

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

In the Matter of)	
)	
EchoStar 77 Corporation)	Call Sign E050196
)	
Application to Modify Blanket Earth Station)	File No. SES-MFS-2011_____
License to Add QuetzSat-1, a Mexican-Licensed)	
DBS Satellite at 77° W.L., as a Point of)	
Communication)	

APPLICATION TO MODIFY BLANKET EARTH STATION AUTHORITY¹

EchoStar 77 Corporation (“EchoStar 77”) hereby requests to modify its authority to operate 1,000,000 receive-only earth stations in the United States to receive Direct Broadcast Satellite (“DBS”) service from the nominal 77° W.L. orbital location allotted by the International Telecommunication Union (“ITU”) to Mexico.² Specifically, EchoStar 77 seeks authority to add QuetzSat-1 – a new Mexican-licensed DBS satellite – as a point of communication at the

¹ In addition to this application, EchoStar Broadcasting Corporation (“EBC”) is separately applying (1) to modify a number of its DBS feeder link earth station licenses (Call Signs E080058, E980174, E070014, and E980180) to enable EBC to provide emergency telemetry, tracking and control (“TT&C”) for the satellite and to uplink programming to the QuetzSat-1 satellite; and (2) for Special Temporary Authority for its transmit/receive earth station (Call Sign E980005) to raise the orbit of QuetzSat-1. DISH Operating L.L.C. is also applying to modify its blanket earth station license (Call Sign E090020) to add QuetzSat-1 as a point of communication.

² EchoStar Corporation was recently granted authority to assign its DBS blanket earth station license on a *pro forma* basis to its subsidiary, EchoStar 77. See Radio Station Authorization, File No. SAT-ASG-20110228-00560 (granted May 26, 2011). The *pro forma* assignment was consummated on May 26, 2011. See Letter from Pantelis Michalopoulos, Counsel for EchoStar Corporation and EchoStar 77 Corporation, to Marlene H. Dortch, Secretary, FCC (June 3, 2011) filed in File No. SAT-ASG-20110228-00560.

nominal 77° W.L. orbital location.³ EchoStar 77 also requests, to the extent this will prove necessary, a waiver of Sections 25.215 and 25.210(i)(1) of the Commission's rules⁴ to permit QuetzSat-1 to be operated with less than 30 dB cross-polarization isolation over certain small regions. After successful launch, which is currently scheduled for August of this year, QuetzSat-1 will provide DBS service to households in the United States and Mexico, pending grant of the appropriate authority. Commercial service to points in the United States is currently scheduled to commence in October 2011, subject to grant of this application.

For the reasons set forth herein, grant of this application will serve the public interest, will not cause any harmful interference, and is fully consistent with the Commission's *DISCO II* policies.⁵

I. BACKGROUND

The nominal 77° W.L. orbital location is allotted to Mexico under the Region 2 Broadcasting-Satellite Service ("BSS") plan set forth in Appendices 30 and 30A to the international Radio Regulations. Three satellites of EchoStar's affiliate, EchoStar Satellite Operation Corporation – EchoStar 1, EchoStar 6, and EchoStar 8 – are currently operating at that nominal orbital location under Mexican authority.

³ As required under Section 25.137 of the Commission's rules, EchoStar 77 is submitting with this application a Technical Annex (Attachment 2) and a Schedule S describing the physical and operational characteristics of the QuetzSat-1 satellite. *See* 47 C.F.R. § 25.137. EchoStar 77 is also requesting a partial waiver of the processing fees payable for this application. *See* Attachment 3.

⁴ 47 C.F.R. §§ 25.215, 25.210(i)(1).

⁵ *See* Amendment of the Commission's Policies to Allow Non-U.S. Licensed Space Stations Providing Domestic and International Service in the United States, *Report and Order*, 12 FCC Rcd. 24094 (1997) ("*DISCO II*").

The QuetzSat-1 satellite will supplement the service provided from the nominal 77° W.L. orbital location under a concession granted by Mexican authorities to QuetzSat, S. de R.L. de C.V. (“QuetzSat”), a Mexican company.⁶ QuetzSat has an arrangement with SES Latin America S.A. (“SES-LA”) and SES S.A (collectively, “SES”) to jointly exploit the 77° W.L. slot. QuetzSat-1 will operate under the control of QuetzSat and will provide service over 32 DBS transponders covering the continental United States (“CONUS”), Mexico and Central America. EchoStar 77 has contracted for the entire DBS service capacity of QuetzSat-1, which EchoStar 77 will make available to its customers, DISH Network L.L.C. (“DISH”) and DISH Mexico, for Direct-to-Home (“DTH”) television service in the United States and similar services in Mexico.⁷

II. THIS APPLICATION IS LEGALLY AND TECHNICALLY COMPLETE

EchoStar 77 is hereby submitting all of the technical information required by Part 25 of the Commission’s rules⁸ in the accompanying Technical Annex (Attachment 2), Form 312, and Schedule S. With respect to the geographic service requirements in Section 25.148(c) of the Commission’s rules,⁹ DBS service to Alaska and Hawaii is not technically feasible from the 77°

⁶ See Secretariat of Communications and Transportation Vice-Ministry of Communications, Concesion Para Ocupar La Posicion Orbital Geoestacionaria 77° Oeste Asignada al Pais y Explotar Sus Respectiveas 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) (“77° W.L. BSS Concession”), filed in File No. SAT-STA-20080311-00068 (English translation).

⁷ Redacted copies of the agreements between (1) EchoStar 77 and SES-LA, and (2) EchoStar 77 and DISH Network are attached to this narrative as Attachments 1A and 1B, respectively. EchoStar 77 is also submitting a hard copy of the unredacted agreements with a request for confidential treatment of the unredacted materials.

⁸ 47 C.F.R. Part 25.

⁹ *Id.* § 25.148(c).

W.L. orbital location, as the Commission recognized in granting EchoStar's request for authority to transfer the EchoStar 8 satellite to QuetzSat for re-flagging under Mexican authority.¹⁰

Waiver Requested. The operation of the QuetzSat-1 satellite is consistent with the technical requirements of Part 25 of the rules in all but one respect — the cross-polarization isolation over certain small regions is 27 dB, which is less than the minimum 30 dB required by Sections 25.215 (for DBS) and 25.210(i)(1) (for Fixed-Satellite Service) of the Commission's rules.¹¹ Accordingly, EchoStar 77 hereby requests a waiver of Sections 25.215 and 25.210(i)(1) of the rules to the extent required.

Commission rules may be waived if there is good cause to do so.¹² 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.¹³ The Bureau explained in one case, “[I]licensees may use cross-polarization isolation different from that specified for the Region 2 BSS Plan if they demonstrate

¹⁰ See Radio Station Authorization, File No. SAT-T/C-20090217-00026 (granted Sept. 17, 2010).

¹¹ 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.”); *id.* § 25.210(i) (“Space station antennas in the Fixed-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.”).

¹² See *id.* § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

¹³ DIRECTV Enterprises LLC, *Order and Authorization*, 20 FCC Rcd. 15778, 15779 ¶ 7 (2005) (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 (2006) (“*EchoStar 9 Lower Ka-band Order*”); Star One S.A., *Order*, 19 FCC Rcd. 16334 ¶ 12 (2004); New Skies Satellites N.V., *Order*, 17 FCC Rcd. 10369 ¶ 19 (2002).

that such a difference does not result in interference to other operational or planned systems, including U.S. licensed systems.”¹⁴

This is the case here. All beams on QuetzSat-1 have cross-polarization performance that meets or exceeds 30 dB over most of the broadcast coverage area. There are small regions, 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 not create any interference to adjacent, co-frequency DBS orbital slots, the nearest of which is in excess of four degrees away at 72.7° W.L. The shortfall will occur in small areas over the Northeast United States, which is on the edge of the usable coverage area, and accounts for approximately 2% of the service area. Accordingly, consistent with past precedent, a waiver of Sections 25.215 and 25.210(i)(1) of the Commission’s rules is warranted here.

III. GRANT OF THIS APPLICATION IS IN THE PUBLIC INTEREST

The grant of this application is in the public interest because it will provide DISH with access to much needed DBS spectrum to provide service to the United States and will allow DISH to enhance service to the United States coverage from the nominal 77° W.L. orbital location. QuetzSat-1 will add 32 DBS transponders (24 of which will be available to DISH) at the nominal 77° W.L. orbital location, substantially increasing DISH’s ability to provide service from that orbital location.

This would result in a greater variety and quality of programming services available to U.S. consumers, including high definition (“HD”) television services. It would allow DISH to

¹⁴ DIRECTV Enterprises LLC, 20 FCC Rcd. at 15779 ¶ 7.

compete more effectively with established cable operators in the multichannel video programming distribution market and respond to Commission requirements to provide more HD programming.

IV. GRANT OF THIS APPLICATION WILL NOT CAUSE HARMFUL INTERFERENCE

The grant of this application also will not present any significant risk of harmful interference to other U.S. and non-U.S. satellites. There is no DBS orbital location in the vicinity of 77° W.L. that is assigned to the United States (the closest is 61.5° W.L.), and there will be no harmful interference from the operation of QuetzSat-1 at the nominal 77° W.L. orbital location with any satellites operating at the 72.5° W.L. and/or 82° W.L. DBS slots assigned to Canada. There is an existing coordination agreement between Mexico and Canada addressing interference issues regarding the Mexican 77° W.L. orbital location, and EchoStar 77 understands that QuetzSat will comply with that agreement and/or with any future coordination agreements. Similarly, QuetzSat will operate QuetzSat-1 in full conformity with the 1996 Mexican ITU modification over all points in Canada and the United States.

V. GRANT OF THIS APPLICATION IS CONSISTENT WITH THE COMMISSION'S *DISCO II* POLICIES

Under its *DISCO II* framework, the Commission evaluates whether the provision of service into the United States from a foreign-licensed satellite will serve the public interest. The *DISCO II* analysis includes consideration of a number of factors, including the effect on competition in the United States; eligibility and operating requirements; spectrum availability; and national security, law enforcement, foreign policy, and trade concerns.¹⁵ As part of this

¹⁵ See *DISCO II*, 12 FCC Rcd. at 24107-72.

analysis, the Commission examines the “effective competitive opportunities” afforded to U.S. satellite operators in the home market of the foreign satellite seeking U.S. market access.¹⁶

The United States and Mexico have a bilateral agreement in place related to the provision of DTH service.¹⁷ Under *DISCO II*, such a bilateral agreement “acts as a gateway to, and a guarantee of, increased competition in the two countries at both ends of the agreement.”¹⁸ Therefore, in cases such as this one, in which U.S. earth stations seek to communicate with a Mexican-flagged space station, the Commission assumes that the application would enhance competition and “no further market access analysis is required.”¹⁹

Finally, EchoStar 77 has demonstrated compliance with the Commission’s eligibility and operating requirements,²⁰ and there are no spectrum availability, national security, law enforcement, foreign policy, or trade concerns that would warrant treating this application differently from those previously granted by the Commission.

¹⁶ *Id.* at 24098 (“For satellites licensed by non-WTO Members and for all satellites providing Direct-to-Home (DTH), Direct Broadcasting Satellite (DBS), and Digital Audio Radio Services (DARS), we will examine whether U.S. satellites have effective competitive opportunities in the relevant foreign markets to determine whether allowing the foreign-licensed satellite to serve the United States would satisfy the competition component of the public interest analysis.”).

¹⁷ *See* Agreement between the Government of the United States of America and the Government of the United Mexican States Concerning the Transmission and Reception from Satellites for the Provision of Satellite Services to Users in the United States of America and the United Mexican States (April 28, 1996); Article I and Protocol Concerning the Transmission and Reception of Signals from Satellites for the Provision of Direct-to-Home Satellite Services in the United States of America and the United Mexican States (November 8, 1996).

¹⁸ *DISCO II*, 12 FCC Rcd. at 24157 ¶ 143.

¹⁹ *See* EchoStar Satellite L.L.C., *Order and Authorization*, 21 FCC Rcd. 4077, 4080 ¶ 8 n.20 (2006).

²⁰ *See* Technical Annex and Schedule S.

VI. CONCLUSION

For the foregoing reasons, EchoStar 77 respectfully requests that the Commission grant this application to add QuetzSat-1, operating at 77° W.L. as a Mexican-licensed satellite, as a point of communication for EchoStar 77's blanket earth station, and waive the cross-polarization requirements set forth in Sections 25.215 and 25.210(i)(1) of the Commission's rules to the extent requested herein.

Respectfully submitted,

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ATTACHMENT 2

Technical Information to Supplement Schedule S

A.1 Scope

This Attachment contains additional information required by Part 25 of the Commission's rules that cannot be entered into the Schedule S submission.

A.2 General Description of Overall System Facilities, Operations and Services [§ 25.114(d)(1)]

A.2.1 General Description

The QuetzSat-1 satellite will operate at the 77.0⁰ W.L. orbital location in the 17.3-17.8 GHz BSS feeder uplink band (ITU Appendix 30A) and the 12.2-12.7 GHz BSS downlink band (ITU Appendix 30) using the 32 frequencies licensed by the Administration of Mexico at this orbital location. The satellite uses the channel center frequencies and channel bandwidths described in the International Telecommunication Union's Region 2 BSS Plan. The satellite will provide BSS services to Mexico, CONUS and Central America.

The satellite uses dual circular polarization. Each transponder has a usable bandwidth up to 26 MHz, and is operated using single or multiple Traveling Wave Tube Amplifiers (TWTAs) of 150W output power:

- A "High Power Transponder" uses 2 TWTAs, and
- A "Super High Power Transponder" uses 3 TWTAs.

The spacecraft carries a total of 84 payload TWTAs operated with 64 active/20 spares, or 57 active/27 spares.

Table A.2.2-1. QuetzSat-1 Frequency plan

Channel Number	Uplink Center Frequency, MHZ	Polarization	Downlink Center frequency, MHz	Polarization
1	17324	RHCP	12224	RHCP
2	17338.58	LHCP	12238.58	LHCP
3	17353.16	RHCP	12253.16	RHCP
4	17367.74	LHCP	12267.74	LHCP
5	17382.32	RHCP	12282.32	RHCP
6	17396.9	LHCP	12296.9	LHCP
7	17411.48	RHCP	12311.48	RHCP
8	17426.06	LHCP	12326.06	LHCP

9	17440.64	RHCP	12340.64	RHCP
10	17455.22	LHCP	12355.22	LHCP
11	17469.8	RHCP	12369.8	RHCP
12	17484.38	LHCP	12384.38	LHCP
13	17498.96	RHCP	12398.96	RHCP
14	17513.54	LHCP	12413.54	LHCP
15	17528.12	RHCP	12428.12	RHCP
16	17542.7	LHCP	12442.7	LHCP
17	17557.28	RHCP	12457.28	RHCP
18	17571.86	LHCP	12471.86	LHCP
19	17586.44	RHCP	12486.44	RHCP
20	17601.02	LHCP	12501.02	LHCP
21	17615.6	RHCP	12515.6	RHCP
22	17630.18	LHCP	12530.18	LHCP
23	17644.76	RHCP	12544.76	RHCP
24	17659.34	LHCP	12559.34	LHCP
25	17673.92	RHCP	12573.92	RHCP
26	17688.5	LHCP	12588.5	LHCP
27	17703.08	RHCP	12603.08	RHCP
28	17717.66	LHCP	12617.66	LHCP
29	17732.24	RHCP	12632.24	RHCP
30	17746.82	LHCP	12646.82	LHCP
31	17761.4	RHCP	12661.4	RHCP
32	17775.98	LHCP	12675.98	LHCP

The capacity of the mission is:

- 28 High Power Transponders operating at saturation, or
- 32 High Power Transponders operating at 0.7 dB Output Backoff.

A.2.2 Frequency and Polarization Plan

The frequency/polarization plan is the same as that described in ITU Appendices 30A and 30; see Table A.2.2-1. This frequency information is also available in the Attached Schedule S.

For normal operation the command carrier is received by the satellite on an “omni” antenna. The Telemetry/Beacon carriers share communication antennas for normal operation. Their frequencies are shown in Table A.2.2-2 below. There are two command receivers at 17793.00 MHz and one at 17797.50 MHz. There are three dual Telemetry Transmitters — one at 12692.0/12693.0 MHz and two at 12694.5/12698.5 MHz

Table A.2.2-2. TT&C carrier frequencies

	Name	Frequency, MHz	Polarization
Command carriers	TC1	17797.00	RHCP
	TC2	17793.00	RHCP
	TC3	17793.00	RHCP
Telemetry/Beacons	TM1F1	12694.50	RHCP
	TM1F2	12698.50	RHCP
	TM2F1	12694.50	RHCP
	TM2F2	12698.50	RHCP
	TM3F1	12692.00	RHCP
	TM3F2	12693.00	RHCP

A.2.3 Uplinks

There are three feeder link sites: Cheyenne, WY, Gilbert, AZ, and Mexico City. The receive antenna is configured with a single reflector and 4 dual-pol spot-beam feeds. Table A.2.3-1 shows key uplink antenna gain and G/T parameter.

A.2.4 Downlinks

Two broadcast beams in each polarization are used to provide all of the broadcast downlink channels in the North American region. Table A.2.4-1 shows the values of key parameters of the 2 beams used.

All beams on the QuetzSat-1 satellite have cross-polarization performance over most of the broadcast coverage area on the uplink and on the downlink that meets or exceeds 30 dB. There are small regions, however, where the cross-polarization performance is about 3 dB poorer, and a limited waiver is requested under Section 1.3 of the Commission’s rules, 47 C.F.R. § 1.3, to the extent necessary under 47 C.F.R. § 25.215 (for DBS) and 47 C.F.R. § 25.210(i)(1) (for Fixed-

Satellite Service) to permit cross-polarization performance down to 27 dB in these regions. Operation with cross polarization down to 27 dB has a negligible impact to service from QuetzSat-1 and any other adjacent operators.

Table A.2.3-1. Key uplink parameters

Pol.	Parameter	Gilbert, AZ	Cheyenne, WY	Mexico City
LHCP	Max antenna gain, dBi	44.65	44.94	43.21
	Max G/T, dB/K	12.77	13.04	9.6
	System Temp dBK	31.88	31.9	33.61
RHCP	Max antenna gain, dBi	44.68	44.9	43.21
	Max G/T, dB/K	12.19	12.44	9.19
	System Temp, dBK	32.49	32.46	34.02

Table A.2.4-1 Maximum EIRP and transmit antenna gain values

Antenna	EIRP, dBW	Antenna gain, dBi
LHCP, East antenna	57.6	35.7
RHCP, East antenna	57.5	35.6
RHCP, West antenna	57.4	35.5
LHCP, West antenna	57.5	35.6

A.3 Space Station Antenna Gain Contours [§ 25.114(d)(3)]

Space station communication transmit antennas will use two reflectors (“East” and “West”). Figures A.3-1 to A.3-10 of Appendix 1 of this document show typical QuetzSat-1 satellite transmit and receive antenna gain contours.

The GXT versions of these patterns are embedded in the associated Schedule S submission.

The uplink Saturating Flux Density (SFD) can be computed from the equation

$$SFD = -82.8 - (G/T) \text{ dBW/m}^2$$

when the Flux Control Attenuator is set to 10 dB.

A.4 Services to Be Provided

The satellite will provide a range of DBS services to tens of millions of small aperture receive-only terminals.

There will be one wideband digitally modulated carrier transmitted in each of the broadcast transponders, with either QPSK or 8PSK modulation. Representative link budgets, including details of the transmission characteristics, performance objectives and earth terminal

characteristics are provided in the Schedule S submission and further described in Section A.4.2 of this Attachment.

A.4.1 Earth Stations

The subscriber receive-only terminals to be used with this satellite will have effective antenna diameters of 45-75 cm, depending on the rain zone, number of feeds on the receive antenna, availability requirements, and subscriber's geographical location.

The feeder links will have antenna diameters of 9 meters or greater.

A.4.2 Link Budgets

Table A.4.2-1 shows link budgets for six representative modulation/coding schemes and typical EIRP values.

A.5 TT&C Characteristics **[§ 25.114(c)(4)(i) and § 25.114(c)(9)]**

The information provided in this section complements that provided in the associated Schedule S submission.

The QuetzSat-1 TT&C sub-system provides for communications during pre-launch, transfer orbit and on-station operations, as well as during spacecraft emergencies. The TT&C sub-system will operate (see Table A.2.2-2) at the edges of the uplink and downlink frequency ranges during all phases of the mission.

During transfer orbit and on-station emergencies, the TT&C signals will be received and transmitted by the satellite using a combination of antennas that create a near omni-directional gain pattern. During normal on-station operation, the TT&C signals will be received via a large-coverage horn antenna on the Earth (+Z) face of the spacecraft. During normal operation, transmit carriers (telemetry/beacons) will be transmitted through the downlink communication transmit antenna.

Figures A.3-11 and 12 show the gain characteristics of the +Z horn antenna, and telemetry transmit antenna (same as Communication antenna).

A summary of the TT&C sub-system characteristics is given in Table A.5-1. Tables A.5-2 and A.5-3 show typical Command carrier and Telemetry carrier link budgets.

Table A.4.2-1. Link budgets

Data Rate	Kbps	25380.0	34077.5	35662.5	41215.5	44096.5	45322.0
Transponder Bandwidth	MHz	24.0	25.8	27.0	25.8	25.8	25.8
Modulation: Number of Phases		4	4	4	8	8	8
FEC (Turbo)		2/3	5/6	5/6	2/3	3/4	4/5
Spectral efficiency		1.269	1.585	1.585	1.917	2.051	2.108
Required Eb/N0	dB	2.70	3.70	3.70	4.40	4.90	5.30
Noise (symbol rate) bandwidth	KHz	20000.0	21500.0	22500.0	21500.0	21500.0	21500.0
C/N required in IF BW	dB	3.73	5.70	5.70	7.23	8.02	8.54
Faded System Margin	dB	0.3	0.3	0.3	0.3	0.3	0.3
Excess bandwidth Factor		1.2	1.2	1.2	1.2	1.2	1.2
Required Bandwidth	MHz	24.0	25.8	27.0	25.8	25.8	25.8
Allocated Bandwidth	MHz	24.0	25.8	27.0	25.8	25.8	25.8
Uplink frequency	MHz	17300.0	17300.0	17300.0	17300.0	17300.0	17300.0
Downlink frequency	MHz	12200.0	12200.0	12200.0	12200.0	12200.0	12200.0
Uncompensated U/L Fade	dB	0.0	0.0	0.0	0.0	0.0	0.0
TxES+ antenna gain	dBW	65.0	65.0	65.0	65.0	65.0	65.0
TxES+ antenna input power	dBW	10.0	10.0	10.0	10.0	10.0	10.0
Uplink loss	dB	209.2	209.2	209.2	209.2	209.2	209.2
Sat. G/T	dB	9.0	9.0	9.0	9.0	9.0	9.0
Uplink C/I(aggregate)	dB	25.0	25.0	25.0	25.0	25.0	25.0
Uplink C/N(thermal)	dB	30.4	30.1	29.9	30.1	30.1	30.1
Uplink C/N	dB	30.4	30.1	29.9	30.1	30.1	30.1
Adjacent satellite #1 C/I(up+dn)	dB	20	20	20	20	20	20
Adjacent satellite #2 C/I(up+dn)	dB	20.0	20.0	20.0	20.0	20.0	20.0
Aggregate C/I	dB	17.0	17.0	17.0	17.0	17.0	17.0
RxES* ant dia	m	0.5	0.5	0.5	0.5	0.5	0.5
ES Tsys	K	120	120	120	120	120	120
RxES* G/T	dB/K	13.5	13.5	13.5	13.5	13.5	13.5
Min C/N Down	dB	4.3	6.4	6.4	8.1	9.0	9.6
XPDR SAT EIRP	dBW	53.6	53.6	53.6	53.6	53.6	53.6
CXR EIRP	dBW	53.6	53.6	53.6	53.6	53.6	53.6
Clear sky Downlink C/N	dB	17.1	16.8	16.6	16.8	16.8	16.8
SatLon	deg (East)	-77	-77	-77	-77	-77	-77
RxES* LON	deg (East)	-98.5	-98.5	-98.5	-98.5	-98.5	-98.5
LAT	deg (North)	29.4	29.4	29.4	29.4	29.4	29.4
DL Free space loss	dB	205.6	205.6	205.6	205.6	205.6	205.6
Margin to Min C/N down	dB	12.8	10.4	10.2	8.7	7.8	7.2

+ Transmit earth station

* Receive earth station

Table A.5-1. TT&C Performance Characteristics

Command Modulation	PCM/BPSK/FM
Command/Ranging Frequencies	See Table A.2.2-2
Uplink Flux Density	Between -90 and -78 dBW/m ² during normal on-station mode.
Satellite Receive Antenna Types	“Pseudo-omni” antenna during transfer orbit and on-station emergencies; Large-coverage horn antenna during on-station mode.
Polarization of Satellite Receive Antennas	RHCP* for pseudo-omni antenna; RHCP* for large-coverage horn antenna.
Peak Deviation (Command/Ranging)	± 400 kHz
Command receiver input dynamic range	-60 to -112 dBm
Telemetry/Ranging Frequencies	See Table A.2.2-2
Satellite Transmit Antenna Types	Pseudo-omni antenna during transfer orbit and on-station emergencies; Shaped reflector communications antenna during on-station mode.
Polarization of Satellite Transmit Antennas. VP	RHCP* for pseudo-omni antennas; RHCP* for shaped reflector antenna

* Polarization can be reversed to the opposite pole.

+ Pseudo-omni antennas would be omnidirectional but for certain null spots

Table A.5-2. Typical Command Carrier Link Budget

		Edge of Coverage (EOC)	Max Flux Density
Flux Density at satellite receive antenna input	dBW/m ²	-90	-78
Transmit Earth station EIRP	dBW	71	83
Spacecraft G/T [gain over temperature]	dB/K	-33.5	-28
Frequency	GHz	17.797	17.797
Isotropic area	dB-m ²	46.46	46.46
Sat/C receive antenna gain(EOC/Peak)	dBi	-2.5	3
Input losses(total)	dB	-2.86	-2.86
Input power level	dBm	-111.82	-94.32
Command threshold/maximum operating command threshold	dBm	-112	-60
Margin	dB	0.18	34.32

Table A.5-3. Typical Telemetry Carrier Link Budget

		Min EIRP	Max EIRP
Frequency	GHz	12.6985	12.6985
Transmit power (satellite)	dBW	-4	-2.85
Transmit losses	dBW	-7.88	-7.62
Antenna gain	dBi	22.4	34.85
EIRP [Equivalent isotropically radiated power]	dBW	10.52	24.38
EIRP spec (min/max)	dBW	10	25
Link loss	dB	-206.13	-206.13
Rain loss	dB	8	8
Predicted EIRP	dBW	10	25
RxES* G/T	dB/K	38.12	38.12
Boltzmann's constant	dBW/K-Hz	-228.6	-228.6
Downlink C/No	dB-Hz	62.59	77.59
EIRP margin	dB	0.5	0.6

* Receive earth station

A.6 Satellite Transponder Frequency Responses
 [§ 25.114(c)(4)(vii)]

The predicted worst case receive and overall channel filter response performance is given in Table A.6-1 below. Table A.6-2 shows Input section Narrow-band Out-of-band response.

Table A.6-1 Typical Receiver and Overall Filter Responses (In-band)

Frequency offset from channel center	Max. p-p gain variations	
	Receive	Overall
CF±6.0 MHz	0.3	0.45
CF±7.7 MHz	0.45	0.67
CF±9.6 MHz	0.61	0.90
CF±12 MHz	1.52	1.92
CF±13 MHz	2.93	3.43

A.6-2 Narrow-Band Receive Out-of-Band Response

Offset from center frequency	Maximum response, dB
CF±16.5 MHz	-3
CF±29.2 MHz	-30

A.7 Cessation of Emissions
[§ 25.207]

Each active satellite transmission chain (channel amplifiers and associated LTWTA) can be individually turned on and off by ground telecommand, thereby causing cessation of emissions from the satellite, as required.

A.8 ITU Filing

Table A.8-1 shown below provides ITU filing information.

Table A.8-1 ITU QuetzSat-1 Filings

Satellite name	Date of receipt	ssn_ref	ssn_no	Part/Art.	WIC/IFIC (ific.mdb)	WIC/IFIC date
QUETZSAT-77	18.10.2006	AP30-30A/E	434	A*	2590	20.03.2007
QUETZSAT-77	18.10.2006	AP30-30A/E	434	D	2604	02.10.2007
QUETZSAT-77	24.06.2009	AP30-30A/E	434	B*	2658	01.12.2009

*Part A and B publication are attached in Appendix 2 of this document.

A.9 Interference Analysis
[§ 25.214(d)(13)]

In accordance with ITU Regulations in Appendix 30, § 4.2.16, agreement has been reached with the administrations of Canada, The United Kingdom, The Netherlands and the USA, which made comments and with which agreement was therefore necessary regarding the final characteristics of the frequency assignments. In accordance with § 4.2.19, the Bureau has published Special Section Reference AP30-30A/E/434 Part B in BR IFIC 2658 showing the final characteristics together with the names of any administrations with respect to the provisions of Article 4 that have been successfully applied. The frequency assignments concerned now enjoy the same status as those appearing in the Region 2 Plan and are considered as frequency assignments in conformity with the Plan.

Because of large orbital separation between Broadcasting Satellites, TT&C coordination with neighboring BSS satellites is generally not required. However, SES routinely exchanges TT&C carrier information with neighboring satellite operators (EchoStar, Telesat, and DIRECTV) and conducts operational coordination if needed.

A.10 Compliance to other ITU regulations

QuetzSat-1 either complies with the ITU regulations dealing with OEPM, Power Flux-Density, Fixed Services, FSS, and others, or has coordinated with other Administrations, as explained above.

A.11 Orbital Debris Mitigation Plan

A.11.1 Spacecraft Hardware Design

The QuetzSat operator has assessed and minimized the amount of debris released during normal operations. The satellite was designed to minimize debris generated after separation from the launch vehicle and to cause no debris during normal on-station operations. All pyrotechnic devices onboard the satellite have been designed to retain all physical debris. The possibility of collisions with debris or micrometeoroids smaller than one centimeter was taken into account and the design of the spacecraft limits the effects of such collisions through the use of shielding, placement of components and the use of redundant systems to maintain spacecraft control. In addition, all sources of stored energy are located within the body of the spacecraft, providing protection from orbital debris.

A.11.2 Minimizing Accidental Explosions

The QuetzSat-1 propulsion system can vent its oxidizer and hydrazine tanks, and also vent the helium tanks following the transfer orbit. All tanks will be fully vented before deorbiting.

During and after the operational life time, the risk of burst is mitigated to a negligible level for the following reasons.

1. The remaining pressure in the Helium tanks (29.5 bar max) is significantly lower than the design burst pressure (414 bars) and the actual measured burst pressure (508.8 bars reached during qualification test); a margin of 1725% with respect to the qualification test and almost 1400% over the design.

Furthermore, the main parameter, which can increase the pressure, is the temperature: to get the tanks to a pressure above the design rupture pressure (414 bars), the tank temperature would have to increase to above 4350°C (5470°C for real burst pressure), whereas thermal analysis guarantees operating temperature lower than 32° C; a margin of 1400% (degK comparison) with respect to the qualification, and 1780% with respect to actual burst pressure.

These margins of the actual pressure and temperature versus either the design or qualification limits indicate that there is no risk of rupture.

2. Design of “He” tanks: the tank is designed on a “leak before burst” basis, meaning that the tanks are designed to release He without catastrophic failure. It is made of a titanium liner and overwrapped with carbon fiber.

So whatever the cause of the unexpected loss of pressure the tank will leak but not burst, in such a way that it will not generate debris.

3. In addition, He tanks are surrounded by panels in the satellite that protect them from thermal flux and external debris.

Based on the above technical design considerations, there is no risk of debris due to burst of any tanks on the satellite, from the initial transfer orbit after launch, through the satellite disposal.

A.11.3 Safe Flight Profiles

In considering current and planned satellites that may have a station-keeping volume that overlaps the QUETZSAT-1 satellite, the QuetzSat operator 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° W.L. have also been reviewed.

The EHOSTAR-4 satellite currently operates at 76.85° W.L. The EHOSTAR-6 satellite currently operates at 76.95° W.L. The EHOSTAR-1 satellite currently operates at 77.15° W.L. The EHOSTAR-8 satellite currently operates at the 77.05° W.L. location. In order to accommodate QUETZSAT-1 at the 77° W.L. cluster, a series of relocations will be requested for approval. EHOSTAR-4 is planned to be deorbited subject to receiving certain approvals. Once EHOSTAR-4 is deorbited, EHOSTAR-8 will be relocated to 76.85° W.L., leaving 77.05° W.L. open for QUETZSAT-1. This will be a temporary location until EHOSTAR-8 is permanently relocated to a different orbital location outside of the 77° W.L. cluster subject to receiving Commission approval. Once EHOSTAR-8 is relocated, EHOSTAR-6 will be moved to 76.9° W.L. and QUETZSAT-1 will be relocated to its final location at 77.0° W.L.

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

- The EHOSTAR-1 satellite will operate at 77.15° W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$.
- The QUETZSAT-1 satellite will operate at 77.05° W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$.
- The EHOSTAR-6 satellite will operate at 76.95° W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$.
- The EHOSTAR-8 satellite will operate at 76.85° W.L. with an east-west station-keeping tolerance of $\pm 0.05^\circ$.

- The ECHOSTAR-4 satellite will be deorbited from the 76.85° W.L. location.

Of these, only the three locations immediately adjacent to 77.05° W.L. need be considered (i.e., 76.85° W.L., 76.95° W.L. and 77.15° 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 with these and the QUETZSAT-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, the QuetzSat operator can find no evidence that they are being constructed.

Based on the preceding, QuetzSat and SES understand that Special Temporary Authority and permanent modifications (as required) will be filed shortly after QUETZSAT-1's application has been filed to allow the above-mentioned satellites to operate within the relevant station-keeping volumes.

A.11.4 Post Mission Disposal Plan

At the end of the operational life of the QuetzSat-1 satellite, QuetzSat will maneuver the satellite to a disposal orbit with a minimum perigee of 350 km above the normal GSO operational orbit. This proposed disposal orbit altitude exceeds the minimum altitude derived from the following calculation, as required in § 25.283:

Total Solar Pressure Area "A" = 115 m²

"M" = Dry Mass of Satellite = 2430 Kg

"CR" = Solar Pressure Radiation Coefficient (worst case) = 1.3

Therefore, the Minimum Disposal Orbit Perigee Altitude:

$$= 235 \text{ km} + 1000 \times \text{CR} \times \text{A}/\text{m}$$

$$= 235 \text{ km} + 1000 \times 1.3 \times 115 / 2430$$

$$= 296.5 \text{ km}$$

$$= 296.5 \text{ km above GSO (35,786 km)}$$

Thus, the designed disposal orbit of 300 km above GSO exceeds the required minimum by a margin of 3.5 km. Maneuvering the satellite to the disposal orbit will require 29 kg of propellant, and this quantity of fuel, taking account of all fuel measurement uncertainties, will be reserved to perform the final orbit raising maneuvers.

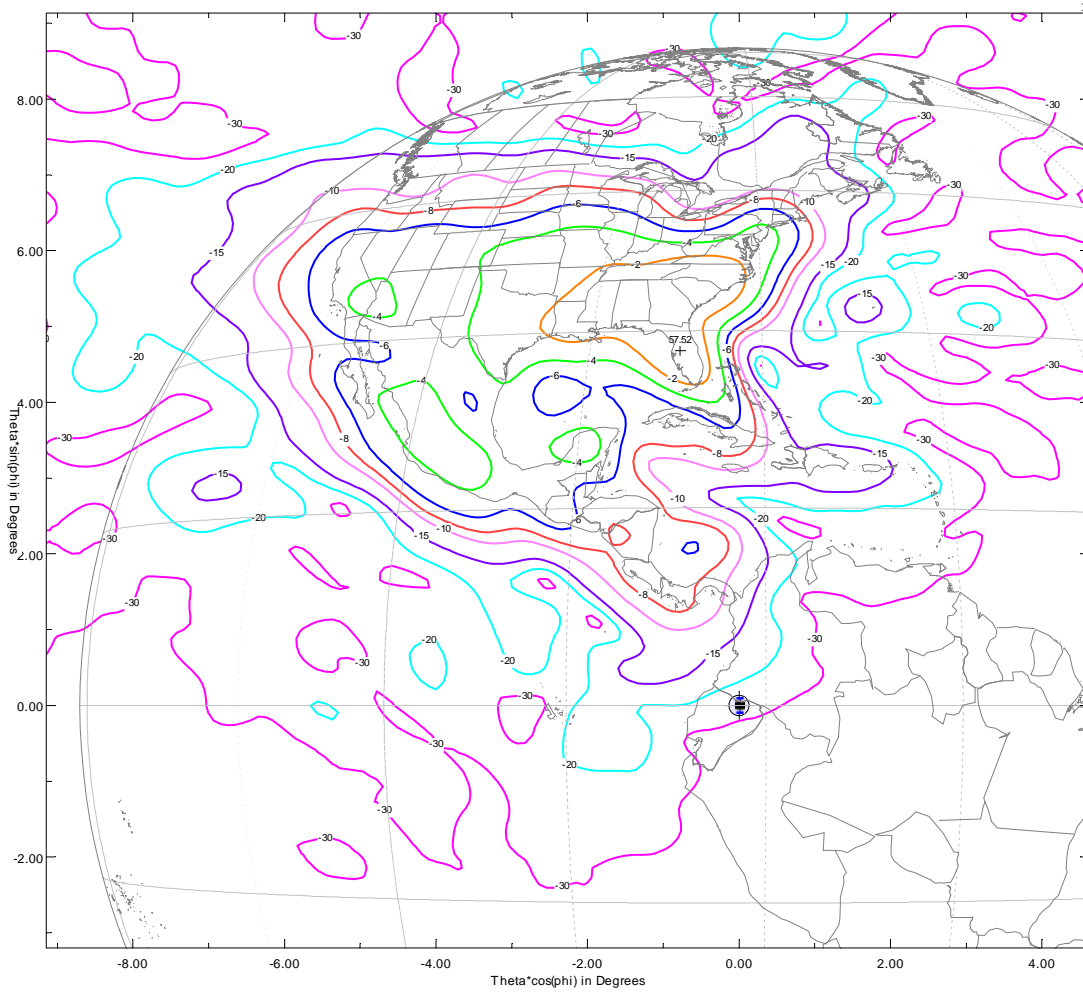
**CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING
ENGINEERING INFORMATION**

I, Krish Jonnalagadda, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing exhibit; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the exhibit and that it is complete and accurate to the best of my knowledge, information and belief.

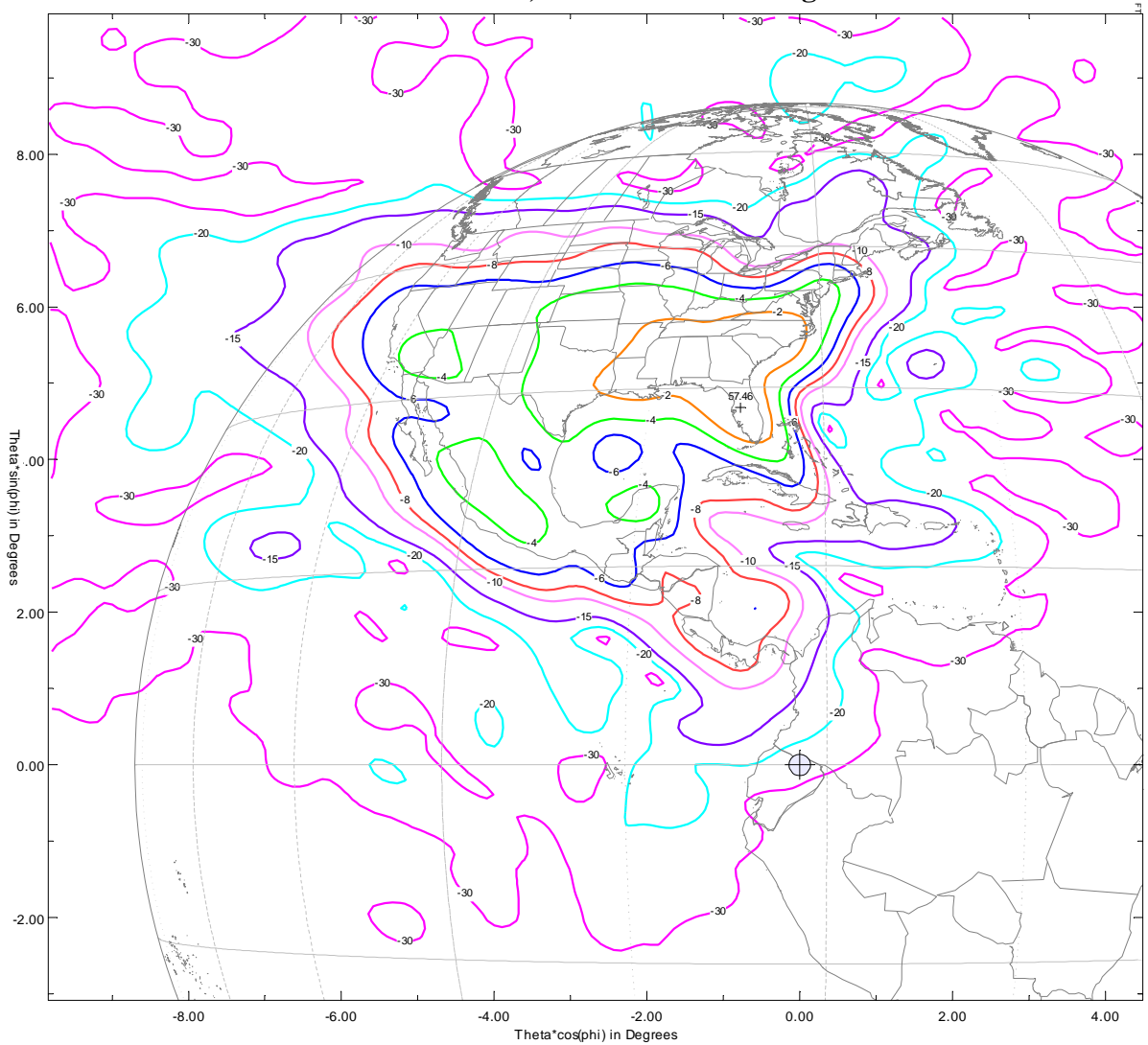
_____/s/_____
Krish Jonnalagadda
Manager, Satellite Market Development
SES Americom, Inc.

**Appendix 1 to Attachment A (Technical Information to Supplement Schedule S)
Antenna gain patterns**

**Fig. A.3-1 Satellite Transmit antenna gain and EIRP patterns
East antenna, Channel 16, LHCP
Maximum EIRP: 57.5 dBW, Maximum antenna gain: 35.6 dBi**



**Fig. A.3-2 Typical Satellite Transmit antenna gain and EIRP patterns
East antenna, Channel 17, RHCP
Maximum EIRP: 57.5 dBW, Maximum antenna gain: 35.6 dBi**



**Fig. A.3-3 Typical Satellite Transmit antenna gain and EIRP patterns
West antenna, Channel 15, RHCP
Maximum EIRP: 57.3 dBW, Maximum antenna gain: 35.5 dBi**

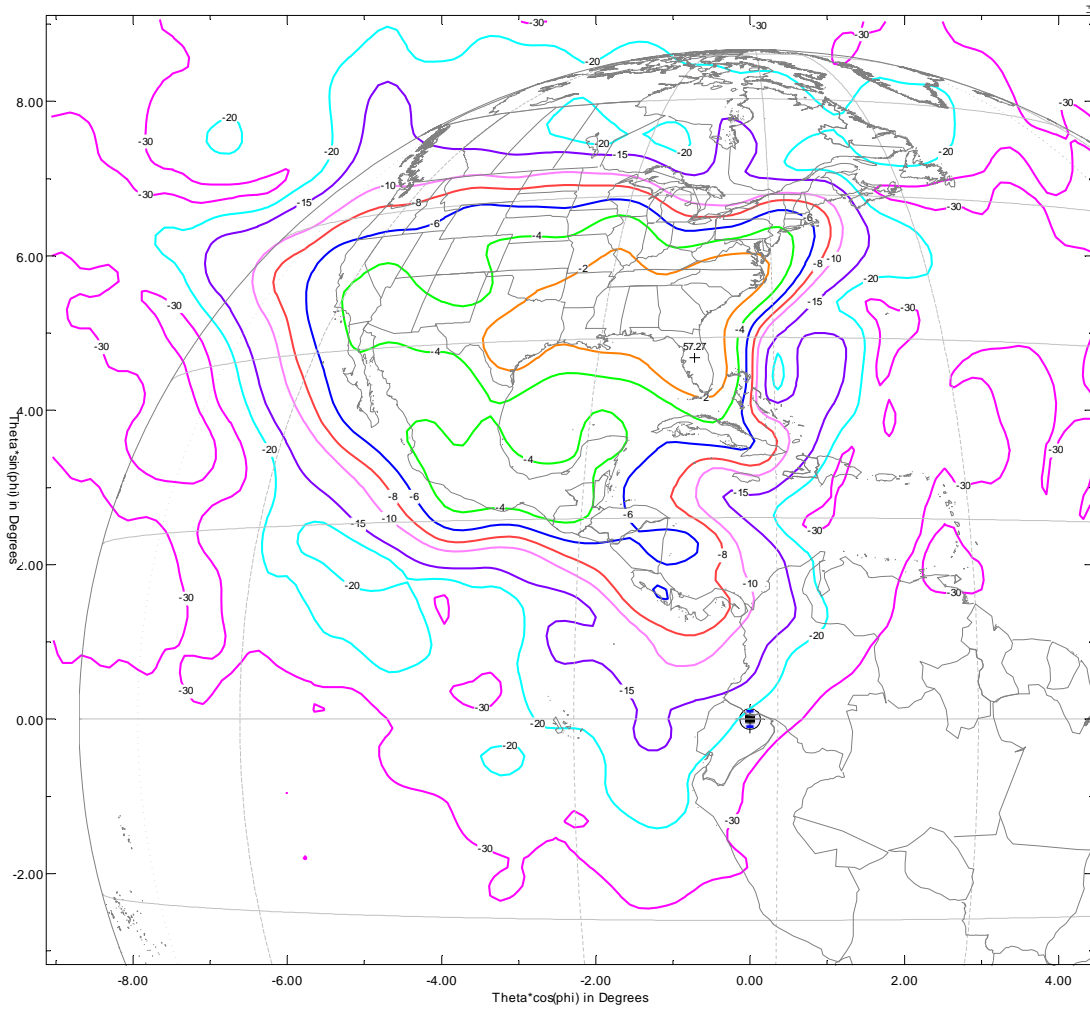


Fig. A.3-4 Typical Satellite Transmit antenna gain and EIRP patterns
West antenna, Channel 18, LHCP
Maximum EIRP: 57.1 dBW, Maximum antenna gain: 35.2 dBi

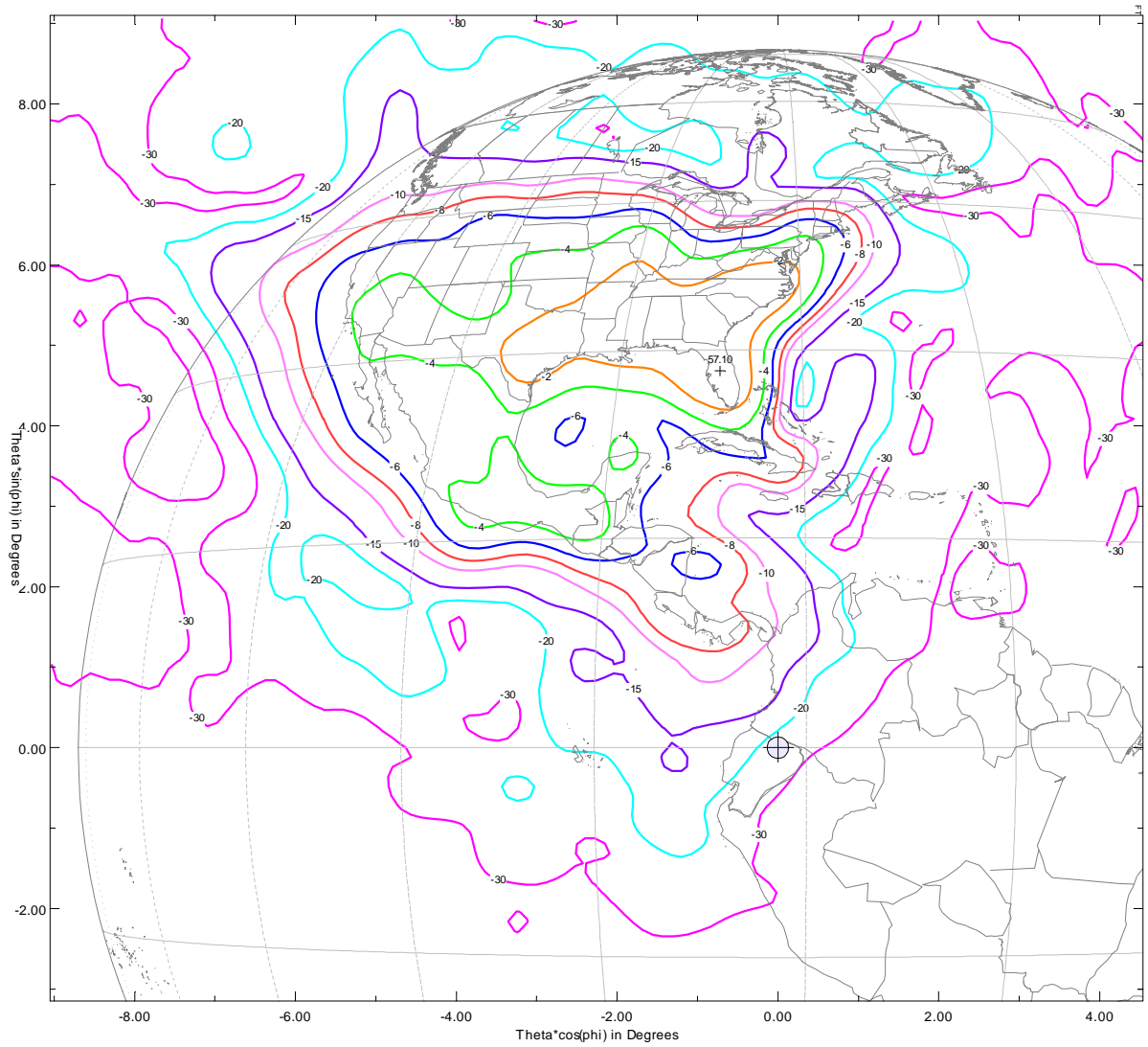
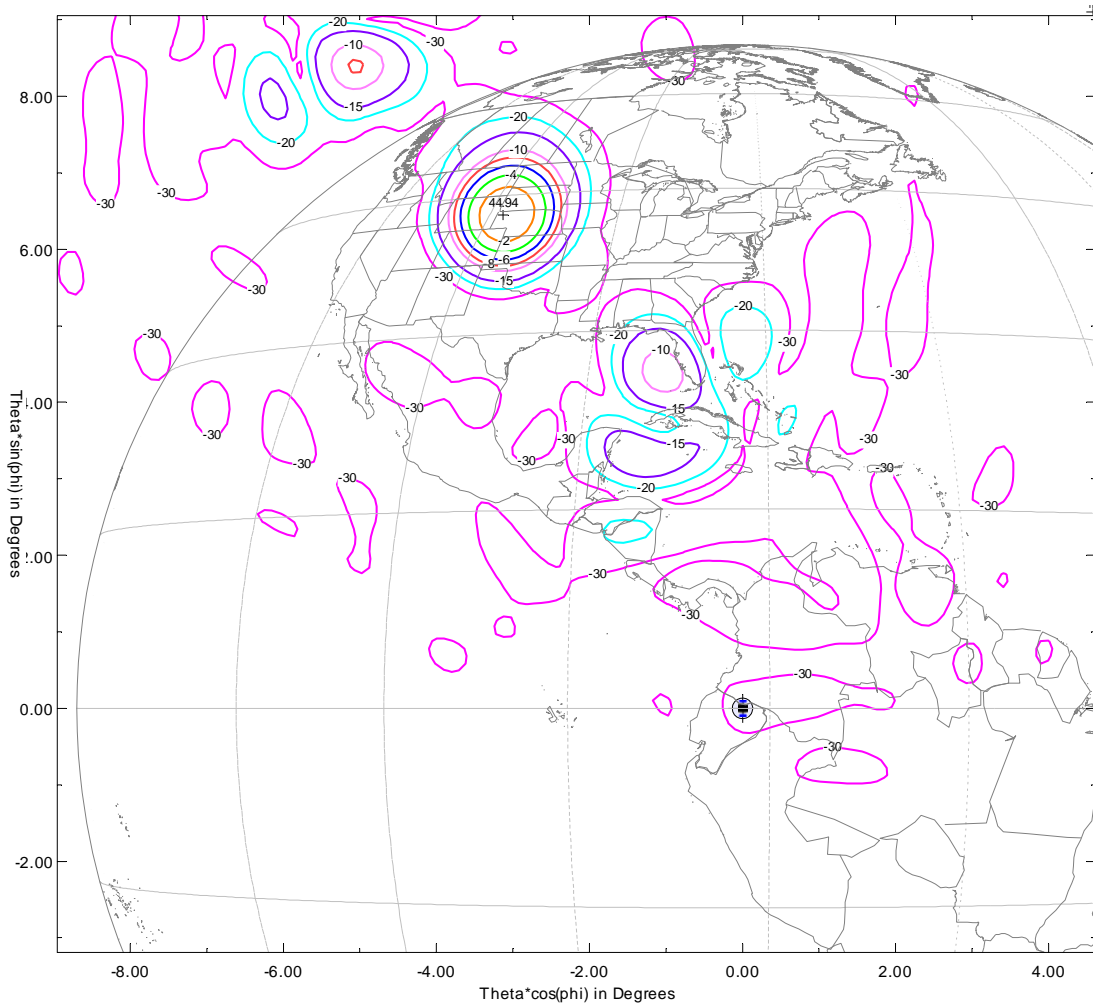


