

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
STA for Eutelsat 133 WA @ 132.85 WL (March 2019)

1. Applicant

Name:	Row 44 Inc.	Phone Number:	310-740-8600
DBA Name:		Fax Number:	
Street:	c/o Global Eagle Entertainment Inc.	E-Mail:	smcullivan@geemedia.com
City:	6100 Center Drive, Suite 1050 Los Angeles	State:	CA
Country:	USA	Zipcode:	90045
Attention:	Mr Simon McLellan		

File # SES-STA-20190312-00331
 Call Sign E080100 Grant Date 3/15/2019
 (or other identifier)
 Term Dates
 From 3/17/2019 To: 5/26/2019
 Approved: Paul E. Blab



Applicant: Row 44, Inc.
Call Sign: E080100
File No.: SES-STA-20190312-00331

Row 44, Inc., is granted STA to operate for 60 days the authorized one hundred TECOM 0.62m model KuStream and, or, QEST 0.63m model Q50000 earth station aboard aircraft (ESAA) terminals to with the EUTELSAT 133WA satellite (Call Sign S3031) at the 132.85 W.L. orbital location satellite in the 11.7-12.2 GHz (space-to-Earth), and 14.0 -14.5 GHz (Earth-to-space) frequency bands under the following conditions:

1. Operations under this authority are on a non-interference basis only and non-protected basis only and while operating under this temporary authority, Row 44 must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating radio-communications systems. Row 44 must cease operations immediately upon notification of such interference and must immediately inform the Commission, in writing, of such an event.
2. Operation pursuant to this authorization must be in compliance with the terms of the licensee's coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of aircraft earth stations in the Ku-Band.
3. Operations of terminals shall not be within line-of-sight of TDRSS stations.
4. Operations will be over CONUS and its territories, International waters.
5. Operations shall not exceed the current parameters in the underlying application FCC IBFS File number SES-MFS-20190312-00328 and shall not exceed the power as coordinated by the EUTELSAT 133WA satellite operator with all satellites within six degrees of orbital separation from Eutelsat 133 WA as provided in accordance with 47 C.F.R. §25.227(b)(2).
6. Any action taken, or expense incurred as a result of operations pursuant to this STA is solely at Row 44 Inc.'s risk.
7. Grant of this STA is without prejudice to any determination that the Commission may make regarding pending application FCC IBFS file number SES-MFS-20190312-00328.
8. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.P.R. § 0.261, and is effective immediately.



File # SES-STA-20190312-00331
Call Sign E080100 Grant Date 3/15/2019
(or other identifier)
Term Dates
From 3/17/2019 To: 5/16/2019
Approved: [Signature]

2. Contact	
Name: David S. Keir	Phone Number: 202-429-8970
Company: Lerman Senter PLLC	Fax Number: 202-293-7783
Street: 2001 L Street, NW Suite 400	E-Mail: dkeir@lermansenter.com
City: Washington	State: DC
Country: USA	Zipcode: 20036 -
Attention:	Relationship: Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number or Submission ID IB2019000717	
4a. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).	
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee	
<input type="radio"/> Other (please explain):	
4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station	
5. Type Request	
<input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other	
6. Requested Use Prior Date 03/17/2019	
7. City	
8. Latitude (dd mm ss.s h) 0 0 0.0	

9. State	10. Longitude (dd mm ss.s h) 0 0 0.0
11. Please supply any need attachments. Attachment 1: Narrative & Exhibits Attachment 2: Attachment 3:	
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) <div style="border: 1px solid black; padding: 5px;">Request for special temporary authority for an initial period of sixty (60) days commencing March 17, 2019 to operate up to 100 SAA antennas and/or GSAA antennas using space segment capacity on the Eutelsat 133 WA satellite at 132.85 degrees W.L. prior to action on Row 44's application to modify its license to specify use of this satellite</div>	
13. 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 <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Simon McLellan	15. Title of Person Signing Chief Engineer
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

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

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

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

12. Description

Request for special temporary authority for an initial period of sixty (60) days commencing March 17, 2019 to operate up to 100 SAA antennas and/or GSAA antennas using space segment capacity on the Eutelsat 133 WA satellite at 132.85 degrees W.L. prior to action on Row 44's application to modify its license to specify use of this satellite under its existing ESAA license (Call Sign E080100). See Attached Explanatory Statement.

