READ INSTRUCTIONS CAREFULLY BEFORE PROCEEDING

(1) LOCKBOX #

FEDERAL COMMUNICATIONS COMMISSION

REMITTANCE ADVICE

APPROVED BY OMB 3060-0589

PAGE NO. 1 OF 1

SPECIAL USE

FCC USE ONLY

RECEIVED JAN 08 1999

COPY

SECTION A - PAYER INFORMATION

(2) PAYER NAME(if paying by credit card, enter name exactly as it appears on your card): Pierson & Burnett, LLP

(3) TOTAL AMOUNT PAID (dollars and cents): $ 4,405.00

(4) STREET ADDRESS LINE NO. 1: 1667 K Street, N.W.

(5) STREET ADDRESS LINE NO. 2: Suite 801

(6) CITY: Washington

(7) STATE: D.C.

(8) ZIP CODE: 20006

(9) DAYTIME TELEPHONE NUMBER (Include area code): (202) 466-3044

(10) COUNTRY CODE (if not in U.S.A.):

IF PAYER NAME AND THE APPLICANT NAME ARE DIFFERENT, COMPLETE SECTION B.
IF MORE THAN ONE APPLICANT, USE CONTINUATION SHEETS (FORM 159-C)

SAT-AMD-19990108-00001
amends 160-SAT-P/LA-97(13)

SECTION B - APPLICANT INFORMATION

(11) APPLICANT NAME(if paying by credit card, enter name exactly as it appears on your card): Denali Telecom, LLC

(12) STREET ADDRESS LINE NO. 1: 1667 K Street, N.W.

(13) STREET ADDRESS LINE NO. 2: Suite 801

(14) CITY: Washington

(15) STATE: D.C.

(16) ZIP CODE: 20006

(17) DAYTIME TELEPHONE NUMBER (Include area code): (202) 466-3044

(18) COUNTRY CODE (if not in U.S.A.):

COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEETS (FORM 159-C)

SECTION C - PAYMENT INFORMATION

(19A) FCC CALL SIGN/OTHER ID	(20A) PAYMENT TYPE CODE (PTC)	(21A) QUANTITY	(22A) FEE DUE FOR (PTC) IN BLOCK 20A	FCC USE ONLY
	C A W	1	$ 4,405.00	

(23A) FCC CODE 1:

(24A) FCC CODE 2:

(19B) FCC CALL SIGN/OTHER ID	(20B) PAYMENT TYPE CODE (PTC)	(21B) QUANTITY	(22B) FEE DUE FOR (PTC) IN BLOCK 20B	FCC USE ONLY
			$	

(23B) FCC CODE 1:

(24B) FCC CODE 2:

(19C) FCC CALL SIGN/OTHER ID	(20C) PAYMENT TYPE CODE (PTC)	(21C) QUANTITY	(22C) FEE DUE FOR (PTC) IN BLOCK 20C	FCC USE ONLY
			$	

(23C) FCC CODE 1:

(24C) FCC CODE 2:

(19D) FCC CALL SIGN/OTHER ID	(20D) PAYMENT TYPE CODE (PTC)	(21D) QUANTITY	(22D) FEE DUE FOR (PTC) IN BLOCK 20D	FCC USE ONLY
			$	

(23D) FCC CODE 1:

(24D) FCC CODE 2:

SECTION D - TAXPAYER INFORMATION (REQUIRED)

(25) PAYER TIN: 52-1957644

(26) COMPLETE THIS BLOCK ONLY IF APPLICANT NAME IN B-11 IS DIFFERENT FROM PAYER NAME IN A-2
APPLICANT TIN: 52-2054947

SECTION E - CERTIFICATION

(27) CERTIFICATION STATEMENT

I, David L. Lihani (PRINT NAME), Certify under penalty of perjury that the foregoing and supporting information are true and correct to the best of my knowledge, infomation and belief SIGNATURE

SECTION F - CREDIT CARD PAYMENT INFORMATION

(28)

☐ MASTERCARD

MASTERCARD/VISA ACCOUNT NUMBER:

EXPIRATION DATE: MONTH YEAR

☐ VISA

I hereby authorize the FCC to charge my VISA or MASTERCARD for the service(s)/authorizations(s) herein described.

AUTHORIZED SIGNATURE

DATE

SEE PUBLIC BURDEN ESTIMATE ON REVERSE

FCC FORM 159 JULY 1997 (REVISED)

LAW OFFICES

PIERSON & BURNETT L.L.P.

1667 K Street, N.W. Suite 801 Washington, D.C. 20006
Tel: 202 466 3044 Fax: 202 466 3055

COPY

January 8, 1999

Via Courier

Federal Communications Commission
International Bureau - Satellites
P.O. Box 358210
Pittsburgh, PA 15251-5210

Re: International Bureau Public Notice (Report No. SPB-141): Cut-off Established for Additional Applications and Letters of Intent in the 12.75-13.25 GHz, 13.75-14.5 GHz, 17.3-17.8 GHz, and 10.7-12.7 GHz Frequency Bands

Ladies and Gentlemen:

Enclosed please find an original plus nine copies (plus one "stamp and receipt" return copy) of the Denali Telecom, LLC clarification to its application (File No. 160-SAT-P/LA-97/13) filed in response to the foregoing proceeding. Accompanying this clarification are (1) an FCC Form 312; (2) an FCC Form 159; and a check payable to the FCC in the amount of $4405.00 to cover the FCC filing fee for an amendment to a pending application. A request to the Managing Director for waiver and refund of the filing fee also is enclosed.

Should any questions arise with regard to this filing, kindly communicate with the undersigned.

Yours very truly,
PIERSON & BURNETT, LLP

David Lihani
Attorneys for Denali Telecom

Enclosures

LAW OFFICES

PIERSON & BURNETT L.L.P.

1667 K Street, N.W. Suite 801 Washington, D.C. 20006
Tel: 202 466 3044 Fax: 202 466 3055

January 8, 1999

Managing Director
Federal Communications Commission
1919 M Street, N.W.
Room 852
Washington, D.C. 20554

Re: Denali Telecom, LLC request for filing fee exemption and refund

Dear Madam or Sir:

Denali Telecom, LLC ("Denali"), by its attorneys, pursuant to the Commission's rules (47 CFR §1.1113) hereby requests a general exemption from the filing fee paid by Denali with its submission under the proceeding established by the International Bureau Public Notice (Report No. SPB-141), *Cut-off Established for Additional Applications and Letters of Intent in the 12.75-13.25 GHz, 13.75-14.5 GHz, 17.3-17.8 GHz, and 10.7-12.7 GHz Frequency Bands.*

This exemption is sought for the filing which was made by Denali for the sole purpose of clarifying its application for authorization in order to comply with the information previously submitted to the International Telecommunications Union ("ITU") by the Commission on behalf of Denali. The clarification filed herewith is identified as an "amendment" solely for purposes of utilizing the Commission's Form 312 and the concomitant fee has been made to observe the Commission's filing procedures.

The refund may be returned in care of the above address. If you have any questions regarding the foregoing, please do not hesitate to contact the undersigned.

Yours very truly,
PIERSON & BURNETT, LLP

David Lihani
Attorneys for Denali Telecom

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
Cut-off Established for Additional Applications and Letters of Intent in the 12.75-13.25 GHz, 13.75-14.5 GHz and 17.3-17.8 GHz and 10.7-12.7 GHz Frequency Bands	)	Public Notice (Report No. SPB-141)

Clarification of Denali Telecom, LLC Application (File No. 160-SAT-P/LA-97/13)

In a public notice (*Report No. SPB-141*, (the "*Report*")), the Federal Communications Commission ("Commission") established a cut-off date for non-geostationary satellite orbit ("NGSO") fixed-satellite service ("FSS") systems seeking to operate in the above referenced frequencies. The Report noted that the application of SkyBridge L.L.C ("SkyBridge") proposing to operate in these frequencies had been found, upon initial review, to be acceptable for filing (*Report No. SPB-98, issued August 28, 1997*). The SkyBridge application was amended as noted in a public notice issued July 20, 1998 (*Report No. SPB-133*).