Fig. A.3-5. Typical Satellite Receive antenna gain pattern for uplink beam from Cheyenne (WY) LHCP, Maximum G/T: 13.0 dB/K, Maximum antenna gain: 44.9 dBi



**Fig. A.3-6. Typical Satellite Receive antenna gain pattern for uplink beam from Gilbert (AZ)
LHCP, Maximum G/T: 12.8 dB/K, Maximum antenna gain: 44.65 dBi**

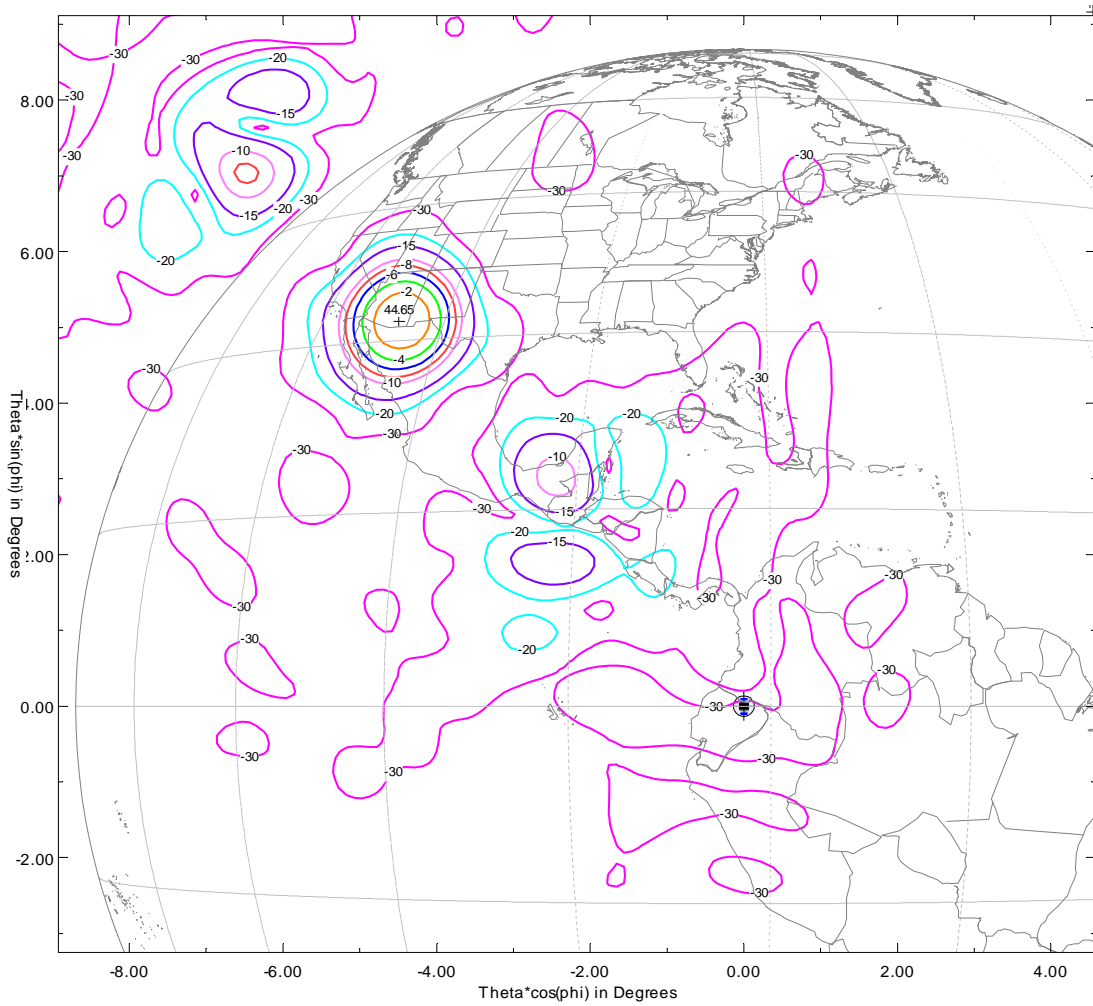


Fig. A.3-7. Typical Satellite Receive antenna gain pattern for uplink beam from Mexico City LHCP, Maximum G/T: 9.6 dB/K, Maximum antenna gain: 43.2 dBi

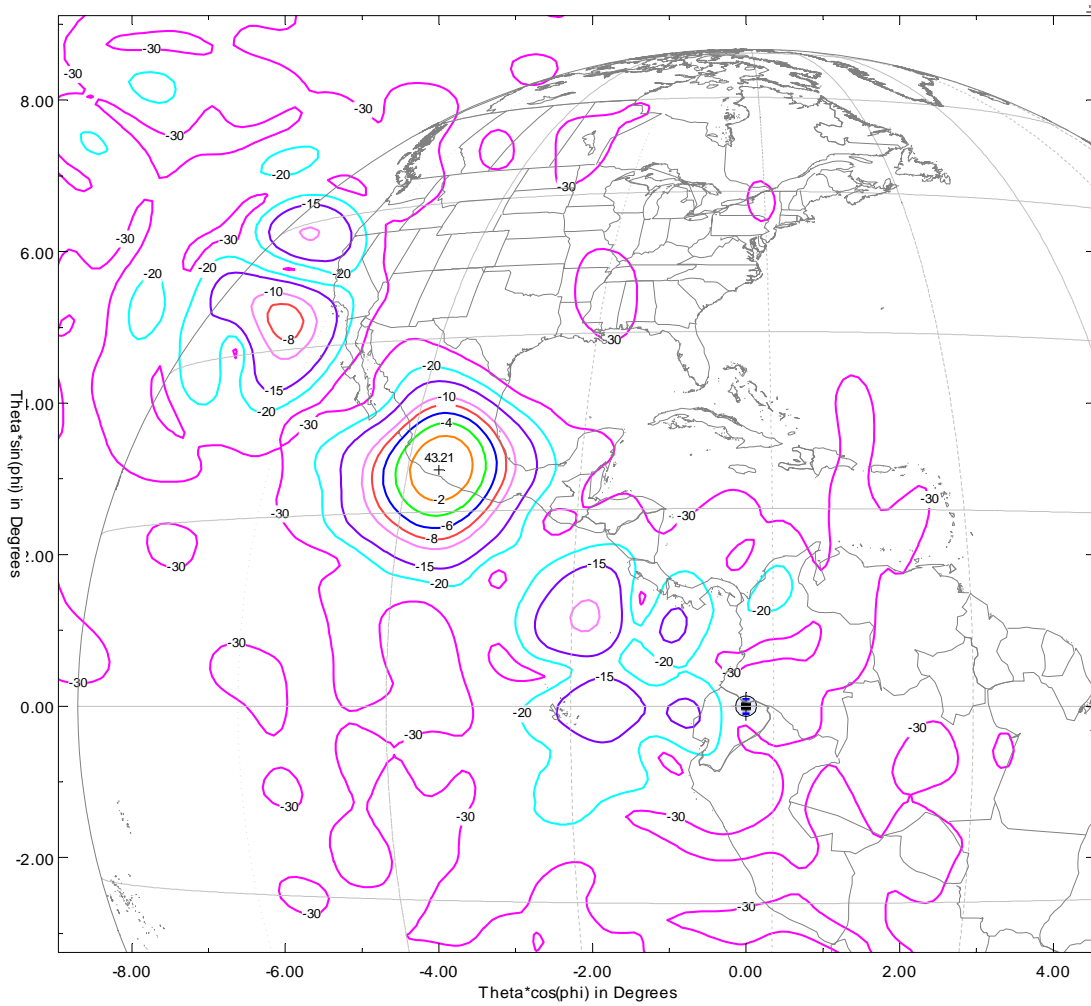
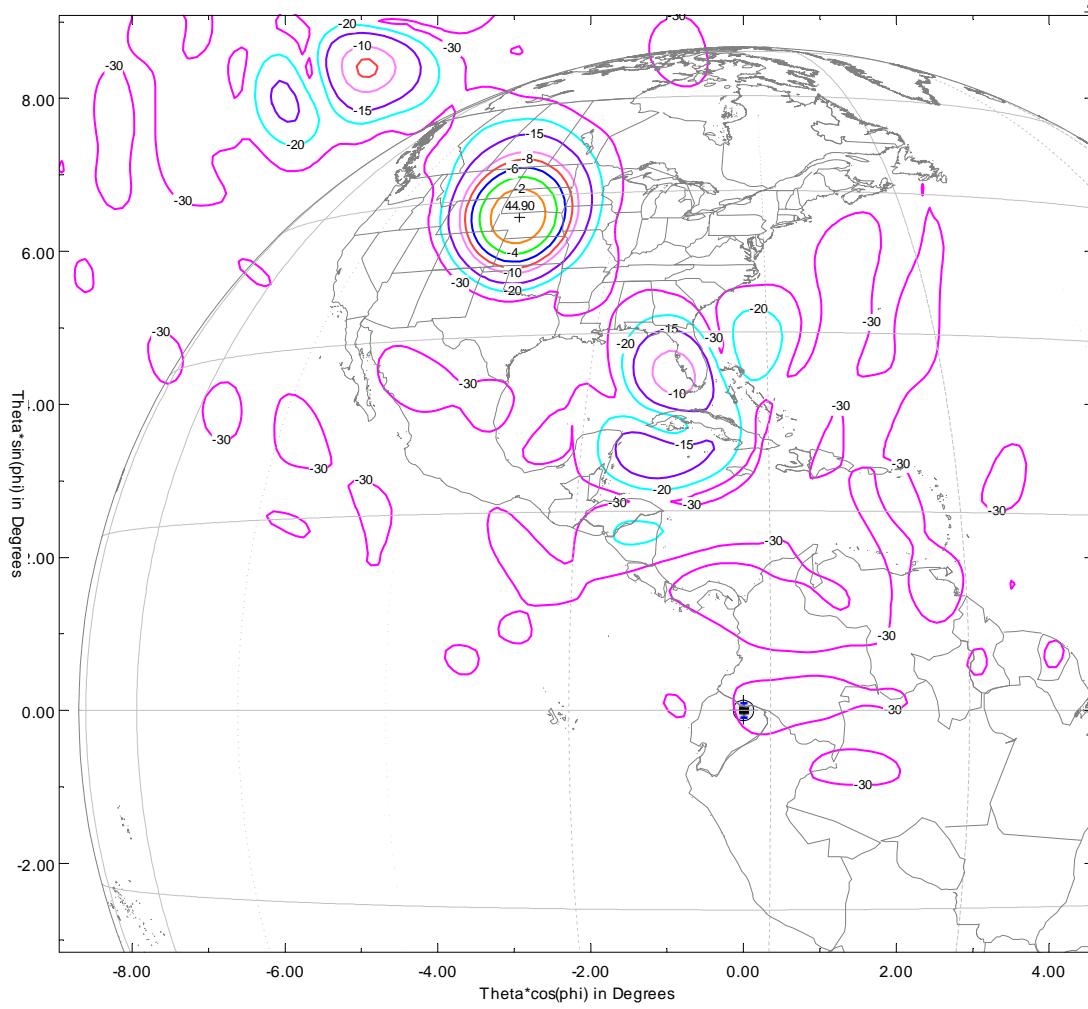


Fig. A.3-8. Typical Satellite Receive antenna gain pattern for uplink beam from Cheyenne (WY) RHCP, Maximum G/T: 12.4 dB/K, Maximum antenna gain: 44.9 dBi



**Fig. A.3-9. Typical Satellite Receive antenna gain pattern for uplink beam from Gilbert (AZ)
RHCP, Maximum G/T: 12.2 dB/K, Maximum antenna gain: 44.7 dBi**

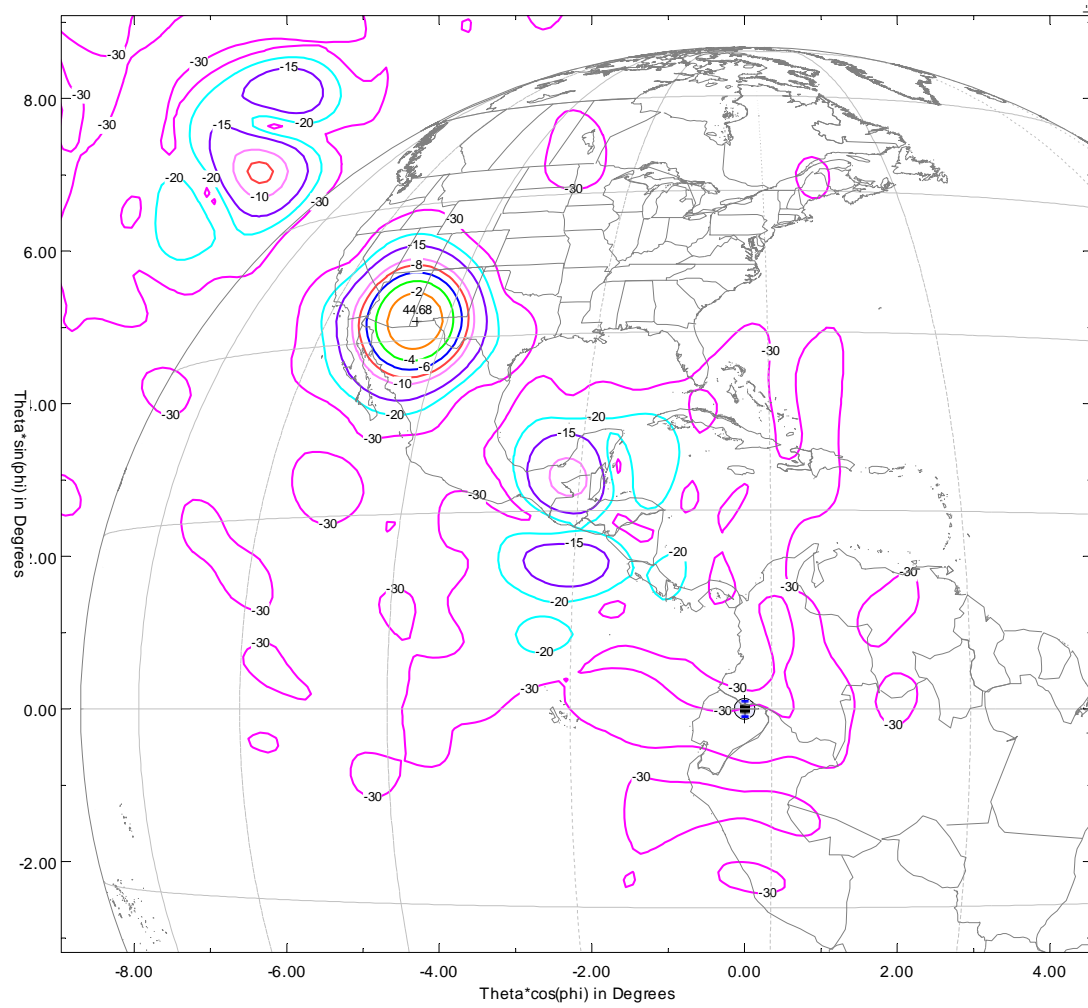


Fig. A.3-10. Typical Satellite Receive antenna gain pattern for uplink beam from Mexico City RHCP, Maximum G/T: 9.2 dB/K, Maximum antenna gain: 43.2 dBi

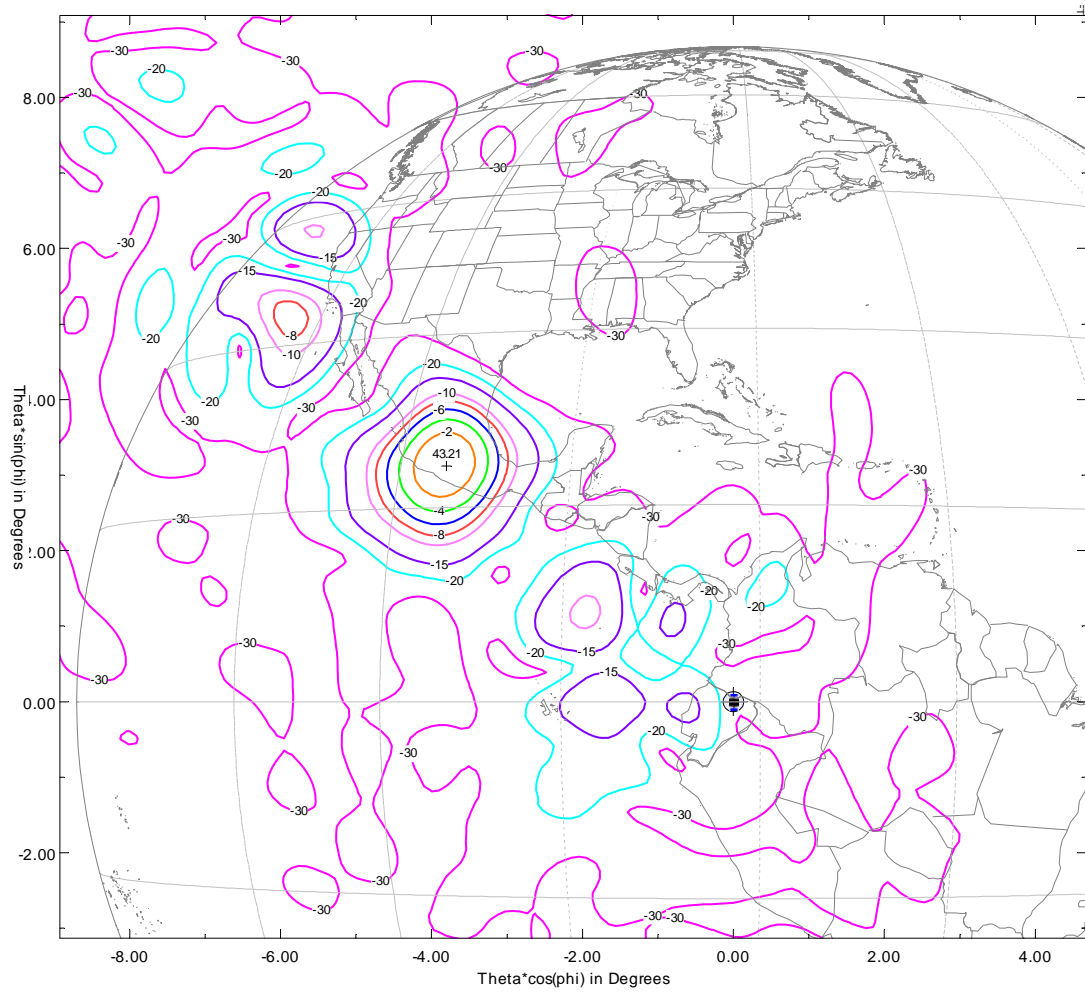
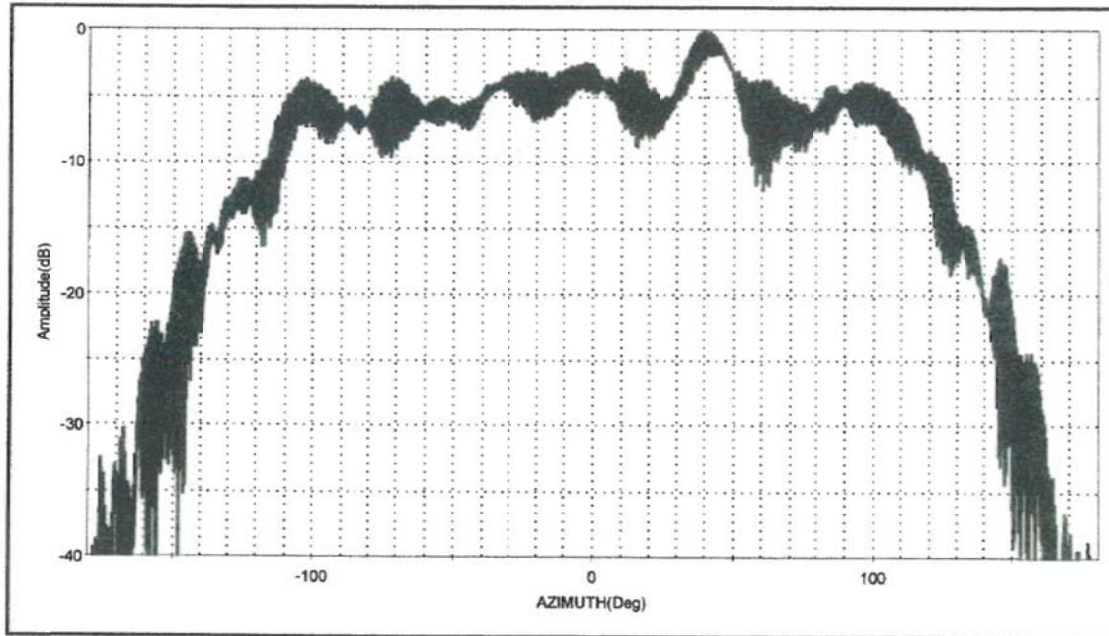
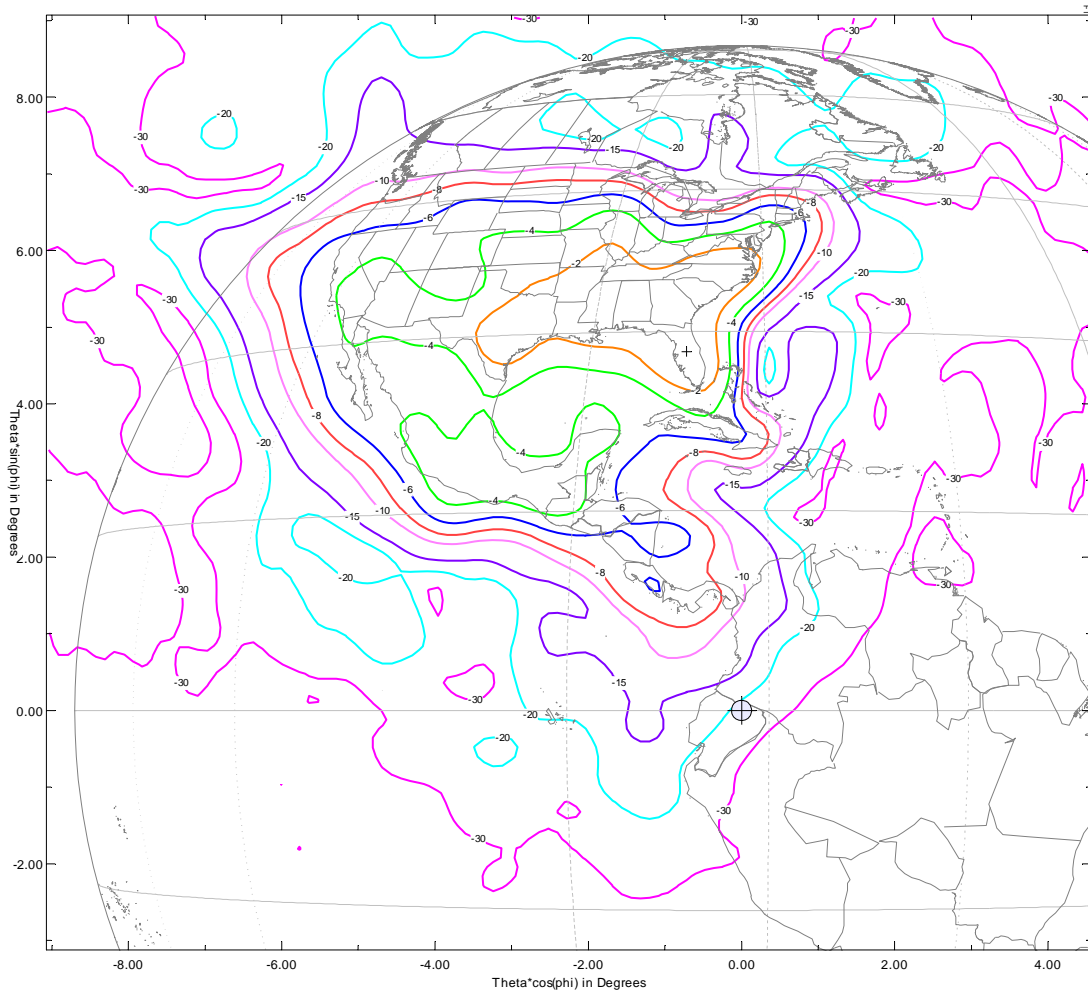


Fig. A.3-11. Amplitude characteristics of typical +Z Omni receive antenna used in Command carrier links. RHCP, Maximum G/T: -33.5 dB/K, Maximum antenna gain: 3.0 dBi



ROLL:0.0 Freq: 17.793 GHz

Fig. A.3-12 Telemetry antenna gain and EIRP patterns
West antenna, RHCP, Maximum EIRP: 24.4 dBW,
Maximum antenna gain: 34.9 dBi. Note that Telemetry carrier uses
communication antenna for normal operations



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

**Part A ITU filing
Part B ITU Publication**



UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES
OFICINA DE RADIOCOMUNICACIONES

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RÉSEAU À SATELLITE SATELLITE NETWORK RED DE SATÉLITE		QUETZSAT-77		SECTION SPÉCIALE N ^o SPECIAL SECTION No. SECCIÓN ESPECIAL N.º	AP30-30A/E/434
ADM. RESPONSABLE RESPONSIBLE ADM. ADM. RESPONSABLE	MEX	LONGITUDE NOMINALE NOMINAL LONGITUDE LONGITUD NOMINAL	77 W	BR IFIC / DATE BR IFIC / DATE BR IFIC / FECHA	2590 / 20.03.2007
NOTIFIÉ AU NOM DE NOTIFIED ON BEHALF OF NOTIFICADA EN NOMBRE DE				NUMÉRO D'IDENTIFICATION IDENTIFICATION NUMBER NÚMERO DE IDENTIFICACIÓN	106555010
RENSEIGNEMENTS REÇUS PAR LE BUREAU LE / INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL					18.10.2006

Caractéristiques des assignations de fréquence publiées en application de l'Article 4 des Appendices 30 et 30A du Règlement des radiocommunications et de la Résolution 546 (CMR-03)

La présente Section spéciale concerne des modifications apportées au Plan pour la Région 2 dans les bandes de fréquences 12.2-12.7 GHz pour les liaisons descendantes et 17.3-17.8 GHz pour les liaisons de connexion.

Characteristics of frequency assignments published in application of Article 4 of Appendices 30 and 30A to the Radio Regulations and Resolution 546 (WRC-03)

This Special Section concerns modifications to the Region 2 Plan in the frequency bands 12.2-12.7 GHz for the downlink and 17.3-17.8 GHz for the feeder-link.

Características de asignaciones de frecuencias publicadas conforme al Artículo 4 de los Apéndices 30 y 30A del Reglamento de Radiocomunicaciones y a la Resolución 546 (CMR-03)

Esta Sección Especial trata de las modificaciones al Plan de la Región 2 en las bandas de frecuencias 12.2-12.7 GHz por los enlaces descendentes y 17.3-17.8 GHz por los enlaces de conexión.

Elle comprend les Parties indiquées ci-dessous par une croix (X) dans la case appropriée.	It is composed of the Parts indicated below by an (X) in the relevant box	Se compone de las Partes indicadas a continuación con una (X) en la casilla pertinente.
<input checked="" type="checkbox"/> <i>Partie A</i> - Projets de modification au Plan pour la Région 2.	<input checked="" type="checkbox"/> <i>Part A</i> - Proposed modifications to the Region 2 Plan.	<input checked="" type="checkbox"/> <i>Parte A</i> - Modificaciones propuestas al Plan de la Región 2.
<input type="checkbox"/> <i>Partie B</i> - Modifications apportées au Plan pour la Région 2 en conséquence de l'application avec succès des dispositions de l'Article 4 des Appendices 30 et 30A.	<input type="checkbox"/> <i>Part B</i> - Modifications entered in the Region 2 Plan as a result of the successful application of the provisions of Article 4 of Appendices 30 and 30A.	<input type="checkbox"/> <i>Parte B</i> - Modificaciones introducidas en el Plan de la Región 2 como resultado de la aplicación satisfactoria de las disposiciones del Artículo 4 de los Apéndices 30 y 30A.
<input type="checkbox"/> <i>Partie C</i> - Annulation d'une Section spéciale Partie A publiée et/ou des assignations de fréquence du Plan pour la Région 2 conformément au § 4.2.6, à la note de bas de page 16 du § 4.2.8, à la note de bas de page 17 du § 4.2.19 et/ou § 4.2.24 de l'Article 4 des Appendices 30 et 30A ou Résolution 49.	<input type="checkbox"/> <i>Part C</i> - Cancellation of a previously published Part A Special Section and/or frequency assignments from the Region 2 Plan in accordance with § 4.2.6, footnote 16 to § 4.2.8, footnote 17 to § 4.2.19 and/or § 4.2.24 of Article 4 of Appendices 30 and 30A or Resolution 49.	<input type="checkbox"/> <i>Parte C</i> - Cancelación de una Parte A de la Sección Especial previamente publicada y/o de las asignaciones de frecuencia del Plan de la Región 2, de conformidad con el § 4.2.6, la nota 16 del § 4.2.8, la nota 17 del § 4.2.19 y/o § 4.2.24 del Artículo 4 de los Apéndices 30 y 30A ó Resolución 49.
<input type="checkbox"/> <i>Partie D</i> - Liste des administrations dont l'accord est nécessaire pour mener à bien la procédure de l'Article 4 conformément au § 4.2.14ter de l'Article 4 des Appendices 30 et 30A.	<input type="checkbox"/> <i>Part D</i> - List of administrations whose agreements are required for completion of the Article 4 procedure in accordance with § 4.2.14ter of Article 4 of Appendices 30 and 30A.	<input type="checkbox"/> <i>Parte D</i> - Lista de administraciones cuyo acuerdo se necesita para terminar el procedimiento del Artículo 4, de conformidad con el § 4.2.14ter del Artículo 4 de los Apéndices 30 y 30A.

SOU MIS AU TITRE DE SUBMITTED UNDER SOMETIDO CON ARREGLO A	§ 4.2.6	DATE LIMITE POUR LA RÉCEPTION DES COMMENTAIRES : EXPIRY DATE FOR THE RECEIPT OF COMMENTS : FECHA LÍMITE PARA LA RECEPCIÓN DE LOS COMENTARIOS :	20.07.2007
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国际电信联盟
无线电通信局

МЕЖДУНАРОДНЫЙ СОЮЗ ЭЛЕКТРОСВЯЗИ
БЮРО РАДИОСВЯЗИ

الاتحاد الدولي للاتصالات
مكتب الاتصالات الراديوية

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卫星网络 СПУТНИКОВАЯ СЕТЬ الشبكة الساتلية	QUETZSAT-77		特节编号 СПЕЦИАЛЬНАЯ СЕКЦИЯ № القسم الخاص رقم	AP30-30A/E/434
负责主管部门 ОТВЕТСТВЕННАЯ АДМ. الإدارة المسؤولة	MEX	标称经度 НОМИНАЛЬНАЯ ДОЛГОТА خط الطول الاسمي	77 W	无线电通信局国际频率信息通报/日期 ИФИК БР / ДАТА النشرة الإعلامية الدولية لترددات/رقمها وتاريخها
通知代表方 ЗАЯВЛЯЕТСЯ ОТ ИМЕНИ مبلغ عنها باسم			识别号 ИДЕНТИФИКАЦИОННЫЙ НОМЕР رقم تعرف الهوية	106555010
通信局收到资料的日期 / ДАТА ПОЛУЧЕНИЯ ИНФОРМАЦИИ БЮРО / معلومات استلمها المكتب في /				18.10.2006

应用无线电规则附录30和30A第4条和第546号决议(WRC-03)公布的频率指配的特性

Характеристики частотных присвоений, публикуемые во исполнение статьи 4 Приложений 30 и 30А к Регламенту радиосвязи и Резолюции 546 (ВКР-03)

خصائص الترددات المخصصة المنشورة تطبيقاً للمادة 4 من التذييلين 30 و 30A للوائح الراديو والقرار (WRC-03) 546

本特节关系到修改2区规划12.2-12.7 GHz频带下行链路和17.3-17.8 GHz频带馈线链路的指配。

Настоящая Специальная секция относится к изменениям Плана для Района 2 в полосах частот 12,2-12,7 ГГц для линий вниз и 17,3-17,8 ГГц для фидерных линий.

يتعلق هذا القسم الخاص بالتعديلات التي أدخلت في خطة الإقليم 2 في نطاق التردد 12,2-12,7 GHz للوصلات الهابطة و 17,3-17,8 GHz للوصلات التغذية.

由下列相关括号内用X表示的部分组成	Она состоит из Частей, отмеченных ниже знаком (X) в соответствующей графе.	وهو يتألف من الأجزاء المشار إليها فيما يلي بالرمز (X) في الرفع المناسب.
[X] A部分 - 对2区规划的建议修改。	[X] Часть A - Предложенные изменения Плана для Района 2.	[X] الجزء A - تعديلات يُقترح إدخالها في خطة الإقليم 2.
[] B部分 - 由于成功地应用附录30和30A第4条规定而登入2区规划的修改	[] Часть B - Изменения в Плана для Района 2, внесенные в результате успешного применения положений статьи 4 Приложений 30 и 30A.	[] الجزء B - تعديلات أدخلت في خطة الإقليم 2 نتيجة نجاح تطبيق أحكام المادة 4 من التذييلين 30 و 30A.
[] C部分 - 根据附录30和30A第4条第4.2.6段脚注16至第4.2.8段脚注17到第4.2.19段和/或第4.2.24段或根据第49号决议，删除一个以前公布的A部分特节和/或2区规划中的频率指配。	[] Часть C - Аннулирование ранее опубликованной Части A Специальной секции и/или частотных присвоений в Плана для Района 2 в соответствии с п. 4.2.6, примечанием 16 п. 4.2.8, примечанием 17 п. 4.2.19 и/или п. 4.2.24 статьи 4 Приложений 30 и 30A или Резолюцией 49.	[] الجزء C - إلغاء قسم خاص للجزء A منشور سابقاً وأو تخصيصات تردد ملغية من خطة الإقليم 2 طبقاً للفقرة 6.2.4، والخاصية 16 للفقرة 8.2.4، والخاصية 17 للفقرة 19.2.4 وأو الفقرة 24.2.4 من المادة 4 في التذييلين 30 و 30A أو القرار 49.
[] D部分 - 根据附录30和30A第4条第4.1.10之三阶段程序，为完成第4条程序而需征得同意的主管部门清单。	[] Часть D - Список администраций, соглашение которых необходимо, чтобы завершить процедуру статьи 4 в соответствии с п. 4.2.14ter статьи 4 Приложений 30 и 30A.	[] الجزء D - قائمة الإدارات التي تعتبر موافقتها ضرورية لإكمال إجراء المادة 4 طبقاً للفقرة 14.2.4 مكرراً تماماً من المادة 4 من التذييلين 30 و 30A.

提交依据 ЗАЯВЛЯЕТСЯ СОГЛАСНО § 4.2.6 مقدمة بموجب	接收意见的截止日期: ПРЕДЕЛЬНАЯ ДАТА ДЛЯ ПОЛУЧЕНИЯ ЗАМЕЧАНИЙ: الموعد النهائي لاستلام التعليقات	20.07.2007
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Items	Description	Description	Descripción
A1a	Identité du réseau à satellite	Identity of the satellite network	Identidad de la red de satélite
A1b	Identification du faisceau	Plan beam identification	Identificación del haz
A1f1	Administration notificatrice (voir le Tableau 1 de la Préface)	Notifying administration (Refer to Table 1 of the Preface)	Administración notificante (véase el cuadro 1 del Prefacio)
A1f2	Si la fiche est soumise au nom d'un groupe d'administrations, les symboles de chaque administration du groupe soumettant les renseignements relatifs au réseau à satellite (voir la Préface)	If the notice is submitted on behalf of a group of administrations, the symbols of each of the administrations in the group, submitting the information on the satellite network (see the Preface)	Si la notificación se presenta en nombre de un grupo de administraciones, los símbolos de cada administración del grupo de administraciones que presentan la información sobre la red de satélites (véase el Prefacio)
A1f3	Organisation Intergouvernementale de Satellite	Intergovernmental Satellite Organization	Organización Intergubernamental de Satélite
A2a	Date de mise en service	Date of bringing into use	Fecha de puesta en servicio
A3a	Entité exploitante (voir le Tableau 12A/12B de la Préface)	Operating agency (Refer to Table 12A/12B of the Preface)	Compañía explotadora (véase el cuadro 12A/12B del Prefacio)
A3b	Symbole identifiant l'administration responsable de la station (Tableau 12A/12B de la Préface)	Symbol identifying the Administration responsible for the station (Refer to Table 12A/12B of the Preface)	Símbolo que identifica a la administración responsable de la estación (véase el cuadro 12A/12B del Prefacio)
A4a1	Longitude nominale d'une station spatiale géostationnaire (degré)	Nominal longitude of a geostationary space station (degree)	Longitud nominal de una estación espacial geostacionaria (grado)
A4a2a	Tolérance de longitude vers l'est prévue	Planned longitudinal tolerance easterly limit	Tolerancia de longitud prevista hacia el Este
A4a2b	Tolérance de longitude vers l'ouest prévue	Planned longitudinal tolerance westerly limit	Tolerancia de longitud prevista hacia el Oeste
A6	Renseignements relatifs à la coordination; référence à une disposition du RR, à un appendice ou à une résolution (Tableau 11 de la Préface)	Coordination information, reference to provision of the RR, Appendix or Resolution (Table 11 of the Preface)	Información de la coordinación, con referencia a una disposición, apéndice o Resolución del RR (cuadro 11 del Prefacio)
A11a	Heure de début UTC	Start time UTC	Hora inicial UTC
A11b	Heure de fin UTC	Stop time UTC	Hora final UTC
A12	Gamme de régulation automatique de gain (dB)	Range of automatic gain control (dB)	Gama de control automático de ganancia expresada (dB)
B1a	Désignation du faisceau de l'antenne du satellite	Designation of the satellite antenna beam	Designación del haz de la antena del satélite
B1b	Indicateur montrant si le faisceau d'antenne, sous B.1.a, est fixe ou orientable (reconfigurable)	Flag showing whether the antenna beam, under B.1.a, is fixed or whether it is steerable (reconfigurable)	Indicador de si el haz de la antena, en B.1.a, está fijo o si es orientable (reconfigurable)
B2	Indicateur d'émission/réception	Transmission/reception indicator	Indicador de transmisión/recepción
B3a1	Gain isotrope copolaire maximal (dBi)	Maximum co-polar isotropic antenna gain (dBi)	Máxima ganancia isotrópica copolar (dBi)
B3a2	Gain isotrope contrapolaire maximal de l'antenne (dBi)	Maximum cross-polar isotropic antenna gain (dBi)	Ganancia isotrópica contrapolar máxima de la antena (dBi)
B3b1	Diagramme des contours de gain copolaire de l'antenne	Co-polar antenna gain contours diagram	Contornos de ganancia de antena copolar
B3b2	Diagramme des contours de gain contrapolaire de l'antenne	Cross-polar antenna gain contours diagram	Contornos de ganancia de antena contrapolar
B3c1a1	Diagramme de rayonnement de référence copolaire	Co-polar reference radiation pattern	Diagrama de radiación de referencia copolar
B3c2a1	Diagramme de rayonnement de référence contrapolaire	Cross-polar reference radiation pattern	Diagrama de radiación de referencia contrapolar
B3d	Précision de pointage (degré)	Pointing accuracy (degree)	Precisión de puntería (grado)
B3e	Diagramme du gain d'antenne en fonction de la longitude de l'orbite	Antenna gain vs orbit longitude diagram	Diagrama de la ganancia de la antena en función de la longitud de la órbita
B3f1	Ligne ou le point de visée du faisceau d'antenne (longitude et latitude)	Boresight or aim point of the antenna beam (longitude and latitude)	Eje de puntería o dirección en la que apunta el haz de la antena (longitud y latitud)
B3f2a	Précision de rotation (degré)	Rotational accuracy (degree)	Precisión de rotación (grado)
B3f2b	Orientation du grand axe (degré)	Major axis orientation (degree)	Orientación del eje mayor (grados)
B3f2c	Grand axe (degré)	Major axis (degree)	Eje mayor (grado)
B3f2d	Petit axe (degré)	Minor axis (degree)	Eje menor (grado)
C2a1	Fréquence assignée	Assigned frequency	Frecuencia asignada
C2a2	Numéro de canal	Channel number	Número del canal
C3a	Bande de fréquences assignée (kHz)	Assigned frequency band (kHz)	Banda de frecuencias asignada (kHz)
C4a	Classe de station (voir le Tableau 3 de la Préface)	Class of station (Refer to Table 3 of the Preface)	Clase de estación (véase el cuadro 3 del Prefacio)
C5a	Température de bruit du système de réception (Kelvin) dans le cas d'une station spatiale	Receiving system noise temperature (Kelvin) in the case of a space station	Temperatura de ruido del sistema receptor (Kelvin) en el caso de una estación espacial
C6a	Type de polarisation (voir le Tableau 5 de la Préface)	Type of polarization (Refer to Table 5 of the Preface)	Tipo de polarización (véase el cuadro 5 del Prefacio)

Items	Description	Description	Description
C6b	Angle de polarisation (degrés) (voir le Tableau 5 de la Préface)	Polarization angle (degree) (Refer to Table 5 of the Preface)	Ángulo de polarización (grado) (véase al cuadro 5 del Prefacio)
C7a	Désignation de l'émission	Designation of emission	Denominación de la emisión
C8b1	Puissance maximale fournie à l'antenne (dBW)	Maximum power supplied to the antenna (dBW)	Potencia máxima suministrada a la antena (dBW)
C8b2	Densité maximale de puissance (dB(W/Hz))	Maximum power density (dB(W/Hz))	Densidad máxima de potencia (dB(W/Hz))
C8h	Valeur moyenne de la densité de puissance maximale par Hz délivrée à l'entrée de l'antenne, en dB(W/Hz), établie sur la largeur de bande nécessaire	Maximum power density per Hz supplied to the input of the antenna, in dB(W/Hz), averaged over the necessary bandwidth	Densidad de potencia máxima por Hz suministrada a la entrada de la antena, en dB(W/Hz), promediada en la anchura de banda necesaria
C8i	Gamme de régulation de puissance (dB)	Range of power control (dB)	Gama del control de potencia (dB)
C9	Renseignements sur les caractéristiques de modulation	Information on modulation characteristics	Información sobre las características de modulación
C9a1	Type de modulation	Type of modulation	Tipo de modulación
C9a3a	Excursion de fréquence (MHz/V)	Frequency deviation (MHz/V)	Excursión de frecuencia (MHz/V)
C9a3b	Caractéristiques de préaccentuation	Pre-emphasis characteristics	Características de preacentuación
C9a3c	Type de multiplexage des signaux image et son	Type of multiplexing of the video and sound signals	Tipo de multiplexión de las señales vídeo y sonoras
C9a6a	Excursion de fréquence crête-à-crête du signal de dispersion d'énergie (MHz)	Peak-to-peak frequency deviation of the energy dispersal waveform (MHz)	Desviación de frecuencia cresta a cresta y la señal de dispersión de energía (MHz)
C9a6b	Fréquence de balayage du signal de dispersion d'énergie (kHz)	Sweep frequency of the energy dispersal waveform (kHz)	Frecuencia de barrido de la señal de dispersión de energía (kHz)
C9a6c	Signal de dispersion d'énergie	Energy dispersal waveform	Señal de dispersión de energía
C9a7	Type de dispersion d'énergie	Type of energy dispersal	Tipo de dispersión de energía
C9a9	Norme de télévision	TV standard	Norma de televisión
C9b1	Caractéristiques de radiodiffusion sonore	Sound-broadcasting characteristics	Características de la radiodifusión sonora
C9b2	Composition de la bande de base	Composition of the baseband	Composición de la banda de base
C10b1	Identité de la station terrienne associée	Identity of the associated earth station	Identidad de la estación terrena asociada
C10b2	Type de station terrienne associée: spécifique [S], type [T] ou radioastronomie [R]	Type of associated earth station: specific [S], typical [T] or radioastronomy [R]	Tipo de la estación terrena asociada: específica [S], tipo [T] o radioastronomía [R]
C10c1	Coordonnées géographiques de l'emplacement de l'antenne	Geographical coordinates of the antenna site	Coordenadas geográficas del emplazamiento de la antena
C10c2	Pays ou zone géographique où est située la station terrienne associée, en utilisant les symboles figurant dans la Préface	Country or geographical area in which the earth station is located, using the symbols from the Preface	País o zona geográfica en que está ubicada la estación terrena asociada; utilizando los símbolos del Prefacio
C10d3	Gain isotrope de l'antenne (dBi)	Isotropic gain of the antenna (dBi)	Ganancia isotropa de la antena (dBi)
C10d4	Ouverture du faisceau (degré)	Beamwidth (degree)	Abertura del haz (grado)
C10d5a1a	Diagramme de rayonnement de référence copolaire pour une station terrienne associée	Co-polar reference radiation pattern of the associated earth station	Diagrama de radiación de referencia copolar para una estación terrena asociada
C10d5a2	Diagramme de rayonnement copolaire pour une station terrienne associée	Co-polar radiation pattern diagram of the associated earth station	Diagrama de radiación copolar para una estación terrena asociada
C10d5b1a	Diagramme de rayonnement de référence contrapolaire pour une station terrienne associée	Cross-polar reference radiation pattern of the associated earth station	Diagrama de radiación de referencia contrapolar para una estación terrena asociada
C10d5b2	Diagramme de rayonnement contrapolaire pour une station terrienne associée	Cross-polar radiation pattern diagram of the associated earth station	Diagrama de radiación contrapolar para una estación terrena asociada
C10d7	Diamètre de l'antenne (m)	Antenna diameter (m)	Diámetro de la antena (m)
C11a1	Numéro de zone de service (GIMS)	Service area no. (GIMS)	Número de zona de servicio (GIMS)
C11a3	Diagramme de zone de service annexe	Service area diagram attachment	Diagrama de la zona de servicio anexo
C11a4	Description détaillée de la zone de service	Narrative description of the service area	Descripción detallada de la zona de servicio
C11a5a	Zone de service définie par un ensemble d'au plus vingt points de mesure	Service area identified by a set of a maximum of twenty test points	Zona de servicio identificada por un conjunto de, como máximo, veinte puntos de prueba
C11a5b	Longitude du point de mesure	Test point longitude	Longitud del punto de prueba
C11a5c	Latitude du point de mesure	Test point latitude	Latitud del punto de prueba
C11a5d	Altitude du point de mesure	Test point altitude	Altitud del punto de prueba
C11a5e	Angle d'élevation minimal (degré)	Minimum elevation angle (degree)	Ángulo de elevación mínimo (grado)
C15a	Description du/des groupe(s) requis dans le cas d'émissions non simultanées	Description of the group(s) required in the case of non-simultaneous emissions	Descripción del grupo o los grupos requeridos en caso de transmisiones no simultáneas

Items	Description	Description	Description
D1a1	Désignation du faisceau de réception	Uplink beam designation	Designación del haz de recepción
D1a2	Désignation du faisceau d'émission	Downlink beam designation	Designación del haz de transmisión
D1a3	Assignation de fréquence sur les liaisons montantes	Uplink assigned frequency	Asignación de frecuencia de enlace ascendente
D1a4	Assignation de fréquence sur les liaisons descendantes	Downlink assigned frequency	Asignación de frecuencia de enlace descendente
2D	Date à partir de laquelle une assignation est prise en compte conformément au Règlement des radiocommunications	Date from which an assignment is taken into account according to the RR	Fecha a partir de la cual una asignación es tomada en cuenta de acuerdo con el RR
BR1	Date de réception	Date of receipt	Fecha de recepción
BR2	Numéro de série de l'administration	Administration serial number	Número de serie de la administración
BR3a	Code de référence de la disposition	Provision reference code	Código de referencia de la disposición
BR3b	B = Appendice 30 / Appendice 30A C = Réseau au stade de la coordination N = Réseau au stade de la notification P = Appendice 30B	B = Appendix 30 / Appendix 30A C = Network in coordination stage N = Network in notification stage P = Appendix 30B	B = Apéndice 30 / Apéndice 30A C = Red en etapa de coordinación N = Red en etapa de notificación P = Apéndice 30B
BR5	Symbole de la zone géographique où est située la station	Symbol of the geographical area in which the station is located	Símbolo de la zona geográfica en que está ubicada la estación
BR6a	Numéro d'identification du réseau à satellite	Identification number of the network	Número de identificación de la red
BR6b	Ancien numéro d'identification du réseau à satellite	Old identification number of the network	Número anterior de la identificación de la red
BR7a	Numéro d'identification du groupe	Identification number of the group	Número de la identificación del grupo
BR20	Numéro de la IFIC	IFIC number	Número de la IFIC
BR21	Partie de la IFIC	Part of the IFIC	Parte de la IFIC
BR25	A = Réseau inscrit dans le Fichier de référence international des fréquences ou pour lequel la demande de coordination a été publiée T = Réseau en cours d'examen	A = Network in MIFR or for which coordination request has been published T = Network under examination	A = Red del Registro o aquella para la que se ha publicado la petición de coordinación T = Red en examen
BR44	Faisceau élémentaire	Beamlet	Haz secundario
BR45	Dégradation maximale de la marge de protection équivalente (Régions 1 et 3) ou dégradation maximale de la marge de protection globale équivalente (Région 2)	Maximum equivalent protection margin degradation (Regions 1 and 3) or maximum overall equivalent protection margin degradation (Region 2)	Degradación máxima de la margen de protección equivalente (Regiones 1 y 3) o degradación máxima de la margen de protección global equivalente (Región 2)
BR49	Zone hydrométéorologique	Rain-climatic zone	Zona hidrometeorológica
BR62	Date d'expiration du délai de mise en service	Expiry date for bringing into use	Fecha de expiración de la puesta en servicio
BR63	Date confirmée de mise en service	Confirmed date of bringing into use	Fecha confirmada de la puesta en servicio
BR64	Date de réception de la première notification soumise au titre de la Résolution 49	Date of receipt of 1st Res49	Fecha de recepción de la primera notificación con arreglo a la Resolución 49
BR65	Date de réception de la notification soumise au titre de la Partie A	Date of receipt of Part A submission	Fecha de recepción de la presentación de la Parte A
BR66	Date d'entrée dans le Plan / la Liste d'un allotissement / d'une assignation	Date of entry into Plan/List of an allotment/assignment	Fecha de entrada en el Plan / la Lista de una adjudicación / de una asignación
BR68	Date de réception de l'échec du lancement	Date of receipt of launch failure	Fecha de recepción del fallo del lanzamiento

