See also: SAT-MOD-20050204-00025
SAT-STA-20041217-00224
SAT-STA-20050706-00080

GRANTED
International Bureau

File # SAT-AMD-20050323-00071
with attached Conditions

Call Sign KS35 Grant Date April 27 2005
(or other identifier)

Approved by OMB
3060-0678

Term Dates
From: April 27, 2005 To: May 30, 2006

Approved: Chief Satellite
Robert G Nelson Engineering Branch

Date & Time Filed: Mar 23 2005 4:37:36:873PM
File Number: SAT-AMD-20050323-00071

FCC APPLICATION FOR SPACE AND EARTH STATION:MOD OR AMD – MAIN FORM FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	FCC Use Only

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
Intelsat LLC's Amendment to Pending MARISAT-F2 Modification to Provide UHF Service

1-8. Legal Name of Applicant

Name:	Intelsat LLC	**Phone Number:**	202-944-7848
DBA Name:		**Fax Number:**	202-944-7860
Street:	c/o Intelsat Global Svc. Corp. 3400 International Drive, N.W.	**E-Mail:**	susan.crandall@intelsat.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20008 -3006
Attention:	Susan H Crandall		

KS35 SAT-AMD-20050323-00071 IB2005000635
Intelsat LLC
MARISAT-F2

ATTACHMENT

MARISAT-F2

SAT-MOD-20050204-00025
SAT-AMD-20050323-00071
SAT-STA-20041217-00224
SAT-STA-20050406-00080
Call Sign: KS35
April 27, 2005

Intelsat LLC's ("Intelsat") requests, File No. SAT-MOD-20050204-00025, as amended by SAT-AMD-20050323-00071, for authority[1] and SAT-STA-20050406-00080 for extension of temporary authority to provide UHF capacity on a non-interference basis via its MARISAT-F2 satellite at 33.9° W.L. orbital location (Call Sign KS35) ARE GRANTED. Accordingly, Intelsat is authorized to operate the MARISAT satellite in the UHF Narrowband Channel A (307.750 MHz Center Frequency (uplink) and 254.150 MHz Center Frequency (downlink)) and the UHF Narrowband Channel B (311.150 MHz Center Frequency (uplink) and 257.550 MHz Center Frequency (downlink)) ("UHF bands") on a non-interference basis until May 30, 2006[2], in accordance with the terms, conditions, and technical specifications set forth in its application, this Attachment and the Federal Communications Commission's Rules.

(1) Intelsat shall ensure that coordination of its UHF band operations at the 33.9° W.L. orbital location with existing satellites has been completed such that no unacceptable interference results from the operation of MARISAT at the 33.9° W.L. orbital location in the UHF bands.

(2) While operating at the 33.9° W.L. orbital location in the UHF bands, no harmful interference shall be caused by the MARISAT satellite to any other lawfully operating satellites or radiocommunication systems. Operations of the MARISAT satellite in the UHF bands shall cease immediately upon notification of such interference and Intelsat shall inform the Commission in writing immediately of such an event.

(3) While operating the MARISAT satellite in the UHF bands at the 33.9° W.L. orbital location, Intelsat is required to accept interference from other lawfully operating in-orbit satellites or other radiocommunication systems.

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[1] The Commission has previously authorized Intelsat to operate the MARISAT-F2 satellite at 33.9° W.L. orbital location and to provide C- and L-band service to the National Science Foundation. *See* Authorizations Granted, Applications of Comsat General Corporation, Lockheed Martin Global Telecommunications LLC, Comsat New Services, Inc., Intelsat LLC, and Intelsat MTC LLC to Assign Licenses and Authorizations and Request for a Declaratory Ruling on Foreign Ownership, DA 04-3418 (Oct. 27, 2004) (Public Notice).

[2] The authority for the Marisat-F2 satellite's operation at 33.9°W.L. was provided by order DA 00-1828 (August 14, 2000). The authority granted in that order expires August 13, 2015.

(4) Any action taken or expense incurred as a result of operations pursuant to this authority is solely at Intelsat's risk.

