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File Number: SES-AFS-20160927-00803

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

#### APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Amendment to Pending Modification of License for Earth Station E140121 to Add Restoration Emissions, Points-of-Contact, and Frequencies

| Name:             | Intelsat License LLC     | <b>Phone Number:</b> | 703–559–7848                |
|-------------------|--------------------------|----------------------|-----------------------------|
| DBA<br>Name:      |                          | Fax Number:          | 703–559–8539                |
| Street:           | c/o Intelsat Corporation | E-Mail:              | susan.crandall@intelsat.com |
|                   | 7900 Tysons One Place    |                      |                             |
| City:             | McLean                   | State:               | VA                          |
| <b>Country:</b>   | USA                      | Zipcode:             | 22102 -5972                 |
| <b>Attention:</b> | Susan H. Crandall        |                      |                             |

#### 9–16. Name of Contact Representative

Name: Cynthia J. Grady Phone Number: 703–559–6949

**Company:** Intelsat Corporation **Fax Number:** 703–559–8539

Street: 7900 One Tysons Place E–Mail: cynthia.grady@intelsat.com

City: McLean State: VA

**Country:** USA **Zipcode:** 22102–5972

Attention: Cynthia J. Grady 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

**b** b3. Amendment to a Pending Application

**b**4. Modification of License or Registration

b5. Assignment of License or Registration

b6. Transfer of Control of License or Registration

**b**7. 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)

(N/A) b11. Application for Earth Station to Access a Non–U.S.satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States

(N/A) b12. Application for Database Entry

b13. Amendment to a Pending Database Entry Application

o b14. Modification of Database Entry

| <ul> <li>17c. Is a fee submitted with this application</li> <li>If Yes, complete and attach FCC Form</li> <li>Governmental Entity</li> <li>Other(please explain):</li> </ul> | 159. If No, indicate reason for fee exemption (se   | e 47 C.F.R.Section 1.1114).   |
|--|---|---|
| 17d.  Fee Classification CGX – Fixed Satellite Testation   | Transmit/Receive Earth  |   |
| <ul><li>18. If this filing is in reference to an existing station, enter:</li><li>(a) Call sign of station:<br/>E140121</li></ul>  | 19. If this filing is an amendment to a pending ap modification please enter only the file number:  (a) Date pending application was filed:  06/20/2016 | plication enter both fields, if this filing is a  (b) File number:  SESMOD2016062000555 |

## TYPE OF SERVICE

| 20. NATURE OF SERVICE: This filing is for an authorization to provide    | e 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      | 22. If earth station applicant, check all that apply.                       |
| only one.  | Using U.S. licensed satellites  |
| O Common Carrier Non–Common Carrier                                      | Using Non–U.S. licensed satellites  |
| 23. If applicant is providing INTERNATIONAL COMMON CARRIER s facilities: | service, see instructions regarding Sec. 214 filings. Choose one. Are these |
| O 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 a         | pplicable 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 addition               | nal 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 & to a countries)                             |
| j — authorization to change Points of Communication (satellites & Double of Communication)                 |
| k — authorization for facilities for which environmental assessment and                                    |
| radiation hazard reporting is required   |
| 1 — authorization to change orbit location   |
| m — authorization to perform fleet management  |
| n — authorization to extend milestones   |
| o — Other (Please specify)   |
|  |

#### **ENVIRONMENTAL POLICY**

| impact as defined by 47 CFR 1.1307? 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 for new transmitting facilities, major modifications, or major amendments. | _     |       | ~     |        |   |     |
|---|-------|-------|-------|--------|---|-----|
| ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeron aeronautical fixed radio station services are not required to respond to Items 30–34.  | autic | al en | ı rou | ite or |   |     |
| 29. Is the applicant a foreign government or the representative of any foreign government?  | 0     | Yes   | •     | No     |   |     |
| 30. Is the applicant an alien or the representative of an alien?  | 0     | Yes   | 0     | No     | • | N/A |
| 31. Is the applicant a corporation organized under the laws of any foreign government?  | 0     | Yes   | 0     | 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?   | 0     | Yes   | 0     | No     | • | N/A |

 $lackbox{ Yes } lackbox{ No}$ 

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental

| 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?       | ٥   | Yes        | 0   | No | <b>⊚</b> 1 | 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.   |     | o `        | 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. |     | <b>●</b> ` | Yes |    | No         | )   |
|  | Exh | ibit E     |     |    |            |     |

| 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 | <b>⊚</b> 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 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 | <b>⊘</b> 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. |       |             |

| 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            | O 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          | <b>⊚</b> No |
| 42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, we coordinated or is in the process of coordinating the space station? Permitted Space Station List Satellites Only   | vhat administr | ration has  |

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 License LLC herein requests an amendment to its pending application to modify its authorization for Hagerstown, Maryland earth station E140121 to add emissions and the 13750−14000 MHz band for restoration services.