The Commission also noted that applications had been received from the Boeing Company and Denali Telecom, LLC ("Denali") in which portions of the proposed systems involve frequency bands subject to the *Report*. The Commission stated that:

> "The portions of these proposed systems that involve frequency bands subject to this Public Notice [the Report] will be considered with the Skybridge proposal and any others that may be filed in response to this cut-off Notice [the Report]. . ." *Report at page 4.*

The Commission also noted that Denali had requested, among other things, 200 MHz of downlink spectrum for space-to-Earth communications in the band 11.7 -12.2 GHz in North America and 12.5-12.7 GHz in Europe and Asia. While this is correct for the initial application, the frequencies were subsequently amended when the ApS4/II information was submitted by Denali to the Commission on August 26, 1998 to cover use of 1000 MHz of spectrum in the 10.7-12.7 GHz band and 750 MHz of spectrum in the 13.75-14.5 GHz band for North America, Europe and Asia for its constellation of thirteen satellites to operate in linked Molniya Highly-Elliptical Orbits ("HEO") in the international fixed satellite service and mobile satellite service (the "Pentriad System"). This information was forwarded to the International Telecommunications Union ("ITU") by the Commission as part of the filing for the USA KU-H1

satellite network (the name of the U.S. system filed, a/k/a the Pentriad System). For ease of reference, the ITU information is appended hereto as Appendix I. Consequently, the segments of the proposed Pentriad System to be considered with the Skybridge application, and any other applications which may be filed with the Commission, are 1000 MHz in the 10.7-12.7 GHz band (preferably the band 11.7-12.7 GHz) for space-to-Earth communications and 750 MHz for its Earth-to-space transmissions in the 13.75-14.5 GHz band. By this clarification, Denali also seeks to conform its application with this information filed with the ITU.

Denali incorporates its application, File No. 160-SAT-P/LA-97/13, which complies with the requirements in Part 25 of the Commission's rules. To the extent the Commission requires additional information in conjunction with this filing, Denali will respond promptly to any request for such additional information. While we do not believe it necessary to file an "amendment" to the Denali application, we are submitting the Form 312 and the appropriate fee, together with a request for the fee to be returned.

For the reasons set forth above, Denali requests that the Commission promptly accept this clarification so that Denali's application (File No. 160-SAT-P/LA-97/13) before the Commission is consistent with the information filed previously by the Commission with the ITU.

Respectfully submitted,

DENALI TELECOM, LLC

By: 
Dennis J. Burnett
President, Pentriad North America Inc.
Manager, Denali Telecom, LLC

David L. Lihani, Esq.
Elsa B. Woodall, Esq.
Pierson & Burnett, LLP
1667 K Street, N.W., Ste. 801
Washington, D.C. 20006
(202) 466-3044

January 8, 1999

APPENDIX I

ITU APS4/II

Administration Ref. Number		(APPENDIX S4 - ANNEX 2A)			ApS4/II
NOTIFYING ADMINISTRATION: USA/	RR1488 Notification ☐	RR1060 Request for Coordination ☐	RR1610 Agreement under Art.14 ☐	Request for Assistance of the BR for RR1060 ☐ and/or RR1610 ☐	NOTIFICATION INTENDED FOR ADDITION / MODIFICATION / SUPPRESSION: A
FIRST NOTIFICATION ☐ / RESUBMISSION ☐		RS 46 Request for Coordination ☒		BR IDENTIFICATION NO. OF NETWORK TO BE MODIFIED / SUPPRESSED	

1. CHARACTERISTICS OF THE NETWORK

A1a. IDENTITY OF THE SATELLITE NETWORK: USA KU-HI

A4. ORBITAL INFORMATION

a. FOR GEOSTATIONARY SATELLITES ONLY

NOMINAL ORBITAL LONGITUDE	2a. LONGITUDINAL TOLERANCE	2b. INCLINATION EXCURSION	3. VISIBILITY ARC	4. SERVICE ARC
Degrees . E/W	Degrees: To West / To East	Degrees	Degrees: From W E/W To E E/W	Degrees: From W E/W To E E/W
	• / •	•		

. REASON FOR SERVICE ARC < VISIBILITY ARC. SEE ATTACHMENT NO. ☐☐

b. FOR NON-GEOSTATIONARY SATELLITES ONLY (see also page ApS4/II-1b if Resolution 46 applies)

1. INCLINATION ANGLE	2. PERIOD	3a. APOGEE (km)	3b. PERIGEE (km)	4. NUMBER OF SATELLITES	5. REFERENCE BODY
Degrees	Days / Hours / Min.	provide exponent to base 10 if value > 99999	provide exponent to base 10 if value > 99999		
063.4	000 14 22	41449.00	05784.00	12	T

GENERAL NOTES :

i. This form of notice consists of four parts - 1, 2, 3 and 4 - as indicated below:
   1 - Characteristics of the network
   2 - Satellite network characteristics for reception at the space station
   3 - Satellite network characteristics for transmission from the space station and
   4 - Overall link characteristics.
   In each part, each information item/data field includes a number in its label. This number is the same as that used for the same item in Appendix S4 (WRC-95) within the same part. For example, on the page labelled "Form ApS4/II - 2a" (at the bottom), the field "A2a. Date of bringing into use" is the item numbered 2a in Part A of Annex 2A to Appendix S4.

ii. Data items that are related are grouped together in a box. For example, the page labelled "Form ApS4/II - 2b" (at the bottom) contains a box titled "Emissions of the associated transmitting station(s)". It is possible to specify 7 different emission values (with associated power, power density and C/N values) in this box. If there are more emissions, use another page of the same type to provide additional data, after checking (√) the field labelled "More emissions on next page" on the preceding page. In all cases where there is more information than can fit in a box, follow this procedure.

iii. This form can be used to add, modify or suppress an existing station, by entering A, M or S in the box at the top right-hand corner of this page in the area titled "Notification intended for". In the case of a modification of an existing station, where certain data fields are to be added, modified or suppressed, provide ALL the data in the particular box as they would look after the change. In addition, indicate that the corresponding beam, associated station or group of frequencies is being modified by entering M or R in the field that has been provided for this purpose at these levels.

iv. Certain fields in this notice form have a superscript "1" as part of their labels. This has the following meaning :
   1 - This information is not required for the notification of a typical earth station.

ORBITAL INFORMATION (CONTINUED)

b. FOR NON-GEOSTATIONARY SATELLITES ONLY

IF NOTIFIED UNDER RESOLUTION NO. 46 (WRC-95) PROVIDE:

NUMBER OF ORBITAL PLANES: 03

R EACH ORBITAL PLANE PROVIDE:

RBITAL PLANE UMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
01	03	020.00	063.4	30020	0.59	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

ELLITE BER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
1	000.0								
4	120.0								
5	240.0								

RBITAL PLANE UMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
02	03	140.00	063.4	30020	0.59	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

ELLITE BER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
2	040.0								
6	160.0								
7	280.0								

RBITAL PLANE UMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
03	03	260.00	063.4	30020	0.59	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

ELLITE BER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
3	080.0								
8	200.0								
9	320.0								

RBITAL PLANE UMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

TELLITE MBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)

MORE ON NEXT PAGE

14. ORBITAL INFORMATION (CONTINUED)

b. FOR NON-GEOSTATIONARY SATELLITES ONLY

IF NOTIFIED UNDER RESOLUTION NO. 46 (WRC-95) PROVIDE:

NUMBER OF ORBITAL PLANES: 03

FOR EACH ORBITAL PLANE PROVIDE:

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
01	01	020.00	063.4	22890	0.47	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
10	000.0								

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
02	01	140.00	063.4	22890	0.47	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
11	060.0								

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
03	01	260.00	063.4	22890	0.47	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
12	120.0								

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)

MORE ON NEXT PAGE [X]

