStar II, EchoStar IV, EchoStar VI and EchoStar VIII).

(a) *Section 1.A*. The second sentence of Section 1.A is modified to read as follows with respect to EchoStar I:

Subject to and in accordance with the terms and conditions stated herein, EchoStar shall have the right to relocate the satellite known as “EchoStar I” to the Orbital Location upon written notice to SES.

(b) *Subsection 1.C(1).* Subsection 1.C(1) is modified to read as follows with respect to EchoStar I:

Once the specific FCC Approvals and approvals from Mexican Governmental Entities necessary to relocate EchoStar I have been received, EchoStar may commence relocating EchoStar I to the Orbital Location. Maintenance of EchoStar I at the Orbital Location for the duration of the Service Term is subject to EchoStar's rights under Section 2.D.

(c) *Subsection 1.C(2).* Subsection 1.C(2) is not applicable to EchoStar I.

(d) *Section 1.E.* Any expiration of this Agreement pursuant to clauses (1), (2) or (4) of Section 1.E as a result of the End-of-Life, Satellite Failure or removal of EchoStar I from the Orbital Location, as applicable, shall result solely in the expiration of this Agreement with respect to EchoStar I, and this Agreement shall otherwise remain in full force and effect in accordance with its terms and conditions. [REDACTED]

(e) *Subsection 2.D(1).* Subsection 2.D(1) is modified to read as follows with respect to EchoStar I:

[REDACTED]

(f) *Subsection 2.D(2).* [REDACTED]

[REDACTED]

(g) *Section 5.B.* Section 5.B is not applicable to EchoStar I.

(h) *Sections 7.A and 7.B.* All of the representations, warranties and covenants set forth in Sections 7.A and 7.B are deemed to be affirmed and restated with respect to EchoStar I as of the Amendment #4 Effective Date.

(i) *Subsection 7.C(6).* Subsection 7.C(6) is not applicable to EchoStar I.

[REDACTED]

(j) *Sections 7.C and 7.D.* All of the representations, warranties and covenants set forth in

(k) *Subsections 7.F(1) and 7.F(2).*

(l) *Section 9.C.* Section 9.C is modified to read as follows with respect to EchoStar I:

[REDACTED]

(3) References to the QuetzSat-1 Satellite. All rights and obligations in the Original Agreement as to the QuetzSat-1 Satellite are disregarded with respect to EchoStar I (*i.e.*, otherwise the rights and obligations would in effect be duplicated). References to which this understanding applies include but are not limited to references to the QuetzSat-1 Satellite in (a) clause (ii) of Subsection 1.B(1), (b) clause (iii) of Subsection 1.B(1), (c) clause (ii) of Subsection 1.B(2), and (d) clause (iii) of Subsection 1.B(2). Notwithstanding the foregoing, (aa) the references to the QuetzSat-1 Satellite in Section 1.E are applicable with respect to EchoStar I and the expiration of the Agreement with respect thereto, and (bb) Section 2.B shall apply with respect to EchoStar I as written.

(4) Comparable Satellite.

(5) Cross-Default.



This **Amendment #4** contains the complete and exclusive understanding of the parties with respect to the subject matter hereof and supersedes all prior negotiations and agreements between the parties with respect thereto.

SES LATIN AMERICA, S.A.

By: _____
Name:
Title:

By: _____
Name:
Title:



By: _____
Name:
Title:

By: _____
Name:
Title:

ECHOSTAR CORPORATION

By: _____
Name:
Title:

[Interim Agreement Amendment #4]