Exhibit A

| 43a. Geographic Service Rule Certification By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25.   | <b>●</b> A |
|--|------------|
| By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements.   | O B        |
| By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached. | <b>o</b> c |

#### **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.

|   | plicable response.)  |
|---|--|
| o Individual                                |  |
| Unincorporated Association                  |  |
| • Partnership                               |  |
| O Corporation                               |  |
| O Governmental Entity                       |  |
| Other (please specify)                      |  |
|   |  |
|   |  |
|   |  |
|   |  |
| 45. Name of Person Signing                  | 46. Title of Person Signing  |
| 45. Name of Person Signing Cynthia J. Grady | 46. Title of Person Signing Regulatory Counsel, Intelsat Corporation |
|   |  |
| Cynthia J. Grady                            |  |
| Cynthia J. Grady >                          |  |

### SATELLITE EARTH STATION AUTHORIZATIONS FCC Form 312 – Schedule B:(Technical and Operational Description) FOR OFFICIAL USE ONLY

| Location of Earth St        | cation Site              |                      |                 |       |  |  |
|-----------------------------|--------------------------|----------------------|-----------------|-------|--|--|
| E1: Site Identifier:        | MTN-1                    | E5. Call Sign:       | E140121         |       |  |  |
| E2: Contact Name            | Mr. Eric Lund            | E6. Phone<br>Number: | 240 420 8990    |       |  |  |
| E3. Street:                 | 17625 Technology<br>BLVD | E7. City:            | Hagerstown      |       |  |  |
|                             |                          | E8. County:          | Washington      |       |  |  |
| E4. State                   | MD                       | E9. Zip Code         | 21740           |       |  |  |
| E10. Area of Operat         | tion:                    | Hagerstown, MD       |                 |       |  |  |
| E11. Latitude:              | 39 °35 '53.1 "N          |                      |                 |       |  |  |
| E12. Longitude:             | 77 °45 '22.3 "W          |                      |                 |       |  |  |
| E13. Lat/Lon Coord          | linates are:             | O NAD-27             | <b>◎</b> NAD-83 | O N/A |  |  |
| E14. Site Elevation (AMSL): |                          | 170.0 meters         |                 |       |  |  |
|                             |                          |                      |                 |       |  |  |

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide as a technical analysis showing compliance with two–degree spacing policy.

| E16. If the proposed antenna(s) do not operate in the Fixed Satellite Ser Satellite Service (FSS) with non–geostationary satellites, do(es) the propagain patterns specified in Section 25.209(a2) and (b) as demonstrated by measurements? | posed antenna(s) comply with the antenna    | <b>O</b> Yes | O No | <b>⊚</b> N/A |
|---|---|--------------|------|--------------|
| E17. Is the facility operated by remote control? If YES, provide the loca point.  | tion and telephone number of the control    | O Yes        | •    | No           |
| E18. Is frequency coordination required? If YES, attach a frequency coo   | rdination report as Exhibit D               | Yes          | 0    | No           |
| E19. Is coordination with another country required? If YES, attach the n coordination contours as   | ame of the country(ies) and plot of         | O Yes        | •    | No           |
| E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25.11 have you attached a copy of a completed FCC Form 854 and/or the FAA the structure to aviation? Exhibit F FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL FAPPLICATION. | a's study regarding the potential hazard of | O Yes        | •    | No           |
| POINTS OF COMMUNICATION   |   | 1            |      |              |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea  | ase enter the following:                    |              |      |              |
| E21. Common Name:   | E22. ITU Name:                              |              |      |              |
| E23. Orbit Location:  | E24. Country:                               |              |      |              |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea  | ase enter the following:                    |              |      |              |