I. ORBITAL INFORMATION (CONTINUED)

b. FOR NON-GEOSTATIONARY SATELLITES ONLY

IF NOTIFIED UNDER RESOLUTION NO. 46 (WRC-95) PROVIDE:

NUMBER OF ORBITAL PLANES: 03

OR EACH ORBITAL PLANE PROVIDE:

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
01	11	000.00	063.4	26450	0.71	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
11	142.0								

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
02	01	120.00	063.4	26450	0.71	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
12	180.0								

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)
03	01	240.00	063.4	26459	0.71	270.0

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)
13	218.0								

ORBITAL PLANE NUMBER	NUMBER OF SATELLITES IN THIS PLANE	RIGHT ASCENSION (Degrees)	INCLINATION ANGLE (Degrees)	SEMI-MAJOR AXIS (km)	ECCENTRICITY	ARGUMENT OF PERIGEE (Degrees)

FOR EACH SATELLITE IN THE ORBITAL PLANE PROVIDE THE INITIAL PHASE ANGLE

SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)	SATELLITE NUMBER	INITIAL PHASE ANGLE (Degrees)

MORE ON NEXT PAGE

2. SATELLITE NETWORK CHARACTERISTICS FOR RECEPTION AT THE SPACE STATION

SATELLITE RECEIVING ANTENNA BEAM DETAILS

CHARACTERISTICS OF THE BEAM

B1. RECEIVING BEAM DESIGNATION: EKTR

NOTE: For a steerable beam, the last character of the beam designation shall be "R"

ADD / MOD / SUP / REP of the beam:

OLD BEAM DESIGNATION (if changed):

B3/B4. ANTENNA CHARACTERISTICS

3a/3b/4a. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 30

3d. POINTING ACCURACY: Degrees +/-:

3a/3b. ANTENNA GAIN CONTOURS DIAGRAM. SEE ATTACHMENT NO.:

3f. ANTENNA GAIN VS ORBIT LONGITUDE DIAGRAM. SEE ATTACHMENT NO.:

3e/4a/4b. ANTENNA RADIATION PATTERN

REFERENCE PATTERN: ND

RADIATION DIAGRAM. SEE ATTACHMENT NO.:

FOR NON-STANDARD ANTENNA PROVIDE

Coefficient A dBi:

Coefficient B dBi:

4b. FOR NON-GEOSTATIONARY SATELLITES UNDER RESOLUTION 46 (WRC-95)

SATELLITE BEAM ORIENTATION

ANGLE ALPHA Degrees: 0.0

ANGLE BETA Degrees: 0.0

INFORMATION COMMON TO THE FOLLOWING GROUPS (LISTS) OF ASSIGNED FREQUENCIES IN THIS BEAM

A2a. DATE OF BRINGING INTO USE: Day / Month / Year: 01 / 11 / 02

A2b. PERIOD OF VALIDITY: Years

A3a. OPERATING AGENCY OR COMPANY (Refer to Table 12A/12B of the Preface to the IFL & SRS):

A3b. ADMINISTRATION RESPONSIBLE FOR THE STATION (Refer to Table 12A/12B of the Preface to the IFL & SRS):

SPECIAL SECTION AR11/A (RR1042) Number: AR11/A/

SPECIAL SECTION AR11/C (RR1060) Number: AR11/C/

SPECIAL SECTION ART.14 (RR1610) Number: AR14/C/

OTHER SPECIAL SECTIONS

	Reference	Number
(1)		
(2)		
(3)		
(4)		
(5)		

A5/A6. COORDINATED WITH OR AGREEMENT REACHED WITH

RR Provision	Symbols of the Administrations concerned
RR	
RR	
RR	
RR	
RR	

A5/A6. COORDINATION REQUESTED WITH OR AGREEMENT SOUGHT WITH

RR Provision	Symbols of the Administrations concerned
RR	
RR	
RR	
RR	
RR	

REMARKS

NOTES ON FILLING IN THE NEXT PAGES:

FOR EACH BEAM YOU MAY PROVIDE ONE OR MORE GROUPS (LISTS) OF ASSIGNED FREQUENCIES, EACH GROUP (LIST) HAVING ONE SET OF COMMON CHARACTERISTICS. THE BOTTOM HALF OF THIS PAGE CONTAINS COMMON DATA THAT IS APPLICABLE TO ONE OR MORE GROUPS (LISTS) OF FREQUENCIES IN THIS BEAM. FOR EACH GROUP (LIST) OF FREQUENCIES IN THIS BEAM, FIRST FILL IN THE SET OF COMMON CHARACTERISTICS, INCLUDING ALL THE ASSOCIATED EARTH (OR SPACE) STATIONS AND

RECEIVING BEAM DESIGNATION: E K T R

PAGE 6 OF 14

8R IDENTIFICATION NUMBER OF GROUP (LIST) OF FREQUENCIES TO BE MODIFIED / SUPPRESSED / REPLACED:

ADD / MOD / SUP / REP of the group:

CHARACTERISTICS COMMON TO THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

C4a. CLASS OF STATION	E K	E D	
C4b. NATURE OF SERVICE	Q T	Q T	

C6. POLARIZATION: TYPE: M; If linear, provide angle in degrees:

C3a. ASSIGNED FREQUENCY BAND: 3000 (kHz)

C5a. RECEIVING SYSTEM NOISE TEMPERATURE: 800 kelvins

C8g. MAXIMUM AGGREGATE POWER: +/- 32.0 dBW

C11a. SERVICE AREA: AAA

OR SERVICE AREA DIAGRAM SEE ATTACHMENT NO.:

C9c. TYPE OF MODULATION AND MULTIPLE ACCESS DATA. SEE ATTACHMENT NO.:

C9c. SPECTRUM MASK DIAGRAM SEE ATTACHMENT NO.:

C11d. AFFECTED REGION SEE ATTACHMENT NO.:

SERVICE AREA NUMBER:

TRANSMITTING STATION(S) ASSOCIATED WITH THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

*COMMAND BEACON

EMISSIONS OF THE ASSOCIATED TRANSMITTING STATION(S)

C7a. DESIGNATION OF EMISSION	C8a1/C8b1. • MAXIMUM PEAK POWER +/- dBW	C8a2/C8b2. • MAXIMUM POWER DENSITY +/- dBW/Hz	C8c1. MINIMUM PEAK POWER +/- dBW	C8c2. MINIMUM POWER DENSITY +/- dBW/Hz	C8e. C/N objective (total - clear sky) dB
*2M50F8D	+31.0	-22.0	+21.0	-32.0	11.3

• If maximum peak power and maximum power density values are of type C8b, check this box:

MORE EMISSIONS ON NEXT PAGE:

Reason for minimum peak power and minimum power density (C8c) values being absent; see attachment No.:

EARTH STATION

C10b1. EARTH STATION NAME: ET-KU

ADD / MOD / SUP / REP of the station:

OLD EARTH STATION NAME (if changed):

COUNTRY [1]:

C10. TYPE OF STATION (Typical/Specific):

C10b2. GEOGRAPHICAL COORDINATES [1]

Longitude				Latitude			
Degrees	E/W	Min.	Sec.	Deg.	N/S	Min.	Sec.