Items	描述	Описание	وصف
A1a	卫星网络标识	Название спутниковой сети	هوية الشبكة الساتلية
A1b	规划波束标识	Идентификация луча	هوية الحزمة
A1f1	通知主管部门 (参见前言的表1)	Заявляющая администрация (См. Таблицу 1 Предисловия)	الإدارة للبلغة (انظر الجدول 1 في المقدمة)
A1f2	如代表一组主管部门提交该通知，则应列出提交卫星网络资料的该组每个主管部门的代号 (见前言)	Если заявка представлена от имени группы администраций, обозначение каждой администрации в группе представившей сведения о спутниковой сети (см. Предисловие)	إذا كانت البطاقة مقدمة باسم مجموعة إدارات، يبين رمز كل إدارة في المجموعة التي تقدم للمعلومات الخاصة بالشبكة الساتلية (انظر المقدمة)
A1f3	政府间卫星组织	Межправительственная спутниковая организация	منظمة ساتلية دولية حكومية
A2a	启用日期	Дата ввода в действие	تاريخ الدخول في الخدمة
A3a	操作机构 (参见前言表12A/12B)	Эксплуатирующая компания (См. Таблицу 12A/12B Предисловия)	وكالة التشغيل (انظر الجدول 12B/12A في المقدمة)
A3b	识别台站负责主管部门的代号 (参见前言表12A/12B)	Обозначение, идентифицирующее ответственную за станцию администрацию (См. Таблицу 12A/12B Предисловия)	الرمز المعرف لإدارة المسؤولة عن المحطة (انظر الجدول 12B/12A في المقدمة)
A4a1	对地静止空间电台的标称经度(度)	Номинальная долгота геостационарной космической станции (градусы)	خط الطول الاسمي للمحطة الفضائية المستقرة بالنسبة إلى الأرض (بالدرجات)
A4a2a	规划经度容限的东端限值	Планируемый предел допуска по долготе с востока	التفاوت المسموح به في خط الطول في اتجاه الشرق
A4a2b	规划经度容限的西端限值	Планируемый предел допуска по долготе с запада	التفاوت المسموح به في خط الطول في اتجاه الغرب
A6	协调资料、参照的无线电规则条款、附录或决议 (前言的表11)	Информация о координации, ссылка на положение РР, приложение или резолюцию (Таблица 11 Предисловия)	معلومات التنسيق، إحالة إلى حكم في لوائح الراديو، أو إلى تعديل أو زار (الجدول 11 في المقدمة)
A11a	起始时间 协调世界时	Время начала UTC	ساعة البدء بالتوقيت العالمي المنسق
A11b	终止时间 协调世界时	Время остановки UTC	ساعة النهاية، بالتوقيت العالمي المنسق
A12	自动增益控制范围 (dB)	Диапазон автоматической регулировки усиления (дБ)	مدى التحكم الأوتوماتي في الكسب (dB)
B1a	卫星天线波束的标识	Название луча спутниковой антенны	تسمية حزمة هوائي الساتل
B1b	表示B.1.a项下天线波束是固定还是可控 (可再配置) 的旗标	Маркер, показывающий, является ли луч антенны, согласно п. B.1.a, фиксированным или ориентируемым (с перестраиваемой конфигурацией)	مؤشر يبين ما إذا كانت حزمة الهوائي المذكورة في B1a ثابتة أم قابلة للتوجيه (مع إمكانية إعادة تشكيلها)
B2	发射/接收指示器	Указатель передачи/приема	مؤشر الإرسال/الاستقبال
B3a1	最大同极各向同性天线 (dBi)	Максимальное кополярное изотропное усиление антенны (дБи)	الكسب للنتاحي الأقصى متحدا الاستقطاب للهوائي (dBi)
B3a2	最大交叉极各向同性天线 (dBi)	Максимальное кроссполярное изотропное усиление антенны (дБи)	الكسب للنتاحي الأقصى متقاطع الاستقطاب للهوائي (dBi)
B3b1	同极天线增益等值线图	Диаграмма контуров кополярного усиления антенны	مخطط أكتة الكسب متحدا الاستقطاب للهوائي
B3b2	交叉极天线增益等值线图	Диаграмма контуров кроссполярного усиления антенны	مخطط أكتة الكسب متقاطع الاستقطاب للهوائي
B3c1a1	同极参考辐射图	Эталонная диаграмма кополярной направленности	مخطط الإشعاع المرجعي متحدا الاستقطاب للهوائي
B3c2a1	同极参考辐射图	Эталонная диаграмма кроссполярной направленности	مخطط الإشعاع المرجعي متقاطع الاستقطاب للهوائي
B3d	指向精度 (度)	Точность наведения (градусы)	دقة التسديد (بالدرجات)
B3e	天线增益与轨道经度图	Диаграмма усиления антенны по отношению к долготе орбиты	مخطط كسب الهوائي بدلالة خط طول المدار
B3f1	天线波束中心线或瞄准点 (经度和纬度)	Визирование или точка прицеливания луча антенны (долгота и широта)	خط التنسديد أو نقطة التسديد لحزمة الهوائي (خط الطول والعرض)
B3f2a	旋转精度 (度)	Точность вращения (градусы)	دقة الدوران (بالدرجات)

Items	描述	Описание	وصف
B3f2b	主轴方向 (度)	Направление большой оси (градусы)	اتجاه المحاور الكبير (بالدرجات)
B3f2c	主轴 (度)	Большая ось (градусы)	المحاور الكبير (بالدرجات)
B3f2d	短轴 (度)	Малая ось (градусы)	المحاور الصغير (بالدرجات)
C2a1	指定频率	Присвоенная частота	التردد المخصص
C2a2	信道号	Номер канала	رقم القناة
C3a	指定频带 (kHz)	Присвоенная полоса частот (kHz)	نطاق الترددات المخصص (kHz)
C4a	台站等级 (参见前言的表3)	Класс станции (см. Таблицу 3 Предисловия)	صنف المحطة (انظر الجدول 3 في المقدمة)
C5a	一空间台站接收系统的噪声温度 (Kelvin)	Шумовая температура приемной системы (Кельвин) в случае космической станции	درجة حرارة الضوضاء في نظام الاستقبال (كلفن) في حالة محطة فضائية
C6a	极化类型 (参见前言的表5)	Тип поляризации (см. Таблицу 5 Предисловия)	نمط الاستقطاب (انظر الجدول 5 في المقدمة)
C6b	极化角 (度) (参见前言的表5)	Угол поляризации (градусы) (см. Таблицу 5 Предисловия)	زاوية الاستقطاب (بالدرجات) (انظر الجدول 5 في المقدمة)
C7a	发射标识	Название излучения	تسمية الإرسال
C8b1	供给天线的最大功率 (dBW)	Максимальная мощность, подаваемая к антенне (dBW)	القدرة القصوى المقدمة للهوائي (dBW)
C8b2	最大功率密度 (dB(W/Hz))	Максимальная плотность мощности (dB(W/Hz))	الكثافة القصوى للقدرة (dB(W/Hz))
C8h	根据必要带宽平均的、以dB(W/Hz)计的提供给天线输入的每赫兹最大功率密度	Среднее значение максимальной плотности мощности на Гц на входе антенны в dB(W/Hz), установленное на основе необходимой ширины полосы	القيمة المتوسطة لكثافة القدرة القصوى لكل هرتز (dB(W/Hz)) المقدمة عند مدخل الهوائي والحسوبة على عرض النطاق اللازم
C8i	功率控制范围 (dB)	Диапазон регулировки мощности (dB)	مدى التحكم في القدرة (dB)
C9	有关调制特性的资料	Информация о характеристиках модуляции	معلومات عن خصائص التشكيل
C9a1	调制类型	Тип модуляции	نمط التشكيل
C9a3a	频率偏移 (MHz/V)	Частотное отклонение (MHz/V)	انحراف التردد (MHz/V)
C9a3b	预加重特性	Характеристики предрыважения	خصائص التشديد المسبق
C9a3c	视频和音频信号复用类型	Тип уплотнения видео- и звуковых сигналов	نمط تعدد الإرسال لإشارات الصورة والصوت
C9a6a	能量扩散波形的峰间频偏 (MHz)	Полный размах частотного отклонения сигнала рассеяния энергии (MHz)	انحراف التردد من ذروة إلى ذروة لإشارة تشتت الطاقة (MHz)
C9a6b	能量扩散波形的峰间扫频 (kHz)	Частота качания сигнала рассеяния энергии (kHz)	تردد المسح لإشارة تشتت الطاقة (kHz)
C9a6c	能量扩散波形	Сигнал рассеяния энергии	إشارة تشتت الطاقة
C9a7	能量扩散类型	Тип рассеяния энергии	نمط تشتت الطاقة
C9a9	电视标准	ТВ стандарт	معييار تلفزيوني
C9b1	声音-广播特性	Характеристики звукового радиовещания	خصائص الإذاعة الصوتية
C9b2	基带合成	Структура основной полосы	تكوين النطاق الأساسي
C10b1	关联地球站名称	Название взаимодействующей земной станции	اسم المحطة الأرضية للمصاحبة
C10b2	关联地球站的类型: 特定 [S], 典型 [T] 或射电天文 [R]	Тип взаимодействующей земной станции: специфическая [S], типовая [T] или радиоастрономическая [R]	نمط المحطة الأرضية للمصاحبة: خاصة [S] أو نموذجية [T] أو للمفلك الراديوي [R]
C10c1	天线所在地的地理坐标	Географические координаты местоположения антенны	الإحداثيات الجغرافية لموقع الهوائي
C10c2	地球站所在的国家或地理区域, 采用前言中的代号	Страна или географическая зона, в которой расположена земная станция, с использованием обозначений из Предисловия	البلد أو المنطقة الجغرافية حيث توجد المحطة الأرضية للمصاحبة, باستخدام الرموز الواردة في المقدمة

Items	描述	Описание	وصف
C10d3	天线全向增益 (dBi)	Изотропное усиление антенны (дБи)	الكسب للتناحي للهوائي (dBi)
C10d4	波束宽度 (度)	Ширина луча (градусы)	فتحة الحزمة (بالدرجات)
C10d5a1a	关联地球站同极参考辐射图	Эталонная диаграмма кополярной направленности взаимодействующей земной станции	مخطط الإشعاع المرجعي منحنى الاستقطاب للمحطة الأرضية للمصاحبة
C10d5a2	关联地球站的同极辐射方式图	Диаграмма кополярной направленности взаимодействующей земной станции	مخطط الإشعاع منحنى الاستقطاب للمحطة الأرضية المصاحبة
C10d5b1a	关联地球站的同极参考辐射图	Эталонная диаграмма кроссполярной направленности взаимодействующей земной станции	مخطط الإشعاع منقطاعات الاستقطاب للمحطة الأرضية للمصاحبة
C10d5b2	关联地球站的同极辐射方式图	Диаграмма кроссполярной направленности взаимодействующей земной станции	مخطط الإشعاع منقطاعات الاستقطاب للمحطة الأرضية للمصاحبة
C10d7	天线直径 (米)	Диаметр антенны (м)	قطر الهوائي (بالمتر)
C11a1	业务区编号 (GIMS)	Номер зоны обслуживания (GIMS)	رقم منطقة الخدمة (GIMS)
C11a3	业务区图附件	Диаграмма смежной зоны обслуживания	للحفظ للرفق لمنطقة الخدمة
C11a4	业务区描述	Детальное описание зоны обслуживания	وصف دقيق لمنطقة الخدمة
C11a5a	以最多达20个测试点识别的业务区	Зона обслуживания, определенная совокупностью из максимум двадцати точек измерения	منطقة الخدمة محددة بعدد لا يزيد على 20 نقطة قياس
C11a5b	测试点经度	Долгота точки измерения	خط طول نقطة القياس
C11a5c	测试点纬度	Широта точки измерения	خط عرض نقطة القياس
C11a5d	测试点高度	Высота точки измерения	ارتفاع نقطة القياس
C11a5e	最小仰角 (度)	Минимальный угол места (градусы)	زاوية الارتفاع الدنيا (بالدرجات)
C15a	非同时发射情况下的组描述	Описание группы/групп, требуемое в случае неодновременный излучений	وصف الحزمة (الزم) اللازمة في حالة الإرسالات غير المتأوتنة
D1a1	上行链路波束标识	Название луча линии вверх	تسمية حزمة الاستقبال
D1a2	下行链路波束标识	Название луча линии вниз	تسمية حزمة الإرسال
D1a3	上行链路指配频率	Присвоенная частота линии вверх	تخصيص التردد على الوصلات الصاعدة
D1a4	下行链路指配频率	Присвоенная частота линии вниз	تخصيص التردد على الوصلات الهابطة
2D	根据无线电规则开始考虑一指配日期	Дата, с которой присвоение учитывается в соответствии с положениями PP	التاريخ الذي يراعى اعتباراً منه تخصيص ما طبقاً للوائح الراديو
BR1	接收日期	Дата получения	تاريخ الاستلام
BR2	主管部门序列号	Серийный номер администрации	رقم التسلسل للإدارة
BR3a	条款参考码	Код ссылки на положение	رمز يشير إلى الحكم
BR3b	B 附录30 / 附录30A C 协调阶段的网络 N 通知阶段的网络 P 附录 30B	B = Приложение30/Приложение 30A C = сеть на стадии координации N = сеть на стадии заявления P = Приложение 30B	B = التذييل /30 التذييل 30A C = شبكة في مرحلة التنسيق N = شبكة في مرحلة التبليغ P = التذييل 30 B
BR5	台站所在地理位置的代号	Обозначение географической зоны, в которой расположена станция	رمز المنطقة الجغرافية التي توجد فيها المحطة
BR6a	网络识别号	Идентификационный номер сети	رقم تعريف هوية الشبكة الساتلية
BR6b	网络的旧识别号	Предыдущий идентификационный номер сети	الرقم السابق لتعريف هوية الشبكة الساتلية

Items	描述	Описание	وصف
BR7a	该组的识别号	Идентификационный номер группы	رقم تعريف هوية المجموعة
BR20	国际频率信息通报的编号	Номер ИФИК	رقم النشرة الإعلامية الدولية للترددات
BR21	国际频率信息通报的部分	Часть ИФИК	الجزء المعين من النشرة الإعلامية الدولية للترددات
BR25	A 国际频率登记总表中的网络或已公布了其协调要求的网络 T 正在审查的网络	A = сеть, записанная в МСРЧ или для которой был опубликован запрос на координацию T = сеть на стадии рассмотрения	A = شبكة مدرجة في السجل الأساسي الدولي للترددات أو شبكة / نشر طلب التنسيق بشأنها. = شبكة تخضع للتفحص حالياً.
BR44	小波束	Составляющий луч	حزمة ثانوية
BR45	最大等效保护边缘衰减 (1区和3区)或最大等效保护边缘衰减 (2区)	Максимальное ухудшение эквивалентного защитного запаса (Районы 1 и 3) или максимальное ухудшение общего эквивалентного защитного запаса (Район 2)	أقصى انخفاض في هوامش الحماية للكافة (الإقليمان 1 و3) أو أقصى انخفاض في هوامش الحماية الإجمالية للكافة (الإقليم 2)
BR49	雨候区	Дождевая климатическая зона	منطقة مناخ مطري
BR62	启用截止日期	Дата истечения срока для ввода в действие	تاريخ انتهاء الوضع في الخدمة
BR63	经确认的启用日期	Подтвержденная дата для ввода в действие	تاريخ موكد للوضع في الخدمة
BR64	收到第一个Res49的日期	Дата получения первой Рез49	تاريخ استلام أول تبليغ بموجب القرار 49
BR65	收到A部分提交的日期	Дата получения заявки по Части A	تاريخ استلام التبليغ بموجب الجزء A
BR66	登入规划 / 一分配清单 / 指配清单的日期	Дата записи в Плане/Списке выделения/присоединя	تاريخ إدراج تعيين/تخصيص في الخطة/القائمة
BR68	收到发射失败信息的日期	Дата получения отказа в запуске	تاريخ استلام التبليغ بنشل الاطلاق

A A1a Sat. Network QUBTSAT-77 A1f1 Notifying adm. MEX A1f3 Inter. sat. org. BR1 Date of receipt 18.10.2006 BR20/BR21 IFIC no./part 2590/
 BR6a/BR6b Id. no. 106555010 BR3a/BR3b Provision reference 4.2.6 B BR2 Adm. serial no. A CAUR R

A1b Plan beam identification
 A1f2 Submitted on behalf
 A4a1 Orbital long. 77 W A4a2a East Long. tolerance limit 0.1 A4a2b West Long. tolerance limit 0.1
 A11a Start time UTC 0 A11b Stop time UTC 24

B1a Beam designation CAUR B1b Steerable Y B2 Emi-Rcp R B3a1 Max. co-polar gain 35 B3a2 Max. cross-polar gain 5
 B3b1 Co-polar ant. gain contours diag. B3b2 Cross-polar ant. gain contours diag. B3e Ant. gain vs orbit long. diag. B3f Boresight or aim point 81.08 W 10.56 N

BR7a Group id. 12105 BR1 Date of receipt 18.10.2006 2D Date of protection 18.10.2006
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 17.10.2014 BR64 Date of receipt of 1st Res49
 C4a Class of station EC C3a Assigned freq. band 24000 C5a Noise temperature 650
 C6a Polarization type CL C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle 5 C11a3 Service area diagram

C11a5a Test points										
C11a5b Longitude	-122.42	-122.32	-112.05	-110.97	-107.4	-104.82	-101.32	-100.33	-99.17	-98.5
C11a5c Latitude	37.77	47.6	33.5	29.07	24.8	41.15	48.27	25.67	19.42	29.42
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	D	D	E	E	M	E	E	M	N	M

C11a5a Test points										
C11a5b Longitude	-90.52	-89.62	-87.75	-87	-86.3	-84.07	-80.19	-79.51	-77	-71.05
C11a5c Latitude	14.63	20.97	41.83	32.73	12.1	9.98	25.77	8.96	38.92	42.35
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	N	N	K	M	P	P	N	P	K	K

Associated typical earth station antenna characteristics					
C10d3 Max. iso. gain	C10d4 Bmwidth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter	
60.31	0.17	R2TES	R2TES	7	

C2a1 Assigned frequency / C2a2 Channel number																				
17.33858	GHz	2	17.42606	GHz	8	17.51354	GHz	14	17.60102	GHz	20	17.6885	GHz	26	17.77598	GHz	32			
17.36774	GHz	4	17.45522	GHz	10	17.5427	GHz	16	17.63018	GHz	22	17.71766	GHz	28						
17.3969	GHz	6	17.48438	GHz	12	17.57106	GHz	18	17.65934	GHz	24	17.74682	GHz	30						

C7a Design. of emission	C8b1 Max. peak pwr	Maximum Power density per Hz over ...		C8i Power control
		C8b2 1 MHz	C8i Necessary bandwidth	
24M0G7W-	26.7	-47.1	-47.1	3.3

A12 Range of automatic gain control 12

BR7a Group id. 12106 BR1 Date of receipt 18.10.2006 2D Date of protection 18.10.2006
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 17.10.2014 BR64 Date of receipt of 1st Res49
 C4a Class of station EC C3a Assigned freq. band 24000 C5a Noise temperature 650
 C6a Polarization type CR C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle 5 C11a3 Service area diagram



A A1a Sat. Network A1f1 Notifying adm. A1f3 Inter. sat. org. BR1 Date of receipt BR20/BR21 IFC no./part
 BR6a/BR6b Id. no. BR3a/BR3b Provision reference BR2 Adm. serial no. CAUR

C11a5a Test points are identical to group id.
 Associated typical earth station antenna characteristics are identical to group id.

C2a1 Assigned frequency / C2a2 Channel number																				
17.324	GHz	1	17.41148	GHz	7	17.49896	GHz	13	17.58644	GHz	19	17.67392	GHz	25	17.7614	GHz	31			
17.35316	GHz	3	17.44064	GHz	9	17.52812	GHz	15	17.6156	GHz	21	17.70308	GHz	27						
17.38232	GHz	5	17.4698	GHz	11	17.55728	GHz	17	17.64476	GHz	23	17.73224	GHz	29						

C7a/C8 Designations of emissions and power characteristics are identical to group id.
 A12 Range of automatic gain control

BR7a Group id. BR1 Date of receipt 2D Date of protection
 A2a Date of bringing into use A3a Op. agency A3b Adm. resp. C15a Exclusive op. group
 BR62 Expiry date for bringing into use BR64 Date of receipt of 1st Res49
 C4a Class of station C3a Assigned freq. band C5a Noise temperature
 C6a Polarization type C6b Polarization angle
 C11a1 Service area no. C11a4 Service area name C11a5e Min. elev. angle C11a3 Service area diagram
 C11a5a Test points are identical to group id.

Associated typical earth station antenna characteristics					
C10d3 Max. iso. gain	C10d4 Bmwdth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter	
65.69	0.09	R2TES	R2TES	13	

C2a1 Assigned frequencies are identical to group id.

C7a Design. of emission	C8b1 Max. peak pwr	Maximum Power density per Hz over ...		C8i Power control
		C8b2 1 MHz	C8h Necessary bandwidth	
24M0G7W-	21.3	-52.5	-52.5	8.7

A12 Range of automatic gain control

BR7a Group id. BR1 Date of receipt 2D Date of protection
 A2a Date of bringing into use A3a Op. agency A3b Adm. resp. C15a Exclusive op. group
 BR62 Expiry date for bringing into use BR64 Date of receipt of 1st Res49
 C4a Class of station C3a Assigned freq. band C5a Noise temperature
 C6a Polarization type C6b Polarization angle
 C11a1 Service area no. C11a4 Service area name C11a5e Min. elev. angle C11a3 Service area diagram
 C11a5a Test points are identical to group id.

Associated typical earth station antenna characteristics are identical to group id.

C2a1 Assigned frequencies are identical to group id.

C7a/C8 Designations of emissions and power characteristics are identical to group id.

A12 Range of automatic gain control



A A1a Sat. Network QUETZSAT-77 A1f1 Notifying adm. MEX A1f3 Inter. sat. org. BR1 Date of receipt 18.10.2006 BR20/BR21 IFC no./part 2590/
 BR6a/BR6b Id. no. 106555010 BR3a/BR3b Provision reference 4.2.6 B BR2 Adm. serial no. A CADR E

B1a Beam designation CADR B1b Steerable Y B2 Emi-Rcp E B3a1 Max. co-polar gain 37 B3a2 Max. cross-polar gain 7
 B3b1 Co-polar ant. gain contours diag. B3b2 Cross-polar ant. gain contours diag. B3f1 Boresight or aim point 81.08 W 10.56 N

BR7a Group id. 12109 BR1 Date of receipt 18.10.2006 2D Date of protection 18.10.2006
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 17.10.2014 BR64 Date of receipt of 1st Res49

C4a Class of station EV C3a Assigned freq. band 24000
 C6a Polarization type CL C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle C11a3 Service area diagram

C11a5a Test points										
C11a5b Longitude	-122.42	-122.32	-112.05	-110.97	-107.4	-104.82	-101.32	-100.33	-99.17	-98.5
C11a5c Latitude	37.77	47.6	33.5	29.07	24.8	41.15	48.27	25.67	19.42	29.42
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	D	D	E	E	M	E	E	M	N	M

C11a5a Test points										
C11a5b Longitude	-90.52	-89.62	-87.75	-87	-86.3	-84.07	-80.19	-79.51	-77	-71.05
C11a5c Latitude	14.63	20.97	41.83	32.73	12.1	9.98	25.77	8.96	38.92	42.35
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	N	N	K	M	P	P	N	P	K	K

Associated typical earth station antenna characteristics				
C10d3 Max. iso. gain	C10d4 Bmwidth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter
33	3.75	MODRES	MODRES	0.45

C2a1 Assigned frequency / C2a2 Channel number																	
12.23858	GHz	2	12.32606	GHz	8	12.41354	GHz	14	12.50102	GHz	20	12.5885	GHz	26	12.67598	GHz	32
12.26774	GHz	4	12.35522	GHz	10	12.4427	GHz	16	12.53018	GHz	22	12.61766	GHz	28			
12.2969	GHz	6	12.38438	GHz	12	12.47186	GHz	18	12.55934	GHz	24	12.64682	GHz	30			

C7a	C8b1	Maximum Power density per Hz over ...	
Design. of emission	Max. peak pwr	C8b2 4 kHz	C8b Necessary bandwidth
24M0G7W--	22	-51.8	-51.8

BR7a Group id. 12110 BR1 Date of receipt 18.10.2006 2D Date of protection 18.10.2006
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 17.10.2014 BR64 Date of receipt of 1st Res49

C4a Class of station EV C3a Assigned freq. band 24000
 C6a Polarization type CR C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle C11a3 Service area diagram

C11a5a Test points are identical to group id. 12109
 Associated typical earth station antenna characteristics are identical to group id. 12109



A A1a Sat. Network A1f1 Notifying adm. A1f3 Inter. sat. org. BR1 Date of receipt BR20/BR21 IFIC no./part
 BR6a/BR6b Id. no. BR3a/BR3b Provision reference BR2 Adm. serial no. CADR

C2a1 Assigned frequency / C2a2 Channel number																				
12.224	GHz	1	12.31148	GHz	7	12.39896	GHz	13	12.48644	GHz	19	12.57392	GHz	25	12.6614	GHz	31			
12.25316	GHz	3	12.34064	GHz	9	12.42812	GHz	15	12.5156	GHz	21	12.60308	GHz	27						
12.28232	GHz	5	12.3698	GHz	11	12.45728	GHz	17	12.54476	GHz	23	12.63224	GHz	29						

C7a/C8 Designations of emissions and power characteristics are identical to group id.

BR7a Group id. BR1 Date of receipt 2D Date of protection
 A2a Date of bringing into use A3a Op. agency A3b Adm. resp. C15a Exclusive op group
 BR62 Expiry date for bringing into use BR64 Date of receipt of 1st Res49
 C4a Class of station C3a Assigned freq. band
 C6a Polarization type C6b Polarization angle
 C11a1 Service area no. C11a4 Service area name C11a5e Min. elev. angle
 C11a3 Service area diagram
 C11a5a Test points are identical to group id.

Associated typical earth station antenna characteristics				
C10d3 Max. iso. gain	C10d4 Bmwidth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter
45.04	0.94	MODRES	MODRES	1.8

C2a1 Assigned frequencies are identical to group id.

C7a Design. of emission	C8b1 Max. peak pwr	Maximum Power density per Hz over ...	
		C8b2 4 kHz	C8b Necessary bandwidth
24M0G7W--	11	-62.8	-62.8

BR7a Group id. BR1 Date of receipt 2D Date of protection
 A2a Date of bringing into use A3a Op. agency A3b Adm. resp. C15a Exclusive op group
 BR62 Expiry date for bringing into use BR64 Date of receipt of 1st Res49
 C4a Class of station C3a Assigned freq. band
 C6a Polarization type C6b Polarization angle
 C11a1 Service area no. C11a4 Service area name C11a5e Min. elev. angle
 C11a3 Service area diagram
 C11a5a Test points are identical to group id.
 Associated typical earth station antenna characteristics are identical to group id.
 C2a1 Assigned frequencies are identical to group id.
 C7a/C8 Designations of emissions and power characteristics are identical to group id.

A	A1a Sat. Network	QUTZSAT-77	A1f1 Notifying adm.	MEX	A1f3 Inter. sat. org.		BR1 Date of receipt	18.10.2006	BR20/BR21 IFIC no./part	2590/
	BR6a/BR6b Id. no.	106555010	BR3a/BR3b Provision reference	4.2.6	B		BR2 Adm. serial no.	A	CADR	B

C9 Modulation characteristics	C7a Designation of emission 24M0G7W--
C9a1 Type of modulation	MDP-4 QPSK MDPQ QPSK KPMH QPSK
C9a3a Freq. deviation of the pre-emphasized signal	
C9a3b Pre-emphasis characteristics	
C9a3c Type of multiplexing	MRT TDM MDT TDM BPK TDM
C9a6a Peak-to-peak freq. dev.	
C9a6b Sweep frequency	
C9a6c Energy dispersal waveform	
C9a7 Type of energy dispersal	La porteuse subit toujours un effet d'étalement du spectre dû a la présence du flux numérique Carrier always spread by digital stream Portadora dispersada siempre por tren digital 载波总是通过数字流扩展 Несущая всегда распределяется по цифровым потокам موجة حاملة تحت تأثير دائم لتمديد الطيف الناجم عن التدفق الرقمي
C9a9 TV standard	DVB DVB DVB DVB DVB DVB
C9b1 Sound-broadcasting	Numérique Digital Digital 数字 Цифровой رقمي
C9b2 Baseband	Vidéo, audio et données Video, audio and data Video, audio y datos 视频、音频和数据 Видео, звук и данные فيديو وسمعي ومعطيات
BR7a Group id.	12105, 12106, 12107, 12108, 12109, 12110, 12111, 12112

A	A1a Sat. Network	QUBZSAT-77	A1f1 Notifying adm.	MEX	A1f3 Inter. sat. org.		BR1 Date of receipt	18.10.2006	BR20/BR21 IFC no./part	2590/
	BR6a/BR6b Id. no.	106555010	BR3a/BR3b Provision reference	4.2.6	B		BR2 Adm. serial no.	A	CADR	E

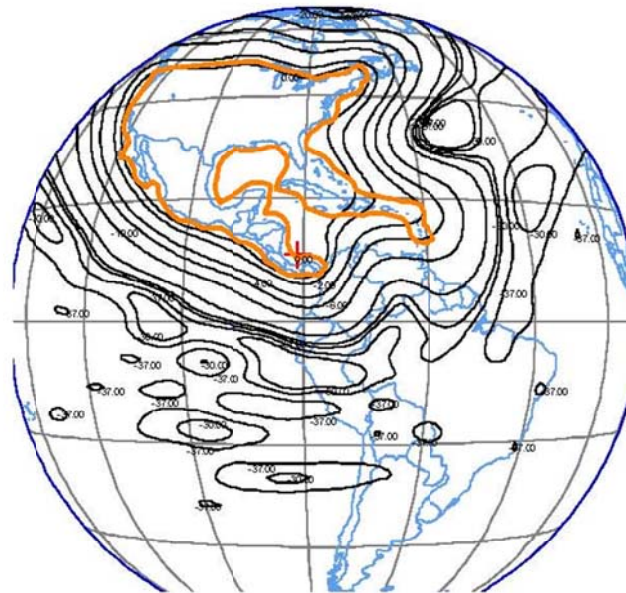
D1a1		D1a2		BR7a		D1a3		D1a4		D1a3		D1a4			
Beam designation				Group id.				Assigned frequency				Channel			
Feeder-link		Downlink		Feeder-link		Downlink		Feeder-link		Downlink		Feeder-link		Downlink	
CAUR		CADR													
Connexion de chaque canal de la liaison descendante au même canal de la liaison de connexion Connection of each downlink channel to the same feeder link channel Conexión de cada canal del enlace descendente al mismo canal del enlace de conexión 每一下行链路信道与相同馈线链路信道的连接 Соединение каждого нисходящего канала связи с таким же каналом фидерной линии توصيل كل قناة للوصلة الهابطة إلى نفس القناة لوصلة التغذية															



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ZONE DE SERVICE ET CONTOURS (COPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA
ZONA DE SERVICIO Y CONTORNOS (COPOLARES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL
空间台站发射天线增益等值线(同极)和业务区
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
منطقة الخدمة وأكفة الكسب (متحد الاستقطاب) طوائف الإرسال للمحطة الفضائية

QUETZSAT-77 (77° W)
Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CADR
Gmax: 37 dBi



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания / منطقة الخدمة : SERVICE (No. 01)

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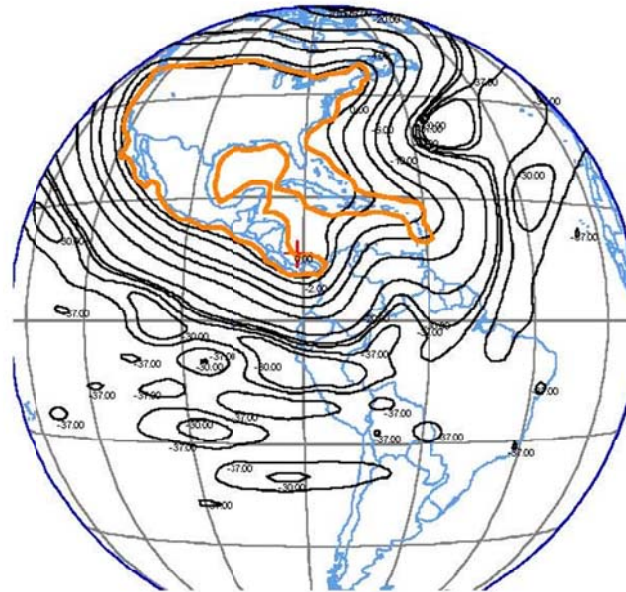
Figure / Figura / 图 / Рисунок / 2 الشكل

ZONE DE SERVICE ET CONTOURS (COPOLAIRES) DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA
ZONA DE SERVICIO Y CONTORNOS (COPOLARES) DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL
空间台站接收天线增益等值线(同极)和业务区
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
منطقة الخدمة وأكفة الكسب (متحد الاستقطاب) لوائي الاستقبال للمحطة الفضائية

QUETZSAT-77 (77° W)

Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CAUR

Gmax: 35 dBi



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания / منطقة الخدمة : SERVICE (No. 01)

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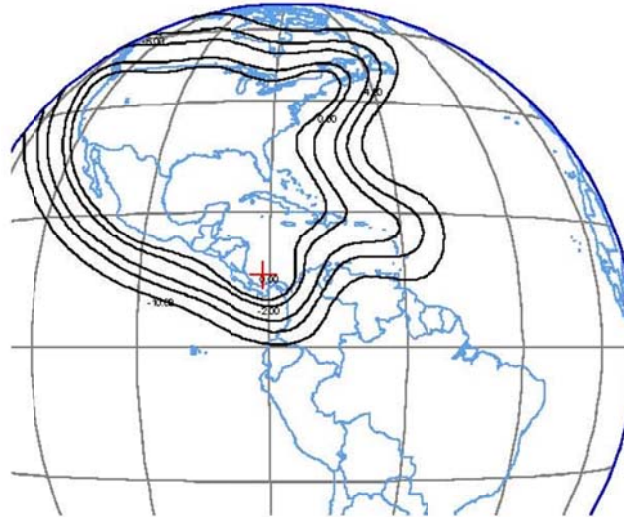
Figure / Figura / 图 / Рисунок / 3 الشكل

CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CROSS-POLAR)
CONTORNOS (CONTRAPOLARES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL
空间台站发射天线增益等值线(交叉极)
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
أكفة الكسب (متقاطعة الاستقطاب) طوائف الإرسال للمحطة الفضائية

QUETZSAT-77 (77° W)

Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CADR

Gmax: 7 dBi



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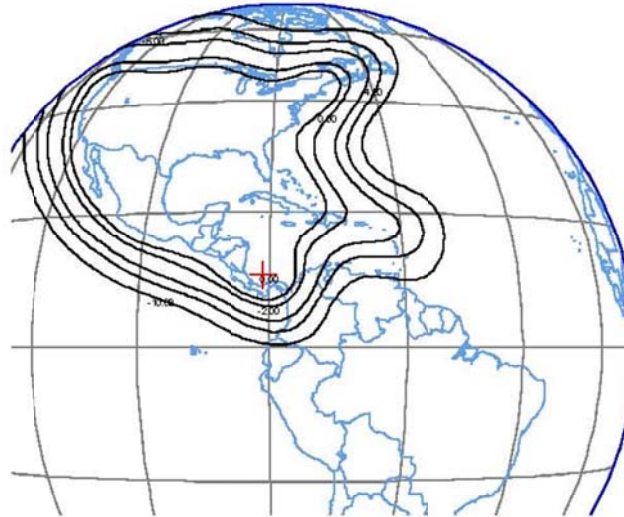
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CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS (CROSS-POLAR)
CONTORNOS (CONTRAPOLARES) DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL
空间台接收天线增益等值线 (交叉极)
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
أكفة الكسب (متقاطعة الاستقطاب) لطوائي الاستقبال للمحطة الفضائية

QUETZSAT-77 (77° W)
Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CAUR
Gmax: 5 dBi



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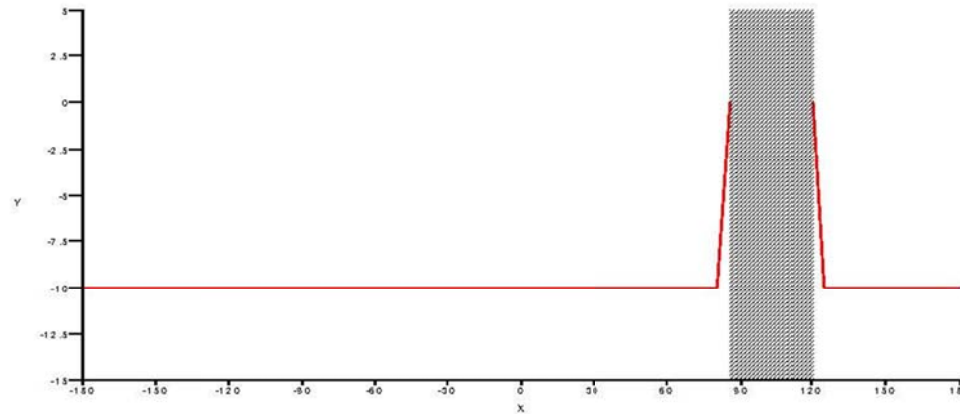
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GAIN ESTIME DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES
 ESTIMATED GAIN OF THE SPACE STATION TRANSMITTING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT
 GANANCIA ESTIMADA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELITES GEOESTACIONARIOS
 对地静止卫星轨道方向的空间台站发射天线估算增益
 РАСЧЕТНОЕ УСИЛЕНИЕ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ
 الكسب المقدر لعوائي الإرسال للمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

QUETZSAT-77 (77° W)
 Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CADR



X = Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y = Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dBi)	Усиление (дБ)	الكسب (dBi)
Obstructed Zone	Zone Occultée	Zona Ocultada	受阻区	Закрытая зона	منطقة محجوبة

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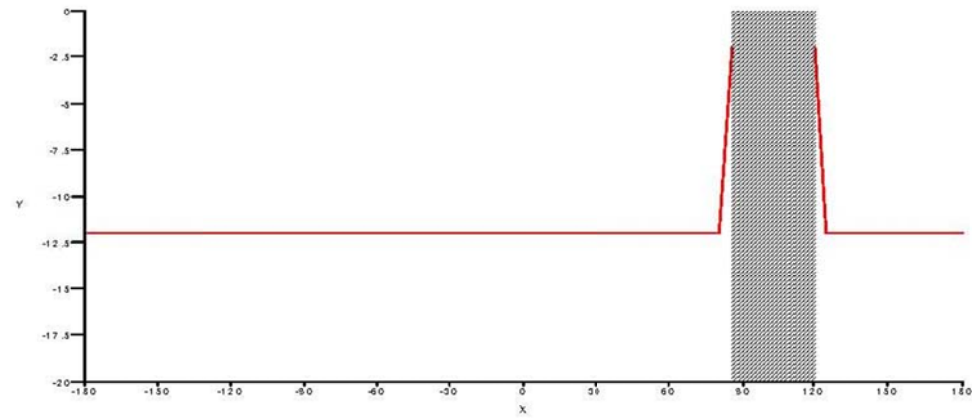
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Figure / Figura / 图 / Рисунок / 6 الشكل

GAIN ESTIME DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORbite DES SATELLITES GEOSTATIONNAIRES
 ESTIMATED GAIN OF THE SPACE STATION RECEIVING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT
 GANANCIA ESTIMADA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELLITES GEOESTACIONARIOS
 对地静止卫星轨道方向的空间台站接收天线估算增益
 РАСЧЕТНОЕ УСИЛЕНИЕ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ
 الكسب المقدر هوائي الاستقبال لمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

QUETZSAT-77 (77° W)
Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CAUR



X = Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y = Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dBi)	Усиление (дБ)	الكسب (dBi)
Obstructed Zone	Zone Occultée	Zona Ocultada	受阻区	Закрытая зона	منطقة محجوبة

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Administrations et/ou réseaux à satellite affectés / Affected administrations and/or satellite networks / Administraciones y/o redes de satélite afectadas / 受影响的主管部门和/或卫星网络 / Затронутые администрации и/или спутниковые сети / الإدارات و/أو الشبكات الساتلية المتأثرة

A1f1 Notifying adm.	A1f3 Inter. sat. org.	A1a Sat. Network / A1b Plan beam identification	BR6a id. no.	A4a1 Orbital long.	BR45 Max. EPM/OEPM degradation	
App.30 Art.4, §4.2.3 c) - Annexe 1, §2 et App.30A Art.4, §4.2.2 c) - Annexe 1 §3 App.30 Art.4, §4.2.3 c) - Annexe 1, §2 and App.30A Art.4, §4.2.2 c) - Annexe 1, §3 Ap.30 Art.4, §4.2.3 c) - Anexo 1, §2 y Ap.30A Art.4, §4.2.2 c) - Anexo 1, §3 附录30第4条, §4.2.3 c)段 - 附件1, 第2段和附录30A第4条, §4.2.2 c)段 - 附件1, 第3段 Пр. 30 Ст. 4, п. 4.2.3 c) – Дополнение 1, п. 2 Пр. 30А Ст. 4, п. 4.2.2 c) – Дополнение 1, п. 3 الفقرة 3.2.4 ج) من المادة 4 من التبديل 30 - الفقرة 2 من الملحق 1 والفقرة 2.2.4 ج) من المادة 4 من التبديل 30A - الفقرة 3 من الملحق 1						
ATG		ATGSJN01	86550011	79.7 W	7.564	
BAH		BAHIFR1	86550038	87.2 W	1.240	
CAN		CAN01606	86550069	70.7 W	1.026	
		CAN01606	86550070	70.3 W	1.325	
		CAN03606	86550095	70.7 W	1.027	
		CAN03606	86550096	70.3 W	1.255	
		CAN-BSS1	96555002	82 W	5.553	
		CAN-BSS1X	106555001	82 W	5.391	
		CAN-BSS2	96555003	91.1 W	0.778	
		CAN-BSS2X	106555002	91.1 W	0.798	
		CAN-BSS3	96555010	72.7 W	5.311	
		CAN-BSS6	103555006	72.7 W	4.790	
		CAN-BSS7	105555004	129 W	0.259	
	CUE		CUE00001	86550109	89.2 W	0.696
	DMA		DMAIFR1	86550111	79.3 W	6.878
DOM		DOMIFR2	86550112	83.3 W	3.538	
F		SPMFRAN3	86550160	53.2 W	0.256	
G		INTELSAT KUEXT 304.5	96555016	55.5 W	0.453	
		INTELSAT KUEXT 304.5	97555003	55.5 W	0.269	
		INTELSAT KUEXT 304.5	98555008	55.5 W	0.392	
		ICMBSS-2	104555001	123.5 W	0.877	
		MSR00001	86550147	79.7 W	7.295	
		USAT-S3	103555003	86.5 W	1.056	
		USAT-S3 MOD-A	103555005	86.5 W	0.613	
		USAT-S3 MOD-B	104555004	86.5 W	1.347	
		USAT-S3 MOD-C	106555007	86.5 W	1.750	
		USAT-S4	104555002	68.5 W	3.129	
		USAT-S5	104555006	66.3 W	0.808	
		USAT-S8	106555003	133.5 W	0.318	
		VRG00001	86550185	79.7 W	7.890	
	GRD		GRD00003	86550120	79.3 W	4.637
HOL		NSS-BSS 59W	106555005	59 W	0.619	
		NSS-BSS 78W	106555004	78 W	16.310	
HTI		HTI00002	86550128	83.3 W	4.074	
JMC		CREBAH01	86550103	92.3 W	0.489	
		CREBLZ01	86550105	92.3 W	0.653	

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A1f1 Notifying adm.	A1f3 Inter. sat. org.	A1a Sat. Network / A1b Plan beam identification	BR6a Id. no.	A4a1 Orbital long.	BR45 Max. EPM/OEPM degradation
		CREJMC01	86550107	92.3 W	0.593
		JMC00002	86550137	92.7 W	0.472
KNA		KNA00001	86550158	79.7 W	7.708
LCA		LCAIFRB1	86550139	79.3 W	6.620
MEX		MEX01SUR	86550142	69.2 W	2.199
		MEX02NTE	86550144	135.8 W	0.252
		MEX-TDH2A	97555004	69.2 W	3.213
		MEX-TDH2B	97555005	68.8 W	1.277
USA		USABSS-13	101555003	101.2 W	0.281
		USABSS-15	102555004	110 W	0.629
		USABSS-16	104555005	110 W	0.324
		USABSS-17	102555002	61.5 W	0.953
		USABSS-18	103555002	119 W	0.269
		USABSS-19	104555007	100.85 W	0.255
		USABSS-1R	99555001	101.2 W	0.624
		USABSS-21	105555003	101 W	0.281
		USABSS-25	106555008	109.8 W	0.346
		USABSS-26	106555009	110 W	0.620
		USABSS-5	97555001	109.8 W	0.357
		USABSS-6	97555002	110.2 W	0.353
		USABSS-7A	101555001	119 W	0.303
		USABSS-8	98555001	61.5 W	2.311
		USABSS-9	98555002	148 W	0.635
		USAEH001	86550165	61.7 W	0.388
		USAEH001	86550166	61.3 W	0.380
		USAWH101	86550177	148.2 W	0.258
		USAWH101	86550178	147.8 W	0.261
VCT		VCT00001	86550181	79.3 W	6.709

A1f1 Notifying adm.	A1a Sat. Network / A1b Plan beam identification	A4a1 Orbital long.	BR3b Category of notif.	BR25 A/T	BR6a Id. no.
<p>App.30A Art.4, §§4.2.2 a) & 4.2.2 b) - Annexe 1, §5 App.30A Art.4, §§4.2.2 a) & 4.2.2 b) - Annex 1, §5 Ap.30A Art.4, §§4.2.2 a) & 4.2.2 b) - Anexo 1, §5 附录30A 第4条, 第4.2.2 a) 段和 4.2.2 b) 段 - 附件1, 第5段 Пр. 30A Ст. 4, пп 4.2.2 а) и 4.2.2 б) - Дополнение 1, п. 5 الفقرتان 2.2.4 أ) و 2.2.4 ب) من المادة 4 من التبديل 30A - الفقرة 5 من الملحق 1</p>					
<p>Néant / None / Ninguna / 无 / Нет / لا يوجد</p>					

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A1f1 Notifying adm.	A1a Sat. Network / A1b Plan beam Identification	A4a1 Orbital long.	BR3b Category of notif.	BR25 A/T	BR6a ld. no.
	<p>App.30 Art.4, §§4.2.3 a) & 4.2.3 b) - Annexe 1, §3 App.30 Art.4, §§4.2.3 a) & 4.2.3 b) - Annex 1, §3 Ap.30 Art.4, §§4.2.3 a) & 4.2.3 b) - Anexo 1, §3 附录30第4条, 第4.2.3 a)段和 4.2.3 b)段 - 附件1, 第3段 Пр. 30 Ст. 4, пп. 4.2.3 а) и 4.2.3 б) – Дополнение 1, п. 3 الفقرتان 3.2.4 أ) و 3.2.4 ب) من المادة 4 من التذييل 30 - الفقرة 3 من الملحق 1</p>				
	Néant / None / Ninguna / 无 / Нет / لا يوجد				
	<p>App.30 Art.4, §4.2.3 e) - Annexe 1, §6 App.30 Art.4, §4.2.3 e) - Annex 1, §6 Ap.30 Art.4, §4.2.3 e) - Anexo 1, §6 附录30 第4条, 第4.2.3 e)段 - 附件1, 第6段 Пр. 30 Ст. 4, п. 4.2.3 е) – Дополнение 1, п. 6 الفقرة 3.2.4 هـ) من المادة 4 من التذييل 30 - الفقرة 6 من الملحق 1</p>				
	Néant / None / Ninguna / 无 / Нет / لا يوجد				
	<p>App.30 Art.4, §4.2.3 e) - Annexe 1, §7 App.30 Art.4, §4.2.3 e) - Annex 1, §7 Ap.30 Art.4, §4.2.3 e) - Anexo 1, §7 附录30 第4条, 第4.2.3 e)段 - 附件1, 第7段 Пр. 30 Ст. 4, п. 4.2.3 е) – Дополнение 1, п. 7 الفقرة 3.2.4 هـ) من المادة 4 من التذييل 30 - الفقرة 7 من الملحق 1</p>				
	Néant / None / Ninguna / 无 / Нет / لا يوجد				
	<p>App.30 Art.4, §4.2.3 f) - Annexe 1, §3 App.30 Art.4, §4.2.3 f) - Annex 1, §3 Ap.30 Art.4, §4.2.3 f) - Anexo 1, §3 附录30 第4条, 第4.2.3 f)段 - 附件1, 第3段 Пр. 30 Ст. 4, п. 4.2.3 ф) – Дополнение 1, п. 3 الفقرة 3.2.4 و) من المادة 4 من التذييل 30 - الفقرة 3 من الملحق 1</p>				
	Néant / None / Ninguna / 无 / Нет / لا يوجد				
	<p>App.30A Art.4, §4.1.1 d) (Art. 2A.2) - Annexe 1, §6 App.30A Art.4, §4.1.1 d) (Art. 2A.2) - Annex 1, §6 Ap.30A Art.4, §4.1.1 d) (Art. 2A.2) - Anexo 1, §6 附录30A第4条, 第4.1.1 d)段 (第2A.2条) - 附件1, 第6段 Пр. 30A Ст. 4, п. 4.1.1 d) (Ст. 2A.2) – Дополнение 1, п. 6 الفقرة 1.1.4 د) من المادة 4 من التذييل 30A (المادة 2A.2) - الفقرة 6 من الملحق 1</p>				
	Néant / None / Ninguna / 无 / Нет / لا يوجد				

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<p>A1f1 Notifying adm. / BR5 Geographical area</p> <p>App.30 Art.4, §4.2.3 d) - Annexe 1, §4</p> <p>App.30 Art.4, §4.2.3 d) - Annex 1, §4</p> <p>Ap.30 Art.4, §4.2.3 d) - Anexo 1, §4</p> <p>附录30第4条, 第4.2.3 d)段 - 附件1, 第4段</p> <p>Пр. 30 Ст. 4, п. 4.2.3 d) – Дополнение 1, п. 4</p> <p>الفقرة 3.2.4 د) من المادة 4 من التذييل 30 - الفقرة 4 من الملحق 1</p>
<p>Néant / None / Ninguna / 无 / Нет / لا يوجد</p>

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Notes du Bureau des radiocommunications

1. Note relative à l'identification des assignations propres à une administration notificatrice

Lorsqu'une administration notificatrice agit en son nom propre, et non au nom d'un groupe d'administrations nommément désignées, il faut considérer que chaque fois que ses propres assignations sont citées dans les Sections spéciales AP30/E/, AP30A/E/ et AP30-30A/E au titre des § 4.1.1 a), 4.1.1 b), 4.1.1 e), 4.2.3 c) ou 4.2.3 e) de l'Appendice 30 et 4.1.1 a) 4.1.1 b) ou 4.2.2 c) de l'Appendice 30A comme susceptibles d'être affectées, elles le sont pour information seulement. La responsabilité de la coordination entre les assignations concernées et les assignations proposées dans la présente Section spéciale est une question interne qui incombe à l'administration notificatrice.

2. Note relative à l'application du concept de groupement à des réseaux groupés avec un ou des réseau(x) occupant la même position orbitale ou à l'intérieur d'un groupe

L'application du concept de groupement dans la Région 2 est expliquée dans les Articles 10 et 9 des Appendices 30 et 30A respectivement. Sur la base de ce concept, le calcul des brouillages causés à des assignations qui font partie d'un groupe ne tient compte que des brouillages causés par des assignations qui ne font pas partie de ce même groupe. En outre, pour le calcul du brouillage causé par des assignations appartenant à un groupe à des assignations ne faisant pas partie du même groupe, seule la contribution de brouillage la plus préjudiciable de ce groupe est prise en considération.

En conséquence, les administrations affectées qui n'ont pas présenté leurs observations dans le délai réglementaire de quatre mois risquent de ne plus être identifiées comme étant affectées par des réseaux qui auront été ultérieurement groupés avec le réseau pour lequel elles n'ont pas soumis d'observations, si ce dernier est inclus dans le Plan de la Région 2.

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Radiocommunication Bureau Notes

1. Note relating to the identification of a notifying administration's own assignments

Where a notifying administration is acting on its own behalf, and not on behalf of a group of named administrations, it should be understood that whenever its own assignments are identified as being potentially affected in AP30/E/, AP30A/E/ and AP30-30A/E/ Special Sections under § 4.1.1 a), 4.1.1 b), 4.1.1 e), 4.2.3 c) or 4.2.3 e) of Appendix 30 and 4.1.1 a), 4.1.1 b) or 4.2.2 c) of Appendix 30A, this identification is provided only for information. Responsibility for coordination between such assignments and the proposed assignments is an internal matter for the notifying administration.

2. Note relating to application of the grouping concept to networks grouped with network(s) at the same orbital position or within a cluster

Application of the grouping concept in Region 2 is explained in Articles 10 and 9 of Appendices 30 and 30A respectively. Based on this concept, when calculating interference to assignments that are part of a group, only the interference contributions from assignments that are not part of the same group are included. Moreover, when calculating interference from assignments belonging to a group into assignments that are not part of the same group, only the worst interference contribution from that group is used.

Consequently, those affected administrations that failed to comment within the four month regulatory period might no longer be identified as affected by subsequent networks grouped with the network they did not comment upon if the latter is included in the Region 2 Plan.

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Notas de la Oficina de Radiocomunicaciones

1. Nota relativa a la identificación de las propias asignaciones de una administración notificante

Cuando una administración notificante actúe en nombre propio y no en nombre de un grupo de administraciones designadas, se entenderá que cuando sus propias asignaciones están identificadas como potencialmente afectadas en las Secciones Especiales AP30/E/, AP30A/E/ y AP30-30A/E/ con arreglo a los § 4.1.1a), 4.1.1b), 4.1.1e), 4.2.3c) o 4.2.3e) del Apéndice 30 y 4.1.1a), 4.1.1b) o 4.2.2c) del Apéndice 30A, esta identificación se efectúa solamente a efectos informativos. La responsabilidad de la coordinación entre tales asignaciones y las asignaciones propuestas en esta Sección Especial es un asunto interno de la administración notificante.

2. Nota relativa a la aplicación del concepto de grupo a las redes agrupadas con una red o redes en la misma posición orbital o al interior de una agrupación

La aplicación del concepto de grupo en la Región 2 se explica en los Artículos 10 y 9 de los Apéndices 30 y 30A respectivamente. Basándose en este concepto, cuando se calcula la interferencia causada a las asignaciones que forman parte de un grupo, se incluyen únicamente las contribuciones a la interferencia procedentes de asignaciones que no forman parte del mismo grupo. Además, cuando se calcula la interferencia causada por asignaciones pertenecientes a un grupo a asignaciones que no forman parte de ese mismo grupo, sólo se utiliza la contribución de interferencia de caso más desfavorable procedente de dicho grupo.

En consecuencia, las administraciones afectadas que no lo notificaron en el plazo reglamentario de cuatro meses no podrán seguir siendo consideradas como afectadas por otras redes agrupadas con la red con respecto a la cual no enviaron comentarios, si se incluye esta última en el Plan de la Región 2.