(5) This grant does not convey to Intelsat any authority to operate another satellite at the 33.9° W.L. orbital location in the UHF bands or any priority in the U.S. application-processing queue relative to applications for authority to operate a regularly authorized satellite at this orbital position in the UHF bands.

(6) Intelsat is required to inform its customers utilizing the UHF bands in writing, including end-users receiving service from resellers accessing capacity on MARISAT, that UHF service is being provided until May 30, 2006 pursuant to a grant on a non-harmful interference basis as specified above.

(7) Intelsat's request to waive the table of allocations to the extent necessary to operate on a non-interference basis in the UHF bands is granted.

(8) This grant shall be limited to the purpose described in Intelsat's application, *i.e.*, support of NATO operations.

(9) This grant is conditioned upon the concurrence of National Telecommunications and Information Administration (NTIA) in the use of UHF bands. If NTIA withdraws its concurrence, the grant will be cancelled effective upon the date NTIA withdraws its concurrence.

(10) Intelsat must operate pursuant to the requirements set forth in the April 14, 2005 letter from Frederick R. Wentland, Associate Administrator, Office of Spectrum Management, NTIA to Donald Abelson, Chief, International Bureau, Federal Communications Commission.

(11) With this grant, Intelsat's request for Special Temporary Authority SAT-STA-20041217-00224 is DISMISSED as MOOT.

(12) This grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

APR 14 2005

Mr. Donald Abelson
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, D.C. 20554

Dear Mr. Abelson:

In their application of February 4, 2005, INTELSAT, as Manager for the MARISAT system, has requested that the Federal Communications Commission ("Commission") modify their authorization to allow them to provide UHF communications from their MARISAT space station located at 33.9W.[1] The specific frequencies being requested are four 25-kHz channels centered on 307.750 MHz (Earth-to-space), 311.150 MHz (Earth-to-space), 254.150 MHz (space-to-Earth), and 257.550 MHz (space-to-Earth). This request is in support of NATO through Paradigm Secure Communications. On April 8, 2005 the Commission informed National Telecommunications and Information Administration (NTIA) that this conditional license will expire on May 30, 2006. INTELSAT has stated that these operations will be conducted on a non-interfering basis.

Currently, these MARISAT UHF operations are being conducted under a Special Temporary Authority (STA) which is to expire on April 10, 2005.[2] NTIA concurred to this STA after consultations with the Department of Defense (DoD).[3] [4] DoD has stated that they could support this INTELSAT request contingent on operating conditions that have been agreed with the INTELSAT customer for the STA. Concerning these conditions, DoD has clarified to NTIA that the condition of NATO operating user terminals East of 20W when transmitting to the MARISAT satellite is limited to the frequency 307.75 MHz.

With the understanding that the conditional license will be granted under the same terms of the existing STA, NTIA has no objection to the FCC authorizing the UHF operations sought by INTELSAT. However, NTIA retains the right to withdraw frequency authorization for this authorization, e.g., if the MARISAT capacity would be needed to meet US defense requirements.

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[1] Space Station Application from Patrick J. Cerra, Vice President, INTELSAT LLC, to Federal Communications Commission dated February 4, 2005.

[2] *See* Commission File SAT-STA-20041217-00225 dated February 11, 2005.

[3] Letter from Frederick R. Wentland, Associate Administrator, Office Spectrum Management to Donald Abelson, Chief of the International Bureau dated January 24, 2005.

[4] Letter from Badri A. Younes, Director, Spectrum Management, Networks and Information Integration, Office of the Assistant Secretary of Defense to Frederick R. Wentland, Associate Administrator, Office Spectrum Management dated January 19, 2005.

NTIA's consideration of this authorization is limited to the existing customer. Any other proposed use of the MARISAT UHF capacity will require further coordination.

If you have any questions, please contact Edward Davison (202-482-5526; edavison@ntia.doc.gov).