EXPLANATORY STATEMENT

Row 44, Inc., pursuant to Section 25.120(b) of the FCC's Rules, hereby requests Special Temporary Authority ("STA") for a period of sixty (60) days to operate its licensed Ku-band network of Earth Stations Aboard Aircraft ("ESAA") (Call Sign E080100) using space segment capacity on the Eutelsat, S.A. ("Eutelsat") 133 WA satellite ("E133 WA") at 132.85° W.L. Row 44 has filed an application to modify its license on a permanent basis to specify long-term operation on E133 WA at 132.85° W.L. consistent with the terms of Eutelsat's U.S. Permitted List operations at this orbital location under Call Sign S3031. *See* FCC File Nos. SAT-PPL-20180302-00018 and SAT-MPL-20180908-00068 (granted Aug. 16, 2018 and Feb.14, 2019, respectively).

Row 44's operations employing capacity on the E133 WA satellite will not cause harmful interference to any adjacent satellites operating in accordance with FCC's two-degree spacing policy. Row 44 included as an annex to its modification application, a copy of which is attached hereto, a coordination certification letter from Eutelsat, pursuant to Sections 25.227(b)(2) and 25.220(d) of the Commission's Rules, covering the proposed operation. The proposed operations will also comply with Row 44's existing, long-term coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration.

Under Section 25.120(b)(1) of the FCC's Rules, the International Bureau may grant an STA when the public interest supports the relief requested, and/or delay in the institution of temporary operations would be contrary to the public interest. *See* 47 C.F.R. § 25.120(b)(1). Such authority may be granted for a period not to exceed 60 days where the applicant has filed a request for permanent authority for the parameters and facilities requested. *See* 47 C.F.R. § 25.120(b)(3). This is the case here, where Row 44 has filed an application to modify its license permanently to permit access to E133 WA at the 132.85° W.L. orbital location for the duration of Eutelsat's operation of the satellite at that location.

Grant of the authority requested here will continue to promote the public interest by permitting Row 44 to provide enhanced service to its customers using capacity on the E133 WA satellite. Use of E133 WA will help maintain effective coverage of all U.S. domestic routes currently served by Row 44, particularly Southwest Airlines flights from the mainland to Hawaii. Grant of the requested STA is consistent with Commission policy and will not adversely affect other authorized operations. Row 44 acknowledges that any action taken pursuant to a grant of the requested STA will be at its own risk, and respectfully requests that the FCC grant it continued authority as of March 17, 2019, for a period of sixty (60) days, to use the E133 WA satellite as a point of communication in the Ku-band in the United States using the two types of TECOM antennas now operating under its FCC ESAA network license.

EXHIBIT

Complete Copy of Underlying Application

FCC Submission ID: IB2019000717

Approved by OMB
3060-0678

Date & Time Filed: Mar 12 2019 7:50:25:210PM
File Number: SES-MFS-20190312-00328

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:
Modification - Add Eutelsat 133 WA @ 132.85 W.L. (March 2019)

1-8. Legal Name of Applicant			
Name:	Row 44 Inc.	Phone Number:	310-740-8600
DBA Name:		Fax Number:	
Street:	c/o Global Eagle Entertainment Inc. 6100 Center Drive, Suite 1050	E-Mail:	smclellan@geemedia.com
City:	Los Angeles	State:	CA
Country:	USA	Zipcode:	90045 -
Attention:	Mr Simon McLellan		
9-16. Name of Contact Representative			
Name:	David S. Keir	Phone Number:	202-416-6742
Company:	Lerman Senter PLLC	Fax Number:	202-293-7783
Street:	2001 L Street, NW Suite 400	E-Mail:	dkeir@lermansenter.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20036-
Attention:	David Keir	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.	
<input checked="" type="radio"/> a1. Earth Station <input type="radio"/> a2. Space Station	(N/A) b1. Application for License of New Station (N/A) b2. Application for Registration of New Domestic Receive-Only Station <input type="radio"/> b3. Amendment to a Pending Application <input checked="" type="radio"/> b4. Modification of License or Registration b5. Assignment of License or Registration b6. Transfer of Control of License or Registration <input type="radio"/> b7. Notification of Minor Modification (N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States (N/A) b10. Other (Please specify) (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.
17c. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee <input type="radio"/> Other (please explain):	
17d. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station	
18. If this filing is in reference to an existing station, enter: (a) Call sign of station: E080100	19. If this filing is an amendment to a pending application enter both fields, if this filing is a modification please enter only the file number: (a) Date pending application was filed: (b) File number: SESMFS2018051500624