| E21. Common Name:  | E22. ITU Name:                                     |
|--|--|
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: INTELSAT 31 (S2924)   INTELSAT 31   95.05 W.L.   | If you selected OTHER, please enter the following: |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | se enter the following:                            |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: INTELSAT 16 (S2750)   INTELSAT 16   58.10 W.L.   | If you selected OTHER, please enter the following: |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | ase enter the following:                           |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: OTHER   OTHER   If you selected OTHER, please er | nter the following:                                |
| E21. Common Name: INTELSAT-1R                                    | E22. ITU Name:                                     |
| E23. Orbit Location: 50.1 W.L.                                   | E24. Country: USA                                  |
|  |  |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | se enter the following:                            |

| E21. Common Name:  | E22. ITU Name:                                     |
|--|--|
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | ase enter the following:                           |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | ase enter the following:                           |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  | •  |
| Satellite Name: INTELSAT 21 (S2863)   INTELSAT 21   58.0 W.L. If | You selected OTHER, please enter the following:    |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  |  |
| Satellite Name: OTHER   OTHER   If you selected OTHER, please en | nter the following:                                |
| E21. Common Name: INTELSAT-9                                     | E22. ITU Name:                                     |
| E23. Orbit Location: 43.1 W.L                                    | E24. Country: USA                                  |
|  |  |
| Satellite Name: INTELSAT 30 (S2887)   INTELSAT 30   95.05 W.L.   | If you selected OTHER, please enter the following: |
| E21. Common Name:  | E22. ITU Name:                                     |
| E23. Orbit Location:   | E24. Country:                                      |
|  | •  |
| Satellite Name: GALAXY 3C (S2381)   GALAXY III-C   95.05 W.L.    | If you selected OTHER, please enter the following: |

| E21. Common Name:  | E22. ITU Name:                                  |
|--|---|
| E23. Orbit Location:   | E24. Country:                                   |
|  |   |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | se enter the following:                         |
| E21. Common Name:  | E22. ITU Name:                                  |
| E23. Orbit Location:   | E24. Country:                                   |
|  |   |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | se enter the following:                         |
| E21. Common Name:  | E22. ITU Name:                                  |
| E23. Orbit Location:   | E24. Country:                                   |
|  |   |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | se enter the following:                         |
| E21. Common Name:  | E22. ITU Name:                                  |
| E23. Orbit Location:   | E24. Country:                                   |
|  |   |
| Satellite Name: PERMITTED LIST   If you selected OTHER, plea     | se enter the following:                         |
| E21. Common Name:  | E22. ITU Name:                                  |
| E23. Orbit Location:   | E24. Country:                                   |
|  |   |
| Satellite Name: INTELSAT 11 (S2237)   INTELSAT 11   43.0 W.L. If | you selected OTHER, please enter the following: |
| E21. Common Name:  | E22. ITU Name:                                  |
| E23. Orbit Location:   | E24. Country:                                   |
|  |   |
| Satellite Name: OTHER   OTHER   If you selected OTHER, please en | ter the following:                              |

| E21. Common Name: GALAXY-23   | E22. ITU Name:    |
|-------------------------------|-------------------|
| E23. Orbit Location: 121 W.L. | E24. Country: USA |

# POINTS OF COMMUNICATION (Destination Points)

| E25. Site Identifier: |               |
|-----------------------|---------------|
| E26. Common Name:     | E27. Country: |

# ANTENNA

| Site ID | E28. Antenna<br>Id | E29. Quantity | E30.<br>Manufacturer |        | E32. Antenna<br>Size <meters></meters> | E41/42. Antenna Gain Transmint and/or Recieve (dBi atGHz) |
|---------|--------------------|---------------|----------------------|--------|--|---|
| MTN-1   | K77                | 1             | Vertex/RSI           | ST13.1 | 13.1                                   | 62.7 dBi at 13  |
| MTN-1   | K78                | 1             | Viasat               | 13.5m  | 13.5                                   | 63.3 dBi at 13  |

| E28. Antenna<br>Id |           | E35. Above<br>Ground Level<br>(meters) | ` ′   | Height Above | E38. Total<br>Input Power at<br>antenna flange<br>(Watts) |     | EIRP for al |
|--------------------|-----------|--|-------|--------------|---|-----|-------------|
| K77                | 13.1/13.1 | 8.66                                   | 170.0 | 0.0          | 340.0   | 0.0 | 88.0        |
| K78                | 13.5/13.5 | 9.14                                   | 170.0 | 0.0          | 340.0   | 0.0 | 88.6        |