C10c. ANTENNA CHARACTERISTICS (continued)

4a. RADIATION PATTERN (give reference pattern or provide diagram): REC580

4b. ANTENNA RADIATION DIAGRAM. SEE ATTACHMENT NO.:

FOR NON-STANDARD ANTENNA PROVIDE:

Coefficient A dBi	Coefficient B dBi	Coefficient C dBi	Coefficient D dBi	PHI1 Degrees

C10c1. CLASS OF STATION	T D		
C10c2. NATURE OF SERVICE	C V		

C10c. ANTENNA CHARACTERISTICS

2. MAXIMUM ISOTROPIC GAIN: +/- 62.0 dBi

3. BEAMWIDTH: 0.14 Degrees

MORE ASSOCIATED TRANSMITTING STATIONS ON NEXT PAGE:

SPACE STATION

ADD / MOD / SUP / REP of the station:

C10a. SPACE STATION NAME:

OLD SPACE STATION NAME (if changed):

TRANSMITTING BEAM DESIGNATION:

C10. TYPE OF STATION (Geo/Non-geo):

OLD BEAM DESIGNATION (if changed):

GROUP (LIST) OF ASSIGNED FREQUENCIES HAVING THE ABOVE COMMON CHARACTERISTICS

C2a. ASSIGNED FREQUENCY	k/M/G Hz
14.4990	G

MORE ON NEXT PAGE:

C2a. ASSIGNED FREQUENCY	k/M/G Hz

3. SATELLITE NETWORK CHARACTERISTICS FOR TRANSMISSION FROM THE SPACE STATION

SATELLITE TRANSMITTING ANTENNA BEAM DETAILS

CHARACTERISTICS OF THE BEAM

ADD / MOD / SUP / REP of the beam: ☐

B1. TRANSMITTING BEAM DESIGNATION: KTR

NOTE: For a steerable beam, the last character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed): ☐☐☐☐

B3/B4. ANTENNA CHARACTERISTICS

3a/3b/4a. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 30

3d. POINTING ACCURACY: Degrees ±: ●

3a/3b. ANTENNA GAIN CONTOURS DIAGRAM. SEE ATTACHMENT NO.: ☐☐

3f. ANTENNA GAIN VS ORBIT LONGITUDE DIAGRAM. SEE ATTACHMENT NO.: ☐☐

3e/4a/4b. ANTENNA RADIATION PATTERN

REFERENCE PATTERN: ND

RADIATION DIAGRAM. SEE ATTACHMENT NO.: ☐☐

FOR NON-STANDARD ANTENNA PROVIDE

Coefficient A (dBi): ●

Coefficient B (dBi): ●

4b. FOR NON-GEOSTATIONARY SATELLITES UNDER RESOLUTION-46 (WRC-95):

SATELLITE BEAM ORIENTATION

ANGLE ALPHA (Degrees): 0.0

ANGLE BETA (Degrees): 0.0

GAIN VS ELEVATION ANGLE DIAGRAM. SEE ATTACHMENT NO.: ☐☐

SPREADING LOSS DATA. SEE ATTACHMENT NO.: ☐☐

MAXIMUM E.I.R.P. AT 4 kHz: +/- dBW: + 18.0

AVERAGE E.I.R.P. AT 4 kHz: +/- dBW: + 15.0

MAXIMUM E.I.R.P. AT 1 MHz: +/- dBW: + 42.0

AVERAGE E.I.R.P. AT 1 MHz: +/- dBW: + 39.0

INFORMATION COMMON TO THE FOLLOWING GROUPS (LISTS) OF ASSIGNED FREQUENCIES IN THIS BEAM

A2a. DATE OF BRINGING INTO USE: Day 01 Month 11 Year 02

A2b. PERIOD OF VALIDITY: ☐☐ Years

A3a. OPERATING AGENCY OR COMPANY (Refer to Table 12A/12B of the Preface to the IFL & SRS): ☐☐☐

A3b. ADMINISTRATION RESPONSIBLE FOR THE STATION (Refer to Table 12A/12B of the Preface to the IFL & SRS): ☐☐

SPECIAL SECTION AR11/A (RR1042) Number: AR11/A/☐☐☐☐

SPECIAL SECTION AR11/C (RR1060) Number: AR11/C/☐☐☐☐

SPECIAL SECTION ART.14 (RR1610) Number: AR14/C/☐☐☐☐

OTHER SPECIAL SECTIONS

	Reference	Number
(1)		
(2)		
(3)		
(4)		
(5)		

A5/A6. COORDINATED WITH OR AGREEMENT REACHED WITH

RR Provision	Symbols of the Administrations concerned
RR	
RR	
RR	
RR	
RR	

A5/A6. COORDINATION REQUESTED WITH OR AGREEMENT SOUGHT WITH

RR Provision	Symbols of the Administrations concerned
RR	
RR	
RR	
RR	
RR	

REMARKS

NOTES ON FILLING IN THE NEXT PAGES:

FOR EACH BEAM YOU MAY PROVIDE ONE OR MORE GROUPS (LISTS) OF ASSIGNED FREQUENCIES, EACH GROUP (LIST) HAVING ONE SET OF COMMON CHARACTERISTICS. THE BOTTOM HALF OF THIS PAGE CONTAINS COMMON DATA THAT IS APPLICABLE TO ONE OR MORE GROUPS (LISTS) OF FREQUENCIES IN THIS BEAM. FOR EACH GROUP (LIST) OF FREQUENCIES IN THIS BEAM, FIRST FILL IN THE SET OF COMMON CHARACTERISTICS, INCLUDING ALL THE ASSOCIATED EARTH (OR SPACE) STATIONS AND THEIR EMISSIONS, FOLLOWED BY THE GROUP (LIST) OF FREQUENCIES TO WHICH THE SET APPLIES. USE AS MANY PAGES AS NECESSARY.

TRANSMITTING BEAM DESIGNATION: K1R

BR IDENTIFICATION NUMBER OF GROUP (LIST) OF FREQUENCIES TO BE MODIFIED / SUPPRESSED / REPLACED:

ADD / MOD / SUP / REP of the group:

CHARACTERISTICS COMMON TO THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

C4a. CLASS OF STATION	C4b. NATURE OF SERVICE	C6. POLARIZATION TYPE	C6. If linear, provide angle in degrees	C3a. ASSIGNED FREQUENCY BAND (kHz)	C8d. MAXIMUM TOTAL PEAK POWER +/- dBW
ER	OT	M		2090	+28.0

C11a. SERVICE AREA: AAA

OR SERVICE AREA DIAGRAM SEE ATTACHMENT NO.:

C9c. TYPE OF MODULATION AND MULTIPLE ACCESS DATA. SEE ATTACHMENT NO.:

C9c. SPECTRUM MASK DIAGRAM SEE ATTACHMENT NO.:

C11d. AFFECTED REGION SEE ATTACHMENT NO.:

SERVICE AREA NUMBER:

SPACE STATION EMISSIONS AND ASSOCIATED RECEIVING STATION(S) COMMON TO THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

* TELEMETRY BEACON

SPACE STATION EMISSIONS

C7a. DESIGNATION OF EMISSION	C8a1/C8b1. • MAXIMUM PEAK POWER +/- dBW	C8a2/C8b2. • MAXIMUM POWER DENSITY +/- dBW/Hz	C8c1. MINIMUM PEAK POWER +/- dBW	C8c2. MINIMUM POWER DENSITY +/- dBW/Hz	C8e. C/N objective (total - clear sky) dB
*200KG9D	+13.0	-40.0	+10.0	-43.0	12.0

• If maximum peak power and maximun power density values are of type C8b, check this box:

MORE EMISSIONS ON NEXT PAGE:

Reason for minimum peak power and minimum power density (C8c) values being absent; see attachment No.:

EARTH STATION

ADD / MOD / SUP / REP of the station:

10b1. EARTH STATION NAME: ET-KU

OLD EARTH STATION NAME (if changed):

COUNTRY [1]:

C10. TYPE OF STATION (Typical/Specific):

C10b2. GEOGRAPHICAL COORDINATES [1]

Longitude Degrees	E/W	Min.	Sec.	Latitude Deg.	N/S	Min.	Sec.