TYPE OF SERVICE

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

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

ESAA

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

- Common Carrier Non-Common Carrier

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

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

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

- Connected to a Public Switched Network Not connected to a Public Switched Network N/A

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

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

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

TYPE OF STATION

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

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

26. TYPE OF EARTH STATION FACILITY:

- Transmit/Receive Transmit-Only Receive-Only N/A

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

PURPOSE OF MODIFICATION

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

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

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, Yes No
 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, aeronautical en route or

aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="radio"/> Yes <input checked="" type="radio"/> No
30. Is the applicant an alien or the representative of an alien?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> 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?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> 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.	<input checked="" type="radio"/> Yes <input type="radio"/> 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 explanation of circumstances.	<input type="radio"/> Yes <input checked="" type="radio"/> No
37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances.	<input type="radio"/> Yes <input checked="" type="radio"/> 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.	<input type="radio"/> Yes <input checked="" type="radio"/> 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 exhibit, an explanation of the circumstances.	<input type="radio"/> Yes <input checked="" type="radio"/> 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. <i>See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.</i>	
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.	
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? No Change	
43. Description. (Summarize the nature of the application and the services to be provided). Application for modification of ESAA license (Call Sign E080100) to add authority to operate using Eutelsat 133 WA at the 132.85 W.L. orbital location as a new point of communication. See attached narrative.Narrative & Exhibits	
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.	<input checked="" type="radio"/> 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.	<input type="radio"/> 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.	<input type="radio"/> C

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CERTIFICATION

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

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

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

45. Name of Person Signing Simon McLellan	46. Title of Person Signing Chief Engineer
--	---

**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).**

**SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)**

FOR OFFICIAL USE ONLY

Location of Earth Station Site			
E1. Site Identifier:	Remote Terminal 2	E5. Call Sign:	E080100
E2. Contact Name	Simon McLellan	E6. Phone Number:	(949) 636-0732
E3. Street:		E7. City:	
E4. State		E8. County:	
E10. Area of Operation:		E9. Zip Code	Mobile
E11. Latitude:	0 ° 0 ' 0.0 " N		
E12. Longitude:	0 ° 0 ' 0.0 " W		
E13. Lat/Lon Coordinates are:	<input type="radio"/> NAD-27	<input checked="" type="radio"/> NAD-83	<input type="radio"/> N/A
E14. Site Elevation (AMSL):	0.0 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.	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
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E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
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E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input checked="" type="radio"/> Yes <input type="radio"/> No
--	---

E18. Is frequency coordination required? If YES, attach a frequency coordination report as	<input type="radio"/> Yes <input checked="" type="radio"/> No
--	---

E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes <input checked="" type="radio"/> No
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E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes <input checked="" type="radio"/> No
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POINTS OF COMMUNICATION

Satellite Name: OTHER OTHER If you selected OTHER, please enter the following:
--

E21. Common Name: Eutelsat 133 WA	E22. ITU Name: F-SAT-N4-133W
E23. Orbit Location: 132.85 WL	E24. Country: France

Satellite Name: OTHER | OTHER | If you selected OTHER, please enter the following:

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: Remote Terminal 2	
E26. Common Name:	E27. Country: USA

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmint and/or Recieve(____ dBi at ____ GHz)	
Remote Terminal 2	B	1000	TECOM	Ku-Stream	0.62	31.1 dBi at 11.2	
Remote Terminal 2	B	1000	TECOM	Ku-Stream	0.62	28.8 dBi at 14.25	