Sincerely,

Fredrick R. Wentland
Associate Administrator
Office of Spectrum Management

9–16. Name of Contact Representative (If other than applicant)

Name:	Carl R. Frank	**Phone Number:**	202–719–7269
Company:	Wiley Rein & Fielding LLP	**Fax Number:**	202–719–7409
Street:	1776 K Street, NW	**E–Mail:**	cfrank@wrf.com
City:	Washington	**State:**	DC
Country:	USA	**Zipcode:**	20006–
Contact Title:	Attorney	**Relationship:**	Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.

- ○ a1. Earth Station
- ◉ a2. Space Station

(N/A) b1. Application for License of New Station
(N/A) b2. Application for Registration of New Domestic Receive–Only Station
◉ (N/A) b3. Amendment to a Pending Application
○ (N/A) b4. Modification of License or Registration
b5. Assignment of License or Registration
b6. Transfer of Control of License or Registration
○ (N/A) b7. Notification of Minor Modification
(N/A) b8. Application for License of New Receive–Only Station Using Non–U.S. Licensed Satellite
(N/A) b9. Letter of Intent to Use Non–U.S. Licensed Satellite to Provide Service in the United States
○ (N/A) b10. Other (Please specify)

17c. Is a fee submitted with this application?

(●) If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).

( ) Governmental Entity ( ) Noncommercial educational licensee

( ) Other(please explain):

17d.

Fee Classification CWY – Space Station Amendment(Geostationary)

18. If this filing is in reference to an existing station, enter:	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number:	
(a) Call sign of station: KS-35	(a) Date pending application was filed:	(b) File number:
	02/04/2005	SATMOD2005020400025

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

- ☐ a. Fixed Satellite
- ☒ b. Mobile Satellite
- ☐ c. Radiodetermination Satellite
- ☐ d. Earth Exploration Satellite
- ☐ e. Direct to Home Fixed Satellite
- ☐ f. Digital Audio Radio Service
- ☐ g. Other (please specify)

21. STATUS: Choose the button next to the applicable status. Choose only one.

○ Common Carrier ◉ Non–Common Carrier

22. If earth station applicant, check all that apply.

- ☐ Using U.S. licensed satellites
- ☐ Using Non–U.S. licensed satellites

23. If applicant is providng INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:

○ Connected to a Public Switched Network ○ Not connected to a Public Switched Network ◉ N/A

24. FREQUENCY BAND(S): Place an 'X' in the box(es) next to all applicable frequency band(s).

- ☒ a. C–Band (4/6 GHz) ☐ b. Ku–Band (12/14 GHz)
- ☒ c.Other (Please specify upper and lower frequencies in MHz.)

Frequency Lower: Frequency Upper: (Please specify additional frequencies in an attachment)

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.

- ○ a. Fixed Earth Station
- ○ b. Temporary–Fixed Earth Station
- ○ c. 12/14 GHz VSAT Network
- ○ d. Mobile Earth Station
- ◉ e. Geostationary Space Station
- ○ f. Non–Geostationary Space Station
- ○ g. Other (please specify)

26. TYPE OF EARTH STATION FACILITY:

○ Transmit/Receive ○ Transmit–Only ○ Receive–Only ◉ N/A

"For Space Station applications, select N/A."

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)

- ☐ a — authorization to add new emission designator and related service
- ☐ b — authorization to change emission designator and related service
- ☐ c — authorization to increase EIRP and EIRP density
- ☐ d — authorization to replace antenna
- ☐ e — authorization to add antenna
- ☐ f — authorization to relocate fixed station
- ☐ g — authorization to change frequency(ies)
- ☒ h — authorization to add frequency
- ☐ i — authorization to add Points of Communication (satellites & countries)
- ☐ j — authorization to change Points of Communication (satellites & countries)
- ☐ k — authorization for facilities for which environmental assessment and radiation hazard reporting is required
- ☐ l — authorization to change orbit location
- ☐ m — authorization to perform fleet management
- ☐ n — authorization to extend milestones
- ☒ o — Other (Please specify)

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? IfYES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. 1.1308 and 1.1311, as an exhibit to this application.A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments.	○ Yes ◉ No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30–34.