# FREQUENCY

| E43/44.<br>Frequency Bands |      | E48. Maximum<br>EIRP per Carrier | E49. Maximum<br>ERIP Density per |
|----------------------------|------|----------------------------------|----------------------------------|
| (MHz)                      | L,R) | (dBW)                            | Carrier<br>(dBW/4kHz)            |
|                            |      |                                  | (uD W/4KIIZ)                     |

| K78                  | 11450<br>11452       | R                  | Linear and Circular           | N0N            | 0.0                    | 0.0                       |
|----------------------|----------------------|--------------------|-------------------------------|----------------|------------------------|---------------------------|
| E50. Modu entirety.) | alation and Services | (If the complete d | escription does not appear in | this box, plea | ase go to the end of t | he form to view it in its |
| Beacon               | 1                    |                    |                               |                |                        |                           |
| K78                  | 11697<br>11700       | R                  | Linear and Circular           | NON            | 0.0                    | 0.0                       |
| Beacon               | 1                    |                    |                               |                |                        |                           |
| K78                  | 11700<br>11705       | R                  | Linear and Circular           | N0N            | 0.0                    | 0.0                       |
| E50. Modu entirety.) | ilation and Services | (If the complete d | escription does not appear in | this box, plea | ase go to the end of t | he form to view it in its |
| Beacon               | 1                    |                    |                               |                |                        |                           |

| K78                    | 12198<br>12200       | R                  | Linear and Circular           | N0N              | 0.0                | 0.0                        |
|------------------------|----------------------|--------------------|-------------------------------|------------------|--------------------|----------------------------|
| E50. Modula entirety.) | ation and Services ( | If the complete de | escription does not appear in | this box, please | go to the end of t | the form to view it in its |
| Beacon                 |                      |                    |                               |                  |                    |                            |
| K78                    | 11445<br>11460       | R                  | Linear and Circular           | 500KG7W          | 0.0                | 0.0                        |
| Telemet                | ry                   |                    |                               |                  |                    |                            |
| K78                    | 11695<br>11700       | R                  | Linear and Circular           | 500KG7D          | 0.0                | 0.0                        |
| E50. Modula entirety.) |                      | If the complete do | escription does not appear in | this box, please | go to the end of t | he form to view it in its  |

| 11700<br>11710        | R                  | Linear and Circular                                  | 1M60G7D  | 0.0   | 0.0  |
|-----------------------|--------------------|--|--|---|--|
| lation and Services ( | If the complete de | escription does not appear in                        | this box, please   | go to the end of t  | he form to view it in its  |
| try                   |                    |  |  |   |  |
| 11700<br>11710        | R                  | Linear and Circular                                  | 500KG7D  | 0.0   | 0.0  |
| try                   |                    |  |  |   |  |
| 12195<br>12200        | R                  | Linear and Circular                                  | 500KG7D  | 0.0   | 0.0  |
| lation and Services ( | If the complete de | escription does not appear in                        | this box, please   | go to the end of t  | the form to view it in its   |
|                       | 11710              | lation and Services (If the complete de try    11700 | lation and Services (If the complete description does not appear in try    11700 | lation and Services (If the complete description does not appear in this box, please try    11700 | lation and Services (If the complete description does not appear in this box, please go to the end of the try    11700 |

| K78                   | 10950<br>11200        | R                 | Horizontal and Vertical     | 43K0G7D             | 0.0                | 0.0                       |
|-----------------------|-----------------------|-------------------|-----------------------------|---------------------|--------------------|---------------------------|
| E50. Modul entirety.) | lation and Services ( | If the complete d | escription does not appear  | in this box, please | go to the end of t | he form to view it in its |
| Digita                | l Data                |                   |                             |                     |                    |                           |
| K78                   | 10950<br>11200        | R                 | Horizontal and<br>Vertical  | 72M0G7D             | 0.0                | 0.0                       |
| Digita                |                       |                   |                             |                     |                    |                           |
| K78                   | 11450<br>11700        | R                 | Horizontal and<br>Vertical  | 43K0G7D             | 0.0                | 0.0                       |
| E50. Modul entirety.) |                       | If the complete d | lescription does not appear | in this box, please | go to the end of t | he form to view it in its |