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无线电通信局的注释

1. 关于确定一通知主管部门自己的指配的注解

当一通知主管部门代表自己，而不是代表一组指名的主管部门行事时，应理解为每当该主管部门自己的指配根据附录 30 的第 4.1.1 a)、4.1.1 b)、4.1.1 e)、4.2.3 c) 或 4.2.3 e) 段和附录 30A 的第 4.1.1 a)、4.1.1 b) 或 4.2.2c)段，在特节 AP30/E/、AP30A/E/ 和 AP30-30A/E/ 中被确定为可能受到影响时，这种确定仅供参考。此类指配与建议的指配之间的协调责任属通知主管部门的内部事宜。

2. 关于对网络处于同一轨道位置或同一群集内的网络组合应用分组概念的注解

附录 30 和 30A 的第 10 条和第 9 条分别说明了在 2 区中应用分组概念的问题。根据此概念，在计算对一组中部分指配的干扰时，仅计算来自于非本组内指配造成的干扰。另外，在计算某一组中的指配对非同组的指配造成的干扰时，仅采用该组最差干扰。

因此，如果那些受影响的主管部门未能在 4 个月的常规期提出意见，则他们可能不再被认定为受到 2 区规划中与他们未对其提出意见的网络同组的其它网络的影响。

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Примечания Бюро радиосвязи

1. Примечание, относящееся к идентификации присвоений, за которые отвечает заявляющая администрация

Когда заявляющая администрация действует от своего собственного имени, а не от имени группы поименованных администраций, следует принимать во внимание, что каждый раз, когда ее собственные присвоения упоминаются в Специальных секциях AP30/E/, AP30A/E/ и AP30-30A/E/ как потенциально затрагиваемые в соответствии с положениями пп. 4.1.1 a), 4.1.1 b), 4.1.1 d), 4.2.3 c) или 4.2.3 e) Приложения 30 и пп. 4.1.1 a), 4.1.1 b) или 4.2.2 c) Приложения 30A, это делается исключительно в целях информации. Ответственность за координацию между такими присвоениями и присвоениями, предложенными в настоящей Специальной секции, является внутренним вопросом, касающимся заявляющей администрации.

2. Примечание, относящееся к применению концепции группирования для сетей, сгруппированных с сетью(-ями) на той же орбитальной позиции или в той же группе

Применение концепции группирования в Районе 2 поясняется в статьях 10 и 9 Приложений 30 и 30A, соответственно. На основе этой концепции при расчете помех, причиняемых присвоениями одной группы, включены только составляющие помех от присвоений, которые не являются частью той же группы. Кроме того, при расчете помех, причиняемых присвоениями одной группы, присвоениям, не принадлежащим к той же группе, следует учитывать только наихудшую составляющую помех от этой группы.

В связи с этим затронутые администрации, от которых не получен ответ в течение установленного четырехмесячного периода, более не идентифицируются как затронутые последующим группированием сетей с сетью, в отношении которой от них не получено ответа, если эта последняя сеть включена в План для Района 2.

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ملاحظات مكتب الاتصالات الراديوية

1. ملاحظة تتعلق بتحديد التخصيصات الخاصة بالإدارة المبلغة

عندما تصرف إدارة مبلغة، عن نفسها وليس عن مجموعة إدارات محددة، في كل مرة يشار إلى تخصيصاتها في الأقسام الخاصة AP30/E/ و AP30A/E/ و AP30-30A/E بموجب الفقرات 1.1.4 أ/م أو 1.1.4 ب/م أو 1.1.4 ج/م أو 3.2.4 ج/م أو 3.2.4 د/م من التذييل 30 والفقرات 1.1.4 أ/م أو 1.1.4 ب/م أو 2.2.4 ج/م من التذييل 30A، على أنها تخصيصات يتمثل أن تتأثر، ينبغي أن يكون مفهوماً أن هذه الإشارة هي للعلم فقط. ومسؤولية التنسيق بين التخصيصات المعنية والتخصيصات المقترحة هي مسألة داخلية تحملها الإدارة المبلغة.

2. ملاحظة تتعلق بتطبيق مفهوم التجميع على شبكات مجمعة مع شبكات أخرى في الموقع الإداري نفسه أو ضمن المجموعة نفسها

إن تطبيق مفهوم التجميع في الإقليم 2 قد ورد شرحه في المادتين 10 و9 في التذييلين 30 و30A على التوالي، واستناداً إلى هذا المفهوم، لا يدخل في حساب التداخل في التخصيصات التي تشكل جزءاً من مجموعة معينة إلا التداخل الصادر عن تخصيصات لا تشكل جزءاً من نفس المجموعة. وعلاوة على ذلك، لا تؤخذ في الاعتبار، لدى حساب التداخل من تخصيصات تشكل جزءاً من مجموعة معينة في تخصيصات لا تشكل جزءاً من نفس المجموعة، إلا أسوأ حالات التداخل من تلك المجموعة. وعليه فإن الإدارات المتأثرة التي لم تقدم تعليقاتها في المهلة النظامية البالغة أربعة أشهر يتمثل ألا تعتبر متأثرة بشبكات جرى تجميعها لاحقاً مع الشبكة التي لم يقدم بشأنها تعليقات، إذا كانت هذه الشبكة واردة في خطة الإقليم 2.

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**Appendix 3 to
Attachment A (Technical Information to Supplement Schedule S)
Part B ITU filing**



UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES
OFICINA DE RADIOCOMUNICACIONES

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RÉSEAU À SATELLITE SATELLITE NETWORK RED DE SATÉLITE		QUETZSAT-77		SECTION SPÉCIALE N° SPECIAL SECTION No. SECCIÓN ESPECIAL N.º	AP30-30A/E/434
ADM. RESPONSABLE RESPONSIBLE ADM. ADM. RESPONSABLE	MEX	LONGITUDE NOMINALE NOMINAL LONGITUDE LONGITUD NOMINAL	77 W	BR IFIC / DATE BR IFIC / DATE BR IFIC / FECHA	2658 / 01.12.2009
NOTIFIÉ AU NOM DE NOTIFIED ON BEHALF OF NOTIFICADA EN NOMBRE DE				NUMÉRO D'IDENTIFICATION IDENTIFICATION NUMBER NÚMERO DE IDENTIFICACIÓN	106555010
RENSEIGNEMENTS REÇUS PAR LE BUREAU LE / INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL					24.06.2009

Caractéristiques des assignations de fréquence publiées en application de l'Article 4 des Appendices 30 et 30A du Règlement des radiocommunications et de la Résolution 546 (CMR-03)

La présente Section spéciale concerne des modifications apportées au Plan pour la Région 2 dans les bandes de fréquences 12.2-12.7 GHz pour les liaisons descendantes et 17.3-17.8 GHz pour les liaisons de connexion.

Characteristics of frequency assignments published in application of Article 4 of Appendices 30 and 30A to the Radio Regulations and Resolution 546 (WRC-03)

This Special Section concerns modifications to the Region 2 Plan in the frequency bands 12.2-12.7 GHz for the downlink and 17.3-17.8 GHz for the feeder-link.

Características de asignaciones de frecuencias publicadas conforme al Artículo 4 de los Apéndices 30 y 30A del Reglamento de Radiocomunicaciones y a la Resolución 546 (CMR-03)

Esta Sección Especial trata de las modificaciones al Plan de la Región 2 en las bandas de frecuencias 12.2-12.7 GHz por los enlaces descendentes y 17.3-17.8 GHz por los enlaces de conexión.

Elle comprend les Parties indiquées ci-dessous par une croix (X) dans la case appropriée.	It is composed of the Parts indicated below by an (X) in the relevant box	Se compone de las Partes indicadas a continuación con una (X) en la casilla pertinente.
<input type="checkbox"/> <i>Partie A</i> - Projets de modification au Plan pour la Région 2.	<input type="checkbox"/> <i>Part A</i> - Proposed modifications to the Region 2 Plan.	<input type="checkbox"/> <i>Parte A</i> - Modificaciones propuestas al Plan de la Región 2.
<input checked="" type="checkbox"/> <i>Partie B</i> - Modifications apportées au Plan pour la Région 2 en conséquence de l'application avec succès des dispositions de l'Article 4 des Appendices 30 et 30A.	<input checked="" type="checkbox"/> <i>Part B</i> - Modifications entered in the Region 2 Plan as a result of the successful application of the provisions of Article 4 of Appendices 30 and 30A.	<input checked="" type="checkbox"/> <i>Parte B</i> - Modificaciones introducidas en el Plan de la Región 2 como resultado de la aplicación satisfactoria de las disposiciones del Artículo 4 de los Apéndices 30 y 30A.
<input type="checkbox"/> <i>Partie C</i> - Annulation d'une Section spéciale Partie A publiée et/ou des assignations de fréquence du Plan pour la Région 2 conformément au § 4.2.6, à la note de bas de page 16 du § 4.2.8, à la note de bas de page 17 du § 4.2.19 et/ou § 4.2.24 de l'Article 4 des Appendices 30 et 30A ou Résolution 49.	<input type="checkbox"/> <i>Part C</i> - Cancellation of a previously published Part A Special Section and/or frequency assignments from the Region 2 Plan in accordance with § 4.2.6, footnote 16 to § 4.2.8, footnote 17 to § 4.2.19 and/or § 4.2.24 of Article 4 of Appendices 30 and 30A or Resolution 49.	<input type="checkbox"/> <i>Parte C</i> - Cancelación de una Parte A de la Sección Especial previamente publicada y/o de las asignaciones de frecuencia del Plan de la Región 2, de conformidad con el § 4.2.6, la nota 16 del § 4.2.8, la nota 17 del § 4.2.19 y/o § 4.2.24 del Artículo 4 de los Apéndices 30 y 30A ó Resolución 49.
<input type="checkbox"/> <i>Partie D</i> - Liste des administrations dont l'accord est nécessaire pour mener à bien la procédure de l'Article 4 conformément au § 4.2.14ter de l'Article 4 des Appendices 30 et 30A.	<input type="checkbox"/> <i>Part D</i> - List of administrations whose agreements are required for completion of the Article 4 procedure in accordance with § 4.2.14ter of Article 4 of Appendices 30 and 30A.	<input type="checkbox"/> <i>Parte D</i> - Lista de administraciones cuyo acuerdo se necesita para terminar el procedimiento del Artículo 4, ce conformidad con el § 4.2.14ter del Artículo 4 de los Apéndices 30 y 30A.



国际电信联盟
无线电通信局

МЕЖДУНАРОДНЫЙ СОЮЗ ЭЛЕКТРОСВЯЗИ
БЮРО РАДИОСВЯЗИ

الاتحاد الدولي للاتصالات
مكتب الاتصالات الراديوية

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卫星网络 СПУТНИКОВАЯ СЕТЬ الشبكة الساتلية	QUETZSAT-77		特节编号 СПЕЦИАЛЬНАЯ СЕКЦИЯ № القسم الخاص رقم	AP30-30A/E/434
负责主管部门 ОТВЕТСТВЕННАЯ АДМ. الإدارة المسؤولة	MEX	标称经度 НОМИНАЛЬНАЯ ДОЛГОТА خط الطول الاسمي	77 W	无线电通信局国际频率信息通报/日期 ИФИК БР / ДАТА النشرة الإعلامية الدولية لترددات/رقمها وتاريخها
通知代表方 ЗАЯВЛЯЕТСЯ ОТ ИМЕНИ مبلغ عنها باسم			识别号 ИДЕНТИФИКАЦИОННЫЙ НОМЕР رقم تعرف الهوية	106555010
通信局收到资料前日期 / ДАТА ПОЛУЧЕНИЯ ИНФОРМАЦИИ БЮРО / معلومات استلمها المكتب في				24.06.2009

应用无线电规则附录30和30A第4条和第546号决议(WRC-03)公布的频率指配的特性

Характеристики частотных присвоений, публикуемые во исполнение Статьи 4 Приложений 30 и 30A к Регламенту радиосвязи и Резолюции 546 (ВКР-03)

خصائص الترددات المخصصة المنشورة تطبيقاً للمادة 4 من التذييلين 30 و 30A لوائح الراديو والقرار 546 (WRC-03)

本特节关系到修改2区规划12.2-12.7 GHz频带下行链路和17.3-17.8 GHz频带馈线链路的指配。

Настоящая Специальная секция относится к изменениям Плана для Района 2 в полосах частот 12,2-12,7 ГГц для линий вниз и 17,3-17,8 ГГц для фидерных линий.

يعلق هذا القسم الخاص بالتعديلات التي أدخلت في خطة الإقليم 2 في نطاق التردد 12,2-12,7 GHz للوصلات الهابطة و17,3-17,8 GHz للوصلات التغذية.

由下列相关括号内用X表示的部分组成	Она состоит из Частей, отмеченных ниже знаком (X) в соответствующей графе.	وهو يتألف من الأجزاء المشار إليها فيما يلي بالرمز (X) في الربع المناسب.
[] A部分 - 对2区规划的建议修改。	[] Часть A - Предложенные изменения Плана для Района 2.	[] الجزء A - تعديلات يُقترح إدخالها في خطة الإقليم 2.
[X] B部分 - 由于成功地应用附录30和30A第4条规定而登入2区规划的修改	[X] Часть B - Изменения в Плана для Района 2, внесенные в результате успешного применения положений Статьи 4 Приложений 30 и 30A.	[X] الجزء B - تعديلات أدخلت في خطة الإقليم 2 نتيجة نجاح تطبيق أحكام المادة 4 من التذييلين 30 و 30A.
[] C部分 - 根据附录30和30A第4条第4.2.6段脚注16至第4.2.8段脚注17到第4.2.19段和/或第4.2.24段或根据第49号决议，删除一个以前公布的A部分特节和/或2区规划中的频率指配。	[] Часть C - Аннулирование ранее опубликованной Части A Специальной секции и/или частотных присвоений в Плана для Района 2 в соответствии с п. 4.2.6, примечанием 16 п. 4.2.8, примечанием 17 п. 4.2.19 или п. 4.2.24 Статьи 4 Приложений 30 и 30A или Резолюцией 49.	[] الجزء C - إلغاء قسم خاص للجزء A منشور سابقاً وألُو تخصيصات تردد ملغية من خطة الإقليم 2 طبقاً للفقرة 6.2.4، والحاشية 16 للفقرة 8.2.4، والحاشية 17 للفقرة 19.2.4 وألُو الفقرة 24.2.4 من المادة 4 في التذييلين 30 و 30A أو القرار 49.
[] D部分 - 根据附录30和30A第4条第4.1.10之三程序，为完成第4条程序而需征得同意的主管部门清单。	[] Часть D - Список администраций, соглашение которых необходимо, чтобы завершить процедуру Статьи 4 в соответствии с п. 4.2.14ter Статьи 4 Приложений 30 и 30A.	[] الجزء D - قائمة الإدارات التي تعتبر موافقتها ضرورية لإكمال إجراء للمادة 4 طبقاً للفقرة 14.2.4 مكرراً لتتياً من المادة 4 من التذييلين 30 و 30A.

<p>On trouvera la description des éléments de données utilisés dans les publications dans le document:</p> <ul style="list-style-type: none"> - ItemsDescription_F.pdf - http://www.itu.int/ITU-R/space/brific/legend/ 	<p>The description of the data items used in the publications can be found in the document:</p> <ul style="list-style-type: none"> - ItemsDescription_E.pdf - http://www.itu.int/ITU-R/space/brific/legend/ 	<p>La descripción de los datos empleados en las publicaciones figura en el documento:</p> <ul style="list-style-type: none"> - ItemsDescription_S.pdf - http://www.itu.int/ITU-R/space/brific/legend/
<p>出版物中使用的数据项说明，见文件:</p> <ul style="list-style-type: none"> - ItemsDescription_C.pdf - http://www.itu.int/ITU-R/space/brific/legend/ 	<p>Описание элементов данных, используемых в данной публикации, содержится в документе:</p> <ul style="list-style-type: none"> - ItemsDescription_R.pdf - http://www.itu.int/ITU-R/space/brific/legend/ 	<p>يمكن الاطلاع على وصف عناصر المعطيات المستعملة في المنشورات في الوثيقة:</p> <p style="text-align: center;">ItemsDescription_A.pdf</p> <p>http://www.itu.int/ITU-R/space/brific/legend/</p>

A A1a Sat. Network A1f1 Notifying adm. A1f3 Inter. sat. org. BR1 Date of receipt BR20/BR21 BR IFIC no./part
 BR6a/BR6b Id. no. BR3a/BR3b Provision reference B BR2 Adm. serial no. CAUR R

A1b Plan beam identification
 A1f2 Submitted on behalf

A4a1 Orbital long. A4a2a East Long. tolerance limit A4a2b West Long. tolerance limit
 A11a Start time UTC A11b Stop time UTC

A6 Agreements AP30#4.2.3C O CAN, G, HOL, USA
 AP30A#4.2.2C O CAN, G, HOL, USA

B1a Beam designation B1b Steerable B2 Emi-Rcp B3a1 Max. co-polar gain B3a2 Max. cross-polar gain
 B3b1 Co-polar ant. gain contours diag. B3b2 Cross-polar ant. gain contours diag. B3e Ant. gain vs orbit long. diag. B3f1 Boresight or aim point

BR7a Group id. BR1 Date of receipt 2D Date of protection

A2a Date of bringing into use A3a Op. agency A3b Adm. resp. C15a Exclusive op group
 BR62 Expiry date for bringing into use BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49

BR65 Date of receipt of Part A submission BR66 Date of entry into Plan/List of an allotment/assignment

BR68 Date of receipt of launch failure
 C4a Class of station C3a Assigned freq. band C5a Noise temperature

C6a Polarization type C6b Polarization angle
 C11a1 Service area no. C11a4 Service area name C11a5e Min. elev. angle C11a3 Service area diagram

C11a5a Test points										
C11a5b Longitude	-122.42	-122.32	-112.05	-110.97	-107.4	-104.82	-101.32	-100.33	-99.17	-98.5
C11a5c Latitude	37.77	47.6	33.5	29.07	24.8	41.15	48.27	25.67	19.42	29.42
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	D	D	E	E	M	E	E	M	N	M

C11a5a Test points										
C11a5b Longitude	-90.52	-89.62	-87.75	-87	-86.3	-84.07	-80.19	-79.51	-77	-71.05
C11a5c Latitude	14.63	20.97	41.83	32.73	12.1	9.98	25.77	8.96	38.92	42.35
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	N	N	K	M	P	P	N	P	K	K

Associated typical earth station antenna characteristics					
C10d3 Max. iso. gain	C10d4 Bmwidth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter	
60.32	0.18	R2TES	R2TES	7	

C2a1 Assigned frequency / C2a2 Channel number																	
17.33858	GHz	2	17.42606	GHz	8	17.51354	GHz	14	17.60102	GHz	20	17.6885	GHz	26	17.77598	GHz	32
17.36774	GHz	4	17.45522	GHz	10	17.5427	GHz	16	17.63018	GHz	22	17.71766	GHz	28			
17.3969	GHz	6	17.48438	GHz	12	17.57186	GHz	18	17.65934	GHz	24	17.74682	GHz	30			

C7a	C8b1	Maximum Power density per Hz over ...			C8f
Design. of emission	Max. peak pwr	C8b2 1 MHz	C8h Necessary bandwidth		Power control
24M0G7W--	26.7	-47.1	-47.1		3.3

A12 Range of automatic gain control

BR7a Group id. BR1 Date of receipt 2D Date of protection

A2a Date of bringing into use A3a Op. agency A3b Adm. resp. C15a Exclusive op group



SECTION SPECIALE / SPECIAL SECTION / SECCIÓN ESPECIAL / 特节 / СПЕЦИАЛЬНАЯ СЕКЦИЯ / القسم الخاص AP30-30A/E/434

A A1a Sat. Network QUETZSAT-77 A1f1 Notifying adm. MEX A1f3 Inter. sat. org. BR1 Date of receipt 24.06.2009 BR20/BR21 BR IFIC no./part 2658/
 BR6a/BR6b Id. no. 106555010 BR3a/BR3b Provision reference 4.2.16 B BR2 Adm. serial no. A CAUR R

BR62 Expiry date for bringing into use 18.10.2014 BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49
 BR65 Date of receipt of Part A submission 18.10.2006 BR66 Date of entry into Plan/Lis/ of an allotment/assignment 01.12.2009

BR68 Date of receipt of launch failure

C4a Class of station EC C3a Assigned freq. band 24000 C5a Noise temperature 650

C6a Polarization type CR C6b Polarization angle

C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle 5 C11a3 Service area diagram

C11a5a Test points are identical to group id. 15561

Associated typical earth station antenna characteristics are identical to group id. 15561

C2a1 Assigned frequency / C2a2 Channel number	
17.324 GHz 1	17.41148 GHz 7
17.35316 GHz 3	17.44064 GHz 9
17.38232 GHz 5	17.4698 GHz 11
17.49896 GHz 13	17.52812 GHz 15
17.58644 GHz 19	17.6156 GHz 21
17.67392 GHz 25	17.70308 GHz 27
17.7614 GHz 31	17.73224 GHz 29

C7a/C8 Designations of emissions and power characteristics are identical to group id. 15561

A12 Range of automatic gain control 12

BR7a Group id. 15563 BR1 Date of receipt 24.06.2009 2D Date of protection 24.06.2009

A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15

BR62 Expiry date for bringing into use 18.10.2014 BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49

BR65 Date of receipt of Part A submission 18.10.2006 BR66 Date of entry into Plan/Lis/ of an allotment/assignment 01.12.2009

BR68 Date of receipt of launch failure

C4a Class of station EC C3a Assigned freq. band 24000 C5a Noise temperature 650

C6a Polarization type CL C6b Polarization angle

C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle 5 C11a3 Service area diagram

C11a5a Test points are identical to group id. 15561

Associated typical earth station antenna characteristics					
C10d3 Max. iso. gain	C10d4 Bmwidth	C10d5a/a Co-polar ref. pattern	C10d5b/a Cross-polar ref. pattern	C10d7 Ant. diameter	
65.7	0.1	R2TES	R2TES	:3	

C2a1 Assigned frequencies are identical to group id. 15561

C7a Design. of emission	C8b1 Max. peak pwr	Maximum Power density per Hz over ...		C8i Power control
		C8b2 1 MHz	C8h Necessary bandwidth	
24M0G7W-	21.3	-52.5	-52.5	8.7

A12 Range of automatic gain control 12

BR7a Group id. 15564 BR1 Date of receipt 24.06.2009 2D Date of protection 24.06.2009

A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15



A A1a Sat. Network QUETZSAT-77 A1f1 Notifying adm. MEX A1f3 Inter. sat. org. BR1 Date of receipt 24.06.2009 BR20/BR21 BR IFC no./part 2659/
 BR6a/BR6b Id. no. 106555010 BR3a/BR3b Provision reference 4.2.16 B BR2 Adm. serial no. A CAUR R

BR62 Expiry date for bringing into use 18.10.2014 BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49
 BR65 Date of receipt of Part A submission 18.10.2006 BR66 Date of entry into Plan/List of an allotment/assignment 01.12.2009
 BR68 Date of receipt of launch failure
 C4a Class of station BC C3a Assigned freq. band 24000 C5a Noise temperature 650
 C6a Polarization type CR C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle 5 C11a3 Service area diagram
 C11a5a Test points are identical to group id. 15561
 Associated typical earth station antenna characteristics are identical to group id. 15563
 C2a1 Assigned frequencies are identical to group id. 15562
 C7a/C8 Designations of emissions and power characteristics are identical to group id. 15563
 A12 Range of automatic gain control 12

B1a Beam designation CADR B1b Steerable B2 Emi-Rcp E B3a1 Max. co-polar gain 33.51 B3a2 Max. cross-polar gain 3.51
 B3b1 Co-polar ant. gain contours diag. B3b2 Cross-polar ant. gain contours diag. B3f1 Boresight or aim point 89.9 W 30.71 N

BR7a Group id. 15565 BR7 Date of receipt 24.06.2009 2D Date of protection 24.06.2009

A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 18.10.2014 BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49
 BR65 Date of receipt of Part A submission 18.10.2006 BR66 Date of entry into Plan/List of an allotment/assignment 01.12.2009
 BR68 Date of receipt of launch failure
 C4a Class of station EV C3a Assigned freq. band 24000
 C6a Polarization type CL C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle C11a3 Service area diagram

C11a5a Test points										
C11a5b Longitude	-122.42	-122.32	-112.05	-110.97	-107.4	-104.82	-101.32	-100.33	-99.17	-98.5
C11a5c Latitude	37.77	47.6	33.5	29.07	24.8	41.15	48.27	25.67	19.42	29.42
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	D	D	E	E	M	E	E	M	N	M

C11a5a Test points										
C11a5b Longitude	-90.52	-89.62	-87.75	-87	-86.3	-84.07	-80.19	-79.51	-77	-71.05
C11a5c Latitude	14.63	20.97	41.83	32.73	12.1	9.98	25.77	8.96	38.92	42.35
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0
BR49 Rain zone	N	N	K	M	P	P	N	P	K	K

Associated typical earth station antenna characteristics					
C10d3 Max. iso. gain	C10d4 Bmwdth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter	
33	3.81	MODRES	MODRES	0.45	

C2a1 Assigned frequency / C2a2 Channel number														
12.23858	GHz	2	12.32606	GHz	8	12.41354	GHz	14	12.50102	GHz	20	12.5885	GHz	26
12.26774	GHz	4	12.35522	GHz	10	12.4427	GHz	16	12.53018	GHz	22	12.61766	GHz	28
12.2969	GHz	6	12.38438	GHz	12	12.47186	GHz	18	12.55934	GHz	24	12.64682	GHz	30



A A1a Sat. Network QUETZSAT-77 A1f1 Notifying adm. MEX A1f3 Inter. sat. org. BR1 Date of receipt 24.06.2009 BR20/BR21 BR IFIC no./part 2659/
 BR6a/BR6b Id. no. 106555010 BR3a/BR3b Provision reference 4.2.16 B BR2 Adm. serial no. A CADR E

C7a Design. of emission	C8b1 Max. peak pwr	Maximum Power density per Hz over ...	
		C8b2 4 kHz	C8b Necessary bandwidth
24M0G7W--	24	-49.8	-49.8

BR7a Group id. 15566 BR1 Date of receipt 24.06.2009 2D Date of protection 24.06.2009
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 18.10.2014 BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49
 BR65 Date of receipt of Part A submission 18.10.2006 BR66 Date of entry into Plan/List of an allotment/assignment 01.12.2009
 BR68 Date of receipt of launch failure
 C4a Class of station EV C3a Assigned freq. band 24000
 C6a Polarization type CR C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle C11a3 Service area diagram
 C11a5a Test points are identical to group id. 15565
 Associated typical earth station antenna characteristics are identical to group id. 15565

C2a1 Assigned frequency / C2a2 Channel number																				
12.224	GHz	1	12.31148	GHz	7	12.39896	GHz	13	12.48644	GHz	19	12.57392	GHz	25	12.6614	GHz	31			
12.25316	GHz	3	12.34064	GHz	9	12.42812	GHz	15	12.5156	GHz	21	12.60308	GHz	27						
12.28232	GHz	5	12.3698	GHz	11	12.45728	GHz	17	12.54476	GHz	23	12.63224	GHz	29						

C7a/C8 Designations of emissions and power characteristics are identical to group id. 15565

BR7a Group id. 15567 BR1 Date of receipt 24.06.2009 2D Date of protection 24.06.2009
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15
 BR62 Expiry date for bringing into use 18.10.2014 BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49
 BR65 Date of receipt of Part A submission 18.10.2006 BR66 Date of entry into Plan/List of an allotment/assignment 01.12.2009
 BR68 Date of receipt of launch failure
 C4a Class of station EV C3a Assigned freq. band 24000
 C6a Polarization type CL C6b Polarization angle
 C11a1 Service area no. 1 C11a4 Service area name SERVICE C11a5e Min. elev. angle C11a3 Service area diagram
 C11a5a Test points are identical to group id. 15565

Associated typical earth station antenna characteristics				
C10d3 Max. iso. gain	C10d4 Bmwidth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d7 Ant. diameter
45.04	0.95	MODRES	MODRES	1.8

C2a1 Assigned frequencies are identical to group id. 15565

C7a Design. of emission	C8b1 Max. peak pwr	Maximum Power density per Hz over ...	
		C8b2 4 kHz	C8b Necessary bandwidth
24M0G7W--	11	-62.8	-62.8

BR7a Group id. 15568 BR1 Date of receipt 24.06.2009 2D Date of protection 24.06.2009
 A2a Date of bringing into use 10.01.2013 A3a Op. agency 361 A3b Adm. resp. A C15a Exclusive op group 15



A A1a Sat. Network A1f1 Notifying adm. A1f3 Inter. sat. org. BR1 Date of receipt BR20/BR21 BR IFIC no./part
 BR6a/BR6b Id. no. BR3a/BR3b Provision reference B BR2 Adm. serial no. CADR

BR62 Expiry date for bringing into use BR63 Confirmed date of bringing into use BR64 Date of receipt of 1st Res49
 BR65 Date of receipt of Part A submission BR66 Date of entry into Plan/List of an allotment/assignment
 BR68 Date of receipt of launch failure
 C4a Class of station C3a Assigned freq. band
 C6a Polarization type C6b Polarization angle
 C11a1 Service area no. C11a4 Service area name C11a5e Min. elev. angle C11a3 Service area diagram
 C11a5a Test points are identical to group id.
 Associated typical earth station antenna characteristics are identical to group id.
 C2a1 Assigned frequencies are identical to group id.
 C7a/C8 Designations of emissions and power characteristics are identical to group id.

C9 Modulation characteristics		C7a Designation of emission 24N0G7W--
C9a1 Type of modulation	QPSK	
C9a3a Freq. deviation of the pre-emphasized signal		
C9a3b Pre-emphasis characteristics		
C9a3c Type of multiplexing	TDM	
C9a6a Peak-to-peak freq. dev.		
C9a6b Sweep frequency		
C9a6c Energy dispersal waveform		
C9a7 Type of energy dispersal	Carrier always spread by digital stream	
C9a9 TV standard	DVB	
C9b1 Sound-broadcasting	Digital	
C9b2 Baseband	Video, audio and data	
BR7a Group id.	15561, 15562, 15563, 15564, 15565, 15566, 15567, 15568	



A	A1a Sat. Network	QUETZSAT-77	A1f1 Notifying adm.	MEX	A1f3 Inter. sat. org.		BR1 Date of receipt	24.06.2009	BR20/BR21 BR IFIC no./part	2659/
	BR6a/BR6b Id. no.	106555010	BR3a/BR3b Provision reference	4.2.16	B	BR2 Adm. serial no.	A	CADR	E	

D1a1	D1a2	BR7a		D1a3	D1a4	D1a3	D1a4
Beam designation		Group id.		Assigned frequency		Channel	
Feeder-link	Downlink	Feeder-link	Downlink	Feeder-link	Downlink	Feeder-link	Downlink
CAUR	CADR	Connexion de chaque canal de la liaison descendante au même canal de la liaison de connexion Connection of each downlink channel to the same feeder link channel Conexión de cada canal del enlace descendente al mismo canal del enlace de conexión 每一下行链路信道与相同馈线链路信道的连接 Соединение каждого нисходящего канала связи с таким же каналом фидерной линии توصيل كل قناة للوصلة الهابطة إلى نفس القناة لوصلة التغذية					

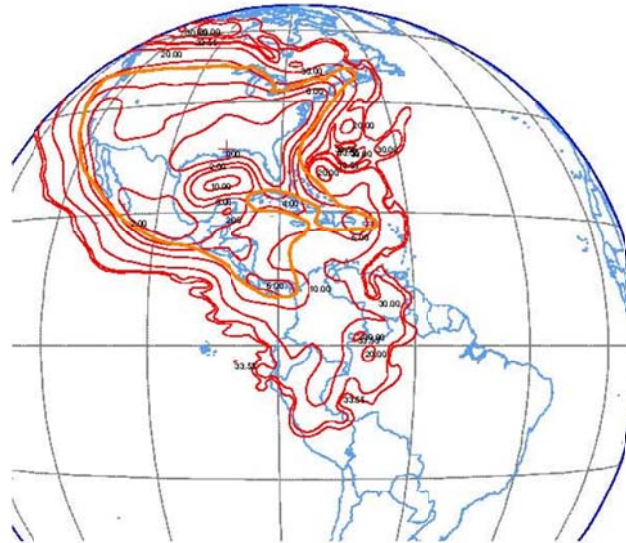
Figure / Figura / 图 / Рисунок / 1 الشكل

ZONE DE SERVICE ET CONTOURS (COPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA
ZONA DE SERVICIO Y CONTORNOS (COPOLARES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL
空间台站发射天线增益等值线(同极)和业务区
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
منطقة الخدمة وأكف الكسب (متحد الاستقطاب) لموائي الإرسال للمحطة الفضائية

QUETZSAT-77 (77° W)

Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CADR

Gmax: 33.51 dBi



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания / منطقة الخدمة : SERVICE (No. 01)

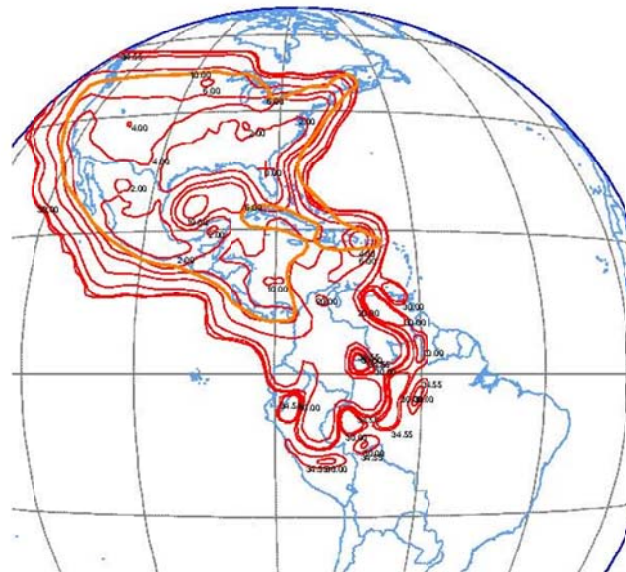
AP30-30A/E/434

Page / Página / 页 / стр. / 10 الصفحة

Figure / Figura / 图 / Рисунок / 2 الشكل

ZONE DE SERVICE ET CONTOURS (CO-POLAIRES) DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA
ZONA DE SERVICIO Y CONTORNOS (CO-POLARES) DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL
空间台站接收天线增益等值线(同极)和业务区
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
منطقة الخدمة وأكفة الكسب (متحد الاستقطاب) لوائي الاستقبال للمحطة الفضائية

QUETZSAT-77 (77° W)
Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CAUR
Gmax: 34.51 dBi



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания / منطقة الخدمة : SERVICE (No. 01)

AP30-30A/E/434

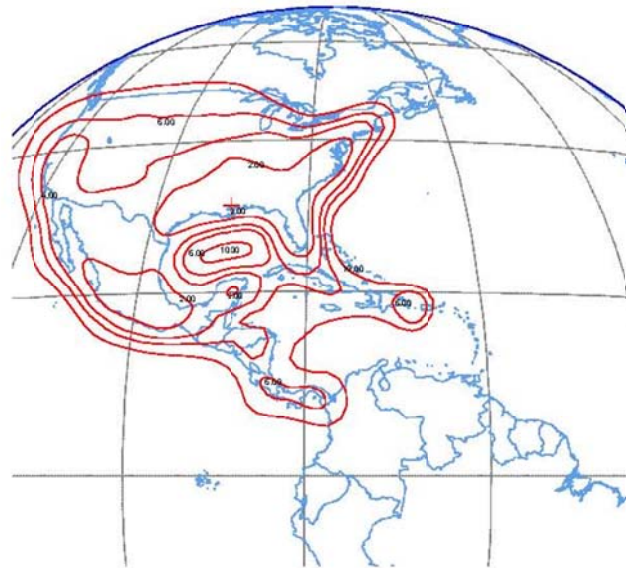
Page / Página / 页 / стр. / 11 الصفحة



Figure / Figura / 图 / Рисунок / 3 الشكل

CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CROSS-POLAR)
CONTORNOS (CONTRAPOLARES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL
空间台站发射天线增益等值线(交叉极)
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
أكفة الكسب (متقاطعة الاستقطاب) طوائمي الإرسال للمحطة الفضائية

QUETZSAT-77 (77° W)
Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CADR
Gmax: 3.51 dBi



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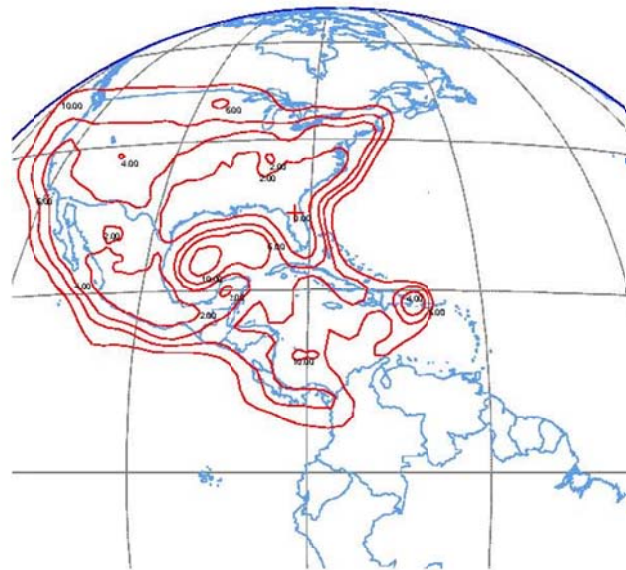
Page / Página / 页 / стр. / 12 الصفحة



Figure / Figura / 图 / Рисунок / 4 الشكل

CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS (CROSS-POLAR)
CONTORNOS (CONTRAPOLARES) DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL
空间台站接收天线增益等值线 (交叉极)
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ
أكفة الكسب (متقاطعة الاستقطاب) لطوائي الاستقبال للمحطة الفضائية

QUETZSAT-77 (77° W)
Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CAUR
Gmax: 4.51 dBi



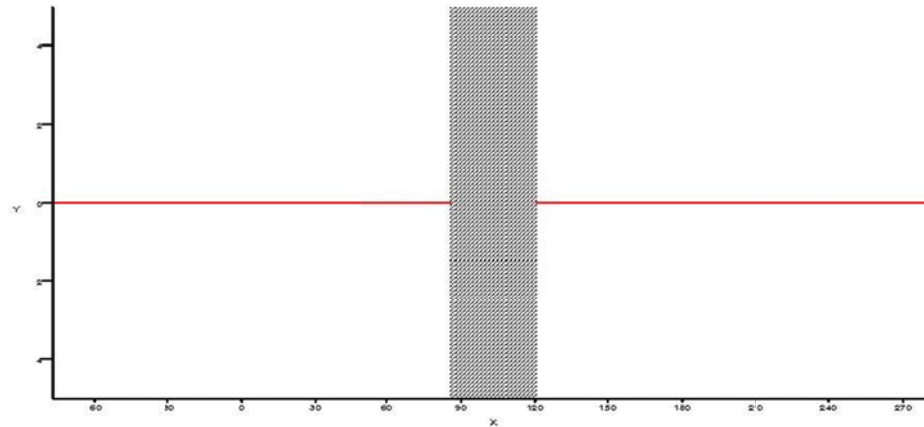
AP30-30A/E/434

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Figure / Figura / 图 / Рисунок / 5 الشكل

GAIN ESTIME DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES
 ESTIMATED GAIN OF THE SPACE STATION TRANSMITTING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT
 GANANCIA ESTIMADA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELITES GEOESTACIONARIOS
 对地静止卫星轨道方向的空间台站发射天线估算增益
 РАСЧЕТНОЕ УСИЛЕНИЕ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ
 الكسب المقدر لموائي الإرسال للمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

QUETZSAT-77 (77° W)
 Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CADR



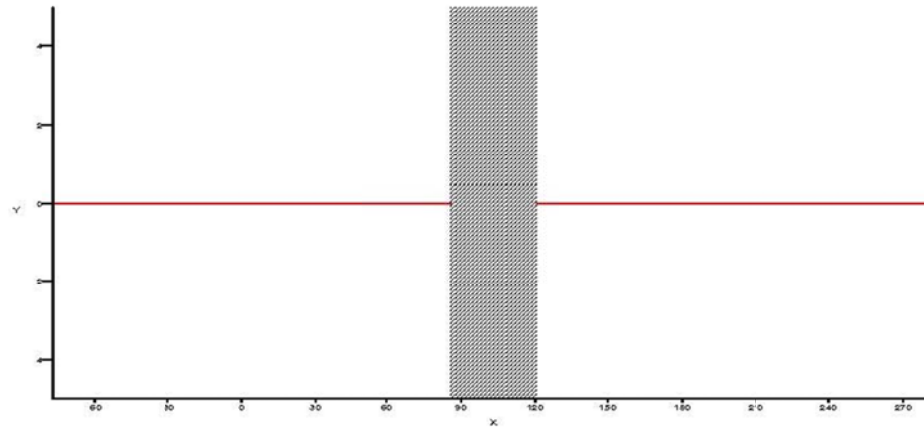
X = Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y = Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dBi)	Усиление (дБ)	الكسب (dBi)
Obstructed Zone	Zone Occultée	Zona Ocultada	受阻区	Закрытая зона	منطقة محجوبة

AP30-30A/E/434

Figure / Figura / 图 / Рисунок / 6 الشكل

GAIN ESTIME DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES
 ESTIMATED GAIN OF THE SPACE STATION RECEIVING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT
 GANANCIA ESTIMADA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELITES GEOESTACIONARIOS
 对地静止卫星轨道方向的空间台站接收天线估算增益
 РАСЧЕТНОЕ УСИЛЕНИЕ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ
 الكسب المقدر لهوائي الاستقبال للمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

QUETZSAT-77 (77° W)
 Faisceau / Beam / Haz / 波束 / Луч / الحزمة : CAUR



X = Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y = Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dBi)	Усиление (дБ)	الكسب (dBi)
Obstructed Zone	Zone Occultée	Zona Ocultada	受阻区	Закрытая зона	منطقة محجوبة

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Notes du Bureau des radiocommunications

1. Suite à la demande qu'il a reçue au titre du § 4.2.16 de l'Article 4 des Appendices 30 et 30A du Règlement des radiocommunications, le Bureau des radiocommunications publie la présente Section spéciale conformément au § 4.2.19 de l'Article 4 des Appendices 30 et 30A.

2. Les assignations de fréquence au réseau à satellite considéré soumises au titre du § 4.2.6 des Appendices 30 et 30A ont été publiées dans la Partie A des Sections spéciales suivantes:
 - AP30-30A/E/434 annexée à la BR IFIC N°2590 du 20 mars 2007
 - AP30-30A/E/434 (Partie D) annexée à la BR IFIC N°2604 du 2 octobre 2007

3. En application des critères mentionnés dans l'Annexe 1 des Appendices 30 et 30A, et compte tenu des caractéristiques définitives et des accords avec une ou plusieurs autres administrations communiqués par l'administration notificatrice tels qu'ils sont publiés dans la présente Section spéciale, le Bureau a examiné la liste des administrations auprès desquelles un accord doit être obtenu pour mener à bien la procédure de l'Article 4 concernant le réseau considéré. Il ressort de cet examen qu'aucun service d'une administration quelconque qui a fait part d'un désaccord valable conformément au § 4.2.10, 4.2.13 ou 4.2.14 de l'Article 4 des Appendices 30 et 30A et dont l'accord n'a pas été obtenu au titre du § 4.2.16, n'est identifié comme étant affecté. De plus, à la suite des modifications apportées aux données initiales, il n'y a pas de nouvelle administration dont les services sont considérés comme étant affectés.

4. Compte tenu de ce qui précède, le Bureau, conformément au § 4.2.19 des Appendices 30 et 30A, conclut que la procédure de l'Article 4 pour le réseau à satellite considéré a été menée à bien. Les assignations en question sont donc incluses dans le Plan et la situation de référence du Plan ainsi que des autres fiches de notification soumises au titre de l'Article 4, qui en sont toujours au stade de l'application de cet Article, ont été mises à jour en conséquence.

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Radiocommunication Bureau Notes

1. Based on the request received by the Radiocommunication Bureau under § 4.2.16 of Article 4 of Appendices 30 and 30A to the Radio Regulations, this Special Section is published in accordance with § 4.2.19 of Article 4 of Appendices 30 and 30A.

2. The frequency assignments of the subject satellite network submitted under § 4.2.6 of Appendices 30 and 30A were published in Part A of the following Special Sections:
 - AP30-30A/E/434 annexed to BR IFIC No. 2590 of 20 March 2007
 - AP30-30A/E/434 (Part D) annexed to BR IFIC No. 2604 of 2 October 2007

3. In application of the criteria of Annex 1 to Appendices 30 and 30A, taking into account the final characteristics and the agreement(s) with other administration(s) provided by the notifying Administration as published in this Special Section, the Bureau has reviewed the list of administrations whose agreements are required for completion of the Article 4 procedure for the subject network. The results of these examinations indicate that no services of any administration that communicated a valid disagreement in accordance with § 4.2.10, 4.2.13 or 4.2.14 of Article 4 of Appendices 30 and 30A and whose agreement was not reached under § 4.2.16, are identified as affected. In addition, there is no administration whose services are newly identified as affected as a result of these modifications to the initial submission.

4. In view of the above, the Bureau, pursuant to § 4.2.19 of Appendices 30 and 30A, concludes that the Article 4 procedure for the subject satellite network has been successfully completed. The subject assignments are therefore included in the Plan and the Reference Situation of the Plan and of other Article 4 submissions, which are still at the stage of application of that Article, have been updated accordingly.

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Notas de la Oficina de Radiocomunicaciones

1. Basándose en la petición recibida por la Oficina de Radiocomunicaciones con arreglo al § 4.2.16 del Artículo 4 de los Apéndices 30 y 30A al Reglamento de Radiocomunicaciones, se publica esta Sección Especial de conformidad con el § 4.2.19 del Artículo 4 de los Apéndices 30 y 30A.

2. Las asignaciones de frecuencias de la red de satélite en cuestión presentada con arreglo al § 4.2.6 de los Apéndices 30 y 30A se publica en la Parte A de las siguientes Secciones Especiales:
 - AP30-30A/E/434 adjunta a la BR IFIC N.º 2590 del 20 de marzo de 2007
 - AP30-30A/E/434 (Parte D) adjunta a la BR IFIC N.º 2604 del 2 de octubre de 2007

3. En aplicación de los criterios del Anexo 1 de los Apéndices 30 y 30A, teniendo en cuenta las características definitivas y los acuerdos con otras administraciones proporcionadas por la Administración notificante como se publica en esta Sección Especial, la Oficina ha examinado la lista de administraciones cuyos acuerdos son necesarios para completar el procedimiento del Artículo 4 aplicado a la red en cuestión. Los resultados de estos exámenes indican que no se ha identificado como afectado ningún servicio de toda administración que ha comunicado un desacuerdo válido de conformidad con los § 4.2.10, 4.2.13 ó 4.2.14 del Artículo 4 de los Apéndices 30 y 30A y cuyo acuerdo no se alcanzó con arreglo al punto 4.2.16. Además, no existe ninguna administración cuyos servicios se hayan identificado como afectados a consecuencia de estas modificaciones introducidas en las presentaciones iniciales.

4. Teniendo en cuenta lo anterior, la Oficina, en virtud del § 4.2.19 de los Apéndices 30 y 30A, ha llegado a la conclusión de que el procedimiento del Artículo 4 para la red de satélite en cuestión se ha completado con éxito. Por lo tanto, las asignaciones correspondientes se incluyen en el Plan y se ha actualizado en consecuencia la situación de referencia del Plan y de otras aplicaciones con arreglo al Artículo 4, que aún se encuentran en la etapa de aplicación de dicho Artículo.

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无线电通信局的注释

1. 无线电通信局在收到根据无线电规则附录 30 和 30A 第 4 条第 4.2.16 段提出的协调要求后，根据附录 30 和 30A 第 4 条第 4.2.19 段公布本特节。
2. 根据附录 30 和 30A 第 4.2.6 段提交的所述卫星网络的频率指配公布在下列特节的 A 部分中：
 - 2007年03月20日无线电通信局国际频率信息通报第2590期附件AP30-30A/E/434
 - 2007年10月02日无线电通信局国际频率信息通报第2604附件AP30-30A/E/434 (D部分)
3. 在应用附录 30 和 30A 附件 1 的标准时，考虑到通知主管部门提交的在本特节中公布的最终特和与其它主管部门达成的协议，无线电通信局审议了对所述网络为完成第 4 条规定的程序而要求与之达成协议的主管部门清单。这些审查的结果表明，根据附录 30 和 30A 第 4 条第 4.2.10、4.2.13 或 4.2.14 段已明确表示异意的并且按照第 4.2.16 段未能达成协议的任何主管部门的任何服务不算做受到影响。修订版) 在对最初提交的资料进行修改后，没有主管部门的业务又被确定为受到影响。
4. 据上所述，无线电通信局根据附录 30A 第 4.2.19 段得出结论，所述卫星网络成功地完成了附录 30 和 30A 第 4 条的程序。因此，所述指配已列入规划。对 1 区和 3 区规划和列表以及其它根据第 4 条提交的仍处于第 4 条应用阶段的资料的参考情况也作了相应的更新。

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Примечания Бюро радиосвязи

1. Настоящая Специальная секция публикуется в соответствии с п. 4.2.19 Статьи 4 Приложений 30 и 30А Регламента радиосвязи на основе запросов, полученных Бюро радиосвязи согласно п. 4.2.16 Статьи 4 Приложений 30 и 30А.
2. Частотные присвоения данной спутниковой сети, представляемые согласно п. 4.2.6 Приложений 30 и 30А, опубликованы в Части А следующих Специальных секций:
 - AP30-30A/E/434, включенной в качестве приложения в ИФИК БР № 2590 от 20.03.2007
 - AP30-30A/E/434 (Часть D), включенной в качестве приложения в ИФИК БР № 2604 от 02.10.2007
3. При применении изложенного в Дополнении 1 к Приложениям 30 и 30А критерия, принимая во внимание окончательные характеристики и соглашение(я) с другой(ими) администрация(ями), представленные заявляющей администрацией и опубликованные в настоящей Специальной секции, Бюро рассмотрело список администраций, согласие которых требуется для выполнения предусмотренной в Статье 4 процедуры касательно данной сети. Результаты этих рассмотрений указывают, что ни одна из служб какой-либо администрации, которая представила обоснованное несогласие в соответствии с п. 4.2.10, 4.2.13 или 4.2.14 Статьи 4 Приложений 30 и 30А и соглашение с которой не было достигнуто согласно п. 4.2.16, не определяется как затронутая. Кроме того, не существует администраций, службы которых вновь определены как затрагиваемые в результате этих изменений первоначального представления.
4. С учетом изложенного выше, Бюро во исполнение п. 4.2.19 Приложений 30 и 30А делает заключение, что процедура Статьи 4 для данной сети успешно завершена. В связи с этим данные присвоения включены в План, и эталонная ситуация Плана и других представлений по Статье 4, которые еще находятся на стадии применения этой статьи, была соответственно обновлена.

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ملاحظات مكتب الاتصالات الراديوية

1. بناء على الطلب الذي استلمه مكتب الاتصالات الراديوية، بموجب الفقرة 16.2.4 من المادة 4 في التذييلين 30 و 30A من لوائح الراديو، فإنه ينشر هذا القسم الخاص طبقاً للفقرة 19.2.4 من المادة 4 في التذييلين 30 و 30A.
2. الترددات المخصصة للشبكة الساتلية المعنية المقدمة بموجب الفقرتين السابقتين 5.3.4 و 5.2.4 من التذييلين 30 و 30A قد نشرت في الجزء A من الأقسام الخاصة التالية:
 - ال النسم الخاص AP30-30A/E/434 للملحق بالنبشرة الإعلامية الدولية للترددات رقم 2590 وتاريخ 2007.03.20
 - ال النسم الخاص (الجزء D) AP30-30A/E/434 للملحق بالنبشرة الإعلامية الدولية للترددات رقم 2904 وتاريخ 2007.10.02
3. تطبيقاً للمعايير المذكورة في الملحق 1 بالتذييل 30 و 30A ، ومراعاة للتخصيص النهائية التي أرسلتها الإدارة للبلغة والاتفاق (الاتفاقات) مع إدارة (إدارات) آخر وفقاً لما هو منشور في هذا القسم الخاص، تفحص للمكتب قائمة الإدارات المطلوب موافقتها لإكمال إجراء المادة 4 فيما يتعلق بالشبكة المعنية. وأظهرت نتائج هذه التفحصات أنه لم يتم تحديد أي خدمة لأي إدارة على أنها متأثرة في حالة إبلاغ هذه الإدارة عن عدم موافقتها على أسس سليمة وفقاً للفقرات 10.2.4 أو 13.2.4 أو 14.2.4 من المادة 4 في التذييل 30 و 30A وعدم الحصول على موافقتها بموجب الفقرة 16.2.4. وبالإضافة إلى ذلك، لم يتم مؤخراً تعيين أي خدمات لأي إدارة بوصفها خدمات متأثرة نتيجة هذه التعديلات في الخصائص المقدمة أصلاً، وفقاً للفقرة.
4. نظراً إلى ما تقدم، خلص للمكتب إلى الاستنتاج، طبقاً للفقرة 19.2.4 من التذييلين 30 و 30A، أن إجراء المادة 4 قد طبق بنجاح بشأن الشبكة الساتلية المعنية. وعليه فقد أدرجت التخصيصات المطروحة في المخططة، وبذلك يكون قد تم تحيين الحالة المرجعية للمخططة وبقيّة بطاقات التبليغ المقدمة بموجب المادة 4 والتي ما زالت في مرحلة تطبيق هذه المادة.