C10c5. RECEIVING SYSTEM NOISE TEMPERATURE (kelvins): 95

C10c1. CLASS OF STATION	C10c2. NATURE OF SERVICE
TR	CV

C10c. ANTENNA CHARACTERISTICS

2. MAXIMUM ISOTROPIC GAIN +/- dBi: +59.8

3. BEAMWIDTH (Degrees): 0.17

MORE ASSOCIATED RECEIVING STATIONS ON NEXT PAGE:

C10c. ANTENNA CHARACTERISTICS (continued)

4a. RADIATION PATTERN (give reference pattern or provide diagram): REC580

4b. ANTENNA RADIATION DIAGRAM. SEE ATTACHMENT NO.:

FOR NON-STANDARD ANTENNA PROVIDE:

Coefficient A dBi	Coefficient B dBi	Coefficient C dBi	Coefficient D dBi	PHI1 Degrees

SPACE STATION

ADD / MOD / SUP / REP of the station:

C10a. SPACE STATION NAME:

OLD SPACE STATION NAME (if changed):

RECEIVING BEAM DESIGNATION:

C10. TYPE OF STATION (Geo/Non-geo):

OLD BEAM DESIGNATION (if changed):

GROUP (LIST) OF ASSIGNED FREQUENCIES HAVING THE ABOVE COMMON CHARACTERISTICS

C2a. ASSIGNED FREQUENCY k/M/G Hz	C2a. ASSIGNED FREQUENCY k/M/G Hz
10.70100G	

SATELLITE RECEIVING ANTENNA BEAM DETAILS

CHARACTERISTICS OF THE BEAM

ADD / MOD / SUP / REP of the beam:

B1. RECEIVING BEAM DESIGNATION: ERR

NOTE: For a steerable beam, the last character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed):

B3/B4. ANTENNA CHARACTERISTICS

3a/3b/4a. MAXIMUM ISOTROPIC GAIN	3d. POINTING ACCURACY	3a/3b. ANTENNA GAIN CONTOURS DIAGRAM. SEE ATTACHMENT NO.	3e/4a/4b. ANTENNA RADIATION PATTERN
+/- dBi: +38.1	Degrees +: 0.05	03	REFERENCE PATTERN: REC-465
		3f. ANTENNA GAIN VS ORBIT LONGITUDE DIAGRAM. SEE ATTACHMENT NO.	RADIATION DIAGRAM. SEE ATTACHMENT NO.
			FOR NON-STANDARD ANTENNA PROVIDE: Coefficient A dBi; Coefficient B dBi

4b. FOR NON-GEOSTATIONARY SATELLITES UNDER RESOLUTION-46 (WRC-95)

SATELLITE BEAM ORIENTATION

ANGLE ALPHA Degrees	ANGLE BETA Degrees
0.0	0.0 *

* These angles are variable for the quasi-geostationary orbit.

INFORMATION COMMON TO THE FOLLOWING GROUPS (LISTS) OF ASSIGNED FREQUENCIES IN THIS BEAM

A2a. DATE OF BRINGING INTO USE: Day 24 | Month 11 | Year 03

A2b. PERIOD OF VALIDITY: Years

A3a. OPERATING AGENCY OR COMPANY (Refer to Table 12A/12B of the Preface to the IFL & SRS): 120

A3b. ADMINISTRATION RESPONSIBLE FOR THE STATION (Refer to Table 12A/12B of the Preface to the IFL & SRS): A

SPECIAL SECTION AR11/A (RR1042) Number: AR11/A/

SPECIAL SECTION AR11/C (RR1060) Number: AR11/C/

SPECIAL SECTION ART.14 (RR1610) Number: AR14/C/

OTHER SPECIAL SECTIONS

	Reference	Number
(1)		
(2)		
(3)		
(4)		
(5)		

A5/A6. COORDINATED WITH OR AGREEMENT REACHED WITH

RR Provision	Symbols of the Administrations concerned
RR	
RR	
RR	
RR	
RR	

A5/A6. COORDINATION REQUESTED WITH OR AGREEMENT SOUGHT WITH

RR Provision	Symbols of the Administrations concerned
RR	F
RR	
RR	
RR	
RR	

REMARKS: COORDINATION SOUGHT WITH FRANCE AND OTHER ADMINISTRATIONS.

NOTES ON FILLING IN THE NEXT PAGES:

FOR EACH BEAM YOU MAY PROVIDE ONE OR MORE GROUPS (LISTS) OF ASSIGNED FREQUENCIES, EACH GROUP (LIST) HAVING ONE SET OF COMMON CHARACTERISTICS. THE BOTTOM HALF OF THIS PAGE CONTAINS COMMON DATA THAT IS APPLICABLE TO ONE OR MORE GROUPS (LISTS) OF FREQUENCIES IN THIS BEAM. FOR EACH GROUP (LIST) OF FREQUENCIES IN THIS BEAM, FIRST FILL IN THE SET OF COMMON CHARACTERISTICS, INCLUDING ALL THE ASSOCIATED EARTH (OR SPACE) STATIONS AND

BR IDENTIFICATION NUMBER OF GROUP (LIST) OF FREQUENCIES TO BE MODIFIED / SUPPRESSED / REPLACED

ADD / MOD / SUP / REP of the group

CHARACTERISTICS COMMON TO THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

C4a. CLASS OF STATION: EC

C4b. NATURE OF SERVICE: CP

C6. POLARIZATION — TYPE: CR; If linear, provide angle in degrees:

C3a. ASSIGNED FREQUENCY BAND: 26000 (kHz)

C5a. RECEIVING SYSTEM NOISE TEMPERATURE: 400 kelvins

C8g. MAXIMUM AGGREGATE POWER: +/- 50.7 dBW

11a. SERVICE AREA

OR SERVICE AREA DIAGRAM SEE ATTACHMENT NO.: 02

TYPE OF MODULATION AND MULTIPLE ACCESS DATA. SEE ATTACHMENT NO.: 01

C9c. SPECTRUM MASK DIAGRAM SEE ATTACHMENT NO.: 04

C11d. AFFECTED REGION SEE ATTACHMENT NO.: 02

SERVICE AREA NUMBER

TRANSMITTING STATION(S) ASSOCIATED WITH THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

EMISSIONS OF THE ASSOCIATED TRANSMITTING STATION(S)

C7a. DESIGNATION OF EMISSION	C8a1/C8b1. * MAXIMUM PEAK POWER +/- dBW	C8a2/C8b2. * MAXIMUM POWER DENSITY +/- dBW/Hz	C8c1. MINIMUM PEAK POWER +/- dBW	C8c2. MINIMUM POWER DENSITY +/- dBW/Hz	C8e. C/N objective (total - clear sky) dB
26MF9W	+19.0	-54.3	+16.0	-51.3	12.5

* If maximum peak power and maximum power density values are of type C8b, check this box

MORE EMISSIONS ON NEXT PAGE

Reason for minimum peak power and minimum power density (C8c) values being absent; see attachment No.

EARTH STATION

ADD / MOD / SUP / REP of the station

C10b1. EARTH STATION NAME: ES-KW

OLD EARTH STATION NAME (if changed)

COUNTRY[1]

C10. TYPE OF STATION (Typical/Specific): T

C10b2. GEOGRAPHICAL COORDINATES[1]

Longitude				Latitude			
Degrees	E/W	Min.	Sec.	Deg.	N/S	Min.	Sec.

C10c. ANTENNA CHARACTERISTICS (continued)

4a. RADIATION PATTERN (give reference pattern or provide diagram): AP28

4b. ANTENNA RADIATION DIAGRAM. SEE ATTACHMENT NO.