| K78                                    | 11450<br>11700     | R                  | Horizontal and<br>Vertical | 72M0G7D             | 0.0                | 0.0                       |
|--|--------------------|--------------------|----------------------------|---------------------|--------------------|---------------------------|
| E50. Modulation entirety.)             | and Services (If t | he complete descri | ption does not appear      | in this box, please | go to the end of t | he form to view it in its |
| Digital Da                             | ta                 |                    |                            |                     |                    |                           |
| K78                                    | 11700<br>12200     | R                  | Horizontal and<br>Vertical | 43K0G7D             | 0.0                | 0.0                       |
| Digital Da                             | ta                 |                    |                            |                     |                    |                           |
| K78                                    | 11700<br>12200     | R                  | Horizontal and<br>Vertical | 72M0G7D             | 0.0                | 0.0                       |
| E50. Modulation entirety.)  Digital Da |                    | he complete descri | ption does not appear      | in this box, please | go to the end of t | he form to view it in its |

| K78                        | 11195.5<br>11195.5 | R                    | Linear and Circular     | 500KG7D          | 0.0                | 0.0                        |
|----------------------------|--------------------|----------------------|-------------------------|------------------|--------------------|----------------------------|
| E50. Modulation entirety.) | and Services (If   | the complete descrip | tion does not appear in | this box, please | go to the end of t | the form to view it in its |
| Telemetry                  |                    |                      |                         |                  |                    |                            |
| K78                        | 11195.5<br>11195.5 | R                    | Linear and Circular     | 500KG7D          | 0.0                | 0.0                        |
| Telemetry                  |                    |                      |                         |                  |                    |                            |
| K78                        | 11198.0<br>11198.0 | R                    | Linear and Circular     | 500KG7D          | 0.0                | 0.0                        |
| E50. Modulation entirety.) | and Services (If   | the complete descrip | tion does not appear in | this box, please | go to the end of t | the form to view it in its |
| Telemetry                  |                    |                      |                         |                  |                    |                            |

| K78                        | 11198.5<br>11198.5   | R                       | Linear and Circular   | 500KG7D                | 0.0                   | 0.0               |
|----------------------------|----------------------|-------------------------|-----------------------|------------------------|-----------------------|-------------------|
| E50. Modulation entirety.) | and Services (If the | ne complete description | on does not appear in | this box, please go to | o the end of the form | to view it in its |
| Telemetry                  |                      |                         |                       |                        |                       |                   |
| K78                        | 11194.25<br>11194.25 | R                       | Linear and Circular   | 500KG7D                | 0.0                   | 0.0               |
| Telemetry                  |                      |                         |                       |                        |                       |                   |
| K78                        | 11196.25<br>11196.25 | R                       | Linear and Circular   | 500KG7D                | 0.0                   | 0.0               |
| E50. Modulation entirety.) | and Services (If the | ne complete description | on does not appear in | this box, please go to | o the end of the form | to view it in its |
|                            |                      |                         |                       |                        |                       |                   |

| K78                        | 11196.25<br>11196.25 | R                     | Linear and Circular   | 500KG7D             | 0.0                    | 0.0               |
|----------------------------|----------------------|-----------------------|-----------------------|---------------------|------------------------|-------------------|
| E50. Modulation entirety.) | and Services (If the | ne complete descripti | on does not appear in | this box, please go | to the end of the form | to view it in its |
| Telemetry                  |                      |                       |                       |                     |                        |                   |
| K78                        | 11196.75<br>11196.75 | R                     | Linear and Circular   | 500KG7D             | 0.0                    | 0.0               |
| Telemetry                  |                      |                       |                       |                     |                        |                   |
| K78                        | 11196.75<br>11196.75 | R                     | Linear and Circular   | 500KG7D             | 0.0                    | 0.0               |
| E50. Modulation entirety.) | and Services (If the | ne complete descripti | on does not appear in | this box, please go | to the end of the form | to view it in its |
| Telemetry                  |                      |                       |                       |                     |                        |                   |

| K78                      | 11199.25<br>11199.25 | R                  | Linear and Circular           | 500KG7D          | 0.0                | 0.0                        |
|--------------------------|----------------------|--------------------|-------------------------------|------------------|--------------------|----------------------------|
| E50. Modulati entirety.) | ion and Services (1  | If the complete de | escription does not appear in | this box, please | go to the end of t | the form to view it in its |
| Telemetr                 | У                    |                    |                               |                  |                    |                            |
| K78                      | 11199.25<br>11199.25 | R                  | Linear and Circular           | 500KG7D          | 0.0                | 0.0                        |
| Telemetr                 | У                    |                    |                               |                  |                    |                            |
| K78                      | 11199.75<br>11199.75 | R                  | Linear and Circular           | 500KG7D          | 0.0                | 0.0                        |
| E50. Modulati entirety.) |                      | If the complete de | escription does not appear in | this box, please | go to the end of t | the form to view it in its |