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Attachment 1A
Redacted Copy of the Agreement Between EchoStar 77 and SES-LA

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.

ARTICLE 1. SERVICE PROVIDED

1.A. Scope. QuetzSat is the licensee of the BSS frequencies at the 77° W.L. orbital location (the "Orbital Location"). SES-LA and its Affiliates intend to construct and launch a BSS communications satellite designated as the "QuetzSat-1 Satellite" and QuetzSat intends to operate the QuetzSat-1 Satellite in the Orbital Location. In accordance with and subject to the terms and conditions of this Agreement, SES-LA has agreed to provide certain satellite services to Customer and, as stated in Subsection 2.G(8), reserve certain of the capacity of the QuetzSat-1 Satellite in observance of QuetzSat's obligations set forth in the Concession. In accordance with and subject to the terms and conditions of this Agreement, SES-LA shall provide to Customer, Customer shall pay the applicable MRC for, and Customer (including DISH Network and EchoStar in accordance with their respective Secondary Agreements) shall be entitled to utilize solely for the Intended Purpose, the Service.

The Service shall be provided in accordance with and subject to the terms and conditions set forth in this agreement, including Attachments A – G (as listed below), which are hereby incorporated by reference in their entirety (collectively, the "Agreement"). In the event of any conflict or inconsistency between the terms and conditions set forth in the body of this Agreement and the terms and conditions set forth in any Attachment hereto, then the terms and conditions set forth in the body of this Agreement shall control.

- Attachment A – Technical Performance Specifications
- Attachment B – [REDACTED]
- Attachment C – Model for QuetzSat-1 MRC Calculation
- Attachment D – [REDACTED]
- Attachment E – QuetzSat-1 Spacecraft System Requirements dated 24 November 2008
- Attachment F – Concession
- Attachment G – [REDACTED]

1.B. Terms Related to Construction Contract, Launch Service Agreement, and Insurance.

1.B(1) [Reserved]

1.B(2) SES-LA shall (a) enter into a contract (the "Construction Contract") with Vendor for the construction of the QuetzSat-1 Satellite, (b) enter into a Launch Service Agreement for the launch of the QuetzSat-1 Satellite, and (c) negotiate insurance contracts with insurers for the launch and for the first year (or such period as is then commercially available) of in-orbit operation for the QuetzSat-1 Satellite.

1.B(3) SES-LA, Customer, DISH Network and EchoStar shall collaborate in good faith toward reaching agreements on the Technical Performance Specifications and other requirements for, and toward the successful construction, insurance and launch of, the QuetzSat-1 Satellite, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The proposed [REDACTED] are described in Attachment E. Upon reaching agreement on the Technical Performance Specifications for the QuetzSat-1 Satellite in accordance with this Subsection 1.B(3), SES-LA and Customer shall mutually agree upon the necessary modifications, if any, to (x) Attachment B ([REDACTED]), and (y) Attachment D ([REDACTED]), in each case to reflect the terms of such Technical Performance Specifications.

Subject to the parties' respective rights and obligations set forth in the immediately preceding paragraph, the parties shall use commercially reasonable efforts to cause the execution of the Construction Contract as soon as reasonably practicable and complete the Technical Performance Specifications as soon as reasonably practicable, in each case in accordance with the steps outlined in this paragraph and the immediately following paragraph. Upon completion, [REDACTED] attached hereto as Attachment A, and shall be deemed to be incorporated herein by reference in their entirety.

[REDACTED]

[REDACTED]

1.B(4) [REDACTED]

1.B(5) Subject to any applicable ITAR and EAR restrictions and Vendor's standard security procedure requirements, Customer, DISH Network and EchoStar shall be permitted to participate in and be

present at: [REDACTED]

[REDACTED] Participation by Customer, DISH Network and EchoStar as contemplated herein shall include attendance by their employees and U.S. citizen representatives at such events and meetings, consultation with Customer, DISH Network and EchoStar on engineering decisions that affect the Satellite's performance (including the ability to meet the applicable Technical Performance Specifications) and the review of relevant reports and test results. When available, SES-LA shall distribute un-redacted versions of all design review documents to Customer, DISH Network and EchoStar. SES-LA shall also instruct Vendor to make available to Customer, DISH Network and EchoStar and their U.S. citizen representatives access to un-redacted versions of all technical documents under the Construction Contract, including without limitation the spacecraft performance specification. With reasonable prior notice, Customer, DISH Network and EchoStar shall be permitted [REDACTED] to view program hardware in progress in accordance with Vendor's access policies and procedures. Subject to any confidentiality restrictions set forth in the Construction Contract, Customer, DISH Network and EchoStar and their U.S. citizen representatives shall be provided access, [REDACTED]

[REDACTED] provided that such access does not unreasonably interfere with such work or any other work. Customer, DISH Network and EchoStar and their U.S. citizen representatives shall be provided access, [REDACTED] to work being performed pursuant to the Construction Contract in Vendor's subcontractors' facilities to the extent Vendor obtains such access, subject to the right of Vendor and SES-LA (or its designee) to accompany Customer, DISH Network and EchoStar and their U.S. citizen representatives on any such visit and subject further to the execution by Customer, DISH Network and EchoStar and their U.S. citizen representatives of non-disclosure or similar agreements as may be required by said subcontractors. [REDACTED]

1.B(6) In the event that Customer requests a modification of any Satellite [REDACTED] in compliance with Subsection 1.B(6) of each of the Secondary Agreements, then SES-LA shall negotiate in good faith with Vendor and in accordance with SES-LA's obligations under Subsection 3.A(10) to implement such modification [REDACTED]

[REDACTED] SES-LA and Customer agree to negotiate, in advance and in good faith, the necessary changes to this Agreement, if any, reasonably related to such modifications, [REDACTED]

Customer further acknowledges that any such modification may also require additional approvals or authorizations (a) from SCT, COFETEL and/or other Mexican Governmental Entities and/or the ITU, which SES-LA shall use its commercially reasonable efforts to obtain [REDACTED]

[REDACTED] and/or (b) from the FCC and/or other United States Governmental Entities, which Customer shall use its commercially reasonable efforts to cause DISH Network and/or EchoStar, as applicable, to

REDACTED – FOR PUBLIC INSPECTION

obtain. 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, as soon as reasonably practicable, to assist SES-LA in the regulatory process for the approvals and authorizations described in clause (a) of the preceding sentence. Upon the request of Customer, SES-LA agrees to provide reasonable support, as soon as reasonably practicable, to assist Customer, DISH Network and EchoStar in the regulatory process for the approvals and authorizations described in clause (b) of the preceding sentence, [REDACTED]

[REDACTED] In the event that, notwithstanding such commercially reasonable efforts by SES-LA and/or Customer, as applicable, such reasonable support from SES-LA and/or Customer, as applicable, and such commercially reasonable efforts by Customer to cause DISH Network and EchoStar to provide such reasonable support [REDACTED]

[REDACTED], any required additional approvals or authorizations are not obtained, then no modifications to the Satellite shall be made.

1.B(7) SES-LA agrees to keep Customer promptly apprised of all material third party discussions related to the Launch Service Agreement. SES-LA shall collaborate with and include Customer, DISH Network and EchoStar in all significant decisions related to the Launch Service Agreement, [REDACTED]

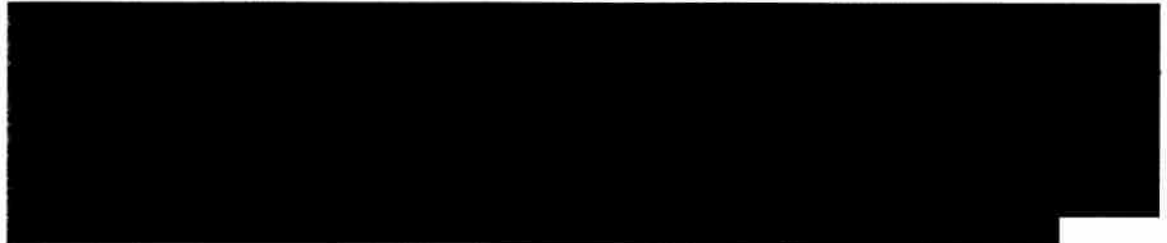
[REDACTED] Subject to any applicable ITAR and EAR restrictions, Customer, DISH Network and EchoStar and their U.S. citizen representatives shall be permitted to participate in reviews of each of LSA Vendor's milestone events with respect to launch of the Satellite. Customer and Customer's guests may at Customer's expense attend the launch of the Satellite.

1.B(8) SES-LA agrees to keep Customer promptly apprised of all material third party discussions related to insurance. SES-LA shall collaborate with and include Customer, DISH Network and EchoStar in all significant decisions related to insurance, including without limitation the placement of insurance, [REDACTED]

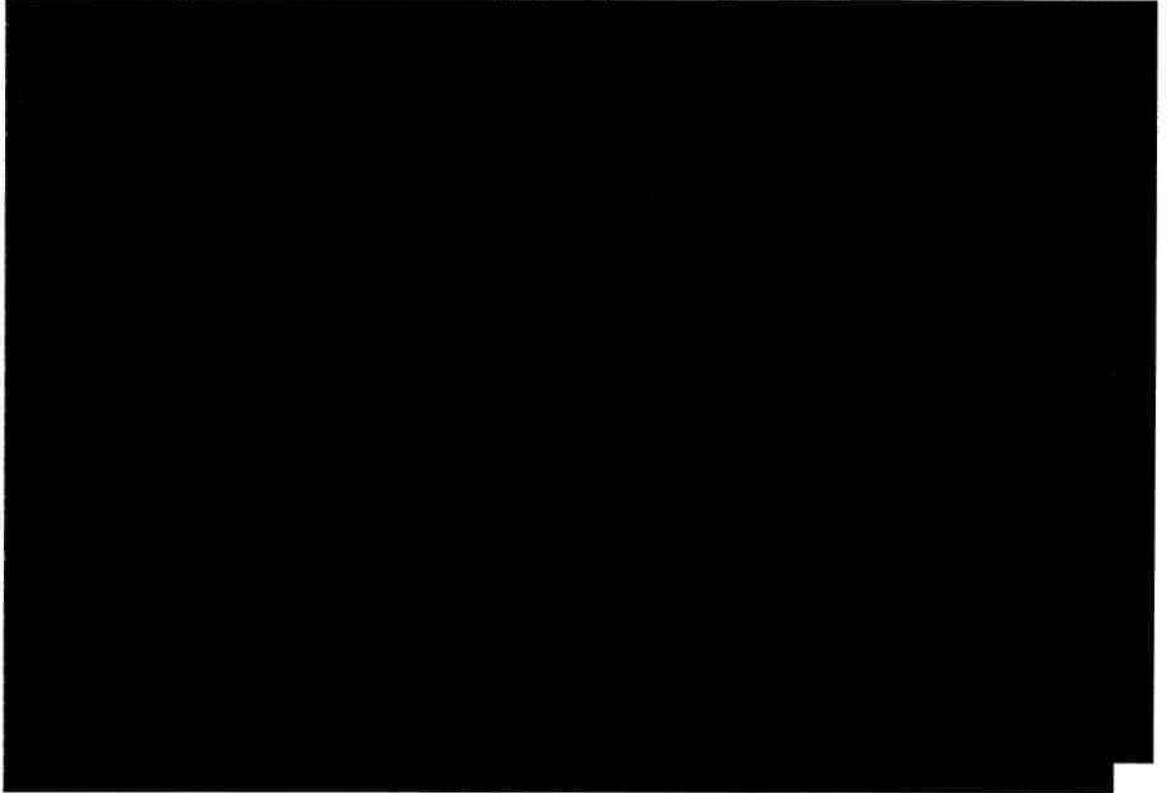
[REDACTED] SES-LA shall use commercially reasonable efforts to include terms in the insurance policies that would include a return of all premiums (or as much of such premiums as possible) in the event of a cancellation of the policies.

1.B(9) [REDACTED]

1.B(10) [REDACTED]

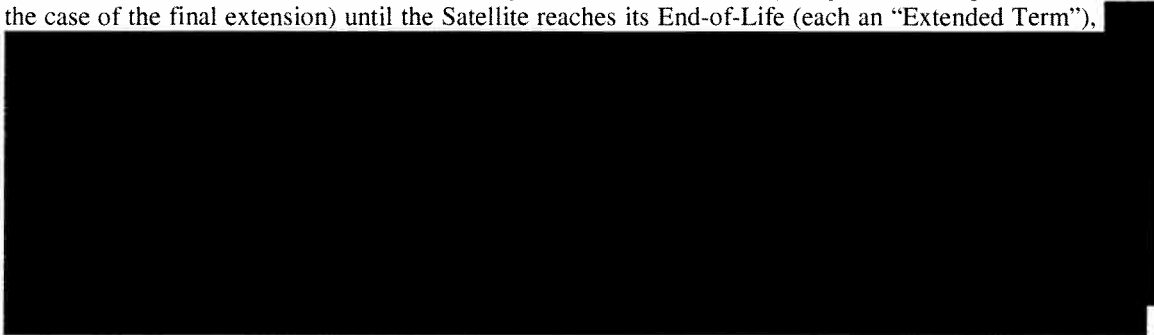


1.B(11) Customer acknowledges and agrees that it is SES-LA’s intention to procure commercial launch and in-orbit insurance covering the [REDACTED], based on an allocation of such Net Book Value to the various payloads on the Satellite, as determined by mutual agreement of SES-LA, Customer, DISH Network and EchoStar subsequent to execution of the Construction Contract (and subject to later modification by mutual agreement of such parties). The terms and conditions of this Agreement shall be equitably adjusted as necessary to reflect the original or modified allocation (e.g., the formula in clause (e) of Subsection 2.H(3), [REDACTED] Attachment B, and the terms and conditions referencing a Failed Payload may need adjustment). Upon the request of SES-LA, Customer, DISH Network or EchoStar, SES-LA, Customer, DISH Network and EchoStar shall use commercially reasonable efforts to mutually agree upon the original allocation or a modified allocation.



1.B(12) SES-LA shall use commercially reasonable efforts to obtain specific payload-level insurance coverage (*i.e.*, in the initial launch coverage and the subsequent in-orbit coverages), consistent with the allocation of Net Book Value determined under Subsection 1.B(11). During such periods of the Service Term in which no such payload-level coverage exists, the references to “Failed Payload” in Subsection 2.A(3), Subsection 2.C(2), Subsection 5.B(1) and Subsection 7.B(1) shall be disregarded. During such periods of the Service Term in which such payload-level coverage exists, the foregoing references shall apply and the terms and conditions of this Agreement shall be equitably adjusted as necessary to reflect the existence of such coverage.

1.C. Service Term. The term for Service (the “Service Term”) on any Satellite (including a Replacement Satellite or a Successor Satellite) shall commence on the In-Service Date for that Satellite, and, except as otherwise provided herein, shall expire on the earlier of (1) ten (10) years after such In-Service Date (the “Initial Term”), or (2) the date that Satellite becomes a Failed Satellite. The Service Term on any Satellite (including a Replacement Satellite or a Successor Satellite) that is not a Failed Satellite may be extended at Customer’s sole option for successive one-year periods (or a portion thereof in the case of the final extension) until the Satellite reaches its End-of-Life (each an “Extended Term”),



1.D. Notices. All notices regarding technical or operational matters requiring immediate attention shall be given by telephone to the telephone numbers set forth below for Customer and the telephone number set forth in the User’s Guides for Technical Representative (on behalf of SES-LA) and shall be followed by written notification in accordance with the procedure set forth below. Any other notice required or permitted to be given hereunder shall be in writing and shall be sent by facsimile transmission or by overnight courier service, charges prepaid, to the party to be notified, addressed to such party at the address set forth below, or sent by facsimile to the fax number set forth below, or such other address or fax number as such party may have substituted by written notice to the other party. The sending of such notice with confirmation of receipt thereof (in the case of facsimile transmission) or receipt of such notice (in the case of delivery by overnight courier service) shall constitute the giving thereof.

If to be given to Customer:



If to be given to SES-LA:



[REDACTED]

Customer's 24-Hour Emergency Telephone # for Technical/Operational Issues:

[REDACTED]

1.E.

[REDACTED]

1.E(1)

[REDACTED]

1.E(2)

[REDACTED]

1.E(3)

[REDACTED]

[REDACTED]

1.E(4)

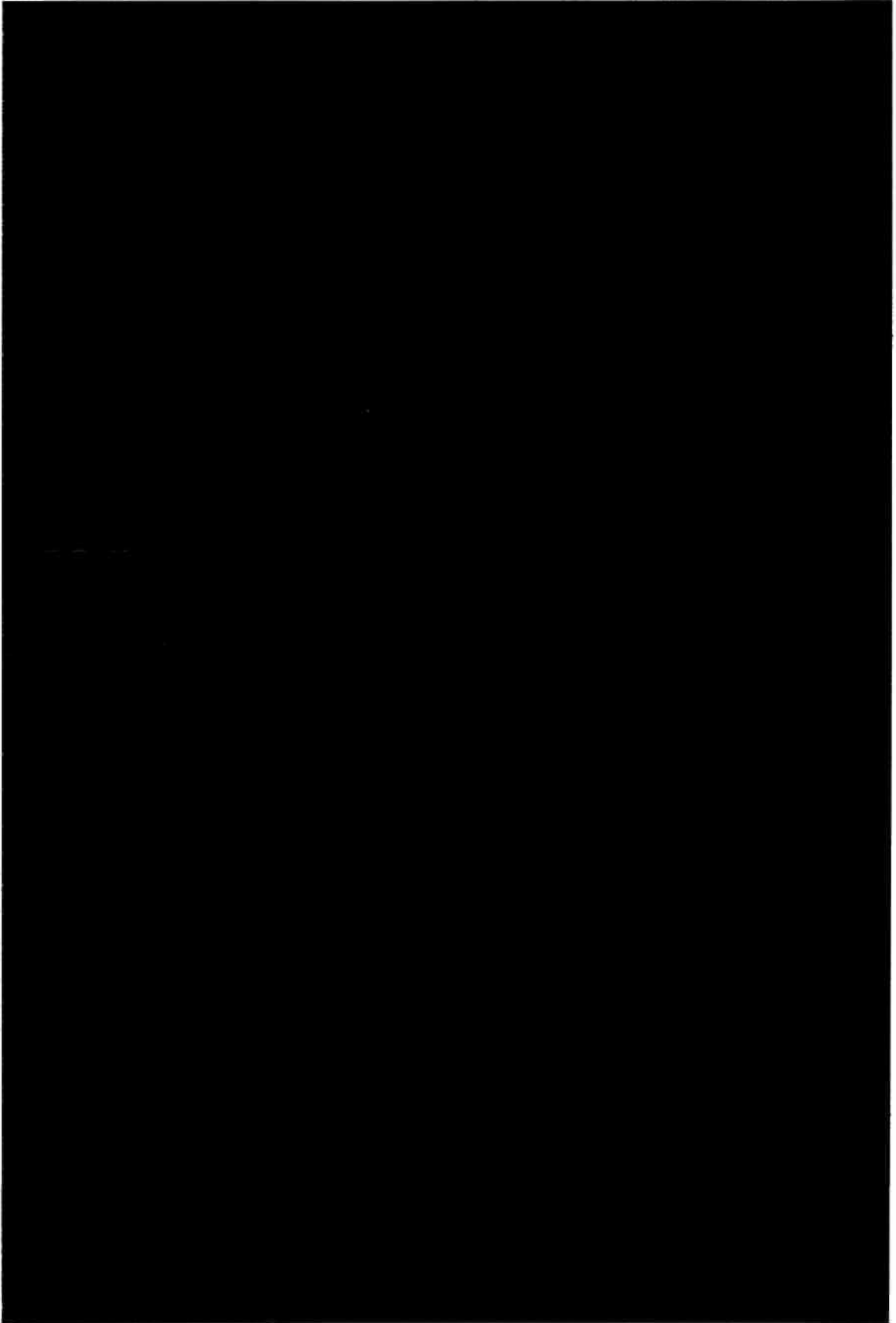
[REDACTED]

ARTICLE 2. PAYMENTS AND OTHER CONSIDERATIONS/ FUTURE SATELLITES

2.A.

[REDACTED]

[REDACTED]



[Redacted]

2.A(2) *[Reserved]*

2.A(3)

[Redacted]

2.A(4)

[Redacted]

2.A(5) *[Reserved]*

2.A(6) *[Reserved]*

2.B. Monthly Recurring Charges.

2.B(1) Commencing on the In-Service Date and for the duration of the Service Term (including any Extended Terms) Customer shall pay to SES-LA for the Service a monthly recurring service charge (the “MRC”) with respect to the QuetzSat-1 Satellite

[Redacted]

2.B(2) [Reserved]


2.B(3)



2.B(4)



2.B(5) At an appropriate time, and from time to time in the event that Customer exercises its right in Subsection 2.G(10) to locate the Satellite at an Alternate Orbital Location after receipt of, and consistent with, Unanimous Instructions pursuant to Subsection 2.G(10) of each of the Secondary Agreements and as otherwise necessary, SES-LA, Customer, DISH Network and EchoStar shall collaborate in good faith as to the methods by which TT&C will be provided for the QuetzSat-1 Satellite, provided that,

, such methods must meet the minimum requirements of the Concession when the Satellite is located at the Orbital Location. With respect to periods when the QuetzSat-1 Satellite is located at the Orbital Location, such collaboration shall include without limitation the following topics: (x) location of TT&C facilities in Mexico in accordance with the terms and conditions of the Concession, and whether to build a facility or contract for services from a third party; and (y) tax considerations, including with respect to permanent establishments. SES-LA agrees to keep Customer, DISH Network and EchoStar promptly apprised of all material third party discussions related to TT&C for the QuetzSat-1 Satellite. SES-LA shall collaborate with and include Customer, DISH Network and EchoStar in all significant decisions related to TT&C for the QuetzSat-1

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Satellite, including without limitation the purchase of TT&C equipment and other terrestrial facilities necessary to perform TT&C services, although the parties agree that SES-LA shall make the final decisions with respect to TT&C for the QuetzSat-1 Satellite (provided that such decisions are consistent with SES-LA's obligations under this Agreement).

[REDACTED]

2.B(6)

[REDACTED]

2.C. Monthly Recurring Charges Adjustments/Refunds.

2.C(1)

[REDACTED]

In the event of a Satellite Failure for any reason whatsoever, Customer's obligation to pay the MRCs due for the period after the Satellite Failure shall automatically terminate as of the date of the Satellite Failure, [REDACTED] SES-LA shall refund to Customer any MRCs paid for periods subsequent to the date of a Satellite Failure, including the

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period between and including the date of the Satellite Failure and the date upon which it is determined that a Satellite Failure has occurred.

2.C(2) [Redacted]

2.D. [Redacted]

2.E. [Redacted]

2.F. Taxes and Other Charges. [Redacted]

SES-LA represents that, as of the date hereof, it has no actual knowledge of any Taxes (1) which would be or are proposed to be levied on SES-LA or any of its Affiliates by any Governmental Entities, (2) which would apply or are proposed to apply to the Service at the Orbital Location or the facilities used to provide the Service at the Orbital Location to Customer, or (3)

The parties shall use their respective commercially reasonable efforts to support each other in (a) the optimization of tax-related strategies, and (b) actions against the establishment of new Taxes that would be payable or reimbursable by Customer pursuant to this Section 2.F,

2.G. Terms Applicable to the QuetzSat-1 Satellite.

2.G(1) *SES-LA Authorizations.*

SES-LA agrees to use commercially reasonable efforts to maintain the Concession and to pursue, secure, as soon as reasonably practicable, and maintain all other Authorizations necessary for the Service Term from SCT, COFETEL, all other Mexican Governmental Entities and the ITU to (a) locate the QuetzSat-1 Satellite at the Orbital Location, and (b) permit (i) TT&C functions for the Satellite 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, the DISH Payload using the 77° W.L. Frequencies utilized by the DISH Payload 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, the EchoStar Payload using the 77° W.L. Frequencies utilized by the EchoStar Payload at the Orbital Location, (iv) DISH Network and its Affiliates to use the QuetzSat-1 Satellite at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose, and (v) EchoStar and its Affiliates to use the QuetzSat-1 Satellite at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose, with the exception of the separate concession that is required to provide direct-to-home service into Mexico from the QuetzSat-1 Satellite and any additional authorizations specifically relating thereto (collectively, the “77° W.L. License”). (The parties acknowledge and agree that

(y) 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 the QuetzSat-1 Satellite for other authorized purposes.) 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.

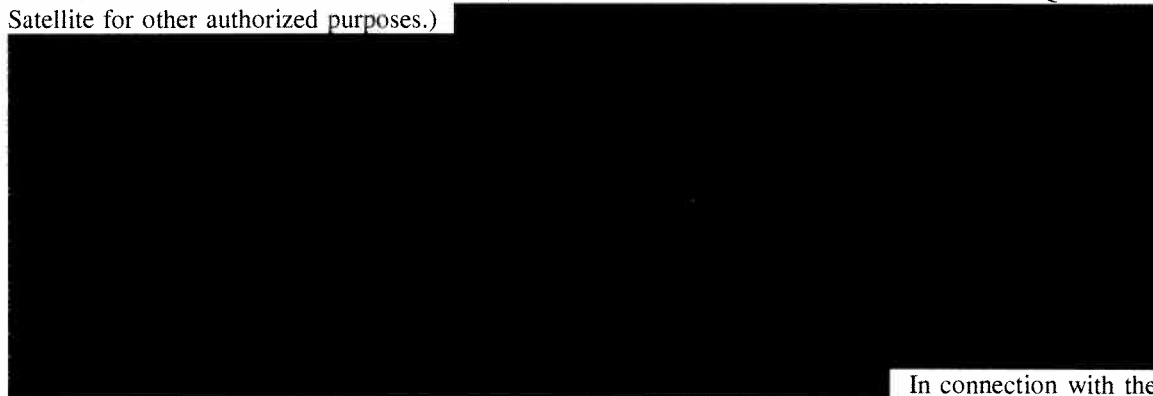
SES-LA agrees to consult regularly with Customer during the regulatory process for the 77° W.L. License.

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 the 77° W.L. License.

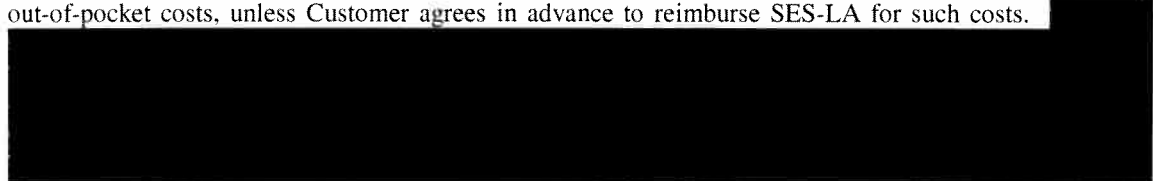
2.G(2) *Customer Authorizations.* Customer agrees to cause DISH Network to use commercially reasonable efforts at the expense of DISH Network to pursue, secure, as soon as reasonably practicable, and

REDACTED – FOR PUBLIC INSPECTION

maintain all Authorizations necessary for the Service Term from United States Governmental Entities (including without limitation the FCC and Department of State) to permit (a) DISH Network 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, the DISH Payload using the 77° W.L. Frequencies utilized by the DISH Payload at the Orbital Location, and (b) DISH Network to use the QuetzSat-1 Satellite at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose, including without limitation all necessary blanket authorizations of earth stations (with respect to the number of earth stations reasonably deemed necessary by Customer from time to time) seeking to receive direct-to-home transmissions in the United States from the QuetzSat-1 Satellite at the Orbital Location (collectively, the “DISH FCC Approvals”). Customer further agrees to cause EchoStar to use commercially reasonable efforts at the expense of EchoStar to pursue, secure, as soon as reasonably practicable, and maintain all Authorizations necessary for the Service Term from United States Governmental Entities (including without limitation the FCC and Department of State) to permit (aa) EchoStar 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, the EchoStar Payload using the 77° W.L. Frequencies utilized by the EchoStar Payload at the Orbital Location, and (bb) EchoStar to use the QuetzSat-1 Satellite at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose (collectively, the “EchoStar FCC Approvals”). (The parties acknowledge and agree that the references in the foregoing clauses (b) and (bb) to the Intended Purpose are not intended and shall not be construed to foreclose Customer, DISH Network and EchoStar from use of the QuetzSat-1 Satellite for other authorized purposes.)



In connection with the foregoing and in consultation with SES-LA, Customer agrees to use commercially reasonable efforts to cause DISH Network to file all documents and take all actions reasonably necessary to obtain the DISH FCC Approvals as soon as reasonably practicable and EchoStar to file all documents and take all actions reasonably necessary to obtain the EchoStar FCC Approvals as soon as reasonably practicable. Customer agrees to use commercially reasonable efforts to cause DISH Network and EchoStar to respond promptly to requests for further information from United States Governmental Entities. Customer agrees to cause DISH Network to consult regularly with SES-LA during the regulatory process for the DISH FCC Approvals and EchoStar to consult regularly with SES-LA during the regulatory process for the EchoStar FCC Approvals, and shall advise SES-LA on a timely basis of all material developments concerning such process. Customer agrees that if any filing or submission made by DISH Network or EchoStar during the regulatory process for the FCC Approvals mentions SES-LA or any of the terms or conditions set forth in this Agreement, then it shall obtain the prior approval of SES-LA before filing or submitting material to any Governmental Entities, such approval not to be unreasonably withheld or delayed. Upon the request of Customer, SES-LA agrees to provide reasonable support, as soon as reasonably practicable, to assist Customer, DISH Network and EchoStar in the regulatory process for the FCC Approvals, and to use best reasonable efforts to cause the then-current Mexican citizen shareholders in QuetzSat to provide such reasonable support, provided that such “best reasonable efforts” shall not obligate SES-LA to incur any out-of-pocket costs, unless Customer agrees in advance to reimburse SES-LA for such costs.



[REDACTED]

2.G(3) Concession. Customer and SES-LA acknowledge the terms and conditions for the concession to occupy the Orbital Location, develop its corresponding BSS frequencies, and broadcast and receive signals established and issued by SCT to QuetzSat on 2 February 2005 (the “Concession”)(a copy of which is appended to this Agreement as Attachment F).

2.G(4) Coordination.

[REDACTED]

2.G(4)(b)

[REDACTED]

(i)

[REDACTED]

(ii)

[REDACTED]

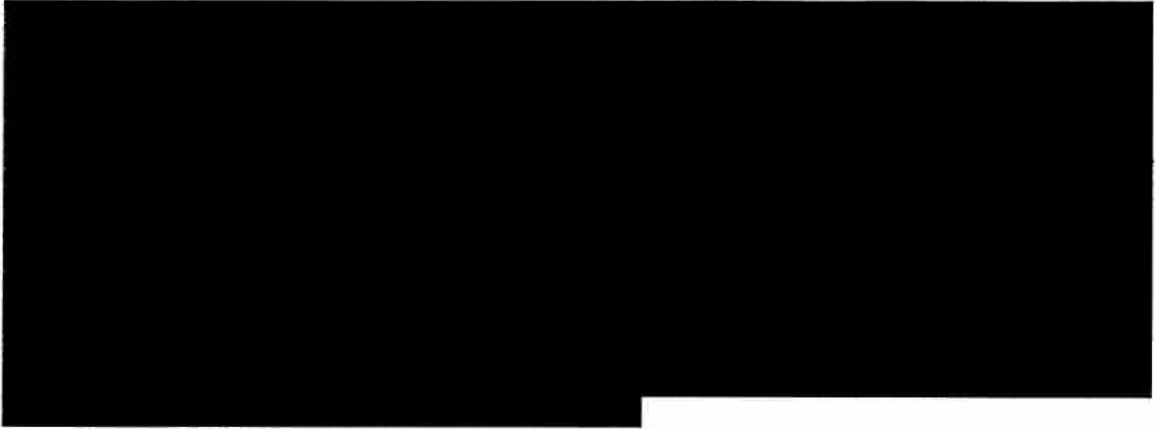
(iii)

[REDACTED]

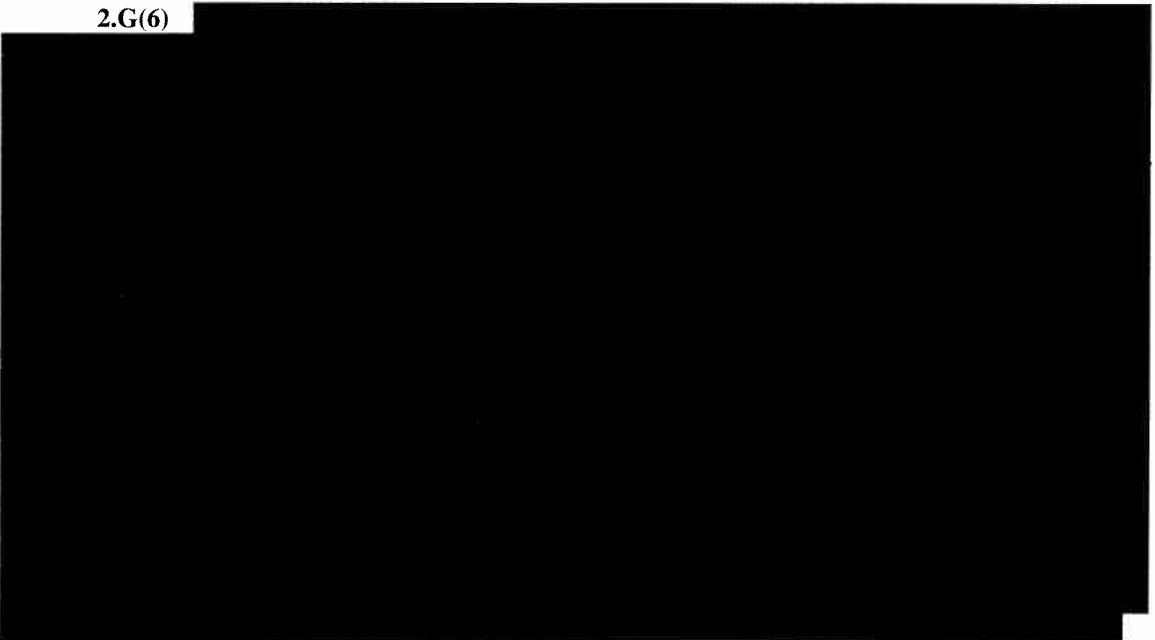
[REDACTED]

2.G(4)(c)

[REDACTED]



2.G(5) *[Reserved]*

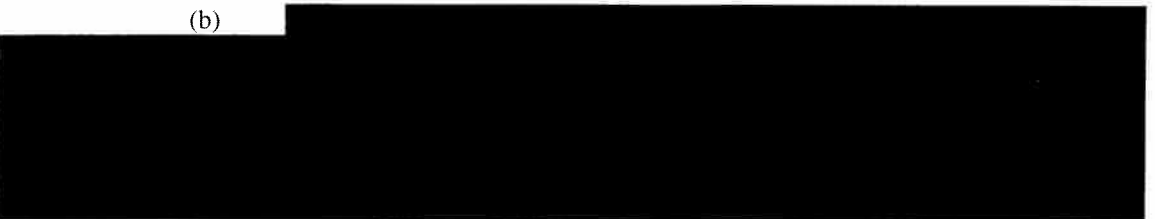


2.G(6)

(a)



(b)



[REDACTED]

(c)

[REDACTED]

[REDACTED]

2.G(7) *[Reserved]*

2.G(8) *Capacity Obligation.* The parties acknowledge QuetzSat’s obligation (the “Capacity Obligation”)

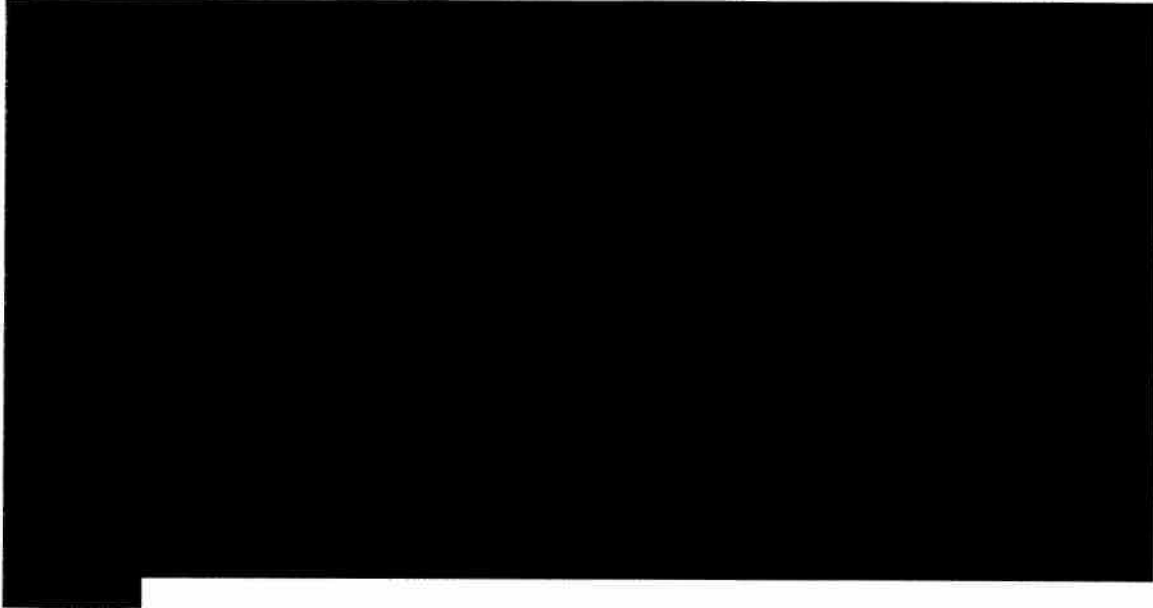
[REDACTED]

Customer shall be responsible for meeting all requirements related to the Capacity Obligation, including any requirements resulting from the failure of capacity provided on the QuetzSat-1 Satellite or failure of the Alternate Capacity in the manner described in Subsection 2.G(8) of each of the Secondary Agreements. Upon the request of Customer, SES-LA agrees to provide reasonable support, as soon as reasonably practicable, to assist Customer in meeting all requirements related to the Capacity Obligation, and to use best reasonable efforts to cause the then-current Mexican citizen shareholders in QuetzSat to provide such reasonable support.

[REDACTED]

2.G(9)

[REDACTED]



2.G(10)



[REDACTED]

2.G(11)

[REDACTED]

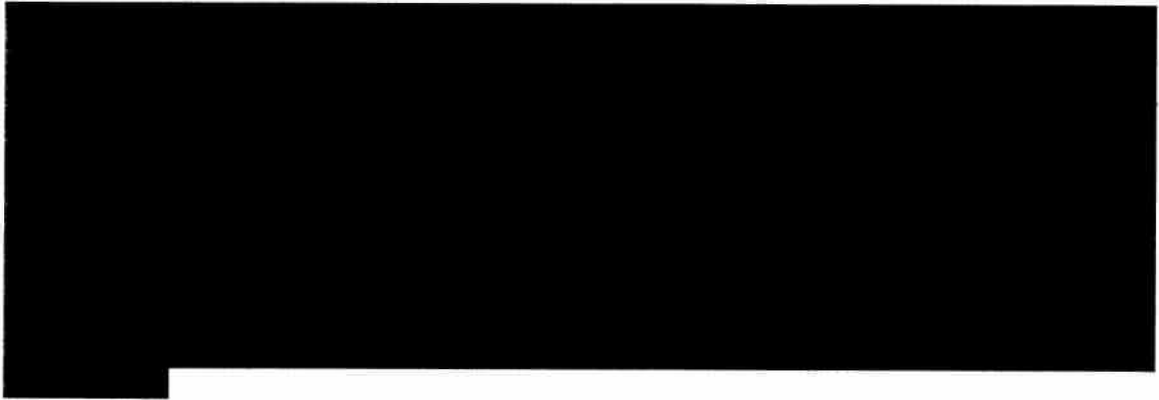
2.G(12) *Agreement with DISH Mexico Partner(s).*

[REDACTED]
to provide direct-to-home video, audio and/or data services into Mexico,
[REDACTED]

2.H.

2.H(1)

2.H(1)(a) In the event that, at any time during the effectiveness of this Agreement, any Satellite (including any Replacement Satellite or Successor Satellite) becomes a Failed Satellite, then Customer shall have the option to request [REDACTED] that SES-LA provide the Service on a Replacement Satellite [REDACTED]

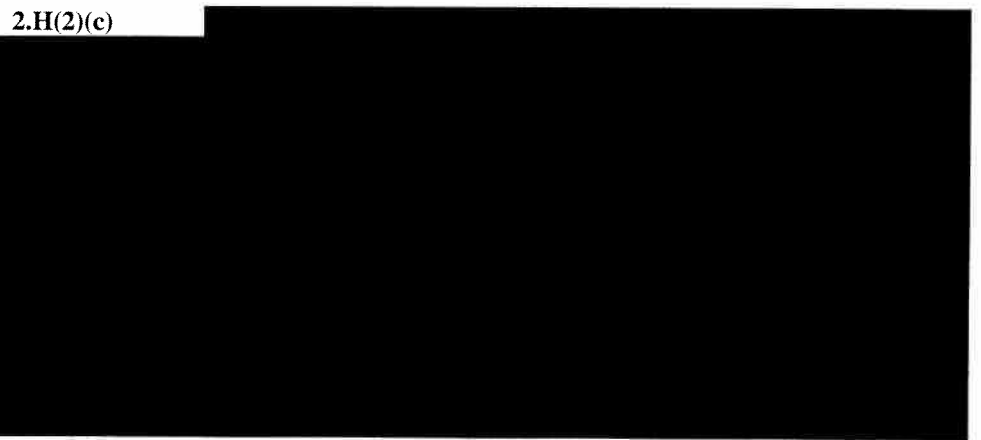


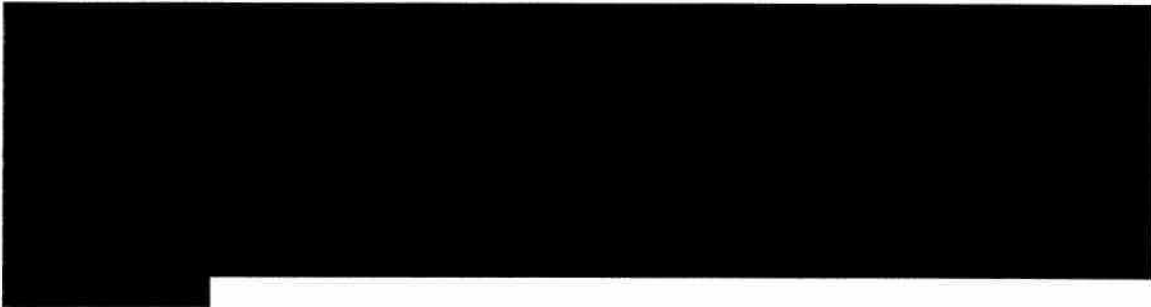
2.H(1)(b) *[Reserved]*

2.H(2) 

2.H(2)(a) 

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

2.H(2)(c) 



2.H(3) [Redacted]

2.H(3)(a) [Redacted]

2.H(3)(b) [Reserved]

2.H(3)(c) [Redacted]

[REDACTED]

[REDACTED]

2.H(3)(e)

[REDACTED]

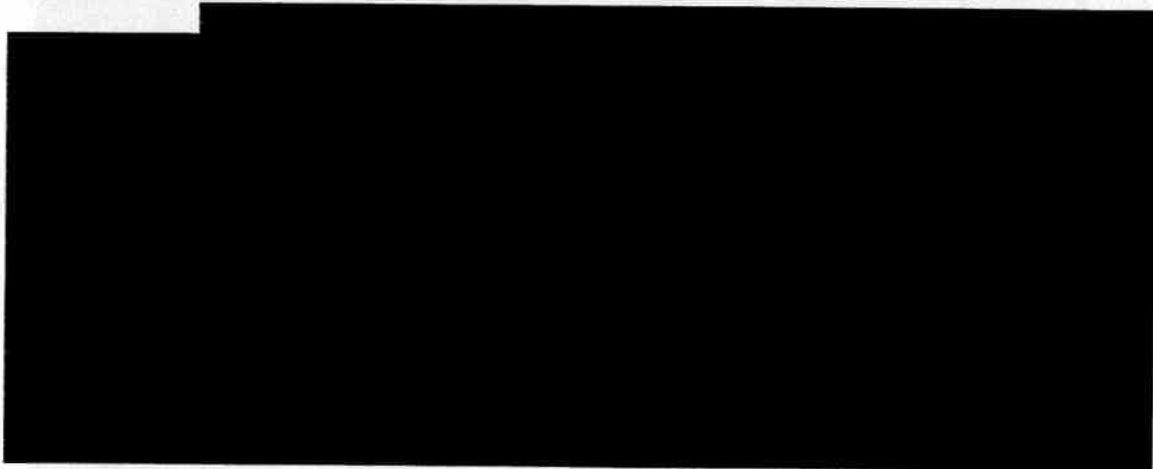
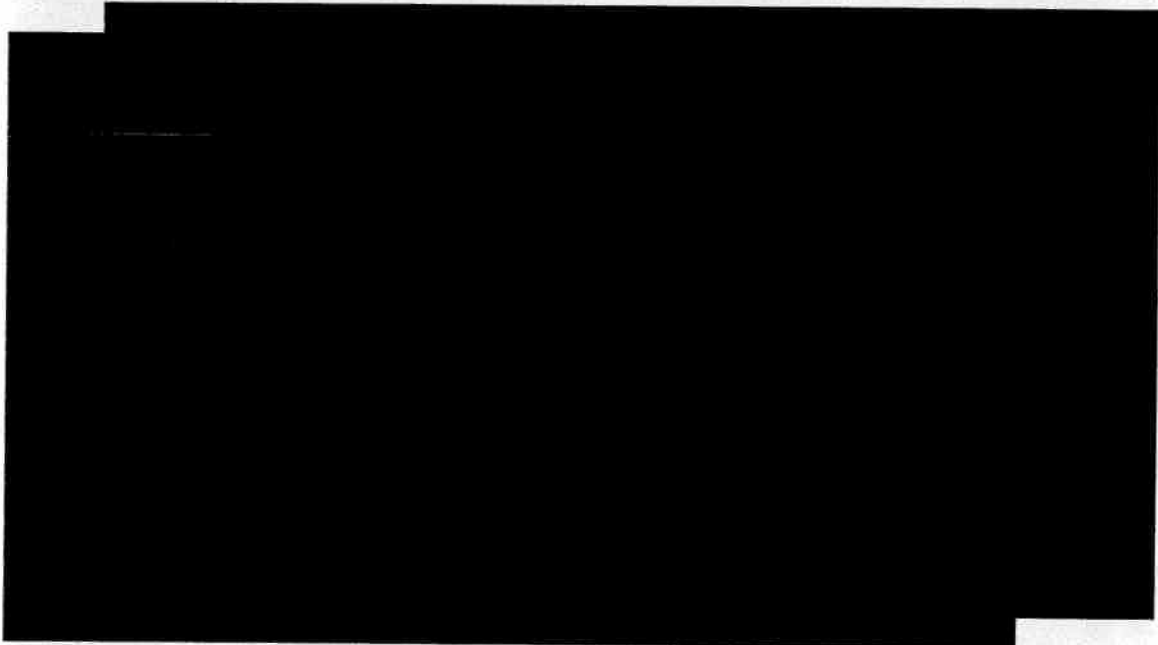
[REDACTED]

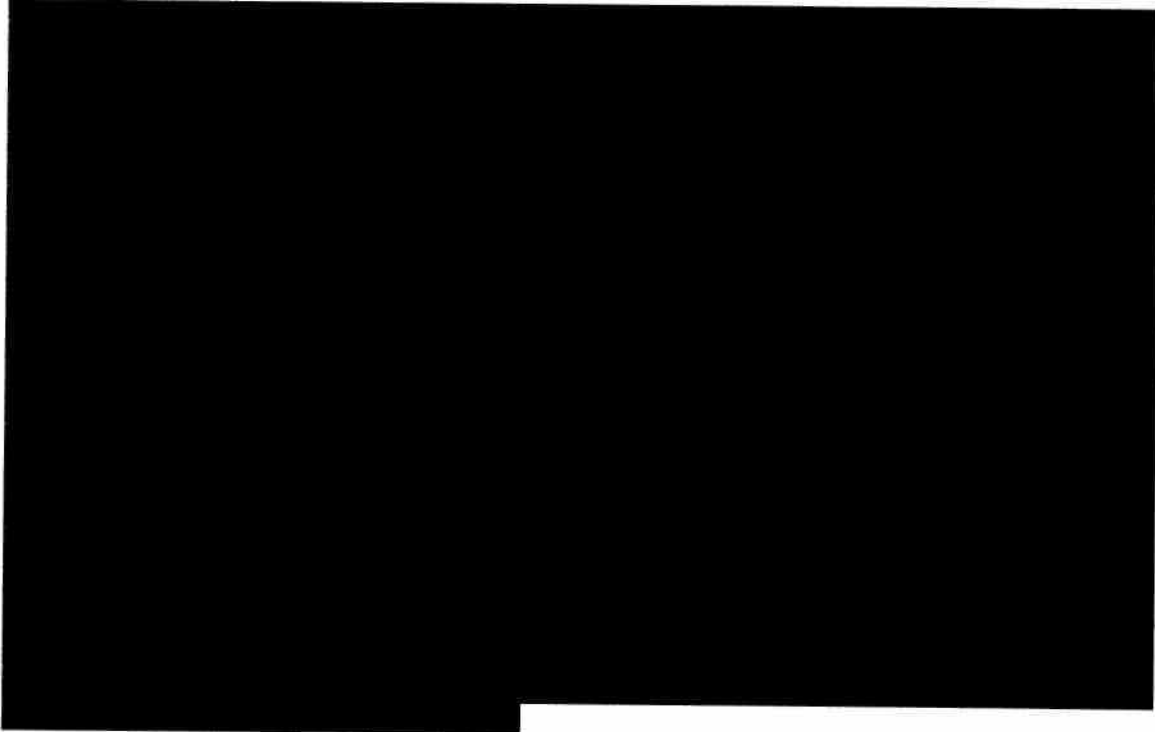
[REDACTED]

[REDACTED]

2.H(4)

[REDACTED]

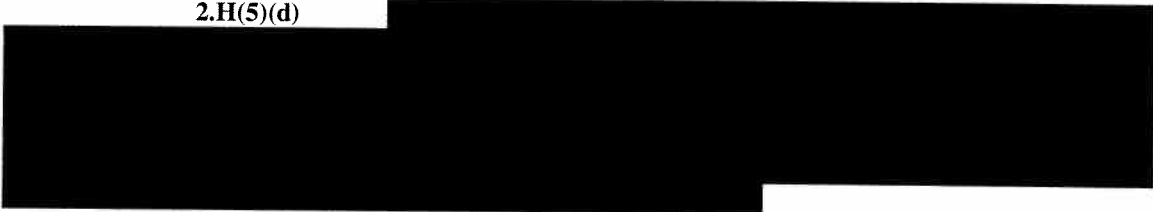




2.H(5)(b) *[Reserved]*

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

2.H(5)(d)

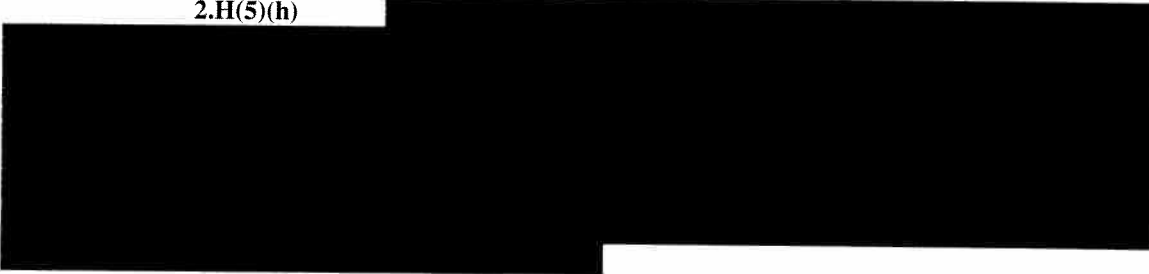


2.H(5)(e) *[Reserved]*

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

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

2.H(5)(h)



2.H(6) *[Reserved]*

2.H(7)



[REDACTED]

2.H(8)

[REDACTED]

2.H(9)

[REDACTED]

2.I.

[REDACTED]

2.I(1)

[REDACTED] option to request Service on a successor satellite [REDACTED] Customer shall have the that SES-LA provide the

[REDACTED]

2.I(2)

[REDACTED]

2.I(3)

[REDACTED]

2.J. Additional Conditions as to Customer Rights.