29. Is the applicant a foreign government or the representative of any foreign government?	○ Yes ◉ No ○ N/A
30. Is the applicant an alien or the representative of an alien?	○ Yes ◉ No ○ N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	○ Yes ◉ No ○ N/A
32. Is the applicant a corporation of which more than one–fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	○ Yes ◉ No ○ N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one–fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	◉ Yes ○ No ○ N/A
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.	

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	◉ Yes ○ No
36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explination of circumstances.	○ Yes ◉ No

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explination of circumstances.	○ Yes	◉ No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition?If Yes, attach as an exhibit, an explanation of circumstances	○ Yes	◉ No
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhinit, an explanation of the circumstances.	○ Yes	◉ No
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.	Exhibit E	

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti–Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.	◉ Yes ○ No
42a. Does the applicant intend to use a non–U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43.	○ Yes ◉ No
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?	

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Intelsat LLC amends its pending Marisat application (seeking authority to provide UHF Space Segment capacity on a non-interference basis via its MARISAT-F2 satellite at 33.9 degrees W.L.) to provide Schedule S data derived from NATO tests. Intelsat LLC certifies that all other information in the pending application remains unchanged.

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- ○ Individual
- ○ Unincorporated Association
- ○ Partnership
- ○ Corporation
- ○ Governmental Entity
- ◉ Other (please specify)

45. Name of Person Signing	46. Title of Person Signing
Susan H. Crandall	Asst. General Counsel, Intelsat Global Svc. Corp.

—>

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT
(U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION
(U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD–PERM, Paperwork Reduction Project (3060–0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to jboley@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

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THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104–13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

FCC 312 Schedule S	FEDERAL COMMUNICATIONS COMMISSION SATELLITE SPACE STATION AUTHORIZATIONS (Technical and Operational Description)	Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name: MARISAT-F2		e. Estimated Date of Placement into Service: 1/1/1977	i Will the space station(s) operate on a Common Carrier Basis: N
b. Construction Commencement Date:		f. Estimated Lifetime of Satellite(s): 5 Years	j. Number of transponders offered on a common carrier basis:
c. Construction Completion Date:		g. Total Number of Transponders: 2	k. Total Common Carrier Transponder Bandwidth: MHz
d1. Est Launch Date Begin: 10/14/1976	d2. Est Launch Date End:	h. Total Transponder Bandwidth (no. transponders x Bandwidth) 0.048 MHz	l. Orbit Type: Mark all boxes that apply: [X] GSO [ ] NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands in which this station will oper
Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (_Hz)		Upper Frequency (_Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
254.138	M	254.162	M	T	Mobile-Satellite Service
257.538	M	257.562	M	T	Mobile-Satellite Service
307.738	M	307.762	M	R	Mobile-Satellite Service
311.138	M	311.162	M	R	Mobile-Satellite Service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W): 33.9 W	b. Alternate Orbital Longitude (Degrees E/W):		c. Reason for orbital location selection: MARISAT-F2 is currently authorized to operate at 33.9 W in the C & L Bands.
Longitudinal Tolerance or E/W Station-Keeping: d. Toward West: 0.1 Degrees e. Toward East: 0.1 Degrees	f. Inclination Excursion or N/S Station-Keeping Tolerance: 10 Degrees	Range of orbital are in which adequate service can be provided (Optional): Degrees E/W g. Westernmost: h. Easternmost:	
i. Reason for service are selection (Optional):			

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System:

S4b. Total Number of Orbital Planes in Network or System:

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.):

S4d. Orbit Epoch Date:

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satellites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k) Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the intital phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

NO NGSO DATA FILED

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S6. SERVICE AREA CHARACTERISTICS for each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.
AOR-T	S	ServArea.gxt	Atlantic Ocean Region
AOR-R	S	ServArea.gxt	Atlantic Ocean Region

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross-Polar Iso-lation (dB)	(h) Polar-ization Switch-able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp (k)	(o) G/T Max. Gain Pt. (db/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
AOR-	T	14	13	0.65	0.65	11	N		AOR-T	1.5	18	23					
AOR-	R	15.4	14.4	0.65	0.65	11	N		AOR-R				31	-18	-151		