| K78                                    | 11199.75<br>11199.75 | R                   | Linear and Circular        | 500KG7D          | 0.0                 | 0.0                       |
|--|----------------------|---------------------|----------------------------|------------------|---------------------|---------------------------|
| E50. Modulation entirety.)             | and Services (If     | the complete descri | ption does not appear in   | this box, please | go to the end of th | ne form to view it in its |
| Telemetry                              |                      |                     |                            |                  |                     |                           |
| K78                                    | 14000<br>14500       | Т                   | Horizontal and<br>Vertical | 34M0G7D          | 88.0                | 48.7                      |
| Digital Da                             | ta                   |                     |                            |                  |                     |                           |
| K78                                    | 14000<br>14500       | Т                   | Horizontal and<br>Vertical | 43K0G7D          | 59.0                | 48.7                      |
| E50. Modulation entirety.)  Digital Da |                      | the complete descri | ption does not appear in   | this box, please | go to the end of th | ne form to view it in its |

| K78                     | 14000<br>14500     | Т                 | Horizontal and<br>Vertical    | 72M0G7D          | 88.0               | 45.5                      |
|-------------------------|--------------------|-------------------|-------------------------------|------------------|--------------------|---------------------------|
| E50. Modulat entirety.) | ion and Services ( | If the complete d | escription does not appear in | this box, please | go to the end of t | he form to view it in its |
| Digital                 | Data               |                   |                               |                  |                    |                           |
| K78                     | 13753<br>13753     | Т                 | Left Hand Circular            | 850KF2D          | 85.0               | 61.7                      |
| Command                 | and Ranging        |                   |                               |                  |                    |                           |
| K78                     | 13995<br>13995     | Т                 | Horizontal and<br>Vertical    | 850KF2D          | 85.0               | 61.7                      |
| E50. Modulat entirety.) | ion and Services ( | If the complete d | escription does not appear in | this box, please | go to the end of t | he form to view it in its |
| Command                 | and Ranging        |                   |                               |                  |                    |                           |

| K78                        | 14001<br>14001     | Т                     | Horizontal and<br>Vertical | 750KF2D            | 85.0                 | 62.3                      |
|----------------------------|--------------------|-----------------------|----------------------------|--------------------|----------------------|---------------------------|
| E50. Modulation entirety.) | and Services (If t | the complete descript | ion does not appear in     | this box, please g | go to the end of th  | he form to view it in its |
| Command ar                 | d Ranging          |                       |                            |                    |                      |                           |
| K78                        | 14003<br>14003     | Т                     | Left Hand Circular         | 750KF2D            | 85.0                 | 62.3                      |
| Command ar                 | d Ranging          |                       |                            |                    |                      |                           |
| K78                        | 14006<br>14006     | Т                     | Linear and Circular        | 1M00G9D            | 85.0                 | 61.0                      |
| E50. Modulation entirety.) | and Services (If t | the complete descript | ion does not appear in     | this box, please g | go to the end of the | he form to view it in its |
| Command ar                 | d Ranging          |                       |                            |                    |                      |                           |

| K78                        | 14497<br>14497     | Т                        | Left Hand Circular    | 750KF2D                | 85.0                  | 62.3              |
|----------------------------|--------------------|--------------------------|-----------------------|------------------------|-----------------------|-------------------|
| E50. Modulation entirety.) | and Services (If t | he complete description  | on does not appear in | this box, please go to | o the end of the form | to view it in its |
| Command an                 | d Ranging          |                          |                       |                        |                       |                   |
| K78                        | 13750.5<br>13750.5 | Т                        | Linear and Circular   | 1M00G9D                | 85.0                  | 61.0              |
| Command an                 | d Ranging          |                          |                       |                        |                       |                   |
| K78                        | 13750.5<br>13750.5 | Т                        | Left Hand Circular    | 850KF2D                | 85.0                  | 61.7              |
| E50. Modulation entirety.) | and Services (If t | the complete description | on does not appear in | this box, please go to | o the end of the form | to view it in its |
| Command an                 | d Ranging          |                          |                       |                        |                       |                   |