2.J(1) Notwithstanding clause (a)(z) of Subsection 2.H(1), clause (a)(z) of Subsection 2.H(2), clause (a)(z) of Subsection 2.H(3), and clause (z) of Subsection 2.I(1), Customer’s rights with respect to Replacement Satellites and Successor Satellites shall not be exercisable if [REDACTED]

[REDACTED]

2.J(2) Other than as set forth in Subsection 2.H(5), Customer's rights with respect to Interim Satellites shall not be exercisable unless [REDACTED]

[REDACTED]

ARTICLE 3. REPRESENTATIONS, WARRANTIES AND COVENANTS

3.A. **SES-LA's Representations, Warranties and Covenants.** SES-LA hereby represents, warrants and covenants to Customer as follows:

3.A(1) It is a limited liability company (Société Anonyme) duly organized, validly existing and in good standing under the laws of Luxembourg. It is duly licensed or qualified to do business as a foreign entity in all jurisdictions where the failure to be so qualified would materially adversely affect its ability to perform its obligations hereunder. It has all requisite power and authority to own its properties and carry on its business as now conducted.

3.A(2) Subject to the Board of Directors approval contemplated by Section 10.Q, the execution, delivery and performance (as provided herein) by SES-LA of this Agreement has been duly authorized by all requisite corporate action of SES-LA (including without limitation any necessary action of its directors and shareholders) and will not violate any applicable provisions of law or any order of any court or any agency of government and will not conflict with or result in a breach under (a) its constating documents, or (b) any material agreement to which SES-LA is a party or by which it is bound. This Agreement is a legal, valid and binding obligation of SES-LA, enforceable in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting creditors' rights generally.

3.A(3) SES-LA has not retained or authorized anyone to represent it as a broker or finder in connection with this Agreement.

3.A(4) In connection with SES-LA's performance under this Agreement, SES-LA shall comply in all material respects with all applicable laws, regulations, or orders of any Governmental Entity,

[REDACTED]

3.A(5) *[Reserved]*

3.A(6) Neither SES-LA nor any of its Affiliates shall place another satellite in service that would cause interference with the 77° W.L. Frequencies.

3.A(7) SES-LA shall not amend the Construction Contract in a way that would adversely impact Customer and SES-LA shall not terminate the Construction Contract, in either case without the express written concurrence of Customer, provided that Customer's concurrence shall not be required if notice has

been given of the termination of this Agreement.

3.A(8) Except with respect to the “QuetzSat-1” designation, SES-LA hereby grants to Customer and any successor owner of the QuetzSat-1 Satellite and their respective Affiliates (a) a non-exclusive, royalty-free, fully-paid-up and irrevocable license under all patents, copyrights, trade secrets and other intellectual property of SES-LA and its Affiliates necessary for Customer to use the QuetzSat-1 Satellite for the purposes permitted [REDACTED]

[REDACTED] such license to expire on the expiration or termination of this Agreement [REDACTED], and (b) the right to sub-license the license described in clause (a) to DISH Network and/or EchoStar and/or their Affiliates under terms that are consistent with clause (a).

3.A(9) SES-LA’s Program Management for a Satellite shall apply at least the same degree of care [REDACTED]

3.A(10) In the construction, insurance and launch of each Satellite pursuant to this Agreement, SES-LA agrees to use good faith efforts to [REDACTED]

[REDACTED] For the avoidance of doubt, the “construction” activities covered above shall include SES-LA’s efforts to implement changes requested by Customer under Subsection 1.B(6).

3.A(11) *[Reserved]*

3.A(12) *[Reserved]*

3.A(13) As of the Effective Date and to the best of the present knowledge and belief of SES-LA, after reasonable investigation, [REDACTED]

3.A(14) As of the Effective Date and to the best of the present knowledge and belief of SES-LA, after reasonable investigation (except as set forth to the contrary herein), QuetzSat is in compliance with the terms, conditions and requirements of all of the Authorizations comprising the 77° W.L. License that have been received by QuetzSat to date (including without limitation the Concession) and there has occurred no violation of, default (with or without notice or lapse of time or both) under, or event giving to any person or entity any right of revocation, modification, suspension, cancellation or termination (with or without notice or lapse of time or both) of any such Authorization. All of the Authorizations comprising the 77° W.L. License that have been received by SES-LA and its Affiliates to date are held by QuetzSat.

3.A(15) As of the Effective Date and to the best of the present knowledge and belief of SES-LA, after reasonable investigation, all of the Authorizations comprising the 77° W.L. License that have been received by QuetzSat to date (including without limitation the Concession) (a) are valid and in full force and effect, (b) have not been stayed, and (c) are not subject to any request for stay, reconsideration, review or judicial appeal.

3.A(16) SES-LA has not received notice of any revocation, modification, suspension, cancellation or termination of any Authorization comprising the 77° W.L. License that has been received by QuetzSat to date (including without limitation the Concession) and is not aware of any fact and has not received any communication, formal or informal, indicating that any Governmental Entity is considering revoking, modifying adversely, suspending, canceling, rescinding or terminating any such Authorization (including without limitation the Concession).

REDACTED – FOR PUBLIC INSPECTION

3.A(17) As of the Effective Date and to the best of the present knowledge and belief of SES-LA, after reasonable investigation, this Agreement and the operation of the Satellite contemplated hereby, including without limitation the TT&C functions described herein, complies with all of the Authorizations comprising the 77° W.L. License that have been received by QuetzSat to date (including without limitation the Concession).

3.A(18) SES-LA has irrevocably delegated to [REDACTED] authority to make all decisions on behalf of SES-LA relating to the [REDACTED]. SES-LA shall be responsible for the actions or inactions of [REDACTED] as to such delegated authority as if the same were actions or inactions of SES-LA.

[REDACTED]

3.A(19) SES-LA (a) has the right to provide Service to Customer on the Satellite, and (b) is party to and shall maintain agreements with QuetzSat and other Affiliates of SES-LA that grant SES-LA all rights held by QuetzSat and all other Affiliates of SES-LA necessary for SES-LA to provide Customer with Service as stated in this Agreement throughout the Service Term, for SES-LA to otherwise perform its obligations hereunder, and for Customer to exercise its rights and otherwise receive all benefits anticipated hereunder.

3.A(20) Certain of the obligations to be performed by SES-LA as stated in this Agreement will be performed on behalf of SES-LA by one or more Affiliates of SES-LA. SES-LA shall cause each such Affiliate to perform such obligations and shall be responsible for the actions or inactions of such Affiliates as to such obligations as if the same were actions or inactions of SES-LA.

3.A(21) From the Effective Date until the later of (a) termination of this Agreement pursuant to Article 9, or (b) expiration of this Agreement in accordance with Subsection 9.F(1), SES-LA and its Affiliates agree not to [REDACTED]

[REDACTED]

3.B. Customer's Representations, Warranties and Covenants. Customer hereby represents, warrants and covenants to SES-LA as follows:

3.B(1) It is a corporation duly organized, validly existing and in good standing under the laws of Delaware. It is duly licensed or qualified to do business as a foreign entity in all jurisdictions where the failure to be so qualified would materially adversely affect its ability to perform its obligations hereunder. It has all requisite power and authority to own its properties and carry on its business as now conducted.

3.B(2) Subject to the Board of Directors approval contemplated by Section 10.Q, the execution, delivery and performance (as provided herein) by Customer of this Agreement has been duly authorized by all requisite corporate action of Customer (including without limitation any necessary action of its directors and shareholders) and will not violate any applicable provisions of law or any order of any court or agency of government and will not conflict with or result in a breach under (a) its Articles of Incorporation or By-Laws, or (b) any material agreement to which Customer is a party or by which it is bound. This Agreement is a legal, valid and binding obligation of Customer, enforceable in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting creditors' rights generally.

3.B(3) Customer has not employed or authorized anyone to represent it as a broker or finder in connection with this Agreement.

3.B(4)

[REDACTED] in connection with Customer's performance under this Agreement, Customer shall comply in all material respects with all applicable laws, regulations, or orders of any Governmental Entity, including without limitation those governing content of transmissions and all SCT, COFETEL and FCC license requirements.

3.B(5)

3.B(6) *[Reserved]*

3.B(7) Customer hereby grants SES-LA and any successor owner of the QuetzSat-1 Satellite and their respective Affiliates a non-exclusive, royalty-free, fully-paid-up and irrevocable license under all patents, copyrights, trade secrets and other intellectual property of Customer and its Affiliates necessary for SES-LA [REDACTED]

3.B(8) As of the Effective Date and to the best of the present knowledge and belief of Customer, after reasonable investigation, Customer and its Affiliates are in compliance with the terms, conditions and requirements of all of the FCC Approvals received by Customer and its Affiliates to date and there has occurred no violation of, default (with or without notice or lapse of time or both) under, or event giving to any person or entity any right of revocation, modification, suspension, cancellation or termination (with or without notice or lapse of time or both) of any such FCC Approvals.

3.B(9) As of the Effective Date and to the best of the present knowledge and belief of Customer, after reasonable investigation, all of the FCC Approvals received by Customer and its Affiliates to date (a) are valid and in full force and effect, (b) have not been stayed, and (c) are not subject to any request for stay, reconsideration, review or judicial appeal.

3.B(10) Customer and its Affiliates have not received notice of any revocation, modification, suspension, cancellation or termination of any FCC Approvals received by Customer and its Affiliates to date and are not aware of any fact and has not received any communication, formal or informal, indicating that any Governmental Entity is considering revoking, modifying adversely, suspending, canceling, rescinding or terminating any such FCC Approvals.

3.B(11) As of the Effective Date and to the best of the present knowledge and belief of Customer, after reasonable investigation, this Agreement and the operation of the Satellite contemplated hereby, including without limitation the TT&C functions described herein, complies with all of the FCC Approvals received by Customer and its Affiliates to date.

3.B(12) Customer shall be responsible for any breaches of this Agreement resulting from the actions or inactions of Customer's Affiliates as if the same were actions or inactions of Customer.

3.C. *[Reserved]*

3.D.

3.D(1)

3.D(1)(a)

3.D(1)(b)

[REDACTED]

3.D(1)(c)

[REDACTED]

3.D(2)

[REDACTED]

3.D(3)

[REDACTED]

3.D(4)

[REDACTED]

3.D(5)

[REDACTED]

ARTICLE 4. SERVICE RESPONSIBILITIES

4.A. **Laws and Regulations Governing Service.** Construction, launch, location and operation of the Satellite, SES-LA’s satellite system, and Customer’s and SES-LA’s performance of all obligations pursuant to this Agreement, are subject to all applicable laws and regulations of Mexico, the United States and other relevant jurisdictions, including without limitation ITAR and EAR, the *Ley Federal de Telecomunicaciones*

REDACTED – FOR PUBLIC INSPECTION

(Mexico), as amended, the Communications Act, all applicable policies, decisions, orders, rules and regulations of SCT, COFETEL, COFECO and the FCC, and coordination agreements with other operators and administrations, provided that it is understood that location and operation of the Satellite at the Orbital Location shall be subject to the licensing jurisdiction of Mexico and that the United States shall not have responsibility for the Satellite during its location and operation at the Orbital Location.

[REDACTED] this Section 4.A shall take precedence over any terms and conditions of this Agreement that could otherwise result in an action contrary to applicable laws and regulations.

4.B. Use Conditions.

4.B(1) Customer shall use the Service in accordance with (a) all applicable laws and regulations [REDACTED] and (b) the conditions of use to be contained in a Commercial Operations Systems User’s Guide to be agreed to by SES-LA, Customer and DISH Network with respect to the DISH Payload and a Commercial Operations Systems User’s Guide to be agreed to by SES-LA, Customer and EchoStar with respect to the EchoStar Payload (collectively the “User’s Guides”).

[REDACTED] Customer shall not use the Service for any unlawful purpose, including violation of laws governing the content of material transmitted using the Service [REDACTED]

[REDACTED] SES-LA shall also provide continuous monitoring of the Satellite in accordance with generally accepted industry standards.

4.B(2) Customer shall be responsible for the failure of third parties (*e.g.*, subcontractors) who Customer utilizes in conjunction with the Service (“Customer’s Designees”) to meet the requirements of Subsection 4.B(1) as if such failures were actions of Customer.

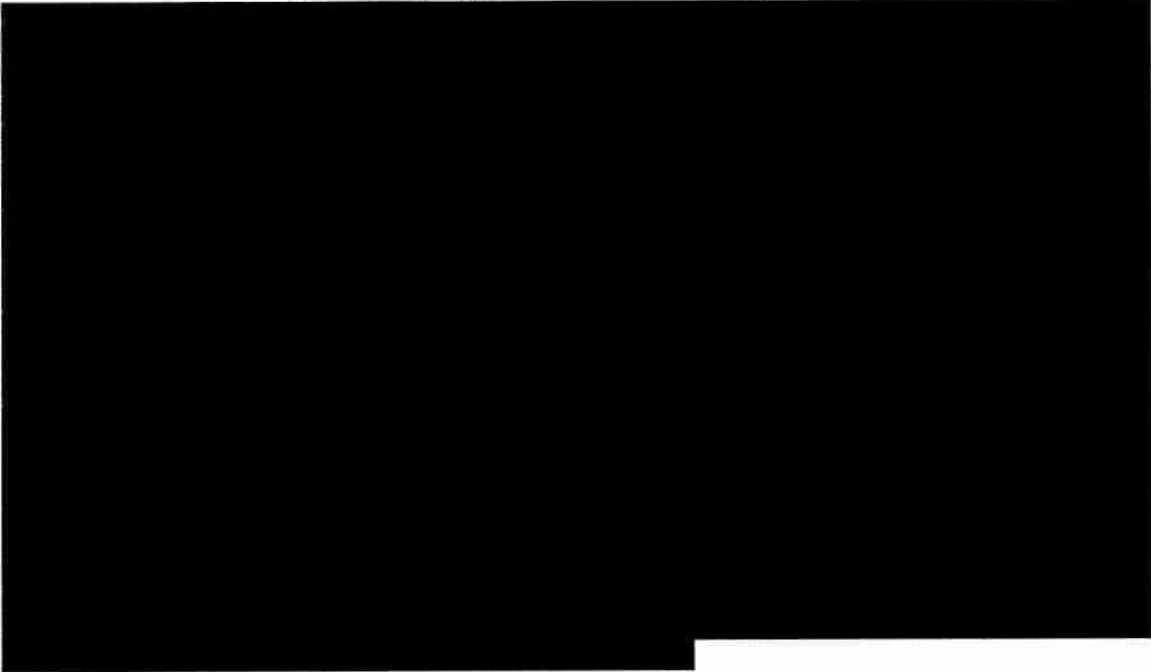
ARTICLE 5. OPERATIONAL MATTERS

5.A. Service Access. Customer is responsible for providing, operating and maintaining the equipment necessary to access the Satellite and Service. When signals are being transmitted from an earth station provided by Customer, Customer shall be responsible for proper illumination of the Transponders. Should improper illumination be detected by SES-LA, Customer shall be notified and shall take corrective action promptly.

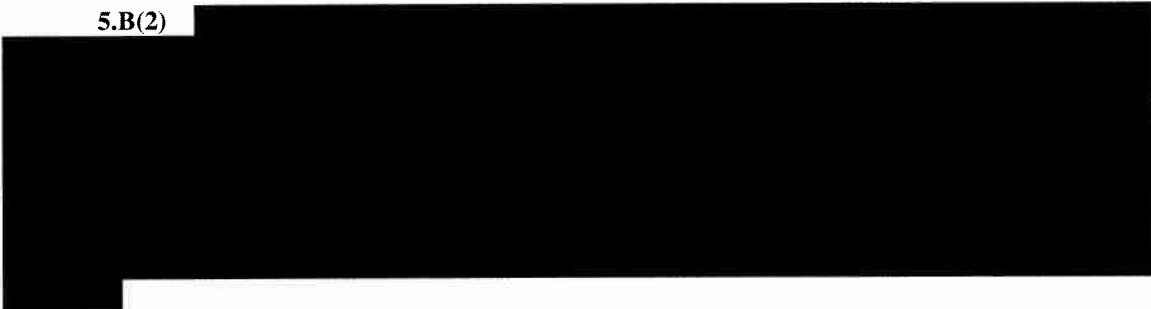
[REDACTED] Customer at its expense shall provide SES-LA with any descrambling or decoding devices that may be required for signal monitoring. At a mutually agreed time, and prior to Customer transmitting from its earth station(s), Customer shall demonstrate to SES-LA’s designated Technical Operations Center that its earth station(s) comply with the satellite access specifications contained in the User’s Guides.

5.B. [REDACTED]

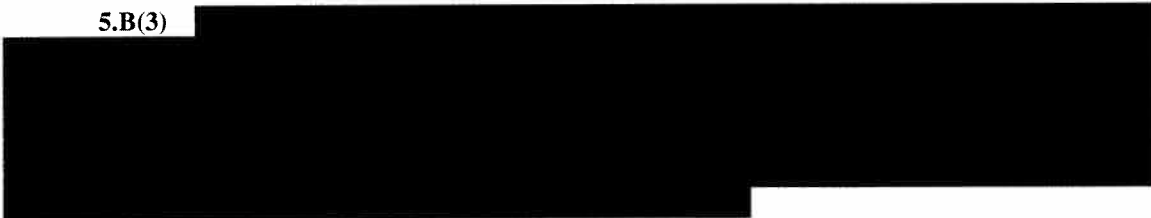
5.B(1) [REDACTED]



5.B(2)



5.B(3)



5.C. Certain Other Operational Matters.

5.C(1) SES-LA, Customer, DISH Network and EchoStar shall participate in monthly meetings to discuss the status of and developments in the construction, launch and insurance of the Satellite. In such meetings, SES-LA shall provide updates on, among other things, the decisions made in the “Trouble Review Board” and “Test Review Board” meetings. Without limitation of Subsection 1.B(5), Customer, DISH Network and EchoStar shall be provided with copies of or, at SES-LA’s election, access to full manufacturing test data (*i.e.*, “box level”) of components of special importance to the payload performance.

5.C(2) Without limitation of Subsection 1.B(5), Customer, DISH Network and EchoStar shall have the right to witness (with a reasonable number of attendees) in-orbit testing of the Satellite from the SES-LA station at which the tests are controlled, and to receive the complete IOT test data results.

5.C(3) SES-LA shall provide to Customer, DISH Network and EchoStar monthly health reports

on the Satellite in a form to be agreed by the parties consistent with industry practice.

5.C(4) Prior to the In-Service Date of the Satellite, SES-LA, Customer, DISH Network and EchoStar shall document a procedure to govern the methods by which the network operation center(s) of DISH Network and EchoStar (or their permitted designees) shall instruct SES-LA's network operation center as to changes in their respective payload configurations, including transmission parameters, [REDACTED]

5.C(5) In the event that SES-LA receives conflicting directions as to payload-related matters, SES-LA (a) shall follow DISH Network's directions with respect to the DISH Payload, so long as such directions do not impact the EchoStar Payload, and (b) shall follow EchoStar's directions with respect to [REDACTED]

ARTICLE 6. INDEMNIFICATION

6.A. By Customer.

6.A(1) General. Upon notice by SES-LA to Customer, Customer shall have the obligation to indemnify, defend and hold harmless, or at its option to settle, and Customer agrees, at its own expense, to defend or at its option to settle, any third-party claim (including those of Customer's Designees) (including, to the extent permitted by law, any fines and penalties), suit, or proceeding brought against SES-LA and/or any of its Affiliates arising out of, resulting from or in connection with any failure to provide Service or any use of Service provided hereunder. The defense provided by Customer shall be conducted by principal counsel which is, [REDACTED] Customer agrees to pay any final judgment or settlement entered against SES-LA on such issue in any such suit or proceeding defended by Customer. SES-LA shall notify Customer promptly in writing of any such claim, suit or proceeding, and at Customer's expense give Customer proper and full information, of which it is aware, and reasonable assistance to settle and/or to defend any such claim, suit, or proceeding. Notwithstanding the foregoing, this indemnity shall not apply to the extent that the loss is based on third-party claims (including those of Customer's Designees) [REDACTED] Customer shall not be liable for any cost or expense incurred by SES-LA in connection with a claim within the scope of this Subsection 6.A(1) without Customer's authorization.

6.A(2) ITAR and EAR-Related. With respect to any access, documents or other information that is provided to Customer under this Agreement, [REDACTED]

6.B. By SES-LA.

6.B(1)

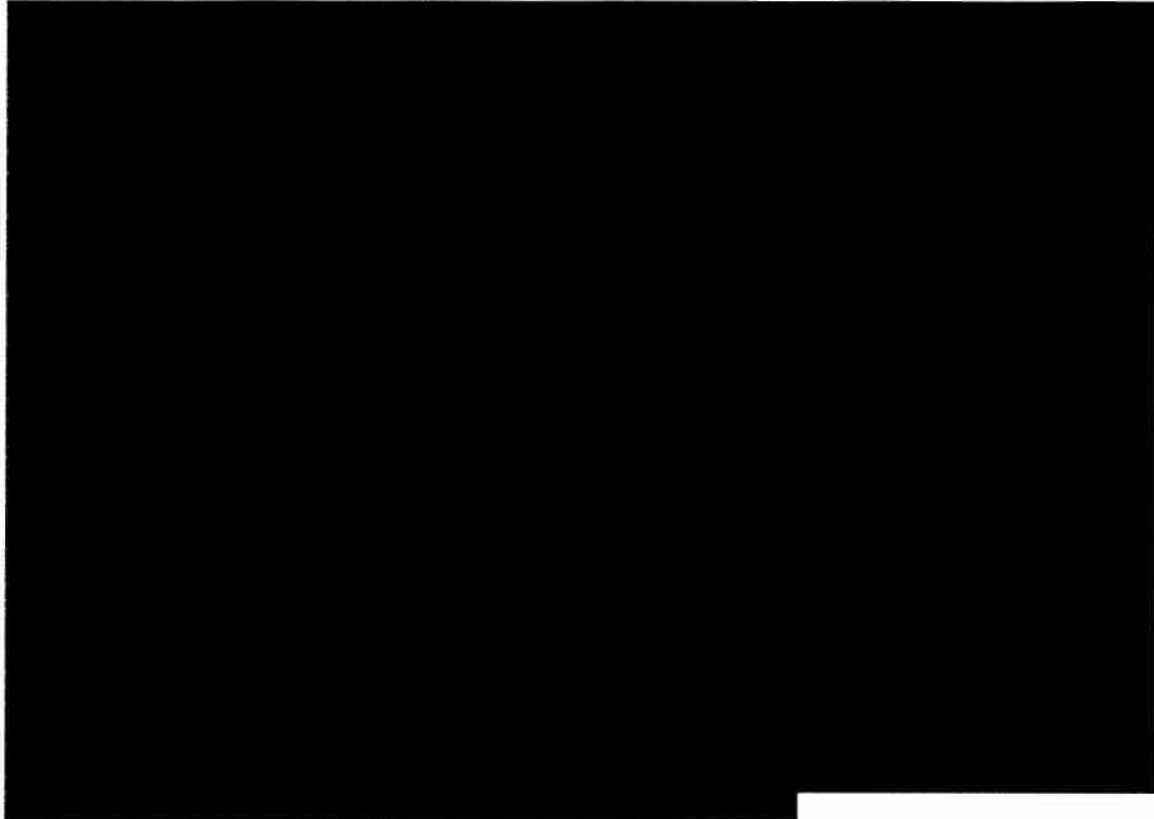
6.B(1)(a) Upon notice by Customer to SES-LA, SES-LA shall have the obligation to indemnify, defend and hold harmless, or at its option to settle, and SES-LA agrees, at its own expense, to defend or at its option to settle, any claim (including, to the extent permitted by law, any fines and penalties), suit, or proceeding brought against Customer, DISH Network and EchoStar and/or any of their Affiliates by a third party

The defense provided by SES-LA shall be conducted by principal counsel which is DISH Network and EchoStar. SES-LA agrees to pay any final judgment or settlement entered against Customer, DISH Network and EchoStar on such issue in any such suit or proceeding

SES-LA shall not be liable for any cost or expense incurred by Customer, DISH Network and EchoStar in connection with a claim within the scope of this Subsection 6.B(1) without SES-LA's authorization.

Subsection 6.B(1) states the entire obligation of SES-LA, and the exclusive remedy of Customer, DISH Network and EchoStar, with respect to

6.B(1)(b)



6.B(2) ITAR and EAR-Related. With respect to any access, documents or other information that is provided to SES-LA under this Agreement, [REDACTED]

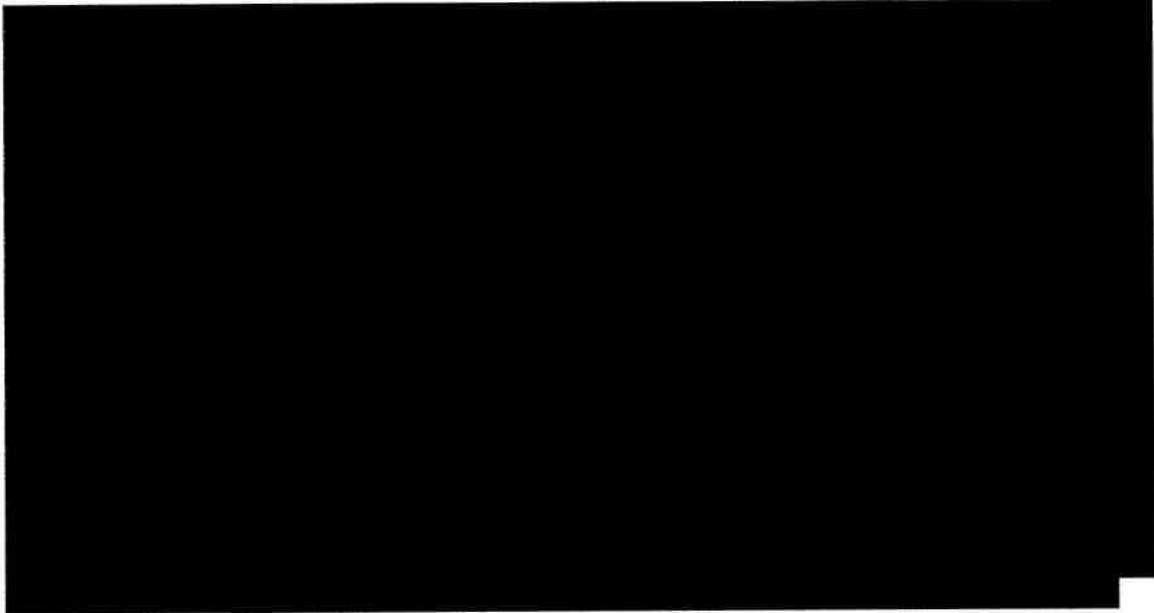
6.C. Survival. The provisions of this Article 6 shall survive expiration or termination of this Agreement indefinitely.

ARTICLE 7. WARRANTY DISCLAIMER; LIMITATION OF LIABILITY

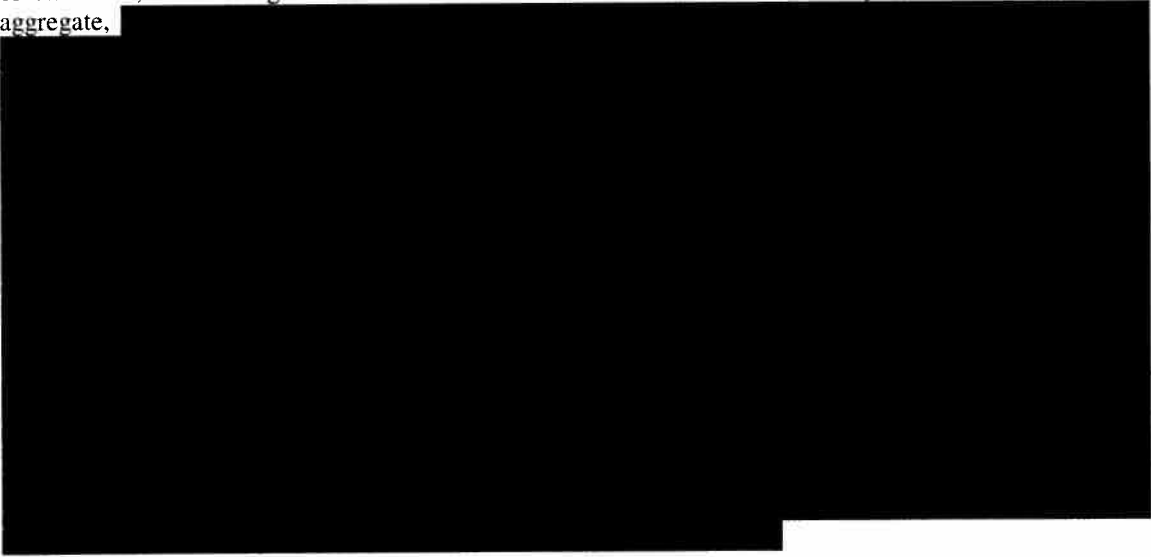
7.A. Warranty Disclaimer. No warranties, express, implied, or statutory, including any warranty of merchantability or fitness for a particular purpose, apply to Service provided hereunder or the equipment and facilities used to provide Service. The conveying by SES-LA of proprietary information or other information to Customer shall in no way alter this disclaimer.

7.B. Limitation of Liability.

7.B(1) As a material condition of entering into this Agreement at the price specified herein, and in regard to any and all causes arising out of or relating to this Agreement, including but not limited to claims of negligence, breach of contract or warranty, failure of a remedy to accomplish its essential purpose or otherwise, Customer agrees that SES-LA's and its Affiliates' entire liability shall not exceed, in the aggregate, [REDACTED]



7.B(2) As a material condition of entering into this Agreement at the price specified herein, and in regard to any and all causes arising out of or relating to this Agreement, including but not limited to claims of negligence, breach of contract or warranty, failure of a remedy to accomplish its essential purpose or otherwise, SES-LA agrees that Customer's and its Affiliates' entire liability shall not exceed, in the aggregate,



7.B(3) Each party agrees that in no event shall the other party, Affiliates of such other party, Vendor, or LSA Vendor be liable to the first party for any indirect, incidental, consequential, punitive, special or other similar damages (whether in contract, tort (including without limitation negligence), strict liability or under any other theory of liability), including but not limited to loss of actual or anticipated revenues or profits, loss of business, customers or good will. (For clarification purposes, the foregoing sentence does not apply to the obligations in Sections 6.A or 6.B as to claims by third parties.)

7.C. Survival. The provisions of this Article 7 shall survive expiration or termination of this Agreement indefinitely.

ARTICLE 8. CONFIDENTIALITY AND NONDISCLOSURE

8.A. Certain Information Regarding Service. Except for disclosures required by a court or governmental agency or to assignees permitted under Section 10.I, each party hereby agrees not to disclose to third parties (without the prior written consent of the other party) the material terms and conditions of this Agreement and the Secondary Agreements (including but not limited to the prices, payment terms, schedules, protection arrangements, and restoration provisions thereof), and all information provided to Customer, DISH Network and EchoStar and SES-LA related to the design and performance characteristics of the Satellite, and any subsystems or components thereof, including the Transponders. [REDACTED]

8.B. Proprietary Information.

8.B(1) To the extent that either party discloses to the other any other information which it considers proprietary or is proprietary information of a third party, in written or tangible form, said party shall identify such information as proprietary when disclosing it to the other party by marking it clearly and conspicuously as proprietary information. Any proprietary disclosure to either party, if made orally, shall be identified as proprietary information at the time of disclosure, if the disclosing party wishes to keep such information proprietary under this Agreement. Any such information disclosed under this Agreement shall be used by the recipient thereof only in its performance under this Agreement.

8.B(2) Neither party shall be liable for the inadvertent or accidental disclosure of such information marked as proprietary, if such disclosure occurs despite the exercising of the same degree of care as the receiving party normally takes to preserve and safeguard its own proprietary information (but not less than reasonable care) or if such information (a) is or becomes lawfully available to the public from a source other than the receiving party before or during the period of this Agreement, (b) is released in writing by the disclosing party without restrictions, (c) is lawfully obtained by the receiving party from a third party or parties without obligation of confidentiality, (d) is lawfully known by the receiving party prior to such disclosure and is not subject to any confidentiality obligations, or (e) is at any time lawfully developed by the receiving party completely independently of any such disclosure or disclosures from the disclosing party.

8.B(3) In addition, neither party shall be liable for the disclosure of any proprietary information which it receives under this Agreement or the Secondary Agreements pursuant to judicial action or decree, or pursuant to any requirement of any Governmental Entity or any agency or department thereof, having jurisdiction over such party, provided that in the reasonable opinion of counsel for such party such disclosure is required, and provided further that such party shall have given the other party notice, to the extent reasonably practicable, prior to such disclosure.

8.B(4) Customer, DISH Network, EchoStar and SES-LA agree to negotiate in good faith a five-party non-disclosure agreement with Vendor for information to be disclosed related to this Agreement.

8.C. Survival. The provisions of this Article 8 are in addition to, and not in lieu of, any agreements of the parties regarding confidentiality executed by the parties on or before the date hereof and shall survive expiration or termination of this Agreement indefinitely.

ARTICLE 9. TERMINATION

9.A. Termination for Default. In addition to any rights of termination provided in other Articles of

this Agreement, either party may terminate this Agreement (a “Termination for Default”) [REDACTED] by giving the other party written notice thereof in the event: (1) the other party materially breaches this Agreement (except for a breach of Article 8) and fails to cure such breach within [REDACTED] days after receipt of written notice thereof (except that, if the breaching party fails to pay amounts due hereunder, such cure period shall be reduced to [REDACTED] days [REDACTED], and, in lieu of termination, SES-LA may, in its sole and absolute discretion (for any reason or no reason), suspend the provision to Customer of the Service, with no liability to Customer); or (2) the other party becomes insolvent or the subject of insolvency proceedings, including without limitation if the other party is judicially declared insolvent or bankrupt, or if any assignment is made of the other party’s property for the benefit of its creditors, or if a receiver, conservator, trustee in bankruptcy or other similar officer is appointed by a court of competent jurisdiction to take charge of all or any substantial part of the other party’s property, or if a petition is filed by or against the other party under any provision of the *Ley de Concursos Mercantiles* (Mexico) or the Bankruptcy Code (U.S.) now or hereafter enacted, and such proceeding is not dismissed within [REDACTED] days after filing, or if a petition is filed by the other party under any provision of the *Ley de Concursos Mercantiles* (Mexico) or the Bankruptcy Code (U.S.) now or hereinafter enacted. The parties agree that (x) a material breach by SES-LA of the Interim Agreement, or (y) a material breach by EchoStar of the Interim Agreement, in each case following written notice and expiration of the applicable cure period (such that the non-breaching party has the right to terminate such agreement as a “Termination for Default” as defined in such agreement) shall entitle the appropriate party (*i.e.*, Customer in the case of clause (x) and SES-LA in the case of clause (y)) to terminate this Agreement as a Termination for Default. Customer shall, and may only, exercise a Termination for Default in the event that DISH Network exercises a “Termination for Default” pursuant to the DISH Secondary Agreement.

9.B Termination for Convenience.

9.B(1) This Agreement may be terminated by Customer, at any time, by written notice to SES-LA (a “9.B(1) Termination”), provided that (x) any such termination shall be effective on the date (the “9.B(1) Effective Date”) that is [REDACTED] after receipt of such written notice by SES-LA, and [REDACTED]

[REDACTED]

9.B(1)(a)

[REDACTED]

9.B(1)(b)

[Redacted]

9.B(1)(c)

[Redacted]

9.B(1)(d)

[Redacted]

9.B(2)

[Redacted]

9.C. Termination for Delay or Force Majeure.

9.C(1) SES-LA shall keep Customer reasonably informed of Vendor’s adherence to the schedule set forth in the Construction Contract. Subject to the terms in this Subsection 9.C(1) set forth below, Customer shall have the right to terminate (“Termination for Delay”) this Agreement

if

9.C(1)(a) [Reserved]

9.C(1)(b)

9.C(1)(c) [Reserved]

9.C(2)

9.C(2)(a)

[REDACTED]

9.C(2)(b)

[REDACTED]

9.C(2)(c)

[REDACTED]

9.C(3) *[Reserved]*

9.C(4) *[Reserved]*

9.D. **Refunds.** In the event of the expiration of this Agreement pursuant to Subsection 9.F(1), or in the event of termination by Customer or wrongful termination by SES-LA pursuant to this Agreement, SES-LA shall refund any portion [REDACTED]

[REDACTED] By way of clarification, this Section 9.D shall not limit Customer's rights under this Agreement, at law, in equity or otherwise, in the event of Termination for Default or otherwise by Customer.

9.E. **Termination Liability.** In the event of a Termination for Default by SES-LA, SES-LA shall be entitled to retain [REDACTED]

[REDACTED]

9.F. Expiration of Agreement/Survival.

9.F(1) This Agreement shall expire on the later of (a) the date that [REDACTED] after the end of the Service Term (or [REDACTED] days after the date of a Satellite Failure occurring prior to the In-Service Date) for any Satellite (including any Replacement Satellite or Successor Satellite), if by such date Customer has not exercised its option to require SES-LA to construct, launch, and provide the Service to Customer on, a Replacement Satellite or a Successor Satellite, or (b) the end of the period during which an Interim Satellite is located at the Orbital Location in accordance with the terms of Subsection 2.H(5).

9.F(2) Neither party shall have any further rights, obligations or liability to the other under this Agreement in the event of the termination or expiration of this Agreement, except for any rights, obligations or liability (a) arising prior to such termination or expiration, (b) expressly arising upon or as a result of such termination or expiration, (c) expressly described in this Agreement as surviving such expiration or termination, (d) that logically would be expected to survive termination or expiration, or (e) arising as a result of or in connection with the representations, warranties and covenants in Article 3.

9.G. [REDACTED]

9.H. [REDACTED]

ARTICLE 10. GENERAL PROVISIONS

10.A. Force Majeure. If a Force Majeure Event under this Agreement has occurred and is continuing, then the performance obligations of the party directly affected by such Force Majeure Event under this Agreement shall be tolled for the duration of such Force Majeure Event and such party shall not be liable to the other by reason of any delay or failure in performance of this Agreement which arises out of such Force Majeure Event, provided that the party directly affected by such Force Majeure Event shall promptly take and continue to take all reasonable actions to abate such Force Majeure Event as soon as possible. [REDACTED]

[REDACTED] If Service is unavailable as a result of a Force Majeure Event affecting the Satellite, then Customer's obligation to pay the MRCs shall be suspended during such period Service is unavailable and shall resume upon the Service becoming available.

10.B. No Implied License. Except to the extent that the Satellite and associated equipment are used for the Intended Purpose (or as otherwise set forth to the contrary in this Agreement), the provision of services or the conveying of any information under this Agreement shall not convey any license by implication, estoppel or otherwise, under any patents or other intellectual property rights of Customer or SES-LA, and their Affiliates, contractors and vendors (including Vendor).

10.C. No Third-Party Rights; No Fiduciary Relationship. [REDACTED]



this Agreement does not, is not intended to, and shall not be deemed or construed by the parties or by any third party to confer any enforceable rights or remedies on, or create any obligations or interests in, any person other than the signatories to this Agreement; or to create the relationship of principal and agent, partnership or joint venture or any other fiduciary relationship or association among the signatories to this Agreement.

10.D. No Waiver; Remedies Cumulative. No waiver, alteration, or modification of any of the terms of this Agreement shall be binding unless in writing and signed by all parties. All remedies and rights hereunder and those available at law or in equity shall be cumulative and the exercise by a party of any such right or remedy shall not preclude the exercise of any other right or remedy available under this Agreement, at law or in equity.

10.E. Costs and Legal Fees. In any action brought with respect to this Agreement by one party hereto against the other party hereto, in addition to any other money damages awarded by a court of competent jurisdiction, the prevailing party shall be entitled to recover from the other party its reasonable costs, including reasonable legal fees, in successfully bringing or defending against such action.

10.F. Governing Law and Exclusive Jurisdiction.

10.F(1) Each party hereby irrevocably and unconditionally agrees that the relationship between the parties, including without limitation all disputes, controversies or claims, whether arising in contract, tort, or under statute, shall be governed by and construed in accordance with the laws of the State of New York, applicable to contracts to be made and performed entirely within the State of New York by residents of the State of New York, without giving any effect to its conflict of law provisions.

10.F(2) Each party hereby irrevocably and unconditionally (a) agrees that any suit, action or proceeding with respect to this Agreement shall be instituted only in the trial court of New York, New York, or the U.S. District Court for the Southern District of New York (and appellate courts from any of the foregoing), as such party may elect in its sole and absolute discretion (for any reason or no reason), (b) consents and submits, for itself and its property, to the jurisdiction of such courts for the purpose of any such suit, action or proceeding instituted against it by any other, and (c) agrees that a final judgment in any such suit, action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law.

10.F(3) Each party hereby irrevocably and unconditionally agrees that service of all writs, process and summonses in any suit, action or proceeding pursuant to Subsection 10.F(2) may be effected by the mailing of copies thereof by registered or certified mail, postage prepaid, to such party at its address for notices pursuant to Section 1.D, such service to become effective thirty (30) days after such mailing, provided that nothing contained in this Subsection 10.F(3) shall affect the right of any party to serve process in any other manner permitted by law.

10.F(4) Each party hereby irrevocably and unconditionally (a) waives any objection which it may now or hereafter have to the laying of venue of any suit, action or proceeding arising out of or relating to this Agreement brought in any court specified in clause (a) of Subsection 10.F(2), (b) waives any claim that

any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum, and (c) agrees not to plead or claim either of the foregoing.

10.F(5) The provisions of this Section 10.F shall survive expiration or termination of this Agreement indefinitely.

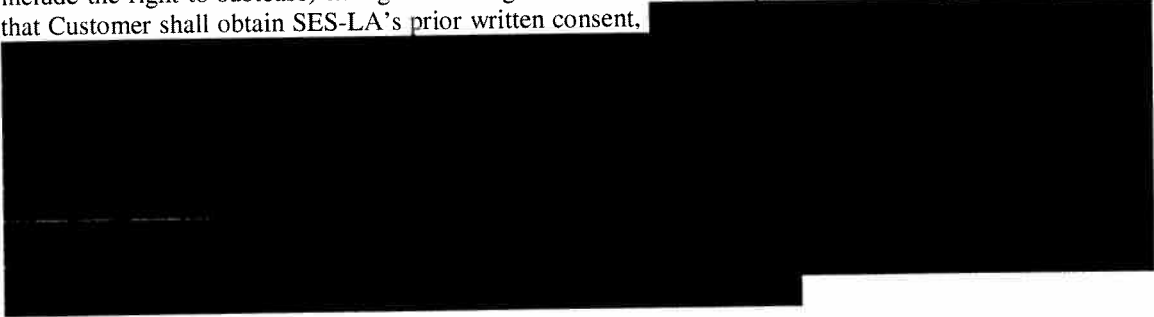
10.G.



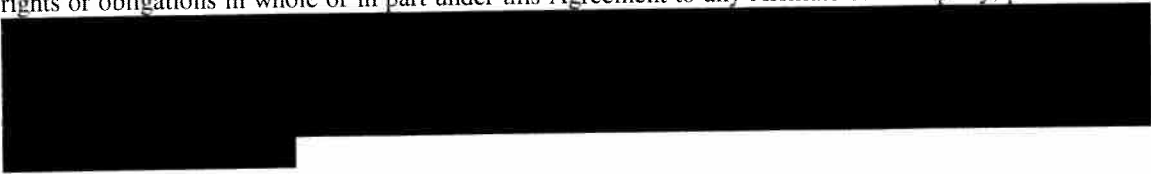
10.H. Headings; Severability; Customer Purchase Orders. All titles and headings in this Agreement are for reference purposes only; they shall not affect the meaning or construction of the terms of this Agreement. If any part or parts of this Agreement are held to be invalid, the remaining parts of the Agreement shall continue to be valid and enforceable. Customer agrees that any purchase order or other similar document that Customer may issue in connection with this Agreement shall be for Customer's internal purposes only and, therefore, even if acknowledged by SES-LA, shall not in any way add to, subtract from, or in any way modify the terms and conditions of this Agreement.

10.I. Assignment and Other Third Party Use.

10.I(1) Customer shall have the right to assign or transfer (which, for clarification purposes, shall include the right to sublease) its rights or obligations in whole or in part under this Agreement, provided that Customer shall obtain SES-LA's prior written consent.



10.I(2) SES-LA shall, without Customer's prior consent, have the right to assign or transfer its rights or obligations in whole or in part under this Agreement to any Affiliate or third party, provided that



10.I(3) The provisions hereof shall be binding on and inure to the benefit of the parties, their successors and permitted assigns. The provisions hereof shall not apply to transactions with subscribers or other end users in their capacity as such.

10.J. Inter-Party Waiver. Customer, on behalf of itself and its officers, employees, Affiliates, agents, insurers, owners and customers, agrees to accept the inter-party waiver and related indemnity provisions required by the applicable Launch Service Agreement for a launch, modified so as to apply to Customer and LSA Vendor. SES-LA likewise, on behalf of itself and its officers, employees, Affiliates, agents, insurers, owners and customers, agrees to accept the inter-party waiver and related indemnity provisions required by the applicable Launch Service Agreement for a launch, modified so as to apply to SES-LA and LSA Vendor. In no event shall such inter-party waiver and related indemnity provisions have any effect on the rights, obligations and liabilities of and between Customer and SES-LA under this Agreement.

10.K. Publicity. Neither party shall in any way or in any form publicize or advertise in any manner this Agreement or the Services to be provided pursuant to this Agreement without the express written approval (which shall not be unreasonably withheld, conditioned or delayed) of the other party, obtained in advance, for each item of advertising or publicity. The foregoing prohibition shall include but not be limited to news releases, letters, correspondence, literature, promotional materials or displays of any nature or form (for clarification purposes, the foregoing shall not apply to the marketing of the Service by Customer to prospective third-party customers). Each request for approval hereunder shall be submitted in writing to the representative designated in writing; and approval, in each instance, shall be effective only if in writing and signed by said representative. Nothing herein shall prevent either party from providing SCT, COFETEL, the FCC, or any other Governmental Entity, information concerning this Agreement as required by law or in response to a request for information by such Governmental Entity, provided that the party providing such information shall have given the other party notice, to the extent reasonably practicable, prior to such disclosure. Notwithstanding the foregoing, either party may refer to the fact that SES-LA is providing the Service to Customer without the other party's prior approval so long as such statements are limited to a statement of such fact and are not an endorsement (positive or negative) of any product or service.

10.L. ITAR/EAR. Information exchanged under this Agreement may be subject to U.S. export control laws and regulations, such as the ITAR and the EAR. The parties agree that information subject to the export control laws and regulations shall not be disclosed or transferred to a third party without first obtaining written approval from the disclosing party and complying with all applicable U.S. export control laws and regulations.

10.M. Currency. All monetary amounts in this Agreement are expressed in U.S. dollars and shall be paid in U.S. dollars.

10.N. Documents. Subject to compliance with applicable legal requirements of Mexico and the United States (*e.g.*, ITAR and EAR), each party agrees to provide information and to execute, and if necessary to file with the appropriate Governmental Entities and international organizations, such documents as the other party shall reasonably request in order to carry out the purposes of this Agreement.

10.O. *[Reserved]*

10.P. Entire Agreement. This Agreement contains the entire and exclusive understanding of the parties with respect to the subject matters hereof and, except (1) as expressly set forth to the contrary in Section 8.C, (2) for the Interim Agreement, [REDACTED]

[REDACTED] (6) for the 77° W.L. Agreement, supersedes all prior negotiations and agreements between the parties with respect thereto. To the extent that any Attachment may be inconsistent with the text of the Agreement, the text of the Agreement shall control.

10.Q. Board Approval. This Agreement is subject to approval by the Boards of Directors of Customer, SES-LA and [REDACTED] and the approval of the Boards of Directors, member(s) or manager(s), as applicable, for the relevant parties to the other agreements (*e.g.*, the DISH Secondary Agreement, [REDACTED]) to be executed and delivered concurrent with the

execution and delivery of this Agreement.

ARTICLE 11. DEFINITIONS

As used in this Agreement:

- A. “9.B(1) Effective Date” shall have the meaning specified in Subsection 9.B(1).
- B. “9.B(1) Termination” shall have the meaning specified in Subsection 9.B(1).
- C. “9.B(2) Termination” shall have the meaning specified in Subsection 9.B(2).
- D. “77° W.L. Agreement” means the Agreement Regarding 77° W.L. BSS Frequencies among SES-LA (formerly known as SES GLOBAL Latin America, S.A.), [REDACTED] DISH Network, [REDACTED] dated 17 November 2004, as such agreement has concurrently been amended and may be amended in the future. (The rights and obligations of DISH Network were assigned to EchoStar in connection with the recent spin-off of certain businesses and assets of DISH Network Corporation and its Affiliates.)
- E. “77° W.L. Frequencies” means the thirty-two (32) Ku-Band BSS frequencies at the Orbital Location assigned to the Republic of Mexico by the ITU Region 2 Plan for BSS.
- F. “77° W.L. License” shall have the meaning specified in Subsection 2.G(1).
- G. [REDACTED]
- H. [REDACTED]
- I. [REDACTED]
- J. [REDACTED]
- K. “Affiliate” means, with respect to a party, any person or entity (1) more than fifty percent (50%) of the capital securities of which on an as-converted basis are owned by, or (2) directly or indirectly controlling, controlled by, or under common control with, such party at the time when the determination of affiliation is being made. For purposes of this definition, the term “control” (including the correlative meanings of the terms “controlled by” and “under common control with”), as used with respect to a person or entity, [REDACTED]
- L. “Agreement” shall have the meaning specified in Section 1.A.
- M. “Alternate Capacity” shall have the meaning specified in Subsection 2.G(8).
- N. “Alternate Orbital Location” shall have the meaning specified in Subsection 2.G(10).
- O. “Amendment #1 to the 77° W.L. Agreement” means Amendment #1 to Agreement Regarding 77° W.L. BSS Frequencies effective as of 24 November 2008 between EchoStar, Customer, [REDACTED]

SES-LA

- P. “Authorization” means any authorization, order, permit, approval, forbearance decision, grant, license, consent, right, franchise, privilege or certificate of any Governmental Entity of competent jurisdiction, whether or not having the force of law.
- Q. “Average Ten-Year Treasuries” means the number derived from averaging Ten-Year Treasuries over the six-month period immediately preceding the Effective Date (as set forth in Attachment G).
- R. “BSS” means the Broadcasting-Satellite Service, as defined by the Radio Regulations of the ITU.
- S. “Business Day” means Monday through Friday, 8:30 a.m. to 5:00 p.m. (local time in New York, New York USA) exclusive of banking holidays observed in New York, New York USA.
- T. “Capacity Obligation” shall have the meaning specified in Subsection 2.G(8).
- U. “COFECO” means Mexico’s Comisión Federal de Competencia and any successor agency thereto.
- V. “COFETEL” means Mexico’s Comisión Federal de Telecomunicaciones and any successor agency thereto.
- W. “Communications Act” means the Communications Act of 1934 (United States), as amended.
- X. “Concession” shall have the meaning specified in Subsection 2.G(3).
- Y. “Construction Contract” shall have the meaning specified in Subsection 1.B(2).
- Z. [REDACTED]
- AA. [REDACTED]
- BB. “Customer” shall have the meaning specified in the preamble paragraph.
- CC. “Customer’s Designees” shall have the meaning specified in Subsection 4.B(2).
- DD. “DISH FCC Approvals” shall have the meaning specified in Subsection 2.G(2).
- EE. “DISH Material Adverse Effect” means:
 - (1) a material adverse effect on (a) DISH Network’s ability to realize the benefits anticipated under this Agreement and/or the DISH Secondary Agreement, (b) the business, assets, operations, prospects or condition (financial or otherwise) of DISH Network and its Affiliates, taken as a whole, or (c) the use by or benefit to DISH Network of the 77° W.L. Frequencies, excluding (for each of clauses (a), (b) and (c)) any change or development resulting from (i) events adversely affecting any of the principal markets served by the businesses of DISH Network or any of its Affiliates, or (ii) general economic conditions, including changes in the economies of any of the jurisdictions in which DISH Network or any of its Affiliates conduct business; and/or
 - (2) with respect to any Authorization or other consent, that such Authorization or other consent contains a condition that would (a) have a material adverse effect (i) on DISH Network’s ability to consummate the transactions contemplated by this Agreement and/or the DISH Secondary Agreement, or (ii) on DISH Network’s ability to use the DISH Payload consistent with the Technical Performance Specifications and for the Intended Purpose, or (b) create any obligation on the part of DISH Network or any of its Affiliates to accept (as a condition to receipt

REDACTED – FOR PUBLIC INSPECTION

of such Authorization or otherwise):

(i) any restriction on the right of DISH Network or any of its Affiliates to operate pursuant to

[REDACTED]

other than (1) any restrictions generally imposed on operators of high-powered BSS services, by applicable Regulatory Provisions and restrictions of the types generally and customarily imposed by the FCC on operators of high-powered BSS services, and (2) the Concession; or

(ii) a requirement that DISH Network or any of its Affiliates dispose of all or any part of the

[REDACTED]

other than any restrictions generally imposed on operators of high-powered BSS services, by applicable Regulatory Provisions and restrictions of the types generally and customarily imposed by the FCC on operators of high-powered BSS services.

[REDACTED]

FF.

[REDACTED]

GG. “DISH Network” means DISH Network L.L.C., formerly known as EchoStar Satellite L.L.C., a limited liability company formed under the laws of Colorado.

HH. “DISH Payload” means (1) for purposes of the QuetzSat-1 Satellite, twenty-four (24) 300-watt Transponders in dual-combined mode

[REDACTED]

II. “DISH Secondary Agreement” means the Satellite Service Agreement for QuetzSat-1 effective as of 24 November 2008 between Customer and DISH Network.

JJ. “DISH Transponder” means a Transponder on the DISH Payload.