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level(meters)	E36. Above Sea Level(meters)	E37. Building Height Above Ground Level(meters)	E38. Total Input Power at antenna flange(Watts)	E39. Maximum Antenna Height Above Rooftop(meters)	E40. Total EIRP for al carriers(dBW)
B	0.0/0.0	0.0	0.0	0.0	31.6	0.0	43.8

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)
B	11200 11450	R	Horizontal and Vertical	36M0G7D	0.0	0.0
E50. Modulation and Services QPSK or octal PSK						
B	11450 11700	R	Horizontal and Vertical	36M0G7D	0.0	0.0
E50. Modulation and Services QPSK or octal PSK						
B	12500 12750	R	Horizontal and Vertical	36M0G7D	0.0	0.0
E50. Modulation and Services QPSK or octal PSK						
B	14050 14470	T	Horizontal and Vertical	1M02G7D	41.3	17.2
E50. Modulation and Services QPSK or octal PSK						
B	14050 14470	T	Horizontal and Vertical	2M04G7D	43.8	16.7
E50. Modulation and Services QPSK or octal PSK						
B	14050 14470	T	Horizontal and Vertical	4M09G7D	43.8	13.7
E50. Modulation and Services QPSK or octal PSK						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc Eastern/Western Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
B	Geostationary	11200 11450	131.0/133.0	121.5	52.5	211.8	45.5	0.0
	Geostationary	11450 11700	131.0/133.0	121.5	52.5	211.8	45.5	0.0
	Geostationary	12500 12750	131.0/133.0	121.5	52.5	211.8	45.5	0.0
	Geostationary	14050 14470	131.0/133.0	121.5	52.5	211.8	45.5	0.0

REMOTE CONTROL POINT LOCATION

E61. Call Sign	E66. Phone Number
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	
E62. Street Address	

E63. City	E68. County	E67/68. State/Country	E64. Zip Code
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**SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)**

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1. Site Identifier:	Remote Terminal 3	E5. Call Sign:	E080100
E2. Contact Name	Simon McLellan	E6. Phone Number:	(949) 636-0732
E3. Street:		E7. City:	
E4. State		E8. County:	
E10. Area of Operation:		E9. Zip Code	Mobile
E11. Latitude:	0 ° 0 ' 0.0 " N		
E12. Longitude:	0 ° 0 ' 0.0 " W		
E13. Lat/Lon Coordinates are:	<input type="radio"/> NAD-27	<input checked="" type="radio"/> NAD-83	<input type="radio"/> N/A
E14. Site Elevation (AMSL):	0.0 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.	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input checked="" type="radio"/> Yes <input type="radio"/> No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	<input type="radio"/> Yes <input checked="" type="radio"/> No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes <input checked="" type="radio"/> No
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes <input checked="" type="radio"/> No

POINTS OF COMMUNICATION

Satellite Name: OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: Eutelsat 133 WA	E22. ITU Name: F-SAT-N4-133W
E23. Orbit Location: 132.85 WL	E24. Country: France
Satellite Name: OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

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

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmint and/or Recieve(____dBi at ____GHz)
Remote Terminal 3	C	1000	QEST	Q050000	0.63	32.1 dBi at 11.2
Remote Terminal 3	C	1000	QEST	Q050000	0.63	33.6 dBi at 14.25

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level(meters)	E36. Above Sea Level(meters)	E37. Building Height Above Ground Level(meters)	E38. Total Input Power at antenna flange(Watts)	E39. Maximum Antenna Height Above Rooftop(meters)	E40. Total EIRP for all carriers(dBW)
C	0.0/0.0	0.0	0.0	0.0	25.0	0.0	43.8