FOR NON-STANDARD ANTENNA PROVIDE:

Coefficient A dBi	Coefficient B dBi	Coefficient C dBi	Coefficient D dBi	PHI1 Degrees

C10c1. CLASS OF STATION: TC

C10c2. NATURE OF SERVICE: CP

C10c. ANTENNA CHARACTERISTICS

2. MAXIMUM ISOTROPIC GAIN: +/- 55.0 dBi

3. BEAMWIDTH: 000.30 Degrees

MORE ASSOCIATED TRANSMITTING STATIONS ON NEXT PAGE

SPACE STATION

ADD / MOD / SUP / REP of the station

C10a. SPACE STATION NAME

OLD SPACE STATION NAME (if changed)

TRANSMITTING BEAM DESIGNATION

C10. TYPE OF STATION (Geo/Non-geo)

OLD BEAM DESIGNATION (if changed)

GROUP (LIST) OF ASSIGNED FREQUENCIES HAVING THE ABOVE COMMON CHARACTERISTICS

C2a. ASSIGNED FREQUENCY k/M/G Hz	C2a. ASSIGNED FREQUENCY k/M/G Hz
14.01667G	14.21667G
14.05000G	14.25000G
14.08333G	14.28333G
14.11667G	14.31667G
14.15000G	14.35000G
14.18333G	14.38333G

MORE ON NEXT PAGE X

GROUP (LIST) OF ASSIGNED FREQUENCIES HAVING THE ABOVE COMMON CHARACTERISTICS

C2a. ASSIGNED FREQUENCY	kHz/G Hz
174.9167	G
414.4500	G
414.4833	G

C2a. ASSIGNED FREQUENCY	kHz/G Hz

SATELLITE TRANSMITTING ANTENNA BEAM DETAILS

CHARACTERISTICS OF THE BEAM

ADD / MOD / SUP / REP of the beam: [ ]

B1. TRANSMITTING BEAM DESIGNATION: [ ][ ]KR

NOTE: For a steerable beam, the last character of the beam designation shall be "R"

OLD BEAM DESIGNATION (If changed): [ ][ ][ ][ ]

B3/B4. ANTENNA CHARACTERISTICS

3a/3b/4a. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 32.2

3d. POINTING ACCURACY: Degrees +: 0.10

3a/3b. ANTENNA GAIN CONTOURS DIAGRAM. SEE ATTACHMENT NO.: 03

3f. ANTENNA GAIN VS ORBIT LONGITUDE DIAGRAM. SEE ATTACHMENT NO.: [ ][ ]

3e/4a/4b. ANTENNA RADIATION PATTERN

REFERENCE PATTERN: REC-465

RADIATION DIAGRAM. SEE ATTACHMENT NO.: [ ][ ]

FOR NON-STANDARD ANTENNA PROVIDE

Coefficient A dBi: [ ][ ].[ ]

Coefficient B dBi: [ ][ ].[ ]

4b. FOR NON-GEOSTATIONARY SATELLITES UNDER RESOLUTION-46 (WRC-95):

SATELLITE BEAM ORIENTATION

ANGLE ALPHA Degrees: 0.0

ANGLE BETA Degrees: 0.0 *

GAIN VS ELEVATION ANGLE DIAGRAM. SEE ATTACHMENT NO.: [ ][ ]

SPREADING LOSS DATA. SEE ATTACHMENT NO.: 04

	+/- dBW		+/- dBW		+/- dBW		+/- dBW
MAXIMUM E.I.R.P. AT 4 kHz	+ 14.0	AVERAGE E.I.R.P. AT 4 kHz	+ 14.0	MAXIMUM E.I.R.P. AT 1 MHz	+ 38.0	AVERAGE E.I.R.P. AT 1 MHz	+ 38.0

INFORMATION COMMON TO THE FOLLOWING GROUPS (LISTS) OF ASSIGNED FREQUENCIES IN THIS BEAM

A2a. DATE OF BRINGING INTO USE: Day 24 Month 11 Year 03

A2b. PERIOD OF VALIDITY: [ ][ ] Years

A3a. OPERATING AGENCY OR COMPANY (Refer to Table 12A/12B of the Preface to the IFL & SRS): 120

A3b. ADMINISTRATION RESPONSIBLE FOR THE STATION (Refer to Table 12A/12B of the Preface to the IFL & SRS): A

SPECIAL SECTION AR11/A (RR1042) Number: AR11/A/[ ][ ][ ][ ]

SPECIAL SECTION AR11/C (RR1060) Number: AR11/C/[ ][ ][ ][ ]

SPECIAL SECTION ART.14 (RR1610) Number: AR14/C/[ ][ ][ ][ ]

OTHER SPECIAL SECTIONS

	Reference	Number
(1)		
(2)		
(3)		
(4)		
(5)		

A5/A6. COORDINATED WITH OR AGREEMENT REACHED WITH

RR Provision	Symbols of the Administrations concerned
RR	
RR	
RR	
RR	
RR	

A5/A6. COORDINATION REQUESTED WITH OR AGREEMENT SOUGHT WITH

RR Provision	Symbols of the Administrations concerned
RR	F
RR	
RR	
RR	
RR	

REMARKS COORDINATION REQUEST SOUGHT WITH FRANCE AND OTHER ADMINISTRATIONS.

* BEAM ORIENTATION VARIES FOR QUASI-GEOSTATIONARY ORBIT.

NOTES ON FILLING IN THE NEXT PAGES:

FOR EACH BEAM YOU MAY PROVIDE ONE OR MORE GROUPS (LISTS) OF ASSIGNED FREQUENCIES, EACH GROUP (LIST) HAVING ONE SET OF COMMON CHARACTERISTICS. THE BOTTOM HALF OF THIS PAGE CONTAINS COMMON DATA THAT IS APPLICABLE TO ONE OR MORE GROUPS (LISTS) OF FREQUENCIES IN THIS BEAM. FOR EACH GROUP (LIST) OF FREQUENCIES IN THIS BEAM, FIRST FILL IN THE SET OF COMMON CHARACTERISTICS, INCLUDING ALL THE ASSOCIATED EARTH (OR SPACE) STATIONS AND THEIR EMISSIONS, FOLLOWED BY THE GROUP (LIST) OF FREQUENCIES TO WHICH THE SET APPLIES. USE AS MANY PAGES AS NECESSARY.

BR IDENTIFICATION NUMBER OF GROUP (LIST) OF FREQUENCIES TO BE MODIFIED / SUPPRESSED / REPLACED

ADD / MOD / SUP / REP of the group

CHARACTERISTICS COMMON TO THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

1a. CLASS OF STATION: EC

1b. NATURE OF SERVICE: CP

C6. POLARIZATION — TYPE: CL

C3a. ASSIGNED FREQUENCY BAND (kHz): 27000

C8d. MAXIMUM TOTAL PEAK POWER: +/- dBW: + 19.0

11a. SERVICE AREA

OR SERVICE AREA DIAGRAM SEE ATTACHMENT NO.: 02

TYPE OF MODULATION AND MULTIPLE ISS DATA. SEE ATTACHMENT NO.: 01

C9c. SPECTRUM MASK DIAGRAM SEE ATTACHMENT NO.: 04

C11d. AFFECTED REGION SEE ATTACHMENT NO.: 02

SERVICE AREA NUMBER

SPACE STATION EMISSIONS AND ASSOCIATED RECEIVING STATION(S) COMMON TO THE FOLLOWING GROUP (LIST) OF ASSIGNED FREQUENCIES

SPACE STATION EMISSIONS

C7a. DESIGNATION OF EMISSION	C8a1/C8b1. • MAXIMUM PEAK POWER +/- dBW	C8a2/C8b2. • MAXIMUM POWER DENSITY +/- dBW/Hz	C8c1. MINIMUM PEAK POWER +/- dBW	C8c2. MINIMUM POWER DENSITY +/- dBW/Hz	C8e. C/N objective (total - clear sky) dB
26MF9W	+ 19.0	- 54.3	+ 16.0	- 51.3	12.5

If maximum peak power and maximum power density values are of type C8b, check this box

MORE EMISSIONS ON NEXT PAGE

Reason for minimum peak power and minimum power density (C8c) values being absent; see attachment No.

EARTH STATION

ADD / MOD / SUP / REP of the station

10b1. EARTH STATION NAME: ES-KU

OLD EARTH STATION NAME (if changed)

COUNTRY [1]

C10. TYPE OF STATION (Typical/Specific): T

C10b2. GEOGRAPHICAL COORDINATES [1]

Longitude Degrees	Longitude E/W	Longitude Min.	Longitude Sec.	Latitude Deg.	Latitude N/S	Latitude Min.	Latitude Sec.