KK. “EAR” means the United States Export Administration Act and Export Administration Regulations, as amended.

LL. “EchoStar” means EchoStar Corporation, a corporation formed under the laws of Nevada.

MM.

[REDACTED]

NN.

[REDACTED]

[REDACTED]

OO. “EchoStar FCC Approvals” shall have the meaning specified in Subsection 2.G(2).

PP. “EchoStar Material Adverse Effect” means:

(1) a material adverse effect on (a) EchoStar’s ability to realize the benefits anticipated under this Agreement and/or the EchoStar Secondary Agreement, (b) the business, assets, operations, prospects or condition (financial or otherwise) of EchoStar and its Affiliates, taken as a whole, or (c) the use by or benefit to EchoStar of the 77° W.L. Frequencies, excluding (for each of clauses (a), (b) and (c)) any change or development resulting from (i) events adversely affecting any of the principal markets served by the businesses of EchoStar or any of its Affiliates, or (ii) general economic conditions, including changes in the economies of any of the jurisdictions in which EchoStar or any of its Affiliates conduct business; and/or

(2) with respect to any Authorization or other consent, that such Authorization or other consent contains a condition that would (a) have a material adverse effect (i) on EchoStar’s ability to consummate the transactions contemplated by this Agreement and/or the EchoStar Secondary Agreement, or (ii) on EchoStar’s ability to use the EchoStar Payload consistent with the Technical Performance Specifications and for the Intended Purpose, or (b) create any obligation on the part of EchoStar or any of its Affiliates to accept (as a condition to receipt of such Authorization or otherwise):

(i) any restriction on the right of EchoStar or any of its Affiliates to operate pursuant to (A) the 77° W.L. License, (B) the BSS authorizations held by EchoStar and its Affiliates with respect to frequency channels [REDACTED]

[REDACTED], other than (1) any restrictions generally imposed on operators of high-powered BSS services, by applicable Regulatory Provisions and restrictions of the types generally and customarily imposed by the FCC on operators of high-powered BSS services, and (2) the Concession; or

(ii) a requirement that EchoStar or any of its Affiliates dispose of all or any part of the [REDACTED], other than any restrictions generally imposed on operators of high-powered BSS services, by applicable Regulatory Provisions and restrictions of the types generally and customarily imposed by the FCC on operators of high-powered BSS services.

[REDACTED]

QQ. “EchoStar Payload” means (1) for purposes of the QuetzSat-1 Satellite, eight (8) 300-watt Transponders in dual-combined mode [REDACTED]

[REDACTED]

RR. “EchoStar Secondary Agreement” means the Satellite Service Agreement for QuetzSat-1 effective as of 24 November 2008 between Customer and EchoStar.

SS. “EchoStar Transponder” means a Transponder [REDACTED]

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- TT. “Effective Date” shall have the meaning specified in the preamble paragraph.
- UU. “End-of-Life” means the date on which, in SES-LA’s reasonable judgment, the Satellite should be taken out of service because of insufficient fuel, which for clarification purposes shall include an allowance for sufficient fuel to de-orbit the Satellite.
- VV. [REDACTED]
- WW. “Failed Payload” [REDACTED]
- XX. “Failed Satellite” or “Satellite Failure” [REDACTED]
- YY. “Failed Transponder” [REDACTED]
- ZZ. “FCC” means the United States Federal Communications Commission and any successor agency thereto.
- AAA. “FCC Approvals” means collectively the DISH FCC Approvals and the EchoStar FCC Approvals.
- BBB. [REDACTED]
- CCC. “Force Majeure Event” means acts of God, acts of the other party, acts of government authority, strikes or other labor disturbances, or any other cause beyond the reasonable control of that party, that (1) as to SES-LA, relates to or affects its ability to provide the Service, (2) as to either party, relates to or affects that party’s ability to make a payment, or (3) as to either party, relates to or affects its ability to fulfill its material obligations under this Agreement.
- DDD. “Governmental Entity” means any (1) multinational, federal, provincial, state, municipal, local or other government, governmental or public department, central bank, court, commission, board, bureau, agency or instrumentality, domestic or foreign, (2) subdivision, agent, commission, board, or authority of any of the foregoing, or (3) quasi-governmental or private body validly exercising any regulatory, expropriation or taxing authority under or for the account of any of the foregoing, in each case in the proper exercise of its governmental authority.
- EEE. [REDACTED]
- FFF. “In-Service” means that the Satellite (or a Replacement Satellite or a Successor Satellite, as applicable) is deployed at the Orbital Location, and, following SES-LA testing and verification of the entire Satellite, [REDACTED]

[REDACTED]

GGG. “In-Service Date” means the date on which the Satellite (or a Replacement Satellite or Successor Satellite, as applicable) is In-Service.

HHH. “Initial Term” shall have the meaning specified in Section 1.C.

III. [REDACTED]

JJJ. “Intended Purpose” means the use of the 77° W.L. Frequencies, subject to Subsection 2.G(8) [REDACTED]

KKK. “Interim Agreement” means the Satellite Relocation and Use Agreement for the 77° W.L. Orbital Location among SES-LA (formerly known as SES GLOBAL Latin America, S.A.), [REDACTED] DISH Network and [REDACTED] dated 13 May 2005, as such agreement has previously been amended, is concurrently being amended and may be amended in the future. (The rights and obligations of DISH Network under such agreement were assigned to EchoStar in connection with the recent spin-off of certain businesses and assets of DISH Network Corporation and its Affiliates.)

LLL. “Interim Satellite” shall have the meaning specified in Subsection 2.H(5).

MMM. “Invoice Date” shall have the meaning specified in Subsection 2.G(11).

NNN. [REDACTED]

OOO. [REDACTED]

PPP. [REDACTED]

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QQQ. “ITAR” means the United States Arms Export Control Act and International Traffic in Arms Regulations, as amended.

RRR. “ITU” means the International Telecommunication Union.

SSS. “ITU Region 2 Plan for BSS” means the ITU Region 2 Plan for BSS and Feeder Link Assignments, as contained in Appendices 30/30A of the Radio Regulations.

TTT. “Launch Service Agreement” means the agreement executed between SES-LA and LSA Vendor for the launch of the Satellite.

UUU. [REDACTED]

VVV. [REDACTED]

WWW. [REDACTED]

XXX. “LSA Vendor” means the launch service provider selected by SES-LA in accordance with and subject to the terms and conditions of this Agreement.

YYY. “MRC” shall have the meaning specified in Subsection 2.B(1).

ZZZ. [REDACTED]

AAAA. “Non-US Interim Satellite License” shall have the meaning specified in clause (a) of Subsection 2.H(5).

BBBB. [REDACTED]

CCCC. [REDACTED]

DDDD. [REDACTED]

EEEE. “Orbital Location” shall have the meaning specified in Section 1.A.

FFFF. “Partial Loss” means any failure of a Transponder to operate in accordance with the Technical Performance Specifications that does not result in a Satellite Failure.

GGGG. [REDACTED]

HHHH. “Pre-Launch Expected Life” means the length of time from the expected In-Service Date to the predicted End-of-Life of the QuetzSat-1 Satellite, as determined immediately prior to launch using [REDACTED]

IIII. “Prime Rate” means the “prime rate” of interest as shown in the Money and Investing Section of the *Wall Street Journal* as of the applicable date.

JJJJ. [REDACTED]

[REDACTED]

KKKK. [REDACTED]

LLLL. [REDACTED]

MMMM. [REDACTED]

NNNN. “QuetzSat” means QuetzSat, S. de R.L. de C.V.

OOOO. “QuetzSat-1 Satellite” shall have the meaning specified in Section 1.A.

PPPP. [REDACTED]

QQQQ. “Regulatory Provisions” means all applicable requirements of the Communications Act and the published policies, rules, decisions, and regulations of the FCC, in each case as amended from time to time.

RRRR. “Replacement Satellite” [REDACTED]

SSSS. “RFP” means a request for proposal.

TTTT. “Satellite” means the QuetzSat-1 Satellite [REDACTED]

UUUU. [REDACTED]

VVVV. “SCT” means Mexico’s Secretaría de Comunicaciones y Transportes and any successor agency thereto.

WWWW. “Secondary Agreements” means collectively the DISH Secondary Agreement and the EchoStar Secondary Agreement.

XXXX. [REDACTED]

YYYY. “Service” means the use of the entire communications capacity on the Satellite for the Intended Purpose, subject to the Capacity Obligation.

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ZZZZ. “Service Term” shall have the meaning specified in Section 1.C.

AAAAA. [REDACTED]

BBBBB. “SES-LA” shall have the meaning specified in the preamble paragraph.

CCCCC. [REDACTED]

DDDDD. [REDACTED]

EEEE. “SS/L” means Space Systems/Loral, Inc.

FFFF. “Successor Satellite” shall have the meaning specified in Subsection 2.I(1).

GGGG. “Taxes” means taxes (including duties, fees or charges in the nature of taxes) levied by Governmental Entities, [REDACTED]

HHHH. “Technical Performance Specifications” means the technical performance criteria for the Service on the QuetzSat-1 Satellite.

IIII. “Technical Representative” means SES Engineering (US), Inc.

JJJJ. [REDACTED]

KKKK. “Termination for Default” shall have the meaning specified in Section 9.A.

LLLL. “Termination for Delay” shall have the meaning specified in Subsection 9.C(1).

MMMM. [REDACTED]

NNNN. “Transponder” means a discrete communication path by which a signal is transmitted using the Satellite.

OOOO. “TT&C” means telemetry, tracking and control.

PPPP. “TT&C Costs” shall have the meaning specified in Subsection 2.B(5).

QQQQ. [REDACTED]



RRRRR. "Unanimous Instructions" shall have the meaning specified in the Secondary Agreements.

SSSSS. "User's Guides" shall have the meaning specified in Subsection 4.B(1).

TTTTT. "Vendor" means the satellite manufacturer selected by SES-LA in accordance with and subject to the terms and conditions of this Agreement.

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IN WITNESS WHEREOF, the parties hereto have caused their duly authorized representatives to execute this agreement as of the Effective Date.

ECHOSTAR 77 CORPORATION

SES LATIN AMERICA S.A.

By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Title: _____

By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Title: _____

By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Title: _____



By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Title: _____

By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Title: _____

[Primary Service Agreement]

Attachment 1B
Redacted Copy of the Agreement Between EchoStar 77 and DISH Network

REDACTED – FOR PUBLIC INSPECTION

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.

ARTICLE 1. SERVICE PROVIDED

1.A. Scope. QuetzSat is the licensee of the BSS frequencies at the 77° W.L. orbital location (the “Orbital Location”). SES-LA and its Affiliates intend to construct and launch a BSS communications satellite designated as the “QuetzSat-1 Satellite” and QuetzSat intends to operate the QuetzSat-1 Satellite in the Orbital Location. EchoStar 77 has entered into the SES-LA Agreement under which SES-LA has agreed to provide certain satellite services to EchoStar 77. In accordance with and subject to the terms and conditions of this Agreement, EchoStar 77 has agreed to provide certain satellite services to Customer and, as stated in Subsection 2.G(8), reserve certain of the capacity of the QuetzSat-1 Satellite in observance of QuetzSat’s obligations set forth in the Concession. In accordance with and subject to the terms and conditions of this Agreement, EchoStar 77 shall provide to Customer, Customer shall pay the applicable MRC for, and Customer shall be entitled to utilize solely for the Intended Purpose, the Service.

The Service shall be provided in accordance with and subject to the terms and conditions set forth in this agreement, including Attachments A – G (as listed below), which are hereby incorporated by reference in their entirety (collectively, the “Agreement”). In the event of any conflict or inconsistency between the terms and conditions set forth in the body of this Agreement and the terms and conditions set forth in any Attachment hereto, then the terms and conditions set forth in the body of this Agreement shall control.

- Attachment A – Technical Performance Specifications
- Attachment B – *[Reserved]*
- Attachment C – Model for QuetzSat-1 MRC Calculation
- Attachment D – *[Reserved]*
- Attachment E – QuetzSat-1 Spacecraft System Requirements dated 24 November 2008
- Attachment F – Concession
- Attachment G – [REDACTED]

1.B. Terms Related to Construction Contract, Launch Service Agreement, and Insurance.

1.B(1) EchoStar 77 and Customer confirm their understanding and agreement that, in the multiple provisions of this Agreement in which EchoStar 77 is obligated to use commercially reasonable efforts to cause SES-LA to take certain actions, EchoStar 77’s ability in such efforts to cause SES-LA to take such actions are specifically subject to the rights and obligations of SES-LA in the SES-LA Agreement.

1.B(2) EchoStar 77 shall cause SES-LA to (a) enter into a contract (the “Construction Contract”) with Vendor for the construction of the QuetzSat-1 Satellite, (b) enter into a Launch Service Agreement for the launch of the QuetzSat-1 Satellite, and (c) negotiate insurance contracts with insurers for the launch and for the first year (or such period as is then commercially available) of in-orbit operation for the QuetzSat-1 Satellite.

[REDACTED]

1.B(3) Pursuant to Subsection 1.B(3) of the SES-LA Agreement, SES-LA, EchoStar 77, Customer and EchoStar Corporation shall collaborate in good faith toward reaching agreements on the Technical Performance Specifications and other requirements for, and toward the successful construction, insurance and launch of, the QuetzSat-1 Satellite, [REDACTED]

[REDACTED] of the QuetzSat-1 Satellite are described in Attachment E. Upon reaching agreement on the Technical Performance Specifications for the QuetzSat-1 Satellite in accordance with Subsection 1.B(3) of this Agreement and Subsection 1.B(3) of the SES-LA Agreement, pursuant to Subsection 1.B(3) of the SES-LA Agreement, SES-LA, EchoStar 77 and Customer shall mutually agree upon the necessary modifications, if any, to Attachment B [REDACTED] to reflect the terms of such Technical Performance Specifications.

Subject to the parties' respective rights and obligations set forth in the immediately preceding paragraph, the parties shall use commercially reasonable efforts (and EchoStar 77 shall cause SES-LA to use commercially reasonable efforts) to cause the execution of the Construction Contract as soon as reasonably practicable and complete the Technical Performance Specifications as soon as reasonably practicable, in each case in accordance with the steps outlined in this paragraph and the immediately following paragraph. Upon completion, [REDACTED] attached hereto as Attachment A, and shall be deemed to be incorporated herein by reference in their entirety. [REDACTED]

1.B(4)

1.B(5) Subject to any applicable ITAR and EAR restrictions and Vendor's standard security procedure requirements, pursuant to Subsection 1.B(5) of the SES-LA Agreement Customer shall be permitted to participate in and be present at

Participation by Customer as contemplated herein shall include attendance by Customer employees and U.S. citizen representatives at such events and meetings, consultation with Customer on engineering decisions that affect the Satellite's performance (including the ability to meet the applicable Technical Performance Specifications) that affect the DISH Payload, and the review of relevant reports and test results. When available, EchoStar 77 shall cause SES-LA to distribute un-redacted versions of all design review documents to Customer. EchoStar 77 shall cause SES-LA to instruct Vendor to make available to Customer and Customer's U.S. citizen representatives access to un-redacted versions of all technical documents under the Construction Contract, including without limitation the spacecraft performance specification. With reasonable prior notice, pursuant to Subsection 1.B(5) of the SES-LA Agreement, Customer shall be permitted, to view program hardware in progress in accordance with Vendor's access policies and procedures. Subject to any confidentiality restrictions set forth in the Construction Contract, pursuant to Subsection 1.B(5) of the SES-LA Agreement, Customer and Customer's U.S. citizen representatives shall be provided access,

, provided that such access does not unreasonably interfere with such work or any other work. Pursuant to Subsection 1.B(5) of the SES-LA Agreement, Customer and Customer's U.S. citizen representatives shall be provided access, to work being performed pursuant to the Construction Contract in Vendor's subcontractors' facilities to the extent Vendor obtains such access, subject to the right of Vendor and SES-LA (or its designee) to accompany Customer and Customer's U.S. citizen representatives on any such visit and subject further to the execution by Customer and Customer's U.S. citizen representatives of non-disclosure or similar agreements as may be required by said subcontractors.

1.B(6) In the event that Customer requests a modification of the DISH Payload, then EchoStar 77 shall cause SES-LA to negotiate in good faith with Vendor and in accordance with SES-LA's obligations under Subsection 3.A(10) of the SES-LA Agreement to implement such modification

[REDACTED]

Customer further acknowledges that any permitted modification of the DISH Payload would be subject to the change procedures set forth in the Construction Contract and the Launch Service Agreement [REDACTED]

[REDACTED]

Customer further acknowledges that any such modification may also require (x) additional approvals or authorizations from SCT, COFETEL and/or other Mexican Governmental Entities and/or the ITU, which EchoStar 77 shall use commercially reasonable efforts to cause SES-LA to obtain [REDACTED]

[REDACTED], and/or (y) additional approvals or authorizations from the FCC and/or other United States Governmental Entities, which Customer shall use its commercially reasonable efforts to obtain. EchoStar 77 shall use commercially reasonable efforts to support (i) the efforts of SES-LA to obtain such additional approvals or authorizations from SCT, COFETEL and/or other Mexican Governmental Entities and/or the ITU, and (ii) the efforts of Customer to obtain such additional approvals or authorizations from the FCC and/or other United States Governmental Entities. [REDACTED]

[REDACTED] Upon the request of EchoStar 77, Customer agrees to provide reasonable support, as soon as reasonably practicable, to assist SES-LA and/or EchoStar 77 in such regulatory process. [REDACTED]

1.B(7) EchoStar 77 agrees to keep Customer promptly apprised of all material third party discussions related to the Launch Service Agreement. [REDACTED]

[REDACTED]

Subject to any applicable ITAR and EAR restrictions, pursuant to Subsection 1.B(7) of the SES-LA Agreement, Customer and Customer's U.S. citizen representatives shall be permitted to participate in reviews of each of LSA Vendor's milestone events with respect to launch of the Satellite. Customer and Customer's guests may at Customer's expense attend the launch of the Satellite.

1.B(8) EchoStar 77 agrees to keep Customer promptly apprised of all material third party discussions related to insurance. Pursuant to Subsection 1.B(8) of the SES-LA Agreement, EchoStar 77 shall cause SES-LA to collaborate with and include Customer in all significant decisions related to insurance, including without limitation the placement of insurance. [REDACTED]

REDACTED – FOR PUBLIC INSPECTION

[REDACTED] EchoStar 77 shall cause SES-LA to use commercially reasonable efforts to include terms in the insurance policies that would include a return of all premiums (or as much of such premiums as possible) in the event of a cancellation of the policies.

1.B(9) [REDACTED]

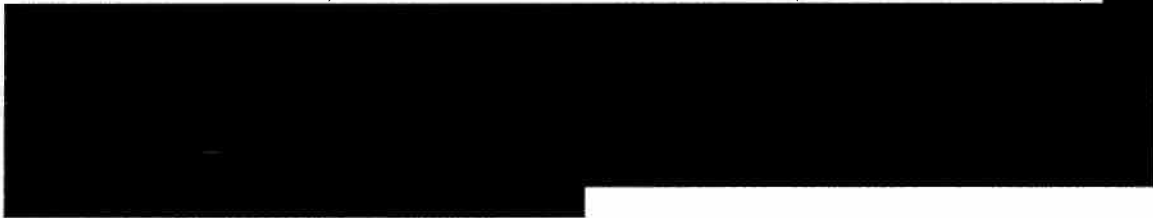
1.B(10) [REDACTED]

1.B(11) Customer acknowledges and agrees that it is SES-LA's intention to procure commercial launch and in-orbit insurance covering the [REDACTED] based on an allocation of such Net Book Value to the various payloads on the Satellite, as determined by mutual agreement of EchoStar 77, SES-LA, Customer and EchoStar Corporation subsequent to execution of the Construction Contract (and subject to later modification by mutual agreement of EchoStar 77, SES-LA, Customer and EchoStar Corporation). [REDACTED]



1.B(12) EchoStar 77 shall cause SES-LA to use commercially reasonable efforts to obtain specific payload-level insurance coverage (*i.e.*, in the initial launch coverage and the subsequent in-orbit coverages), consistent with the allocation of Net Book Value determined under Subsection 1.B(11). During such periods of the Service Term in which such payload-level coverage exists, the terms and conditions of this Agreement shall be equitably adjusted as necessary to reflect the existence of such coverage.

1.C. Service Term. The term for Service (the “Service Term”) on any Satellite (including a Replacement Satellite or a Successor Satellite) shall commence on the In-Service Date for that Satellite, and, except as otherwise provided herein, shall expire on the earlier of (1) ten (10) years after such In-Service Date (the “Initial Term”), or (2) the date that Satellite becomes a Failed Satellite. The Service Term on any Satellite (including a Replacement Satellite or a Successor Satellite) that is not a Failed Satellite may be extended at Customer’s sole option for successive one-year periods (or a portion thereof in the case of the final extension) until the Satellite reaches its End-of-Life (each an “Extended Term”),



1.D. Notices. All notices regarding technical or operational matters requiring immediate attention shall be given by telephone to the telephone numbers set forth below and shall be followed by written notification in accordance with the procedure set forth below. Any other notice required or permitted to be given hereunder shall be in writing and shall be sent by facsimile transmission or by overnight courier service, charges prepaid, to the party to be notified, addressed to such party at the address set forth below, or sent by facsimile to the fax number set forth below, or such other address or fax number as such party may have substituted by written notice to the other party. The sending of such notice with confirmation of receipt thereof (in the case of facsimile transmission) or receipt of such notice (in the case of delivery by overnight courier service) shall constitute the giving thereof.

If to be given to EchoStar 77:

[REDACTED]

[REDACTED]

If to be given to Customer:

[REDACTED]

24-Hour Emergency Telephone # for Technical/Operational Issues:

[REDACTED]

1.E. [REDACTED]

1.E(1) [REDACTED]

1.E(2) [REDACTED]

1.E(3) *[Reserved]*

1.E(4) [REDACTED]

ARTICLE 2. PAYMENTS AND OTHER CONSIDERATIONS/ FUTURE SATELLITES

2.A. *[Reserved]*

2.B. Monthly Recurring Charges.

REDACTED – FOR PUBLIC INSPECTION

2.B(1) Commencing on the In-Service Date and for the duration of the Service Term (including any Extended Terms) Customer shall pay to EchoStar 77 for the Service a monthly recurring service charge (the “MRC”) with respect to the DISH Payload of the QuetzSat-1 Satellite

[REDACTED]

2.B(2) *[Reserved]*

2.B(3)

[REDACTED]

2.B(4)

[REDACTED]

2.B(5) At an appropriate time, and from time to time in the event that, after receipt of Unanimous Instructions pursuant to Subsection 2.G(10), EchoStar 77 exercises its right in Subsection 2.G(10) of the SES-LA Agreement to locate the Satellite at an Alternate Orbital Location and as otherwise

REDACTED – FOR PUBLIC INSPECTION

necessary, pursuant to Subsection 2.B(5) of the SES-LA Agreement, SES-LA, EchoStar Corporation, EchoStar 77 and Customer shall collaborate in good faith as to the methods by which TT&C will be provided for the QuetzSat-1 Satellite, provided that, [REDACTED]

[REDACTED] such methods must meet the minimum requirements of the Concession when the Satellite is located at the Orbital Location. With respect to periods when the QuetzSat-1 Satellite is located at the Orbital Location, such collaboration shall include without limitation the following topics: (x) location of TT&C facilities in Mexico in accordance with the terms and conditions of the Concession, and whether to build a facility or contract for services from a third party; and (y) tax considerations, including with respect to permanent establishments. EchoStar 77 agrees to keep Customer promptly apprised of all material third party discussions related to TT&C for the QuetzSat-1 Satellite. Pursuant to Subsection 2.B(5) of the SES-LA Agreement, EchoStar 77 shall cause SES-LA to collaborate with and include Customer in all significant decisions related to TT&C for the QuetzSat-1 Satellite, including without limitation the purchase of TT&C equipment and other terrestrial facilities necessary to perform TT&C services, [REDACTED]

2.B(6) *[Reserved]*

2.C. Monthly Recurring Charges Adjustments/Refunds. [REDACTED]

[REDACTED] In the event of a Satellite Failure for any reason whatsoever, Customer's obligation to pay the MRCs due for the period after the Satellite Failure shall automatically

terminate as of the date of the Satellite Failure, [REDACTED]
[REDACTED] EchoStar 77 shall refund to Customer any MRCs paid for periods subsequent to the date of a Satellite Failure, including the period between and including the date of the Satellite Failure and the date upon which it is determined that a Satellite Failure has occurred.

2.D. [REDACTED]

2.E. [REDACTED]

2.F. Taxes and Other Charges.

EchoStar 77 represents that, as of the date hereof, it has no actual knowledge of any Taxes (1) which would be or are proposed to be levied on EchoStar 77, SES-LA or any of their Affiliates by any Governmental Entities, (2) which would apply or are proposed to apply to the Service at the Orbital Location or the facilities used to provide the Service at the Orbital Location to Customer, or (3)

The parties shall use their respective commercially reasonable efforts to support each other in (a) the optimization of tax-related strategies, and (b) actions against the establishment of new Taxes that would be payable or reimbursable by Customer pursuant to this Section 2.F,

2.G. Terms Applicable to the QuetzSat-1 Satellite.

2.G(1) SES-LA Authorizations.

EchoStar 77 shall use commercially reasonable efforts to cause SES-LA to maintain the Concession and to pursue, secure, as soon as reasonably practicable, and maintain all other Authorizations necessary for the Service Term from SCT, COFETEL, all other Mexican Governmental Entities and the ITU to (a) locate the QuetzSat-1 Satellite at the Orbital Location, and (b) permit (i) TT&C functions for the Satellite 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, the DISH Payload using the 77° W.L. Frequencies utilized by the DISH Payload at the Orbital Location, and (iii) Customer to use the DISH Payload at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose, with the exception of the separate concession that is required to provide direct-to-home service into Mexico from the QuetzSat-1 Satellite and any additional authorizations specifically relating thereto (collectively, the “77° W.L. License”). (The parties acknowledge and agree

(y) 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 the DISH Payload for other authorized purposes.) EchoStar 77 agrees to 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 the 77° W.L. License,

Upon the request of EchoStar 77, Customer agrees to provide reasonable support, as soon as reasonably practicable, to assist SES-LA and/or EchoStar 77 in the regulatory process for the 77° W.L. License.

2.G(2) Customer Authorizations. Customer agrees to use commercially reasonable efforts at its expense to pursue, secure, as soon as reasonably practicable, and maintain all Authorizations necessary for the Service Term from United States Governmental Entities (including without limitation the FCC and Department of State) to permit (i) 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, the DISH Payload using the 77° W.L. Frequencies utilized by the DISH Payload at the Orbital Location, and (ii) Customer to use the DISH Payload at the Orbital Location consistent with the Technical Performance Specifications and for the Intended Purpose (collectively, the “FCC Approvals”). (The parties acknowledge and agree that the reference in the foregoing clause (ii) to the Intended Purpose is not intended and shall not be construed to foreclose Customer from use of the DISH Payload for other authorized purposes.)

[REDACTED]

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 FCC Approvals 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 the FCC Approvals, and shall advise EchoStar 77 and SES-LA on a timely basis of all material developments concerning such process. Customer agrees that if any filing or submission made by Customer during the regulatory process for the FCC Approvals mentions EchoStar 77, SES-LA or any of the terms or conditions set forth in this Agreement, then Customer shall obtain the prior approval of EchoStar 77 (and EchoStar 77 shall use commercially reasonable efforts to obtain the approval of SES-LA to the extent that such approval is required under the SES-LA Agreement) before filing or submitting material to any Governmental Entities, such approval not to be unreasonably withheld or delayed, provided that it shall be reasonable for EchoStar 77 to withhold its approval in the event that EchoStar 77 is unable to obtain SES-LA’s approval despite the use of commercially reasonable efforts to do so. Upon the request of Customer, EchoStar 77 agrees to provide (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 the FCC Approvals, and EchoStar 77 shall use commercially reasonable efforts to cause SES-LA to cause the then-current Mexican citizen shareholders in QuetzSat to provide such reasonable support.

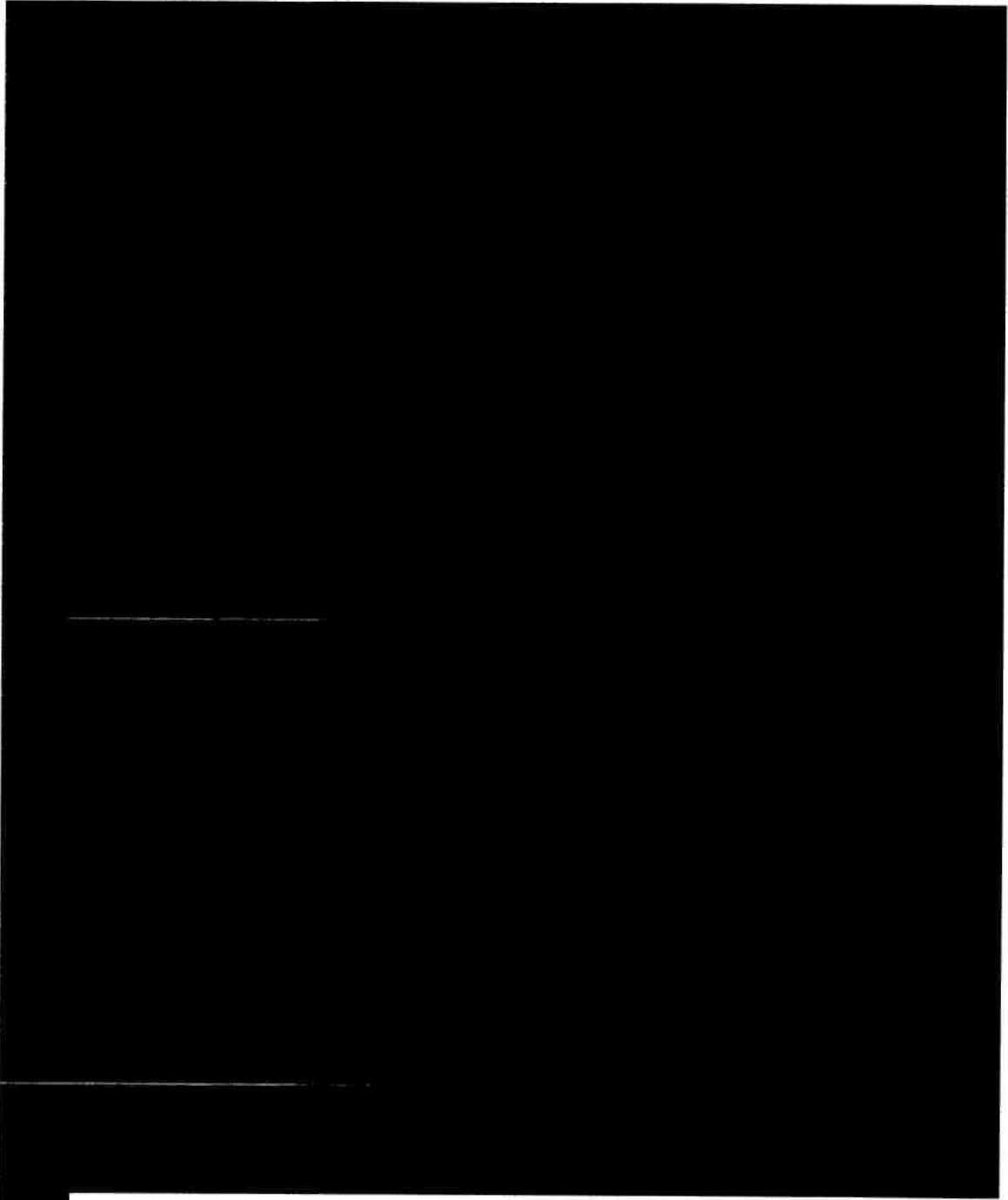
[REDACTED]

2.G(3) Concession. Customer and EchoStar 77 acknowledge the terms and conditions for the concession to occupy the Orbital Location, develop its corresponding BSS frequencies, and broadcast and receive signals established and issued by SCT to QuetzSat on 2 February 2005 (the “Concession”)(a copy of which is appended to this Agreement as Attachment F).

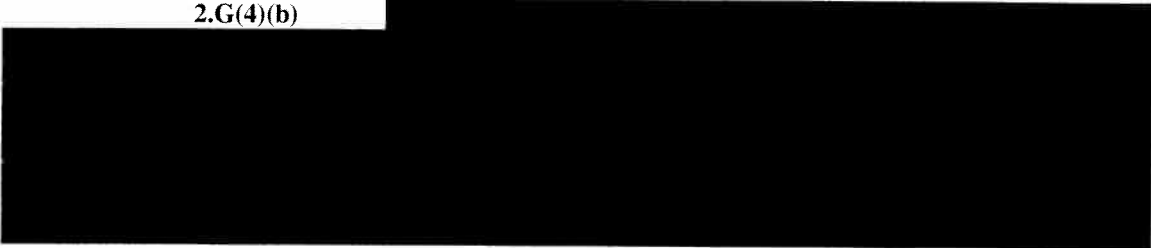
2.G(4) Coordination.

2.G(4)(a)

[REDACTED]



2.G(4)(b)



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

2.G(4)(c)

[REDACTED]

[Redacted]

2.G(5) *[Reserved]*

2.G(6)

[Redacted]

(a)

[Redacted]

(b)

[Redacted]

(c)

[Redacted]

[REDACTED]

[REDACTED]

2.G(7) *[Reserved]*

2.G(8) *Capacity Obligation.* The parties acknowledge QuetzSat’s obligation (the “Capacity Obligation”)

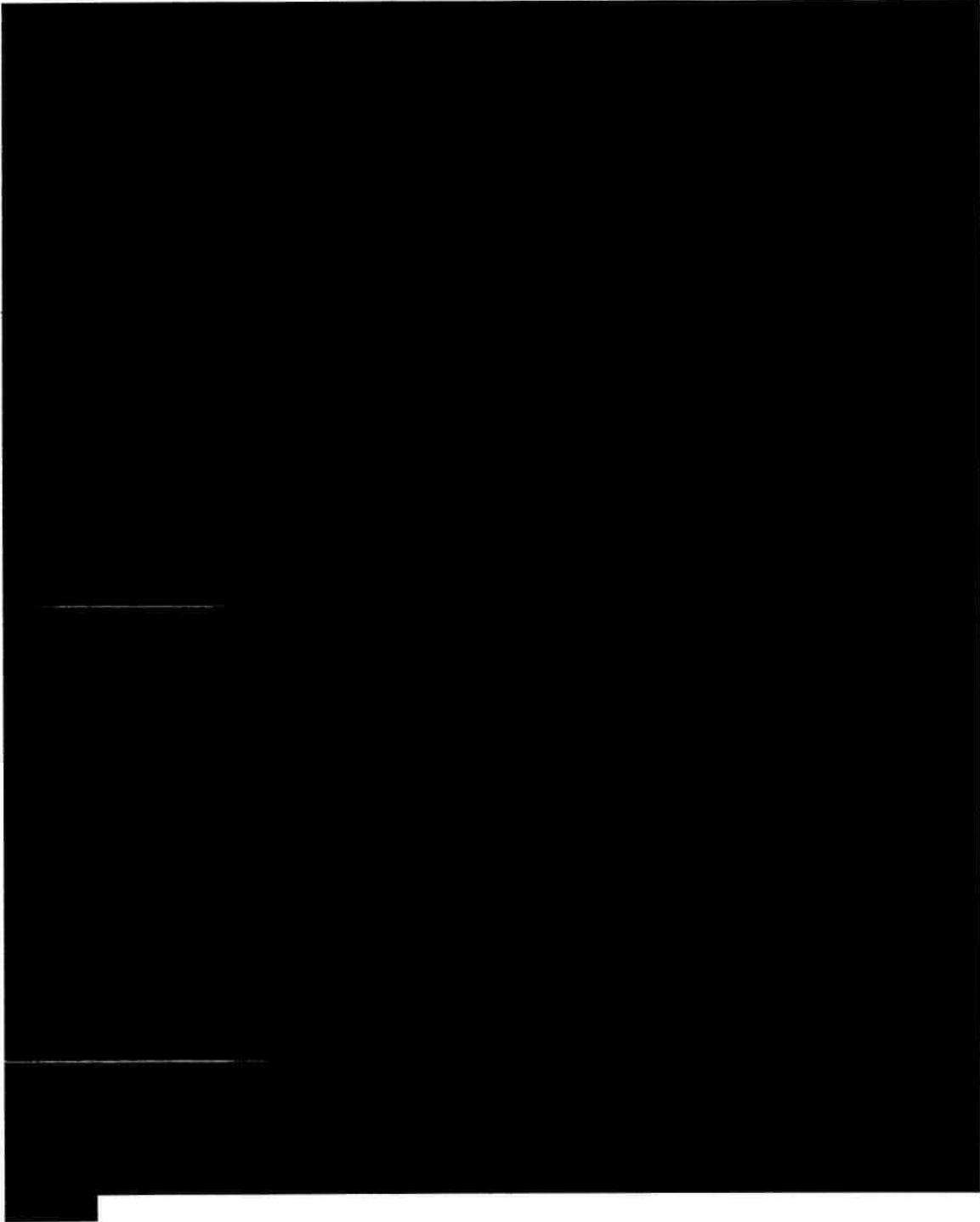
[REDACTED]

2.G(9)

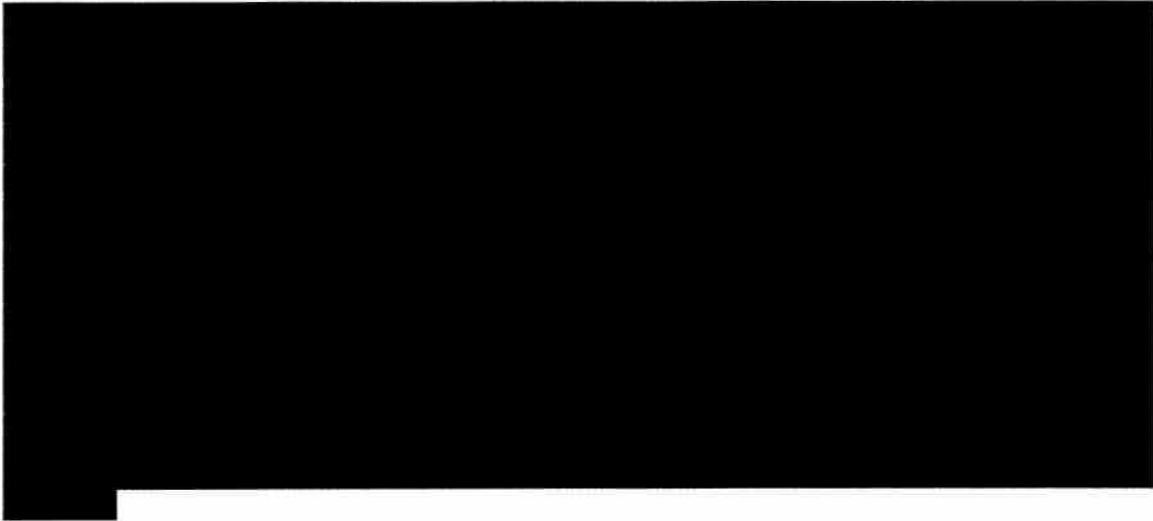
[REDACTED]

2.G(10)

[REDACTED]



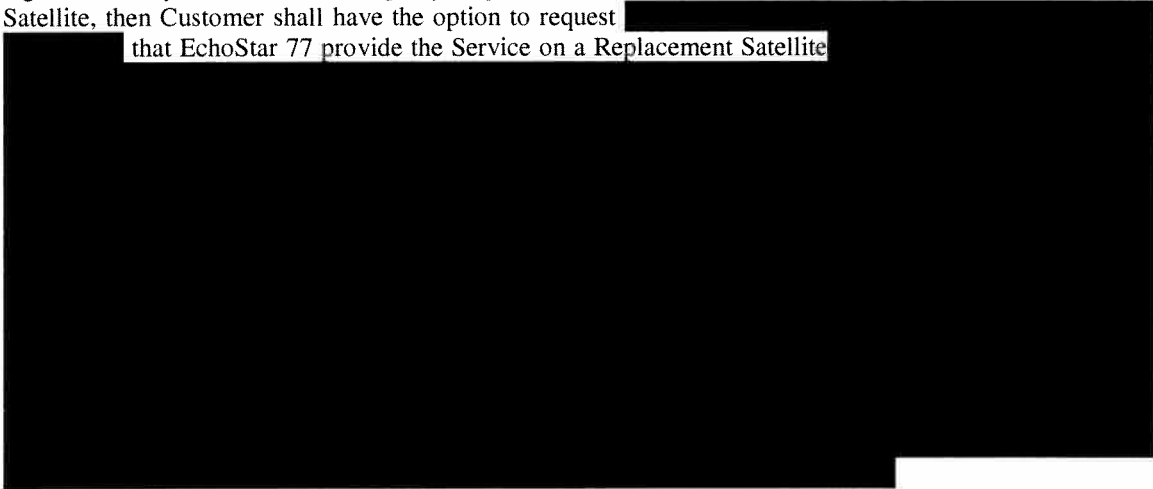
2.G(11) [Redacted]



2.H. [Redacted]

2.H(1) [Redacted]

2.H(1)(a) In the event that, at any time during the effectiveness of this Agreement, any Satellite (including any Replacement Satellite or Successor Satellite) becomes a Failed Satellite, then Customer shall have the option to request [Redacted] that EchoStar 77 provide the Service on a Replacement Satellite



2.H(1)(b) [Reserved]

2.H(2) [Redacted]

2.H(2)(a) [Redacted]



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

2.H(2)(c)



2.H(3)

2.H(3)(a)



2.H(3)(b) [Reserved]

2.H(3)(c)



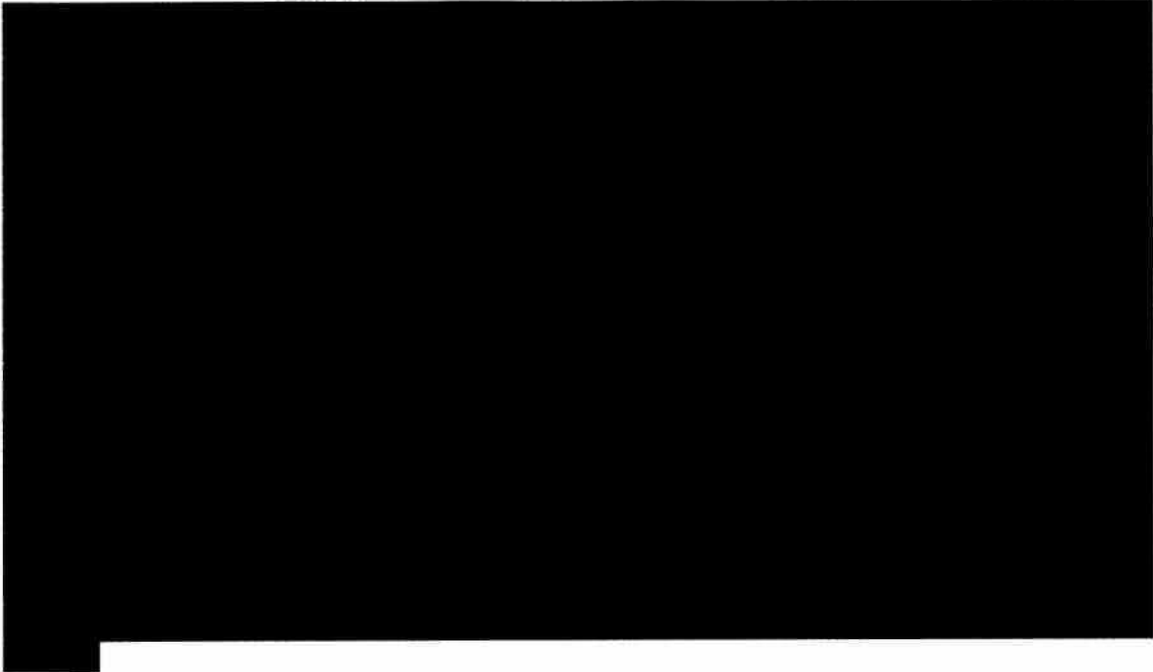
2.H(3)(d) [Reserved]

2.H(3)(e)

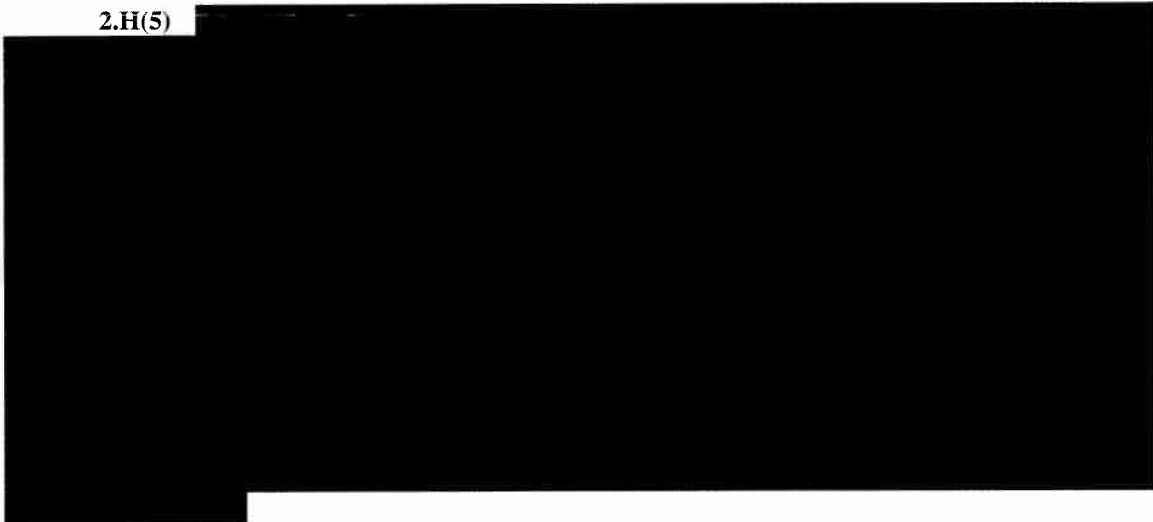


2.H(4)

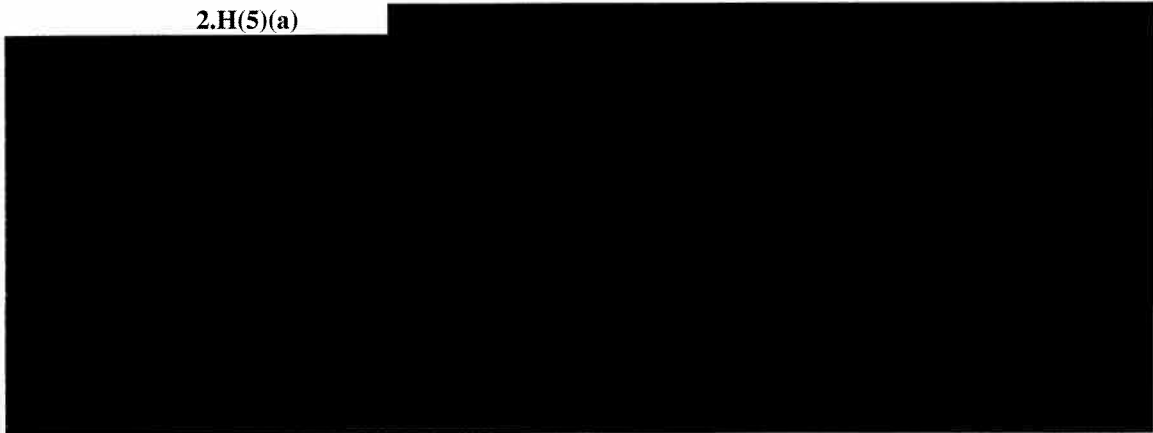




2.H(5)



2.H(5)(a)





2.H(5)(b)



[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)

[Redacted]

2.H(6) [Reserved]

2.H(7)

[Redacted]

2.H(8)

[Redacted]

2.H(9)

[Redacted]

2.I. [REDACTED]

2.I(1) [REDACTED]

[REDACTED] Customer shall have the option to request [REDACTED] that EchoStar 77 provide the Service on a successor satellite [REDACTED]

2.I(2) [REDACTED]

2.I(3) [REDACTED]

2.J. Additional Conditions as to Customer Rights.

2.J(1) Notwithstanding clause (a) of Subsection 2.H(1), clause (a) of Subsection 2.H(2), clause (a) of Subsection 2.H(3), and Subsection 2.I(1), Customer's rights with respect to Replacement Satellites and Successor Satellites shall not be exercisable if [REDACTED]

2.J(2) Other than as set forth in Subsection 2.H(5), Customer's rights with respect to Interim Satellites shall not be exercisable unless [REDACTED]

ARTICLE 3. REPRESENTATIONS, WARRANTIES AND COVENANTS

3.A. EchoStar 77's Representations, Warranties and Covenants. EchoStar 77 hereby represents, warrants and covenants to Customer as follows:

3.A(1) It is a corporation duly organized, validly existing and in good standing under the laws of Delaware. It is duly licensed or qualified to do business as a foreign entity in all jurisdictions where the failure to be so qualified would materially adversely affect its ability to perform its obligations hereunder. It has all requisite power and authority to own its properties and carry on its business as now conducted.

3.A(2) Subject to the Board of Directors approval contemplated by Section 10.R, the execution, delivery and performance (as provided herein) by EchoStar 77 of this Agreement has been duly authorized by all requisite corporate action of EchoStar 77 (including without limitation any necessary action of its directors and shareholders) and shall not violate any applicable provisions of law or any order of any court or any agency of government and shall not conflict with or result in a breach under (a) its Articles of Incorporation or By-Laws, or (b) any material agreement to which EchoStar 77 is a party or by which it is bound. This Agreement is a legal, valid and binding obligation of EchoStar 77, enforceable in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting creditors' rights generally.

3.A(3) EchoStar 77 has not retained or authorized anyone to represent it as a broker or finder in connection with this Agreement.

3.A(4) In connection with EchoStar 77's performance under this Agreement, EchoStar 77 shall comply in all material respects with all applicable laws, regulations, or orders of any Governmental Entity,



3.A(5) *[Reserved]*

3.A(6) EchoStar 77 shall not (and EchoStar 77 shall ensure that SES-LA and its Affiliates and EchoStar Corporation and its Affiliates shall not) shall place another satellite in service that would cause interference with the 77° W.L. Frequencies being utilized by the DISH Payload.

3.A(7) EchoStar 77 shall not consent to an amendment of the Construction Contract that would adversely impact Customer and EchoStar 77 shall not consent to a termination of the Construction Contract, in either case without the express written concurrence of Customer, provided that Customer's concurrence shall not be required if notice has been given of the termination of this Agreement.

3.A(8) Except with respect to the "QuetzSat-1" designation, EchoStar 77 hereby grants to Customer and its Affiliates a non-exclusive, royalty-free, fully-paid-up and irrevocable license under all patents, copyrights, trade secrets and other intellectual property of SES-LA and EchoStar 77 and their respective Affiliates necessary for Customer to use the QuetzSat-1 Satellite for the purposes permitted hereunder, such license to expire on the expiration or termination of this Agreement.

3.A(9) *[Reserved]*

3.A(10) *[Reserved]*

3.A(11) As of the Effective Date and to the best of the present knowledge and belief of EchoStar 77, after reasonable investigation, EchoStar 77 and its Affiliates are in compliance with the terms, conditions and requirements of all of the FCC Approvals received by EchoStar 77 and its Affiliates to date and there has occurred no violation of, default (with or without notice or lapse of time or both) under, or

REDACTED – FOR PUBLIC INSPECTION

event giving to any person or entity any right of revocation, modification, suspension, cancellation or termination (with or without notice or lapse of time or both) of any such FCC Approvals.

3.A(12) As of the Effective Date and to the best of the present knowledge and belief of EchoStar 77, after reasonable investigation, all of the FCC Approvals received by EchoStar 77 and its Affiliates to date (a) are valid and in full force and effect, (b) have not been stayed, and (c) are not subject to any request for stay, reconsideration, review or judicial appeal.

3.A(13) EchoStar 77 and its Affiliates have not received notice of any revocation, modification, suspension, cancellation or termination of any FCC Approvals received by EchoStar 77 and its Affiliates to date and are not aware of any fact and has not received any communication, formal or informal, indicating that any Governmental Entity is considering revoking, modifying adversely, suspending, canceling, rescinding or terminating any such FCC Approvals.

3.A(14) As of the Effective Date and to the best of the present knowledge and belief of EchoStar 77, after reasonable investigation, this Agreement and the operation of the Satellite contemplated hereby, including without limitation the TT&C functions described herein, complies with all of the FCC Approvals received by EchoStar 77 and its Affiliates to date.

3.A(15) *[Reserved]*

3.A(16) *[Reserved]*

3.A(17) *[Reserved]*

3.A(18) *[Reserved]*

3.A(19) EchoStar 77 (a) has the right to provide Service to Customer on the Satellite, and (b) is party to and shall maintain the SES-LA Agreement that grants EchoStar 77 the rights necessary for EchoStar 77 to provide Customer with Service as stated in this Agreement throughout the Service Term, for EchoStar 77 to otherwise perform its obligations hereunder, and for Customer to exercise its rights and otherwise receive all benefits anticipated hereunder.