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum EIRP Density per Carrier(dBW/4kHz)
C	11200 11450	R	Horizontal and Vertical	36M0G7D	0.0	0.0
E50. Modulation and Services QPSK or octal PSK						
C	11450 11700	R	Horizontal and Vertical	36M0G7D	0.0	0.0
E50. Modulation and Services QPSK or octal PSK						
C	12500 12750	R	Horizontal and Vertical	36M0G7D	0.0	0.0
E50. Modulation and Services QPSK or octal PSK						
C	14050 14470	T	Horizontal and Vertical	1M02G7D	41.3	17.2
E50. Modulation and Services QPSK or octal PSK						
C	14050 14470	T	Horizontal and Vertical	2M04G7D	43.8	16.7
E50. Modulation and Services QPSK or octal PSK						
C	14050 14470	T	Horizontal and Vertical	4M09G7D	43.8	13.7
E50. Modulation and Services QPSK or octal PSK						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc Eastern/Western Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
C	Geostationary	11200 11450	131.0/133.0	121.5	52.5	211.8	45.5	0.0
	Geostationary	11450 11700	131.0/133.0	121.5	52.5	211.8	45.5	0.0
	Geostationary	12500 12750	131.0/133.0	121.5	52.5	211.8	45.5	0.0
	Geostationary	14050 14470	131.0/133.0	121.5	52.5	211.8	45.5	0.0

REMOTE CONTROL POINT LOCATION

E61. Call Sign			E66. Phone Number				
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.							
E62. Street Address							
E63. City			E68. County			E67/68. State/Country	E64. Zip Code

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

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

Remember - You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

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

ATTACHMENT

Description of Application for Modification of License

1.0 OVERVIEW

Row 44, Inc. (“Row 44”) seeks modification of its Ku-band Earth Stations Aboard Aircraft (“ESAA”) license (Call Sign E080100) for the purpose of adding an additional satellite point of communication – the Eutelsat 133 WA satellite (“E133 WA”) located at 132.85° West Longitude. Row 44 seeks this modification subject to all terms and conditions set forth in its current license¹ and the operations proposed are otherwise consistent with the technical specifications set forth in its current license. Operations using the additional satellites would use both the TECOM Ku-Stream (SAA/Remote 2) and QEST Q050000 (GSAA/Remote 3) antennas. The Form 312, Schedule B associated with this filing reflects only the additional points of communication and additional receive frequencies for E133 WA and does not recapitulate all of the technical data contained in its current license.

2.0 ADDITIONAL POINT OF COMMUNICATION REQUESTED

Row 44 requests the addition of the E133 WA satellite that recently initiated modified service at the 132.85° W.L. orbital location through the repointing of its Ku-band Fixed Beam to provide coverage of Hawaii as well as the Western Continental United States. The E133 WA satellite, which operates under an International Telecommunication Union registration of the administration of France, is permitted to serve U.S. locations under Call Sign S3031 (FCC File Nos. SAT-PPL-20180302-00018 and SAT-MPL-20180908-00068).

Complete technical information regarding the E133 WA satellite was submitted to the FCC in the proceeding authorizing the satellite’s inclusion on the Ku-band Permitted List, which is cited in the foregoing paragraph. Row 44 therefore simply requests that its existing ESAA license be updated to reflect use of E133 WA on a primary basis for ESAA operations in the 14-14.5 GHz and 11.7-12.2 GHz bands [and it seeks authority as further detailed below to communicate with on an unprotected basis in the 10.95-11.7 GHz downlink band, consistent with Commission precedent and the terms of the authorization].

The addition to the Row 44 license of authority to communicate using E133 WA will provide additional near-term space segment capacity for Row 44’s ESAA network, thereby allowing it to provide additional throughput and coverage for the provision of its in-flight Wi-Fi connectivity services to airline passengers on flights operating in the Western United States and between CONUS and Hawaii. Row 44 is concurrently seeking special temporary authority (“STA”) to permit it to operate using these same parameters on an expedited basis to begin service on or about March 17, 2019,

¹ See Row 44 Inc., Call Sign E080100, FCC File No. SES-MFS-20180515-00624 (Sat. Div., granted 7/17/2018).

3.0 COORDINATION CERTIFICATION **[47 C.F.R. §§ 25.227(b)(2) & 25.220(d)]**

Row 44's intended operations are within the scope that Eutelsat has coordinated with the adjacent satellite operators within six degrees adjacent to E133 WA in either direction along the geostationary arc and should not cause harmful interference to any of these satellites operating in accordance with FCC's two-degree spacing policy. Exhibit A attached hereto provides copies of the March 12, 2019 coordination certification letter covering Row 44's proposed operations using E133 WA.