C10c5. RECEIVING SYSTEM NOISE TEMPERATURE (Kelvins): 120

C10c1. CLASS OF STATION: TC

C10c2. NATURE OF SERVICE: CP

C10c. ANTENNA CHARACTERISTICS

MAXIMUM OMNIDIRECTIONAL GAIN +/- dBi: + 36.9

3. BEAMWIDTH (Degrees): 2.50

MORE ASSOCIATED RECEIVING STATIONS ON NEXT PAGE

C10c. ANTENNA CHARACTERISTICS (continued)

4a. RADIATION PATTERN (give reference pattern or provide diagram): REC-465

4b. ANTENNA RADIATION DIAGRAM. SEE ATTACHMENT NO.

FOR NON-STANDARD ANTENNA PROVIDE:

Coefficient A dBi	Coefficient B dBi	Coefficient C dBi	Coefficient D dBi	PHI1 Degrees

SPACE STATION

ADD / MOD / SUP / REP of the station

C10a. SPACE STATION NAME

OLD SPACE STATION NAME (if changed)

RECEIVING BEAM DESIGNATION

C10. TYPE OF STATION (Geo/Non-geo)

OLD BEAM DESIGNATION (if changed)

GROUP (LIST) OF ASSIGNED FREQUENCIES HAVING THE ABOVE COMMON CHARACTERISTICS

C2a. ASSIGNED FREQUENCY k/M/G Hz	C2a. ASSIGNED FREQUENCY k/M/G Hz
10.7315.0 G	11.20834 G
10.79167 G	11.29167 G
10.87500 G	11.37500 G
10.95834 G	11.45834 G
11.04167 G	11.54167 G
11.12500 G	11.62500 G

GROUP (LIST) OF ASSIGNED FREQUENCIES HAVING THE ABOVE COMMON CHARACTERISTICS

C2a ASSIGNED FREQUENCY	kHz/MHz/GHz
118.708345	G
121.791675	G
111.875000	G
119.583345	G
120.041675	G
120.125000	G
120.208345	G
120.291675	G
120.375000	G
120.458345	G

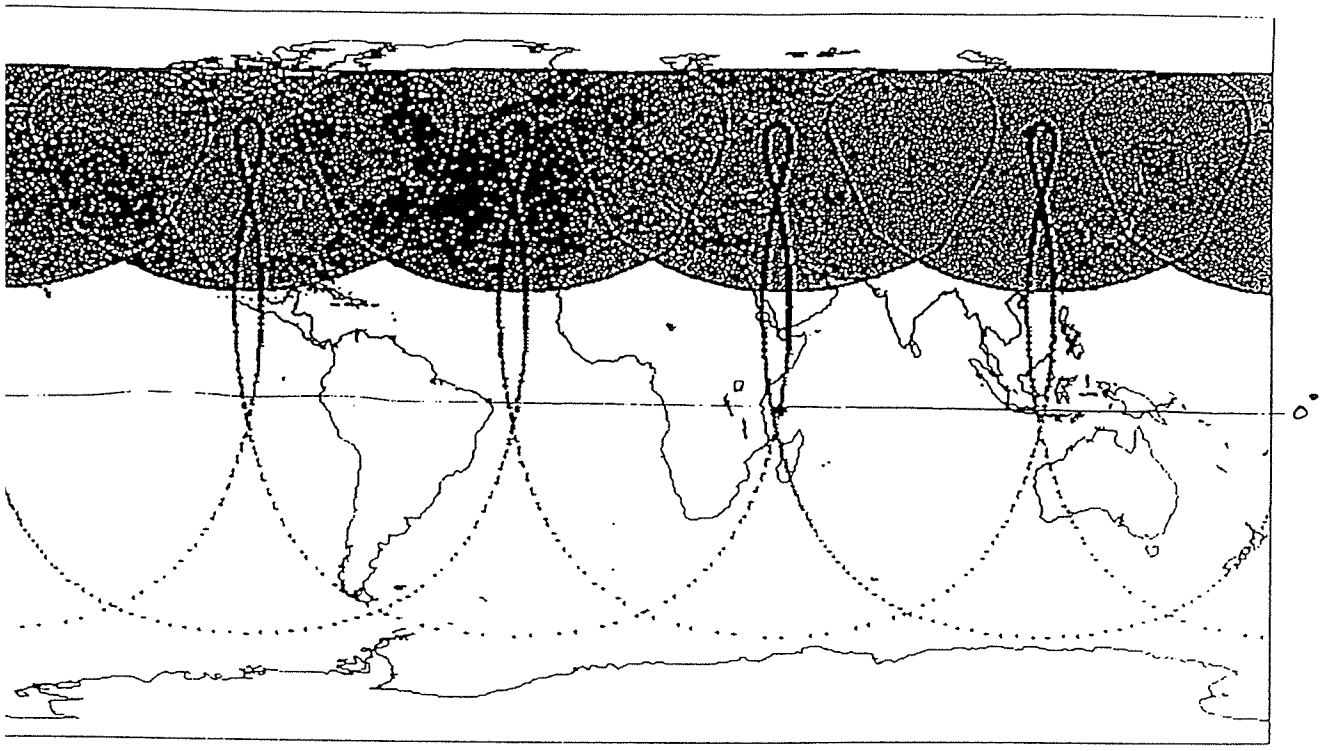
C2a ASSIGNED FREQUENCY	kHz/MHz/GHz
120.541675	G
120.625000	G

Notes

A. All space-to-Earth transmissions will comply with the PFD limits in Articles S21 and S22 of the Radio Regulations using the following technique. First, the pointing direction of the steerable (or re-pointable) beam will be determined in each case. An analysis of the PFD at the Earth's surface will then be made within the 10dB relative gain contour of the beam, taking into account the worst case pointing error of the beam. From this analysis, the maximum value of PFD excess, if any, over the applicable limits will be calculated. The maximum space station transmit power and power spectral density will be reduced by this amount of maximum excess relative to the limits of the Regulations.

B. The Appendix S4 submission herein is not intended to conflict with or prejudice any position the United States has taken or may take at WRC-97 or any current or future domestic spectrum allocation in the United States.