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co-or Cross Polar Mode ("C" or" X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure/Table/ Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/M2/Hz) At Angle of Arrival above horizontal (for emission with highest PFD)				
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg
AOR-	T	C	-33.9	MARISAT.pdf	UHF.gxt	-148	-148	-148	-148	-148
AOR-	R	C	-33.9	MARISAT.pdf	UHF.gxt					
AOR-	T	C	-33.9	MARISAT.pdf	UHF.gxt	-148	-148	-148	-148	-148
AOR-	R	C	-33.9	MARISAT.pdf	UHF.gxt					

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S9. SPACE STATION CHANNELS For each frequency channel provide:

(a) Channel No.	(B) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H, V, L, R)	(f) TTC or Comm Channel (T or C)
A-T	24	T	307.75	R	C
B-T	24	T	311.15	R	C
A-R	24	R	254.15	R	C
B-R	24	R	257.55	R	C

S10. SPACE STATION TRANSPONDERS For each transponder provide:

(a) Transponder ID	(b) Transponder Gain (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID
A	170	A-R	AOR-R	A-T	AOR-T
B	170	B-R	AOR-R	B-T	AOR-T

S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e)Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
1	5K00G7W	5	2	2.4	0.576	0	10	20

S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise-Weighting (dB)	(l) Video and SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, and Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						

FEDERAL COMMUNICATIONS COMMISSION — **Page 9: Typical Emissions**

SATELLITE SPACE STATION AUTHORIZATIONS

FCC Form 312 - Schedule S: (Technical and Operational Description)

S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g)Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth (kHz)	Receive Band (Assoc. Transmit Stn)			Transmit Band (This Space Station)			
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)					(i)Assoc. Stn. Max. Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		(n) Max. Power Flux Density (dBW/m2/Hz)	(o)Assoc. Stn Rec. G/T (dB/K)
									(j) Min.	(k) Max.	(l) Min.	(m) Max.		
A	B	1		1		Marisat 25K_A.	5	10	20	23	22	23	-141	-27

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S14. Is the space station(s) controlled and monitored remotely? If Yes, provide the location and telephone number of the TT and C control point(s): Yes

Remote Control (TT C) Location(s):

S14a: Street Address: 22000			
S14b. City: Clarksburg	S14c. County: Montgomery	S14d. State/Country MD	S14e. Zip Code: 20871
S14f. Telephone Number: 301-428-1501	S14g. Call Sign of Control Station (if appropriate): E000355		

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S15. SPACECRAFT PHYSICAL CHARACTERISTICS:

S15a: Mass of spacecraft without fuel (kg): 306.356	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
S15b. Mass of fuel and disposables at launch (kg): 655.441		
S15c. Mass of spacecraft and fuel at launch (kg): 392.942	S15f. Length (m): 2.159	S15i. Payload: 1
S15d. Mass of fuel, in orbit, at beginning of life (kg): 328.841	S15g. Width (m): 2.159	S15j. Bus: 1
S15e. Deployed Area of Solar Array (square meters): 8.2	S15h. Height (m): 3.81	S15k. Total: 1

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS:

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts):	(a):	(f):	(k):	(p):
Bus (Watts):	(b):	(g):	(l):	(q):
Total (Watts):	(c):	(h):	(m)	(r): 202
Solar Array (Watts):	(d): 409	(i): 380	(n): 348	(s): 312
Depth of Battery Discharge (%):	(e) %	(j) %	(o) %	(t) 10 %

S17. CERTIFICATIONS:

a. Are the power flux density limits of § 25.208 met?:		YES		NO	X N/A
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?		YES		NO	X N/A
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2) and (3) met?		YES		NO	X N/A

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R § 25.114.