| K78                        | 13994.5<br>13994.5   | Т                       | Horizontal            | 1M00G9D               | 85.0                  | 61.0              |
|----------------------------|----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-------------------|
| E50. Modulation entirety.) | and Services (If the | he complete description | on does not appear in | this box, please go t | o the end of the form | to view it in its |
| Command an                 | d Ranging            |                         |                       |                       |                       |                   |
| K78                        | 13995.5<br>13995.5   | Т                       | Linear and Circular   | 750KF2D               | 85.0                  | 62.3              |
| Command an                 | d Ranging            |                         |                       |                       |                       |                   |
| K78                        | 13997.5<br>13997.5   | Т                       | Linear and Circular   | 750KF2D               | 85.0                  | 62.3              |
| E50. Modulation entirety.) | and Services (If the | he complete description | on does not appear in | this box, please go t | o the end of the form | to view it in its |
| Command an                 | d Ranging            |                         |                       |                       |                       |                   |

| K78                        | 13998.5<br>13998.5   | Т                     | Linear and Circular    | 1M00G9D             | 85.0                   | 61.0              |
|----------------------------|----------------------|-----------------------|------------------------|---------------------|------------------------|-------------------|
| E50. Modulation entirety.) | and Services (If the | he complete descripti | on does not appear in  | this box, please go | to the end of the form | to view it in its |
| Command an                 | d Ranging            |                       |                        |                     |                        |                   |
| K78                        | 14000.5<br>14000.5   | Т                     | Left Hand Circular     | 850KF2D             | 85.0                   | 61.7              |
| Command an                 | d Ranging            |                       |                        |                     |                        |                   |
| K78                        | 14000.5<br>14000.5   | Т                     | Right Hand<br>Circular | 750KF2D             | 85.0                   | 62.3              |
| E50. Modulation entirety.) | and Services (If the | he complete descripti | on does not appear in  | this box, please go | to the end of the form | to view it in its |
| Command an                 | d Ranging            |                       |                        |                     |                        |                   |

| K78                        | 14003.5<br>14003.5 | Т                   | Linear and Circular      | 1M00G9D          | 85.0                | 61.0                      |
|----------------------------|--------------------|---------------------|--------------------------|------------------|---------------------|---------------------------|
| E50. Modulation entirety.) | and Services (If t | he complete descrip | ption does not appear in | this box, please | go to the end of th | ne form to view it in its |
| Command an                 | d Ranging          |                     |                          |                  |                     |                           |
| K78                        | 14494.5<br>14494.5 | Т                   | Vertical                 | 750KF2D          | 85.0                | 62.3                      |
| Command an                 | d Ranging          |                     |                          |                  |                     |                           |
| K78                        | 14498.5<br>14498.5 | Т                   | Linear and Circular      | 750KF2D          | 85.0                | 62.3                      |
| E50. Modulation entirety.) | and Services (If t | he complete descrip | ption does not appear in | this box, please | go to the end of th | ne form to view it in its |
| Command an                 | d Ranging          |                     |                          |                  |                     |                           |

| K78                                     | 14498.5<br>14498.5   | Т                       | Left Hand Circular    | 850KF2D                | 85.0                  | 61.7              |
|---|----------------------|-------------------------|-----------------------|------------------------|-----------------------|-------------------|
| E50. Modulation entirety.)              | and Services (If the | ne complete description | on does not appear in | this box, please go to | o the end of the form | to view it in its |
| Command an                              | d Ranging            |                         |                       |                        |                       |                   |
| K78                                     | 14499.5<br>14499.5   | Т                       | Linear and Circular   | 750KF2D                | 85.0                  | 62.3              |
| E50. Modulation entirety.)  Command and |                      | ne complete description | on does not appear in | this box, please go to | o the end of the form | to view it in its |