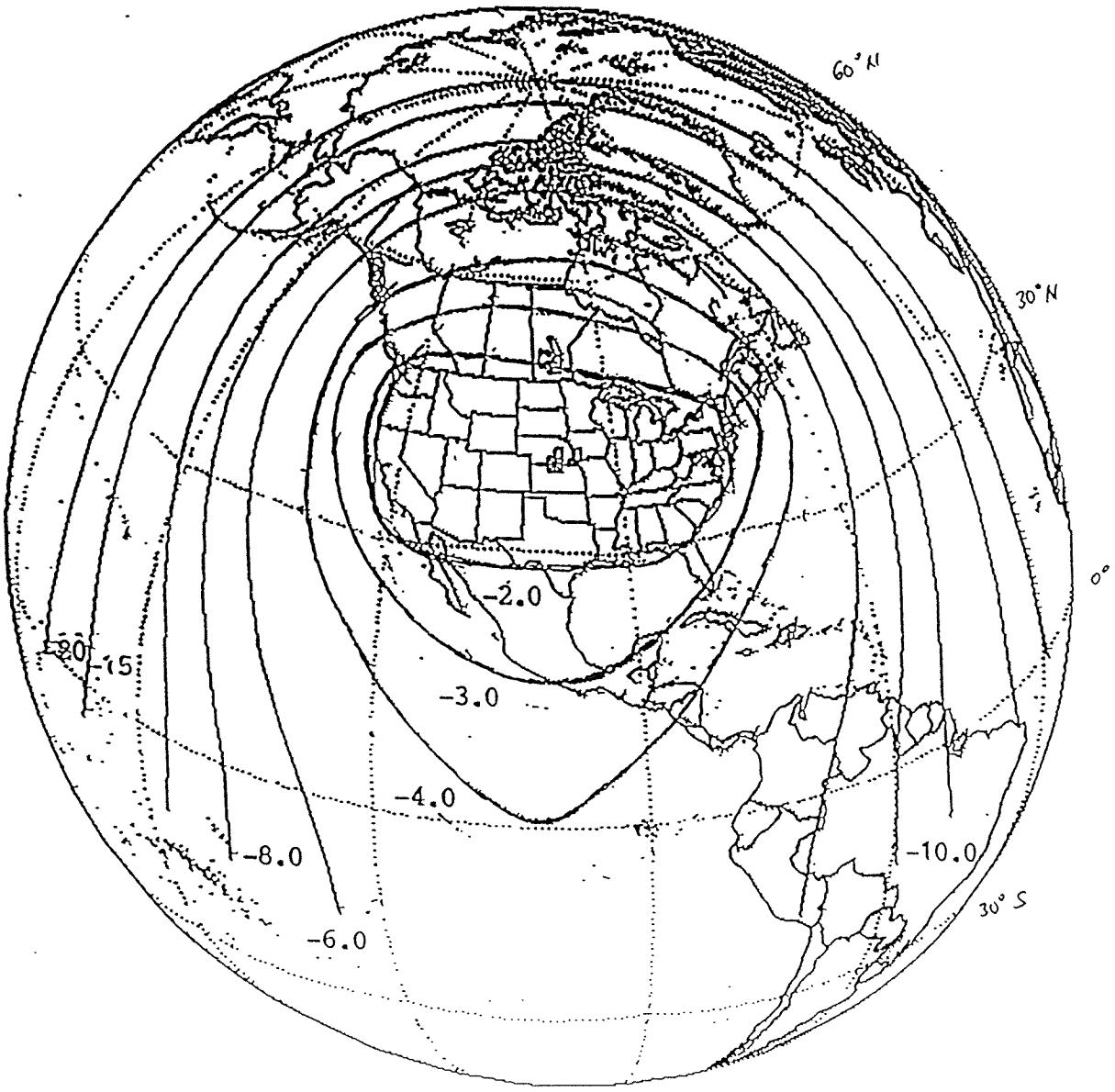
Attachment 02: Service Area Diagram



Attachment 03:

Antenna Gain Contours

Ku-Band



Antenna boresight : 44°N, 100°W

View from satellite at 63° N latitude.

1. C9c. Spectrum Mask Diagram.

Spectrum mask diagram conforms to the standard $\sin x / x^2$

2. C9c. Modulation and Multiple Access Data.

Modulation: QPSK; Code Division Multiple Access

3. 4b. Spreading Loss Data

With quasi-geostationary satellites, to compensate for small variations in spreading loss, minor changes to gain will be made.

APPENDIX II

FCC Form 312

FCC 312
Main Form

Approved by OMB 3060-0678

Est. Avg.Burden Hours Per Response: 11 Hrs.

FEDERAL COMMUNICATIONS COMMISSION

APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS

FCC Use Only
File Number:
Call Sign:
Fee Number:

APPLICANT INFORMATION

1. Legal Name of Applicant: Denali Telecom, LLC	2. Voice Telephone Number: (202) 466-3044
3. Other Name Used for Doing Business (if any)	4. Fax Telephone Number: (202) 466-3055
5. Mailing Street Address or P.O. Box: 1667 K Street, N.W. Suite 801 ATTENTION: Dennis J. Burnett	6. City: Washington 7. State / Country (if not U.S.A.): D.C. 8. Zip Code: 20006
9. Name of Contact Representative (If other than applicant): W. Theodore Pierson, Jr., David L. Lihani	10. Voice Telephone Number: (202) 466-3044
11. Firm or Company Name: Pierson & Burnett, LLP	12. Fax Telephone Number: (202) 466-3055
13. Mailing Street Address or P.O. Box: 1667 K Street, N.W. Suite 801 ATTENTION: David L. Lihani	14. City: Washington 15. State / Country (if not U.S.A): D.C. 16. Zip Code: 20006

CLASSIFICATION OF FILING

17. Place an "X" in the box next to the classification that applies to this filing for both questions a. and b. Mark only one box for 17a and only one box for 17b.

- [ ] a1. Earth Station
- [ ] a2. Space Station

- [ ] b1. Application for License of New Station
- [ ] b2. Application for Registration of New Domestic Receive-Only Station
- [X] b3. Amendment to a Pending Application
- [ ] b4. Modification of License or Registration
- [ ] b5. Assignment of License or Registration
- [ ] b6. Transfer of Control of License or Registration
- [ ] b7. Notification of Minor Modification
- [ ] b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
- [ ] b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
- [ ] b10. Other (Please Specify):

18. If this filing is in reference to an existing station, enter: Call sign of station:	19. If this filing is an amendment to a pending application enter: (a) Date pending application was filed: 9/26/97 (b) File number of pending application: 160-SAT-P/LA-97/13

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Place an "X" in the box(es) next to all that apply.

[X] a. Fixed Satellite [ ] c. Radiodetermination Satellite [ ] e. Direct to Home Fixed Satellite
[ ] b. Mobile Satellite [ ] d. Earth Exploration Satellite [ ] f. Digital Audio Radio Service [ ] g. Other (please specify) _____

21. STATUS: Place an "X" in the box next to the applicable status. Mark only one box.

[ ] a. Common Carrier [X] b. Non-Common Carrier

22. If earth station applicant, place an "X" in the box(es) next to all that apply.

[ ] a. Using U.S. licensed satellites [ ] b. Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Mark only one box. Are these facilities:

[ ] a. Connected to the Public Switched Network [ ] b. Not connected to the Public Switched Network

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

[ ] a. C-Band (4/6 GHz)
[X] b. Ku-Band (12/14 GHz) [X] c. Other (Please specify) Above 40 GHz

TYPE OF STATION

25. CLASS OF STATION: Place an "X" in the box next to the class of station that applies. Mark only one box.

[ ] a. Fixed Earth Station [ ] b. Temporary-Fixed Earth Station [ ] c. 12/14 GHz VSAT Network [ ] d. Mobile Earth Station [X] e. Space Station [ ] f. Other (Specify) _____

If space station applicant, go to Question 27.

26. TYPE OF EARTH STATION FACILITY Mark only one box.

[ ] a. Transmit/Receive [ ] b. Transmit-Only [ ] c. Receive-Only

PURPOSE OF MODIFICATION OR AMENDMENT

27. The purpose of this proposed modification or amendment 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 assigned frequency(ies)
[ ] h -- authorization to add Points of Communication (satellites & countries)
[ ] i -- authorization to change Points of Communication (satellites & countries)
[ ] j -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
[X] k -- Other (Please Specify)

authorization to clarify filed frequencies

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? [ ] YES [X] NO
If YES, 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 as an exhibit for new transmitting facilities, major modifications, or major amendments. Refer to OET Bulletin 65.

ALIEN OWNERSHIP

29. Is the applicant a foreign government or the representative of any foreign government?	☐ YES	☒ NO
30. Is the applicant an alien or the representative of an alien?	☐ YES	☒ NO
31. Is the applicant a corporation organized under the laws of any foreign government?	☐ YES	☒ NO
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
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
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit, the 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 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 explanation of the circumstances.	☐ YES	☒ NO
37. Has the applicant, or any party to this application, 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 explanation of the 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 attempting 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 the 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 preceeding two items? If Yes, attach as an exhibit, 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, addresses, and citizenship of those stockholders owning of 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.	**	
41. By checking Yes, the undersigned certifies, that neither the 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? U.S.A.		

* To the extent requested in 160-SAT-P/LA-97/13.

** See 160-SAT-P/LA-97/13.

43. Description. (Summarize the nature of the application and the services to be provided).

Clarification sought by Applicant for information submitted by the Commission to the ITU for "USA- Ku-H-1."

Exhibit No.	Identify all exhibits that are attached to this application.

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): (Place an "X" in the box next to applicable response.)

☐ a. Individual ☐ b. Unincorporated Association ☐ c. Partnership ☐ d. Corporation ☐ e. Governmental Entity ☒ f. Other (Please specify) LLC

45. Typed Name of Person Signing	46. Title of Person Signing
Dennis J. Burnett	President, Pentriad North America, Inc. Manager, Denali Telecom LLC

47. Signature: Dennis J. Burnett

48. Date: 1/8/99

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).