Project Marisat UHF 25 kHz | File: Marisat 25K_A

TRANSMIT EARTH STATION		RECEIVE EARTH STATION	
Code/Standard	Mobile	Code/Standard	Mobile
Name/Location	Ship Board	Name/Location	Ship Board

SATELLITE

Type	Marisat F2	Transponder	A (25 kHz
Location	326.1 E	Gain step	
Maximum Possible Allotment		0.025 MHz	
Actual Full Transponder Bandwidth		0.025 MHz	

CARRIER

Info data rate	2.4 kbit/s	Type	
FEC Inner	0.5760 (1=None)	Availability	%
FEC Outer R/S	1.0000 (1=None)	Modulation	BPSK
Overhead	0.0000 % (0 = None)		

Uplink satellite G/T b.e.	-18.0 dB/K	Full Transponder
Downlink satellite saturation EIRP b.e.	23.0 dBW	Full Transponder
Transponder operating point total IBO	0.0 dB	
Transponder operating point OBO	0.0 dB	
Number of Carriers at this point	Single Carriers	
Xpndr IM Noise density b.e.	-99.00 dBW/Hz	
Co-channel interference 'X' value	16.8 dB	
Uplink Other UHF users Noise density b.e.	-31.80 dBW/Hz	
Receive E/S actual G/T	-27.00 dB/K @	0.25415 MHz
Uplink tracking error allowance	1.0 dB	
Downlink tracking error allowance	1.0 dB	
G/T Degradation due to Downlink Rain Fade	0.0 dB	
Uplink margin allowance	0.0 dB	
Downlink margin allowance	0.0 dB	
BE Uplink Flux Pattern Advantage	0.00 dB	
BE Uplink G/T Pattern Advantage	0.00 dB	
BE Downlink Pattern Advantage	0.00 dB	
Uplink path loss	174.54 dB @	0.30775 MHz
Downlink path loss	172.87 dB @	0.25415 MHz
Uplink carrier frequency	0.308 MHz	
Downlink carrier frequency	0.254 MHz	

Minimum Clear Sky Requirements

Nominal Info+OH Eb/No	13.5 dB
Nominal B.E.P.	1.00E-05 %

COMSAT General MARISAT F2 LINK BUDGET

Project Marisat UHF 25 kHz

Summary of link noise contributions

C/No Uplink Thermal	58.1	dB/Hz	24.3	Eb/No Uplink Thermal
C/No Uplink Other UHF users	53.8	dB/Hz	20.0	Eb/No Uplink Other UHF users
C/No Uplink	52.4	dB/Hz	18.6	Eb/No Uplink
C/No DownLink X-pol & ASI	53.8	dB/Hz	20.0	Eb/No DownLink X-pol & ASI
C/No Down Thermal	50.7	dB/Hz	16.9	Eb/No Down Thermal
C/No Down link	49.0	dB/Hz	15.2	Eb/No Down link

C/No Link	47.4 dB/Hz	13.6 Eb/No Link

Link Budget Details

Parameter		Units
Transmit EIRP	23.00	dBW
Transmit E/S tracking error	1.0	dB
Uplink margin	0.0	dB
Uplink path loss	174.5	dB
Uplink B.E. Flux Pattern Advantage	0.0	dB
Gain 1 m2	-48.8	dB/m2
Uplink B.E. carrier flux density	-201.3	dBW/m2
Downlink saturated B.E. EIRP	23.0	dBW
C/T AND C/N CALCULATIONS:		
Transmit EIRP	23.0	dBW
Transmit E/S tracking error	1.0	dB
Uplink margin	0.0	dB
Uplink path loss	174.5	dB
Uplink B.E. G/T Pattern Advantage	0.0	dB
Satellite B.E. G/T	-18.0	dB/K
C/T)up Thermal	-170.5	dBW/K
C/T) Uplink Other UHF users	-174.8	dBW/K
C/T)up	-176.2	dBW/K
Downlink B.E. EIRP .	23.0	dBW
Receive E/S tracking error	1.0	dB
Downlink margin	0.0	dB
Downlink path loss	172.9	dB
Downlink B.E. Pattern Advantage	0.0	dB
Receive E/S G/T	-27.0	dB/K
C/T)dn Thermal	-177.9	dBW/K
C/T) DownLink X-pol & ASI	-174.8	dBW/K
C/T)t Down Link	-179.6	dBW/K
C/T)t Link	-181.2	dBW/K
Boltzmann's constant	-228.6	dBW/Hz-K
C/No Link	47.4	dB/Hz
Tx Rate	4.2	
Symbol Rate	4.2	kbps
Occupied BW (1.2 Sym)	5.0	kHz
10 log (occupied BW)	37.0	dB-Hz
C/N	10.4	dB
Information rate Eb/No	13.6	dB
Transmission rate Eb/No	11.2	dB
Co/No	11.2	dB
Spectrum Analyser (Co+No)/No	11.5	dB