# FREQUENCY COORDINATION

|     |               | Frequency<br>Limits(MHz) | Range of<br>Satellite Arc<br>Eastern/West | Station<br>Azimuth<br>Angle | Antenna<br>Elevation<br>Angle<br>Eastern Limit | Station<br>Azimuth<br>Angle |       | E60.<br>Maximum<br>EIRP Density<br>toward the<br>Horizon<br>(dBW/4kHz) |
|-----|---------------|--------------------------|---|-----------------------------|--|-----------------------------|-------|--|
| K78 | Geostationary | 13753<br>13753           | 94.95/95.15                               | 205.82                      | 40.85  | 206.1                       | 40.77 | -12.23   |

| Geostationary | 13995<br>13995     | 49.9/50.1     | 140.33 | 35.9  | 140.57 | 36.1  | -10.85 |
|---------------|--------------------|---------------|--------|-------|--------|-------|--------|
| Geostationary | 14000<br>14500     | 18.0/140.0    | 110.38 | 14.41 | 251.45 | 12.54 | -13.97 |
| Geostationary | 14001<br>14001     | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -11.69 |
| Geostationary | 14003<br>14003     | 120.9/121.1   | 235.78 | 26.43 | 235.96 | 26.29 | -6.92  |
| Geostationary | 14006<br>14006     | 95.025/95.225 | 205.99 | 40.8  | 206.27 | 40.72 | -12.92 |
| Geostationary | 14497<br>14497     | 120.9/121.1   | 235.78 | 26.43 | 235.96 | 26.29 | -6.92  |
| Geostationary | 11195.5<br>11195.5 | 95.025/95.225 | 205.99 | 40.8  | 206.27 | 40.72 | -12.92 |
| Geostationary | 11198.0<br>11198.0 | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |
| Geostationary | 11198.5<br>11198.5 | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |
| Geostationary | 13750.5<br>13750.5 | 57.9/58.1     | 150.46 | 39.77 | 150.73 | 39.85 | -11.96 |
| Geostationary | 13750.5<br>13750.5 | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |
| Geostationary | 13994.5<br>13994.5 | 57.9/58.1     | 150.46 | 39.77 | 150.73 | 39.85 | -12.67 |
| Geostationary | 13995.5<br>13995.5 | 42.9/43.1     | 132.46 | 31.83 | 132.67 | 31.96 | -9.0   |
| Geostationary | 13997.5<br>13997.5 | 58.0/58.2     | 150.6  | 39.81 | 150.86 | 39.89 | -11.43 |

| Geostationar | y 13997.5<br>13997.5   | 76.1/76.3     | 177.4  | 44.14 | 177.7  | 44.15 | -12.55 |
|--------------|------------------------|---------------|--------|-------|--------|-------|--------|
| Geostationar | y 13998.5<br>13998.5   | 95.025/95.225 | 205.99 | 40.8  | 206.27 | 40.72 | -12.92 |
| Geostationar | y 14000.5<br>14000.5   | 43.0/43.2     | 132.57 | 31.89 | 132.78 | 32.02 | -9.02  |
| Geostationar | y 14003.5<br>14003.5   | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |
| Geostationar | y 14003.5<br>14003.5   | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |
| Geostationar | y 14494.5<br>14494.5   | 43.0/43.2     | 132.57 | 31.89 | 132.78 | 32.02 | -9.02  |
| Geostationar | y 14498.5<br>14498.5   | 49.9/50.1     | 140.33 | 35.9  | 140.57 | 36.1  | -10.85 |
| Geostationar | y 14499.5<br>14499.5   | 58.0/58.2     | 150.6  | 39.81 | 150.86 | 39.89 | -11.43 |
| Geostationar | y 11194.25<br>11194.25 | 95.025/95.225 | 205.99 | 40.8  | 206.27 | 40.72 | -12.92 |
| Geostationar | y 11196.25<br>11196.25 | 95.025/95.225 | 205.99 | 40.8  | 206.27 | 40.72 | -12.92 |
| Geostationar | y 11196.75<br>11196.75 | 95.025/95.225 | 205.99 | 40.8  | 206.27 | 40.72 | -12.92 |
| Geostationar | y 11199.25<br>11199.25 | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |
| Geostationar | y 11199.75<br>11199.75 | 94.95/95.15   | 205.82 | 40.85 | 206.1  | 40.77 | -12.94 |

REMOTE CONTROL POINT LOCATION

| E61. Call Sign   | E66. Phone Number |  |                          |               |
|--|-------------------|--|--------------------------|---------------|
| NOTE: Please enter the callsign of the control callsign for which this application is being filed. |                   |  |                          |               |
| E62. Street Address  |                   |  |                          |               |
| E63. City  | E68. County       |  | E67/68.<br>State/Country | E64. Zip Code |

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