In the event that a Ku-band NGSO FSS system is launched in the future, Row 44 would enter into coordination with the NGSO FSS system operator to establish operating parameters that permit successful co-frequency sharing, and would modify its operations as necessary to effect any coordination agreement reached. Row 44 acknowledges that the Commission may condition the grant of any modified license issued to it upon a requirement that it complete such coordination at the appropriate time.

4.0 TECHNICAL DATA, LINK BUDGETS AND PREDICTED COVERAGE AREAS [47 C.F.R. § 25.227(b)(4)]

Exhibit B attached hereto includes representative link budgets and a depiction of the geographic coverage contours for operations using E133 WA at 132.85° W.L.

5.0 REQUESTS FOR WAIVER OF FCC RULES

Row 44 seeks waiver of the Commission's Table of Allocations, including footnote NG52, to permit operations with the E133 WA satellite in the extended Ku-band segments at 11.2-11.45 GHz and 12.5-12.75 GHz on an unprotected, non-interference basis, including limited operation of terminals in U.S. airspace in the 11.2-11.45 GHz band. Grant of the requested waivers is fully consistent with applicable Commission precedent, under which the Commission has observed that "terminals on U.S.-registered aircraft may need to access foreign satellites while traveling outside of the United States (e.g., over international waters), and therefore may need to downlink in the extended Ku-band in certain circumstances."² The Commission has previously authorized ESAA operators to use other extended Ku-band frequencies for downlinks through the modification of the Table of Allocations to permit ESAA operations not only in the conventional Ku-band, but in the discrete 10.95-11.2 GHz and 11.45-11.7 GHz segments of the extended Ku-band as well.³ The Commission then

² See *Service Rules and Procedures to Govern the Use of Aeronautical Mobile Satellite Service Earth Stations in Frequency Bands Allocated to the Fixed Satellite Service*, IB Docket No. 05-20, Notice of Proposed Rulemaking, 20 FCC Rcd 2906, 2917 (¶ 18) (2005).

³ See 47 C.F.R. § 2.106, note NG52, adopted in *Revisions to Parts 2 and 25 of the Commission's Rules to Govern the Use of Earth Stations Aboard Aircraft Communicating with Fixed-Satellite Service Geostationary-Orbit Space Stations Operating in the 10.95-11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz and 14.0-14.5 GHz Frequency Bands*, FCC 12-161, Report & Order, 27 FCC Rcd 16510, 16520-21 (¶ 21) (2012) ("ESAA R&O").

acknowledged that ESAA operators may also require access to other extended Ku-band downlink spectrum, and that access to such spectrum could be granted “on a case-by-case basis under Part 25 licensing rules.”⁴ In the *ESAA R&O*, the Commission made clear that ESAA operations in the 10.95-11.2 GHz and 11.45-11.7 GHz band were permitted on an unprotected basis and no waiver of footnote NG52 is required for such operations, but this existing exception does not extend to the 11.2-11.45 GHz and 12.5-12.75 GHz portions of the extended Ku-band. The Commission has nonetheless authorized ESAA operations in these bands on multiple occasions.⁵

Consistent with these past rulings, Row 44 requests a waiver of the Table of Allocations and footnote NG52 to the extent necessary to permit its terminals to receive transmissions from E133 WA in the 11.2-11.45 GHz and 12.5-12.75 GHz bands, including use of the 11.2-11.45 GHz band to provide limited U.S. domestic in-flight services. Although authority for limited domestic operations is requested, as the capacity to be utilized on E133 WA is primarily for flights to Hawaii and other Pacific Ocean destinations, the bulk of the transmissions to aircraft in this band will be over international waters. The Commission has already specifically granted Eutelsat U.S. market access for the E133 WA satellite.⁶ Accordingly, authorizing Row 44 to receive signals from this satellite in the 11.2-11.45 GHz and 12.5-12.75 GHz bands (within ITU Region 2, outside the U.S.) on a limited basis consistent with this grant will not alter any existing space segment operations, and therefore will not create any new risk of harmful interference to other authorized users of the spectrum. Furthermore, Row 44 will not claim interference protection from such authorized users. Under these circumstances, waiving Section 2.106 and footnote NG52 to the extent requested is appropriate.