3.A(20) Certain of the obligations to be performed by EchoStar 77 as stated in this Agreement may be performed on behalf of EchoStar 77 by one or more Affiliates of EchoStar 77. EchoStar 77 shall cause each such Affiliate to perform such obligations and shall be responsible for the actions or inactions of such Affiliates as to such obligations as if the same were actions or inactions of EchoStar 77.

3.B. Customer's Representations, Warranties and Covenants. Customer hereby represents, warrants and covenants to EchoStar 77 as follows:

3.B(1) It is a limited liability company duly organized, validly existing and in good standing under the laws of Colorado. It is duly licensed or qualified to do business as a foreign entity in all jurisdictions where the failure to be so qualified would materially adversely affect its ability to perform its obligations hereunder. It has all requisite power and authority to own its properties and carry on its business as now conducted.

3.B(2) Subject to the approval of its sole member contemplated by Section 10.R, the execution, delivery and performance (as provided herein) by Customer of this Agreement has been duly authorized by all requisite corporate action of Customer (including without limitation any necessary action of its directors, members and shareholders) and shall not violate any applicable provisions of law or any order of any court or agency of government and shall not conflict with or result in a breach under (a) its organizational documents or by-laws, or (b) any material agreement to which Customer is a party or by which it is bound. This Agreement is a legal, valid and binding obligation of Customer, enforceable in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization,

moratorium or other similar laws affecting creditors' rights generally.

3.B(3) Customer has not employed or authorized anyone to represent it as a broker or finder in connection with this Agreement.

3.B(4) [REDACTED] in connection with Customer's performance under this Agreement, Customer shall comply in all material respects with all applicable laws, regulations, or orders of any Governmental Entity, including without limitation those governing content of transmissions and all SCT, COFETEL and FCC license requirements.

3.B(5) [REDACTED]

3.B(6) *[Reserved]*

3.B(7) Customer hereby grants EchoStar 77 and SES-LA and any successor owner of the QuetzSat-1 Satellite and their respective Affiliates a non-exclusive, royalty-free, fully-paid-up and irrevocable license under all patents, copyrights, trade secrets and other intellectual property of Customer and its Affiliates necessary for EchoStar 77 and SES-LA [REDACTED]

3.B(8) *[Reserved]*

3.B(9) *[Reserved]*

3.B(10) *[Reserved]*

3.B(11) *[Reserved]*

3.B(12) Customer shall be responsible for any breaches of this Agreement resulting from the actions or inactions of Customer's Affiliates as if the same were actions or inactions of Customer.

3.C. DISH Network Corporation Representations, Warranties and Covenants.

3.C(1) DISH Network Corporation hereby represents, warrants, and covenants, solely with respect to the obligation set forth in Subsection 3.C(2), as follows:

3.C(1)(a) It is a corporation duly organized, validly existing and in good standing under the laws of Nevada. It is duly licensed or qualified to do business as a foreign corporation in all jurisdictions where the failure to be so qualified would materially adversely affect its ability to perform its obligations hereunder. It has all requisite corporate power and authority to own its properties and carry on its business as now conducted.

3.C(1)(b) Subject to the Board of Directors approval contemplated by Section 10.R, the execution, delivery and performance (as provided herein) by DISH Network Corporation of the obligation set forth in Subsection 3.C(2) has been duly authorized by all requisite action and will not violate any applicable provisions of law or any order of any court or agency of government and will not conflict with or result in a breach under (i) its Articles of Incorporation or By-Laws, or (ii) any material agreement to which DISH Network Corporation is a party or by which it is bound.

3.C(2) In the event that Customer's [REDACTED] then DISH Network Corporation, or any

REDACTED – FOR PUBLIC INSPECTION

successor entity thereto that is the ultimate parent of Customer, shall become, effective at the end of such calendar quarter, absolutely, irrevocably, unconditionally and continually obligated to EchoStar 77 to perform fully and timely all of the payment and other obligations and covenants of Customer hereunder.

ARTICLE 4. SERVICE RESPONSIBILITIES

4.A. Laws and Regulations Governing Service. Construction, launch, location and operation of the Satellite and Customer's and EchoStar 77's performance of all obligations pursuant to this Agreement, are subject to all applicable laws and regulations of Mexico, the United States and other relevant jurisdictions, including without limitation ITAR and EAR, the *Ley Federal de Telecomunicaciones* (Mexico), as amended, the Communications Act, all applicable policies, decisions, orders, rules and regulations of SCT, COFETEL, COFECO and the FCC, and coordination agreements with other operators and administrations, provided that it is understood that location and operation of the Satellite at the Orbital Location shall be subject to the licensing jurisdiction of Mexico and that the United States shall not have responsibility for the Satellite during its location and operation at the Orbital Location. [REDACTED]

[REDACTED] this Section 4.A shall take precedence over any terms and conditions of this Agreement that could otherwise result in an action contrary to applicable laws and regulations.

4.B. Use Conditions.

4.B(1) Customer shall use the Service in accordance with (a) all applicable laws and regulations [REDACTED]

[REDACTED], and (b) the conditions of use to be contained in the Commercial Operations Systems User's Guide as agreed to by SES-LA, EchoStar 77 and Customer pursuant to Subsection 4.B(1) of the SES-LA Agreement with respect to the DISH Payload (the "User's Guide"). [REDACTED]

[REDACTED] Customer shall not use the Service for any unlawful purpose, including violation of laws governing the content of material transmitted using the Service. [REDACTED]

[REDACTED] EchoStar 77 shall also cause SES-LA to provide continuous monitoring of the Satellite in accordance with generally accepted industry standards.

4.B(2) Customer shall be responsible for the failure of third parties (*e.g.*, subcontractors) who Customer utilizes in conjunction with the Service ("Customer's Designees") to meet the requirements of Subsection 4.B(1) as if such failures were actions of Customer.

ARTICLE 5. OPERATIONAL MATTERS

5.A. Service Access. Customer is responsible for providing, operating and maintaining the equipment necessary to access the Satellite and Service. When signals are being transmitted from an earth station provided by Customer, Customer shall be responsible for proper illumination of the Transponders. Should improper illumination be detected by SES-LA, Customer shall be notified and shall take corrective action promptly. [REDACTED]

[REDACTED] Customer at its expense shall provide EchoStar 77 with any descrambling or decoding devices that may be required for signal monitoring. At a mutually agreed time, and prior to Customer transmitting from its earth station(s), Customer shall demonstrate to SES-LA's designated Technical Operations Center that its earth station(s) comply with the satellite access specifications contained in the User's Guide.

5.B. [REDACTED]

[REDACTED]

5.B(2)

[REDACTED]

[REDACTED]

[REDACTED]

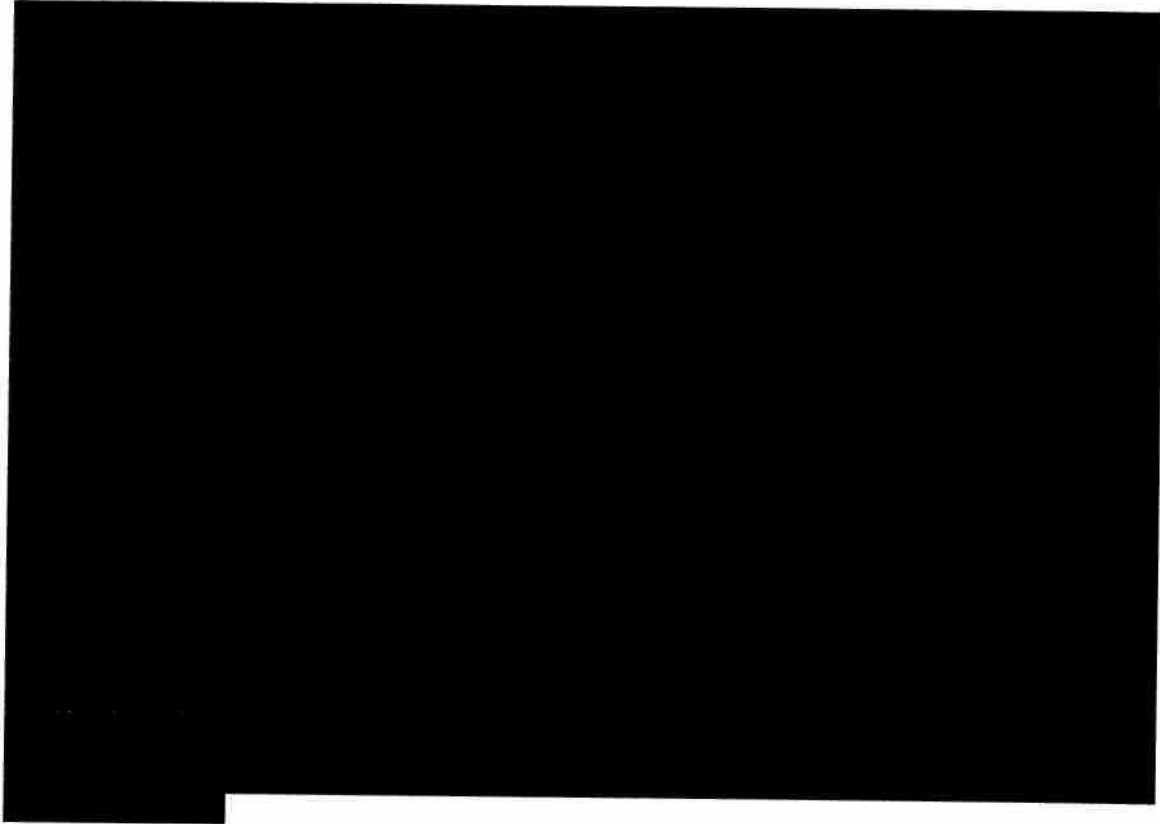
[REDACTED]

[REDACTED]

[REDACTED]

5.B(3)

[REDACTED]




5.C. Certain Other Operational Matters.

5.C(1) Pursuant to Subsection 5.C(1) of the SES-LA Agreement, EchoStar 77 and Customer shall participate in monthly meetings with SES-LA to discuss the status of and developments in the construction, launch and insurance of the Satellite. In such meetings, EchoStar 77 shall provide updates on, among other things, the decisions made in the “Trouble Review Board” and “Test Review Board” meetings. Without limitation of Subsection 1.B(5), Customer shall be provided with copies of or, at SES-LA’s election, access to full manufacturing test data (*i.e.*, “box level”) of components of special importance to the payload performance.

5.C(2) Without limitation of Subsection 1.B(5), pursuant to Subsection 5.C(2) of the SES-LA Agreement, Customer shall have the right to witness (with a reasonable number of attendees) in-orbit testing of the Satellite from the SES-LA station at which the tests are controlled, and to receive the complete IOT test data results.

5.C(3) Pursuant to Subsection 5.C(3) of the SES-LA Agreement, EchoStar 77 shall cause SES-LA to provide to Customer monthly health reports on the Satellite in a form to be agreed by SES-LA, EchoStar 77 and Customer consistent with industry practice (except for redactions of information related to the payload(s) on which Customer is not taking Service).

5.C(4) Pursuant to Subsection 5.C(4) of the SES-LA Agreement, prior to the In-Service Date of the Satellite, the parties shall document a procedure to govern the methods by which the network operation center of Customer (or its permitted designee) shall instruct SES-LA’s network operation center as to changes in its payload configurations, including transmission parameters, 



[REDACTED]

5.C(5) In the event that EchoStar 77 receives conflicting directions from Customer or a Customer Affiliate as to payload-related matters, EchoStar 77 shall follow Customer's directions.

[REDACTED]

ARTICLE 6. INDEMNIFICATION

6.A. By Customer.

6.A(1) General. Upon notice by EchoStar 77 and/or SES-LA to Customer, Customer shall have the obligation to indemnify, defend and hold harmless, or at its option to settle, and Customer agrees, at its own expense, to defend or at its option to settle, (a) any third-party claim (including those of Customer's Designees) (including, to the extent permitted by law, any fines and penalties), suit, or proceeding brought against EchoStar 77, SES-LA and/or any of their Affiliates arising out of, resulting from or in connection with any failure to provide Service or any use of Service provided hereunder,

[REDACTED]

The defense provided by Customer shall be conducted by principal counsel which is [REDACTED]. Customer agrees to pay any final judgment or settlement entered against EchoStar 77 and/or SES-LA on such issue in any such suit or proceeding defended by Customer. EchoStar 77 and/or SES-LA shall notify Customer promptly in writing of any such claim, suit or proceeding, and EchoStar 77 shall give to Customer (and shall cause SES-LA to give to Customer), at Customer's expense, proper and full information, of which it is aware, and reasonable assistance to settle and/or to defend any such claim, suit, or proceeding. Notwithstanding the foregoing, this indemnity shall not apply to the extent that the loss is based on third-party claims (including those of Customer's Designees)

[REDACTED] Customer shall not be liable for any cost or expense incurred by EchoStar 77 or SES-LA in connection with a claim within the scope of this Subsection 6.A(1) without Customer's authorization.

6.A(2) ITAR and EAR-Related. With respect to any access, documents or other information that

is provided to Customer under this Agreement, [REDACTED]

6.B. By EchoStar 77.

6.B(1) [REDACTED]

6.B(1)(a) Upon notice by Customer to EchoStar 77, EchoStar 77 shall cause SES-LA to indemnify, defend and hold harmless, or at its option to settle, any claim (including, to the extent permitted by law, any fines and penalties), suit, or proceeding brought against Customer and/or any of its Affiliates by a third party [REDACTED]

[REDACTED] Customer confirms its understanding that an indemnification and defense provided by SES-LA may be provided in coordination with similar defenses and indemnifications provided by SES-LA for the benefit of EchoStar 77 and/or EchoStar Corporation. [REDACTED]

[REDACTED] Neither SES-LA nor EchoStar 77 shall be liable for any cost or expense incurred by Customer in connection with a claim within the scope of this clause (a) of Subsection 6.B(1) without SES-LA's authorization. [REDACTED]

[REDACTED] Subsection 6.B(1) of this Agreement and Subsection 6.B(1) of the SES-LA Agreement states the entire obligation of EchoStar 77 and SES-LA, respectively, and the exclusive remedy of Customer, with respect to [REDACTED]

6.B(1)(b) [REDACTED]

[REDACTED]

6.B(2) ITAR and EAR-Related. With respect to any access, documents or other information that is provided to EchoStar 77 under this Agreement, [REDACTED]

6.C. Survival. The provisions of this Article 6 shall survive expiration or termination of this Agreement indefinitely.

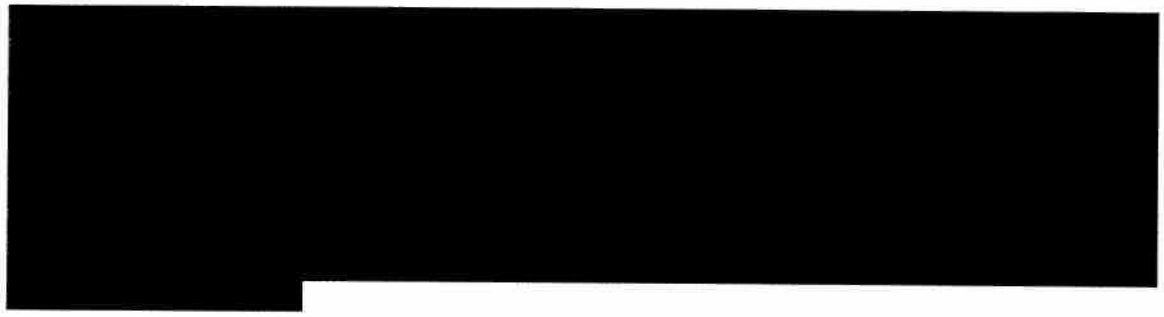
ARTICLE 7. WARRANTY DISCLAIMER; LIMITATION OF LIABILITY

7.A. Warranty Disclaimer. No warranties, express, implied, or statutory, including any warranty of merchantability or fitness for a particular purpose, apply to Service provided hereunder or the equipment and facilities used to provide Service. The conveying by EchoStar 77 of proprietary information or other information to Customer shall in no way alter this disclaimer.

7.B. Limitation of Liability.

7.B(1) As a material condition of entering into this Agreement at the price specified herein, and in regard to any and all causes arising out of or relating to this Agreement, including but not limited to claims of negligence, breach of contract or warranty, failure of a remedy to accomplish its essential purpose or otherwise, Customer agrees that EchoStar 77's and its Affiliates' entire liability shall not exceed, in the aggregate, [REDACTED]

7.B(2) As a material condition of entering into this Agreement at the price specified herein, and in regard to any and all causes arising out of or relating to this Agreement, including but not limited to claims of negligence, breach of contract or warranty, failure of a remedy to accomplish its essential purpose or otherwise, EchoStar 77 agrees that Customer's and its Affiliates' entire liability shall not exceed, in the aggregate, [REDACTED]

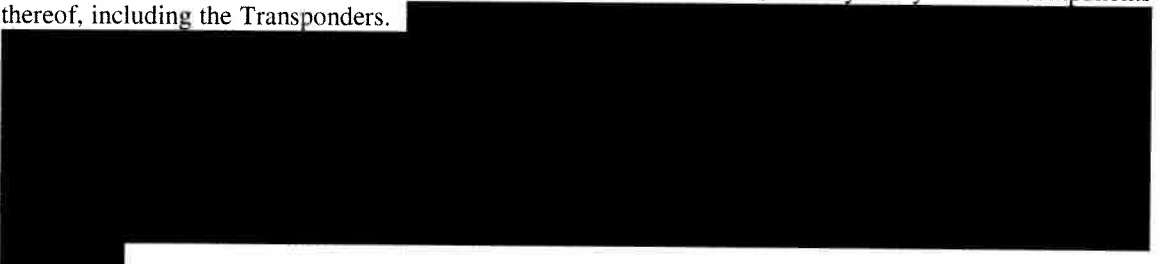


7.B(3) Each party agrees that in no event shall the other party, Affiliates of such other party, Vendor, or LSA Vendor be liable to the first party for any indirect, incidental, consequential, punitive, special or other similar damages (whether in contract, tort (including without limitation negligence), strict liability or under any other theory of liability), including but not limited to loss of actual or anticipated revenues or profits, loss of business, customers or good will. (For clarification purposes, the foregoing sentence does not apply to the obligations in Sections 6.A or 6.B as to claims by third parties.)

7.C. Survival. The provisions of this Article 7 shall survive expiration or termination of this Agreement indefinitely.

ARTICLE 8. CONFIDENTIALITY AND NONDISCLOSURE

8.A. Certain Information Regarding Service. Except for disclosures to SES-LA or EchoStar Corporation or required by a court or governmental agency or to assignees permitted under Section 10.I, each party hereby agrees not to disclose to third parties (without the prior written consent of the other party) the material terms and conditions of this Agreement, the SES-LA Agreement or the EchoStar Corporation SSA (including but not limited to the prices, payment terms, schedules, protection arrangements, and restoration provisions thereof), and all information provided to Customer and EchoStar 77 related to the design and performance characteristics of the Satellite, and any subsystems or components thereof, including the Transponders.



8.B. Proprietary Information.

8.B(1) To the extent that either party discloses to the other any other information which it considers proprietary or is proprietary information of a third party, in written or tangible form, said party shall identify such information as proprietary when disclosing it to the other party by marking it clearly and conspicuously as proprietary information. Any proprietary disclosure to either party, if made orally, shall be identified as proprietary information at the time of disclosure, if the disclosing party wishes to keep such information proprietary under this Agreement. Any such information disclosed under this Agreement shall be used by the recipient thereof only in its performance under this Agreement.

8.B(2) Neither party shall be liable for the inadvertent or accidental disclosure of such information marked as proprietary, if such disclosure occurs despite the exercising of the same degree of care as the receiving party normally takes to preserve and safeguard its own proprietary information (but not less than reasonable care) or if such information (a) is or becomes lawfully available to the public from a source other than the receiving party before or during the period of this Agreement, (b) is released in

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writing by the disclosing party without restrictions, (c) is lawfully obtained by the receiving party from a third party or parties without obligation of confidentiality, (d) is lawfully known by the receiving party prior to such disclosure and is not subject to any confidentiality obligations, or (e) is at any time lawfully developed by the receiving party completely independently of any such disclosure or disclosures from the disclosing party.

8.B(3) In addition, neither party shall be liable for the disclosure of any proprietary information which it receives under this Agreement, the SES-LA Agreement or the EchoStar Corporation SSA pursuant to judicial action or decree, or pursuant to any requirement of any Governmental Entity or any agency or department thereof, having jurisdiction over such party, provided that in the reasonable opinion of counsel for such party such disclosure is required, and provided further that such party shall have given the other party notice, to the extent reasonably practicable, prior to such disclosure.

8.B(4) Customer and EchoStar 77 agree to negotiate in good faith, and EchoStar 77 shall cause SES-LA and EchoStar Corporation to negotiate in good faith, a five-party non-disclosure agreement with Vendor for information to be disclosed related to this Agreement and that certain Satellite Service Agreement for QuetzSat-1 between EchoStar 77 and EchoStar Corporation dated 24 November 2008 (the “EchoStar Corporation SSA”).

8.C. Survival. The provisions of this Article 8 are in addition to, and not in lieu of, any agreements of the parties regarding confidentiality executed by the parties on or before the date hereof and shall survive expiration or termination of this Agreement indefinitely.

ARTICLE 9. TERMINATION

9.A. Termination for Default. In addition to any rights of termination provided in other Articles of this Agreement, either party may terminate this Agreement (a “Termination for Default”) by giving the other party written notice thereof in the event: (1) the other party materially breaches this Agreement (except for a breach of Article 8) and fails to cure such breach within [REDACTED] days after receipt of written notice thereof (except that, if the breaching party fails to pay amounts due hereunder, such cure period shall be reduced to [REDACTED] days [REDACTED] and, in lieu of termination, EchoStar 77 may, in its sole and absolute discretion (for any reason or no reason), suspend the provision to Customer of the Service, with no liability to Customer); or (2) the other party becomes insolvent or the subject of insolvency proceedings, including without limitation if the other party is judicially declared insolvent or bankrupt, or if any assignment is made of the other party’s property for the benefit of its creditors, or if a receiver, conservator, trustee in bankruptcy or other similar officer is appointed by a court of competent jurisdiction to take charge of all or any substantial part of the other party’s property, or if a petition is filed by or against the other party under any provision of the *Ley de Concursos Mercantiles* (Mexico) or the Bankruptcy Code (U.S.) now or hereafter enacted, and such proceeding is not dismissed within [REDACTED] days after filing, or if a petition is filed by the other party under any provision of the *Ley de Concursos Mercantiles* (Mexico) or the Bankruptcy Code (U.S.) now or hereinafter enacted. Notwithstanding anything to the contrary contained in this Agreement, Customer acknowledges and agrees that this Agreement shall automatically be terminated upon the expiration or earlier termination of the SES-LA Agreement, provided that EchoStar 77 shall not exercise any right of termination that EchoStar 77 may have under the SES-LA Agreement without the prior written consent of Customer, which consent may be withheld in Customer’s sole and absolute discretion (for any reason or no reason).

9.B. Termination for Convenience.

9.B(1) This Agreement may be terminated by Customer, at any time, by written notice to EchoStar 77 (a “9.B(1) Termination”), provided that any such termination shall be effective on the date upon which EchoStar 77’s termination of the SES-LA Agreement becomes effective (the “9.B(1) Effective Date”). [REDACTED]

[REDACTED]

9.B(1)(a)

[REDACTED]

9.B(1)(b)

[REDACTED]

9.B(1)(c)

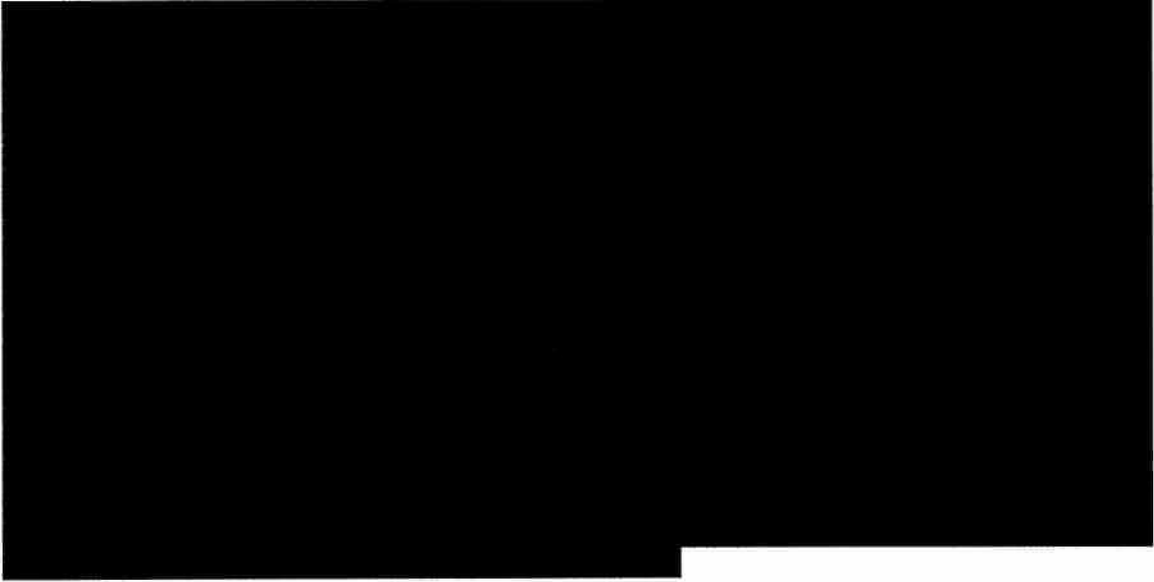
[REDACTED]

9.B(1)(d)

[REDACTED]

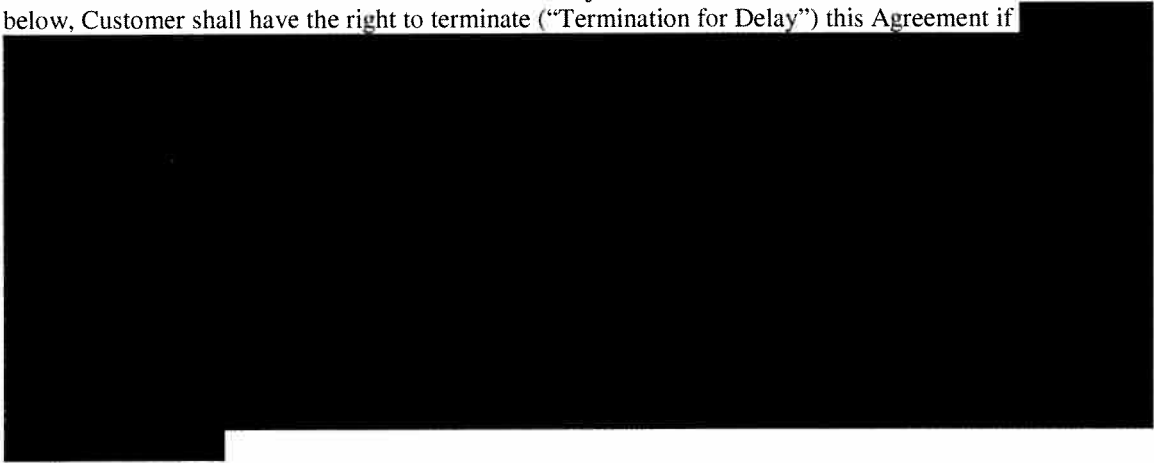
9.B(2)

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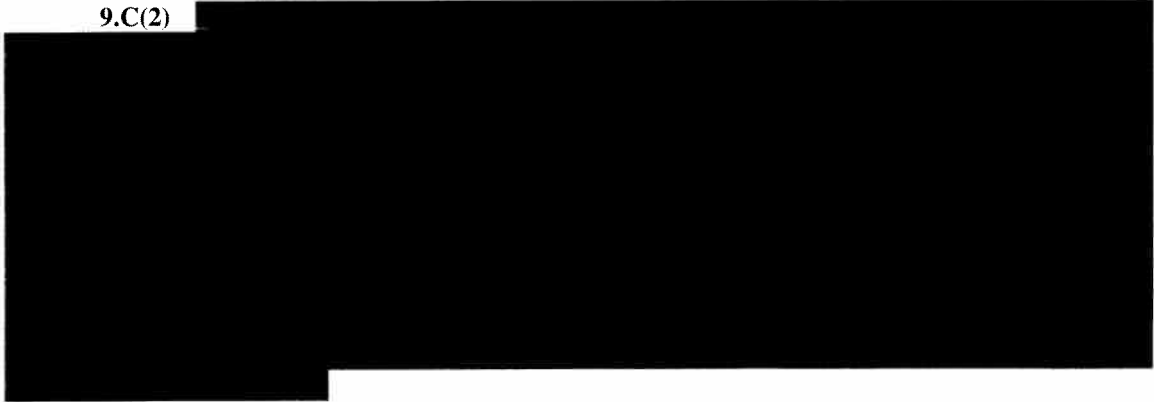


9.C. Termination for Delay or Force Majeure.

9.C(1) EchoStar 77 shall keep Customer reasonably informed of Vendor’s adherence to the schedule set forth in the Construction Contract. Subject to the terms in this Subsection 9.C(1) set forth below, Customer shall have the right to terminate (“Termination for Delay”) this Agreement if



9.C(2)



9.C(3) [Reserved]

9.C(4) [Reserved]

9.D. **Refunds.** In the event of the expiration of this Agreement pursuant to Subsection 9.F(1), or in the event of termination by Customer or wrongful termination by EchoStar 77 pursuant to this Agreement, EchoStar 77 shall refund any portion [REDACTED]

[REDACTED] By way of clarification, this Section 9.D shall not limit Customer's rights under this Agreement, at law, in equity or otherwise, in the event of Termination for Default or otherwise by Customer.

9.E. **Termination Liability.** In the event of a Termination for Default by EchoStar 77, EchoStar 77 shall be entitled to retain [REDACTED]

[REDACTED]

9.F. **Expiration of Agreement/ Survival.**

9.F(1) This Agreement shall expire on the later of (a) the date that is [REDACTED] days after the end of the Service Term (or [REDACTED] days after the date of a Satellite Failure occurring prior to the In-Service Date) for any Satellite (including any Replacement Satellite or Successor Satellite), if by such date Customer has not exercised its option to require EchoStar 77 to construct, launch and provide the Service to Customer on a Replacement Satellite or a Successor Satellite, or (b) the end of the period during which an Interim Satellite is located at the Orbital Location in accordance with the terms of Subsection 2.H(5).

9.F(2) Neither party shall have any further rights, obligations or liability to the other under this

Agreement in the event of the termination or expiration of this Agreement, except for any rights, obligations or liability (a) arising prior to such termination or expiration, (b) expressly arising upon or as a result of such termination or expiration, (c) expressly described in this Agreement as surviving such expiration or termination, (d) that logically would be expected to survive termination or expiration, or (e) arising as a result of or in connection with the representations, warranties and covenants in Article 3.

9.G. [Redacted]

9.H. [Reserved]

ARTICLE 10. GENERAL PROVISIONS

10.A. **Force Majeure.** If a Force Majeure Event under this Agreement has occurred and is continuing, then the performance obligations of the party directly affected by such Force Majeure Event under this Agreement shall be tolled for the duration of such Force Majeure Event and such party shall not be liable to the other by reason of any delay or failure in performance of this Agreement which arises out of such Force Majeure Event, provided that the party directly affected by such Force Majeure Event shall promptly take and continue to take all reasonable actions to abate such Force Majeure Event as soon as possible. [Redacted]

[Redacted] If Service is unavailable as a result of a Force Majeure Event affecting the Satellite, then Customer’s obligation to pay the MRCs shall be suspended during such period Service is unavailable and shall resume upon the Service becoming available.

10.B. **No Implied License.** Except to the extent that the Satellite and associated equipment are used for the Intended Purpose (or as otherwise set forth to the contrary in this Agreement), the provision of services or the conveying of any information under this Agreement shall not convey any license by implication, estoppel or otherwise, under any patents or other intellectual property rights of Customer or EchoStar 77, and their Affiliates, contractors and vendors.

10.C. **Intended Third Party Beneficiaries; No Third-Party Rights; No Fiduciary Relationship.**

[Redacted]

[Redacted] this Agreement does not, is not intended to, and shall not be deemed or construed by the parties or by any third party to confer any enforceable rights or remedies on, or

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create any obligations or interests in, any person other than the signatories to this Agreement; or to create the relationship of principal and agent, partnership or joint venture or any other fiduciary relationship or association among the signatories to this Agreement.

10.D. No Waiver; Remedies Cumulative. No waiver, alteration, or modification of any of the terms of this Agreement shall be binding unless in writing and signed by all parties. All remedies and rights hereunder and those available at law or in equity shall be cumulative and the exercise by a party of any such right or remedy shall not preclude the exercise of any other right or remedy available under this Agreement, at law or in equity.

10.E. Costs and Legal Fees. In any action brought with respect to this Agreement by one party hereto against the other party hereto, in addition to any other money damages awarded by a court of competent jurisdiction, the prevailing party shall be entitled to recover from the other party its reasonable costs, including reasonable legal fees, in successfully bringing or defending against such action.

10.F. Governing Law and Exclusive Jurisdiction.

10.F(1) Each party hereby irrevocably and unconditionally agrees that the relationship between the parties, including without limitation all disputes, controversies or claims, whether arising in contract, tort, or under statute, shall be governed by and construed in accordance with the laws of the State of New York, applicable to contracts to be made and performed entirely within the State of New York by residents of the State of New York, without giving any effect to its conflict of law provisions.

10.F(2) Each party hereby irrevocably and unconditionally (a) agrees that any suit, action or proceeding with respect to this Agreement shall be instituted only in the trial court of New York, New York, or the U.S. District Court for the Southern District of New York (and appellate courts from any of the foregoing), as such party may elect in its sole and absolute discretion (for any reason or no reason), (b) consents and submits, for itself and its property, to the jurisdiction of such courts for the purpose of any such suit, action or proceeding instituted against it by any other, and (c) agrees that a final judgment in any such suit, action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law.

10.F(3) Each party hereby irrevocably and unconditionally agrees that service of all writs, process and summonses in any suit, action or proceeding pursuant to Subsection 10.F(2) may be effected by the mailing of copies thereof by registered or certified mail, postage prepaid, to such party at its address for notices pursuant to Section 1.D, such service to become effective thirty (30) days after such mailing, provided that nothing contained in this Subsection 10.F(3) shall affect the right of any party to serve process in any other manner permitted by law.

10.F(4) Each party hereby irrevocably and unconditionally (a) waives any objection which it may now or hereafter have to the laying of venue of any suit, action or proceeding arising out of or relating to this Agreement brought in any court specified in clause (a) of Subsection 10.F(2), (b) waives any claim that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum, and (c) agrees not to plead or claim either of the foregoing.

10.F(5) The provisions of this Section 10.F shall survive expiration or termination of this Agreement indefinitely.

10.G.



[REDACTED]

10.H. Headings; Severability; Customer Purchase Orders. All titles and headings in this Agreement are for reference purposes only; they shall not affect the meaning or construction of the terms of this Agreement. If any part or parts of this Agreement are held to be invalid, the remaining parts of the Agreement shall continue to be valid and enforceable. Customer agrees that any purchase order or other similar document that Customer may issue in connection with this Agreement shall be for Customer's internal purposes only and, therefore, even if acknowledged by EchoStar 77, shall not in any way add to, subtract from, or in any way modify the terms and conditions of this Agreement.

10.I. Assignment and Other Third Party Use.

10.I(1) Customer shall have the right to assign or transfer its rights or obligations in whole or in part under this Agreement, provided that Customer shall obtain EchoStar 77's prior written consent, [REDACTED]

10.I(2) EchoStar 77 shall, without Customer's prior consent, have the right to assign or transfer its rights or obligations in whole or in part under this Agreement to any Affiliate or third party, provided that [REDACTED]

10.I(3) The provisions hereof shall be binding on and inure to the benefit of the parties, their successors and permitted assigns. The provisions hereof shall not apply to transactions with subscribers or other end users in their capacity as such.

10.J. Inter-Party Waiver. Customer, on behalf of itself and its officers, employees, Affiliates, agents, insurers, owners and customers, agrees to accept the inter-party waiver and related indemnity provisions required by the applicable Launch Service Agreement for a launch, modified so as to apply to Customer and LSA Vendor. EchoStar 77 likewise, on behalf of itself and its officers, employees, Affiliates, agents, insurers, owners and customers, agrees to accept the inter-party waiver and related indemnity provisions required by the applicable Launch Service Agreement for a launch, modified so as to apply to EchoStar 77 and LSA Vendor. In no event shall such inter-party waiver and related indemnity provisions have any effect on the rights, obligations and liabilities of and between Customer and EchoStar 77 under this Agreement.

10.K. Publicity. Neither party shall in any way or in any form publicize or advertise in any manner this Agreement or the Services to be provided pursuant to this Agreement without the express written approval (which shall not be unreasonably withheld, conditioned or delayed) of the other party and SES-LA,

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obtained in advance, for each item of advertising or publicity. The foregoing prohibition shall include but not be limited to news releases, letters, correspondence, literature, promotional materials or displays of any nature or form (for clarification purposes, the foregoing shall not apply to the marketing of the Service by Customer to prospective third-party customers). Each request for approval hereunder shall be submitted in writing to the representative designated in writing; and approval, in each instance, shall be effective only if in writing and signed by said representative. Nothing herein shall prevent either party from providing SCT, COFETEL, the FCC, or any other Governmental Entity, information concerning this Agreement as required by law or in response to a request for information by such Governmental Entity, provided that the party providing such information shall have given the other party and SES-LA notice, to the extent reasonably practicable, prior to such disclosure. Notwithstanding the foregoing, either party may refer to the fact that EchoStar 77 is providing the Service to Customer without the other party's prior approval so long as such statements are limited to a statement of such fact and are not an endorsement (positive or negative) of any product or service.

10.L. ITAR/EAR. Information exchanged under this Agreement may be subject to U.S. export control laws and regulations, such as the ITAR and the EAR. The parties agree that information subject to the export control laws and regulations shall not be disclosed or transferred to a third party without first obtaining written approval from the disclosing party and complying with all applicable U.S. export control laws and regulations.

10.M. Currency. All monetary amounts in this Agreement are expressed in U.S. dollars and shall be paid in U.S. dollars.

10.N. Documents. Subject to compliance with applicable legal requirements of Mexico and the United States (*e.g.*, ITAR and EAR), each party agrees to provide information and to execute, and if necessary to file with the appropriate Governmental Entities and international organizations, such documents as the other party shall reasonably request in order to carry out the purposes of this Agreement.

10.O. *[Reserved]*

10.P. Entire Agreement. This Agreement contains the entire and exclusive understanding of the parties with respect to the subject matters hereof and, except (1) as expressly set forth to the contrary in Section 8.C, and (2) for the SES-LA Agreement; and (3) [REDACTED] supersedes all prior negotiations and agreements between the parties with respect thereto. To the extent that any Attachment may be inconsistent with the text of the Agreement, the text of the Agreement shall control.

10.Q. [REDACTED]

10.R. Board Approval. This Agreement is subject to approval by the Boards of Directors, member(s) or manager(s), as applicable, of EchoStar 77, [REDACTED] and Customer, and the approval of the Boards of Directors, member(s) or manager(s), as applicable, for the relevant parties to the other agreements (*e.g.*, the Security-Related Agreements) to be executed and delivered concurrent with the execution and delivery of this Agreement.

ARTICLE 11. DEFINITIONS

As used in this Agreement:

- A. "9.B(1) Effective Date" shall have the meaning specified in Subsection 9.B(1).
- B. "9.B(1) Termination" shall have the meaning specified in Subsection 9.B(1).
- C. "9.B(2) Termination" shall have the meaning specified in Subsection 9.B(2).

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- D. “77° W.L. Agreement” means the Agreement Regarding 77° W.L. BSS Frequencies among SES-LA (formerly known as SES GLOBAL Latin America, S.A.), [REDACTED], [REDACTED], DISH Network L.L.C. (formerly known as EchoStar Satellite L.L.C.), [REDACTED] dated 17 November 2004. (The rights and obligations of DISH Network L.L.C. were assigned to EchoStar Corporation in connection with the recent spin-off of certain businesses and assets of DISH Network Corporation and its Affiliates.)
- E. “77° W.L. Frequencies” means the thirty-two (32) Ku-Band BSS frequencies at the Orbital Location assigned to the Republic of Mexico by the ITU Region 2 Plan for BSS.
- F. “77° W.L. License” shall have the meaning specified in Subsection 2.G(1).
- G. [REDACTED]
- H. [REDACTED]
- I. [REDACTED]
- J. “Affiliate” means, with respect to a party, any person or entity (1) more than fifty percent (50%) of the capital securities of which on an as-converted basis are owned by, or (2) directly or indirectly controlling, controlled by, or under common control with, such party at the time when the determination of affiliation is being made. For purposes of this definition, the term “control” (including the correlative meanings of the terms “controlled by” and “under common control with”), as used with respect to a person or entity, [REDACTED]
- K. “Agreement” shall have the meaning specified in Section 1.A.
- L. “Alternate Capacity” shall have the meaning specified in Subsection 2.G(8).
- M. “Alternate Orbital Location” shall have the meaning specified in Subsection 2.G(10).
- N. “Amendment #1 to the 77° W.L. Agreement” means Amendment #1 to Agreement Regarding 77° W.L. BSS Frequencies effective as of 24 November 2008 between EchoStar, Customer, [REDACTED] SES-LA [REDACTED]
- O. “Authorization” means any authorization, order, permit, approval, forbearance decision, grant, license, consent, right, franchise, privilege or certificate of any Governmental Entity of competent jurisdiction, whether or not having the force of law.
- P. [REDACTED]
- Q. “BSS” means the Broadcasting-Satellite Service, as defined by the Radio Regulations of the ITU.
- R. “Business Day” means Monday through Friday, 8:30 a.m. to 5:00 p.m. (local time in New York, New York USA) exclusive of banking holidays observed in New York, New York USA.

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- S. “Capacity Obligation” shall have the meaning specified in Subsection 2.G(8).
- T. “COFECO” means Mexico’s Comisión Federal de Competencia and any successor agency thereto.
- U. “COFETEL” means Mexico’s Comisión Federal de Telecomunicaciones and any successor agency thereto.
- V. “Communications Act” means the Communications Act of 1934 (United States), as amended.
- W. “Concession” shall have the meaning specified in Subsection 2.G(3).
- X. “Construction Contract” shall have the meaning specified in Subsection 1.B(2).
- Y. [REDACTED]
- Z. [REDACTED]
- AA. “Customer” shall have the meaning specified in the preamble paragraph.
- BB. “Customer Material Adverse Effect” means

(1) a material adverse effect on (a) Customer’s ability to realize the benefits anticipated under this Agreement and/or the SES-LA Agreement, (b) the business, assets, operations, prospects or condition (financial or otherwise) of Customer and its Affiliates, taken as a whole, or (c) the use by or benefit to Customer of the 77° W.L. Frequencies, excluding (for each of clauses (a), (b) and (c)) any change or development resulting from (i) events adversely affecting any of the principal markets served by the businesses of Customer or any of its Affiliates, or (ii) general economic conditions, including changes in the economies of any of the jurisdictions in which Customer or any of its Affiliates conduct business; and/or

(2) with respect to any Authorization or other consent, that such Authorization or other consent contains a condition that would (a) have a material adverse effect (i) on Customer’s ability to consummate the transactions contemplated by this Agreement and/or the SES-LA Agreement, or (ii) on Customer’s ability to use the DISH Payload consistent with the Technical Performance Specifications and for the Intended Purpose, or (b) create any obligation on the part of Customer or any of its Affiliates to accept (as a condition to receipt of such Authorization or otherwise):

(i) any restriction on the right of Customer or any of its Affiliates to operate pursuant to [REDACTED]

[REDACTED] other than (1) any restrictions generally imposed on operators of high-powered BSS services, by applicable Regulatory Provisions and restrictions of the types generally and customarily imposed by the FCC on operators of high-powered BSS services, and (2) the Concession; or

(ii) a requirement that Customer or any of its Affiliates dispose of all or any part of the [REDACTED]

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other than any restrictions generally imposed on operators of high-powered BSS services, by applicable Regulatory Provisions and restrictions of the types generally and customarily imposed by the FCC on operators of high-powered BSS services.

[REDACTED]

- CC. “Customer’s Designees” shall have the meaning specified in Subsection 4.B(2).
- DD. “DISH Network L.L.C.” means DISH Network L.L.C., formerly known as EchoStar Satellite L.L.C., a limited liability company formed under the laws of Colorado.
- EE. “DISH Payload” means (1) for purposes of the QuetzSat-1 Satellite, twenty-four (24) 300-watt Transponders in dual-combined mode [REDACTED]
- FF. “DISH Transponder” means a Transponder on the DISH Payload.
- GG. “EAR” means the United States Export Administration Act and Export Administration Regulations, as amended.
- HH. [REDACTED]
- II. “EchoStar 77” shall have the meaning specified in the preamble paragraph.
- JJ. [REDACTED]
- KK. [REDACTED]
- LL. “EchoStar Corporation” means EchoStar Corporation, a corporation formed under the laws of Nevada
- MM. “EchoStar Corporation SSA” shall have the meaning specified in Subsection 8.B(4).

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- NN. “EchoStar Payload” means (1) for purposes of the QuetzSat-1 Satellite, eight (8) 300-watt Transponders in dual-combined mode [REDACTED]
- OO. “EchoStar Transponder” means a Transponder [REDACTED]
- PP. “Effective Date” shall have the meaning specified in the preamble paragraph.
- QQ. “End-of-Life” means the date on which, in SES-LA’s reasonable judgment, the Satellite should be taken out of service because of insufficient fuel, which for clarification purposes shall include an allowance for sufficient fuel to de-orbit the Satellite.
- RR. [REDACTED]
- SS. “Failed Satellite” or “Satellite Failure” [REDACTED]
- TT. “Failed Transponder” [REDACTED]
- UU. “FCC” means the United States Federal Communications Commission and any successor agency thereto.
- VV. “FCC Approvals” shall have the meaning specified in Subsection 2.G(2).
- WW. [REDACTED]
- XX. “Force Majeure Event” means acts of God, acts of the other party, acts of government authority, strikes or other labor disturbances, or any other cause beyond the reasonable control of that party, that (1) as to EchoStar 77, relates to or affects its ability to provide the Service, (2) as to either party, relates to or affects that party’s ability to make a payment, or (3) as to either party, relates to or affects its ability to fulfill its material obligations under this Agreement.
- YY. “Governmental Entity” means any (1) multinational, federal, provincial, state, municipal, local or other government, governmental or public department, central bank, court, commission, board, bureau, agency or instrumentality, domestic or foreign, (2) subdivision, agent, commission, board, or authority of any of the foregoing, or (3) quasi-governmental or private body validly exercising any regulatory, expropriation or taxing authority under or for the account of any of the foregoing, in each case in the proper exercise of its governmental authority.
- ZZ. [REDACTED]
- AAA. “In-Service” means that the Satellite (or a Replacement Satellite or a Successor Satellite, as applicable) is deployed at the Orbital Location, and, following SES-LA testing and verification of the entire Satellite, [REDACTED]

[REDACTED]

BBB. “In-Service Date” means the date on which the Satellite (or a Replacement Satellite or Successor Satellite, as applicable) is In-Service.

CCC. “Initial Term” shall have the meaning specified in Section 1.C.

DDD. [REDACTED]

EEE. “Intended Purpose” means the use of the 77° W.L. Frequencies utilized by the DISH Payload, subject to Subsection 2.G(8), [REDACTED]

FFF. “Interim Agreement” means the Satellite Relocation and Use Agreement for the 77° W.L. Orbital Location among SES-LA (formerly known as SES GLOBAL Latin America, S.A.), [REDACTED] DISH Network L.L.C. (formerly known as EchoStar Satellite L.L.C.) [REDACTED] dated 13 May 2005. (The rights and obligations of DISH Network L.L.C. under such agreement were assigned to EchoStar Corporation in connection with the recent spin-off of certain businesses and assets of DISH Network Corporation and its Affiliates.)

GGG. “Interim Satellite” shall have the meaning specified in Subsection 2.H(5).

HHH. “Invoice Date” shall have the meaning specified in Subsection 2.G(11).

III. [REDACTED]

JJJ. [REDACTED]

KKK. [REDACTED]

LLL. “ITAR” means the United States Arms Export Control Act and International Traffic in Arms

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Regulations, as amended.

- MMM. “ITU” means the International Telecommunication Union.
- NNN. “ITU Region 2 Plan for BSS” means the ITU Region 2 Plan for BSS and Feeder Link Assignments, as contained in Appendices 30/30A of the Radio Regulations.
- OOO. “Launch Service Agreement” means the agreement executed between SES-LA and LSA Vendor for the launch of the Satellite.
- PPP. [REDACTED]
- QQQ. [REDACTED]
- RRR. [REDACTED]
- SSS. “LSA Vendor” means the launch service provider selected by SES-LA in accordance with and subject to the terms and conditions of the SES-LA Agreement.
- TTT. [REDACTED]
- UUU. “MRC” shall have the meaning specified in Subsection 2.B(1).
- VVV. [REDACTED]
- WWW. “Non-US Interim Satellite License” shall have the meaning specified in clause (a) of Subsection 2.H(5).
- XXX. “Operational Arrangement” shall have the meaning specified in clause (a) of Subsection 2.G(4).
- YYY. [REDACTED]
- ZZZ. “Orbital Location” shall have the meaning specified in Section 1.A.
- AAAA. “Partial Loss” means any failure of a Transponder to operate in accordance with the Technical Performance Specifications that does not result in a Satellite Failure.
- BBBB. [REDACTED]
- CCCC. “Pre-Launch Expected Life” means the length of time from the expected In-Service Date to the predicted End-of-Life of the QuetzSat-1 Satellite, as determined immediately prior to launch using [REDACTED]
- DDDD. “Prime Rate” means the “prime rate” of interest as shown in the Money and Investing Section of

the *Wall Street Journal* as of the applicable date.

EEEE. [REDACTED]

FFFF. [REDACTED]

GGGG. [REDACTED]

HHHH. [REDACTED]

IIII. “QuetzSat” means QuetzSat, S. de R.L. de C.V.

JJJJ. “QuetzSat-1 Satellite” shall have the meaning specified in Section I.A.

KKKK. “Regulatory Provisions” means all applicable requirements of the Communications Act and the published policies, rules, decisions, and regulations of the FCC, in each case as amended from time to time.

LLLL. “Replacement Satellite” [REDACTED]

MMMM. “RFP” means a request for proposal.

NNNN. “Satellite” means the QuetzSat-1 Satellite, [REDACTED]

OOOO. “Satellite Investment” shall have the meaning specified in Section 11.UUUU of the SES-LA Agreement.

PPPP. “SCT” means Mexico’s Secretaría de Comunicaciones y Transportes and any successor agency thereto.

QQQQ. [Reserved].

RRRR. [Reserved].

SSSS. “Service” means the use of the DISH Payload for the Intended Purpose, subject to the terms and conditions of Subsection 2.G(8) regarding the Capacity Obligation.

TTTT. “Service Term” shall have the meaning specified in Section I.C.

UUUU. “SES-LA” means SES Latin America S.A.

VVVV. [REDACTED]

WWWW. “SES-LA Agreement” means the Satellite Service Agreement for QuetzSat-1 between SES-LA [REDACTED] and EchoStar 77 on the other hand, dated 24 November 2008.

XXXX. [REDACTED]

YYYY. “Successor Satellite” shall have the meaning specified in Subsection 2.I(1).

ZZZZ. “Taxes” means taxes (including duties, fees or charges in the nature of taxes) levied by Governmental Entities, [REDACTED]

AAAAA. “Technical Performance Specifications” means the technical performance criteria for the Service on the QuetzSat-1 Satellite.

BBBBB. “Technical Representative” means SES Engineering (US), Inc.

CCCCC. [REDACTED]

DDDDD. “Termination for Default” shall have the meaning specified in Section 9.A.

EEEE. “Termination for Delay” shall have the meaning specified in Subsection 9.C(1).

FFFFF. [REDACTED]

GGGGG. “Transponder” means a discrete communication path by which a signal is transmitted using the Satellite.

HHHHH. “TT&C” means telemetry, tracking and control.

IIIII. “TT&C Costs” shall have the meaning specified in Subsection 2.B(5).

JJJJJ. “TWTA” means a traveling wave tube amplifier.

KKKKK. “Unanimous Instructions” means instruction(s) set forth in a written agreement between all persons or entities receiving (or with written agreements to receive) service from EchoStar 77 comprising the entirety of the DISH Payload and the [REDACTED] (excluding the capacity being used, if any, to satisfy the Capacity Obligation).

LLLLL. “User’s Guide” shall have the meaning specified in Subsection 4.B(1).

MMMMM. “US Interim Satellite License” shall have the meaning specified in clause (b) of Subsection 2.H(5).

NNNNN. [REDACTED]

OOOOO. “Vendor” means the satellite manufacturer selected by SES-LA in accordance with and subject to the terms and conditions of the SES-LA Agreement.

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IN WITNESS WHEREOF, the parties hereto have caused their duly authorized representatives to execute this agreement as of the Effective Date.

ECHOSTAR 77 CORPORATION

DISH NETWORK L.L.C.

By: _____
(Signature)

By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Name: _____
(Typed or Printed Name)

Title: _____

Title: _____

DISH NETWORK CORPORATION, *solely as to the obligation set forth in Section 3.C of this Agreement*

By: _____
(Signature)

Name: _____
(Typed or Printed Name)

Title: _____