Project Marisat UHF 25 kHz | File: Marisat 25K_A

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Code/Standard	Mobile	Code/Standard	Mobile
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Uplink tracking error allowance	1.0 dB		
Downlink tracking error allowance	1.0 dB		
G/T Degradation due to Downlink Rain Fade	0.0 dB		
Uplink margin allowance	0.0 dB		
Downlink margin allowance	0.0 dB		
BE Uplink Flux Pattern Advantage	0.00 dB		
BE Uplink G/T Pattern Advantage	0.00 dB		
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Uplink path loss	174.54 dB	@	0.30775 MHz
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Downlink saturated B.E. EIRP	23.0	dBW
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C/N	10.4	dB
Information rate Eb/No	13.6	dB
Transmission rate Eb/No	11.2	dB
Co/No	11.2	dB
Spectrum Analyser (Co+No)/No	11.5	dB

Exhibit E

Following are the officers of Intelsat LLC:

Conny Kullman, Chairman
Elizabeth Scheid, Deputy Chairman
Phillip Spector, Secretary

The address of all Intelsat LLC officers is:

Wellesley House North
90 Pitts Bay Road
Pembroke, HM 08
Bermuda

Intelsat LLC is wholly owned by Intelsat Holdings LLC, which is wholly owned by Intelsat Subsidiary Holding Company, Ltd. Intelsat Subsidiary Holding Company, Ltd. is wholly owned by Intelsat (Bermuda), Ltd., which is wholly owned by Intelsat, Ltd. Intelsat, Ltd., in turn, is wholly owned by Intelsat Holdings, Ltd.

Following are the officers and directors of Intelsat Holdings, Ltd.:

Officers

Conny Kullman, Chairman and Chief Executive Officer[1]
David P. McGlade, Chief Executive Officer[2]
Andrew D. Africk, Deputy Chairman
Ramu Potarazu, Chief Operating Officer
William Atkins, Chief Financial Officer
Phillip Spector, Executive Vice President and General Counsel
Patrick Cerra, Resident Representative
Elizabeth Scheid, Secretary

Directors

Andrew D. Africk
Douglas Grissom
Richard A. Haight
Conny Kullman

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[1] Mr. Kullman will be the Chief Executive Officer until Mr. McGlade commences his employment at Intelsat, Ltd. on April 1, 2005.

[2] Mr. McGlade will be the Chief Executive Officer upon commencement of his employment at Intelsat, Ltd. on April 1, 2005.

David P. McGlade[3]
James N. Perry, Jr.
Alan Peyrat
Nic Volpi
Andrew P. Sillitoe
Aaron J. Stone

Shareholders holding 10% or more of the issued share capital of Intelsat Holdings, Ltd. are as follows:

Shareholder	Jurisdiction of Incorporation	Address	% of voting and equity stock
AIF V Euro Holdings, L.P.	Cayman Islands	c/o Walkers SPV Limited Walker House PO Box 908GT George Town, Grand Cayman Cayman Islands	24.8%
Apax WW Nominees Ltd.[4]	United Kingdom	15 Portland Place London W1B 1PT	19.8%
MDCP IV Global Investments, L.P.	Cayman Islands	c/o Walkers SPV Limited Walker House PO Box 908QT George Town, Grand Cayman Cayman Islands	24.8%
Permira Europe III L.P. 2	Guernsey	PO Box 255 Trafalgar Court Les Banques St. Peter Port, Guernsey CI, GY1 3QL	17.8%

[3] Mr. McGlade will be a Director upon commencement of his employment at Intelsat, Ltd. on April 1, 2005.

[4] Registered shareholder for nine entities holding, in the aggregate, 19.8% of the equity of Intelsat Holdings, Ltd.