6.0 REVISED SPACECRAFT, FREQUENCY & BEAM COVERAGE

[See Next Page]

⁴ See *ESAA R&O*, 27 FCC Rcd at 16520 n.43.

⁵ See, e.g., Modification Application of AC BidCo LLC, FCC File No. SES-MFS-20171220-01351 (Call Sign E120106) (granted March 9, 2018) (11.2-11.45 GHz band; see conditions 90458 and 900389); Modification Application of Panasonic Avionics Corporation, File No. SES-MFS-20180122-00052 (Call Sign E100089) (granted Aug. 1, 2018) (both the 11.2-11.45 GHz and 12.5-12.75 GHz bands; see conditions 90407 and 90458); see also Current Row 44, Inc. Authorization, FCC File No. SES-MFS-20180515-00624 (granted July 17, 2018) (Conditions 90426 and 90458).

⁶ Eutelsat 133 WA Market Access Grant, SAT-MPL-20180908-00068 (Call sign S3031) (granted Feb. 14, 2019).

Table 1: Spacecraft, Frequency & Beam Coverage Table
 (All Provide Some Coverage to U.S. Locations; * =Non-U.S., Permitted List Satellite)

Satellite	Location	Beam Coverage Area	Tx (GHz)	Rx (GHz)	Satellite Operator
AMC-1	130.9 W	North America, Central America and Pacific	14.05-14.47	11.7-12.2	SES
AMC-2	84.85 W	North America, Caribbean and North Atlantic	14.05-14.47	11.7-12.2	
AMC-3	72.0 W	North America, Central America, Atlantic and Caribbean	14.05-14.47	11.7-12.2	
AMC-9	83.0 W	North America, Caribbean, Central America and North Atlantic	14.05-14.47	11.7-12.2	
SES-1	101.0 W	North America, Central America, Pacific and Caribbean	14.05-14.47	11.7-12.2	
SES-10	67.0W	North America, Central America, South Atlantic and Caribbean	14.05-14.47	11.7-12.2	
SES-15	129.0 W	North America, Central America, Caribbean and Pacific	14.05-14.47	10.7-10.95, 10.95-11.2, 11.2-11.45, 11.45-11.7, 11.7-12.2	
IS-29E	50.0 W	North America, Central America, South America, North Atlantic and Caribbean	14.05-14.47	10.95-11.2, 11.2-11.45, 11.45-11.7, 11.7-12.2, 12.2-12.5	Intelsat
Eutelsat 115 WB*	114.9 W	North America, North Atlantic and Pacific Ocean	14.05-14.47	11.7-12.2	Eutelsat
Eutelsat 133 WA*	132.85 W	North America and Pacific	14.05-14.47	11.2-11.45, 11.45-11.7, 12.5-12.75	
Telstar 12	109.2 W	North America, Gulf of Mexico and Caribbean	14.05-14.47	11.7-12.2	Telesat (Skynet)

7.0 TELEPORT UPLINK LOCATIONS

Table 2
Teleport Locations for Provision of Service within the United States

Satellite	Orbital Location	Teleport Location(s)	Site Operator	Call Sign(s)
AMC-1	130.9 W	Holmdel, NJ	GEE/MTN	E160163
AMC-2	80.85W	N. Las Vegas, NV	Hughes	E940460
AMC-3	72.0 W	Holmdel, NJ	GEE/MTN	E160163
AMC-9	83.0W	North Las Vegas, NV	Hughes	E940460
SES-1	101.0W	North Las Vegas, NV	Hughes	E940460
SES-10	67.0W	Steele Valley, CA	Level 3/ Vyvx	E950202
SES-15	129.0 W	South Mountain, CA	SES	E170139
IS-29E	50.0 W	Holmdel, NJ	GEE/MTN	E160163
Eutelsat 115 WB*	114.9W	Southfield (Detroit), MI	Hughes	E990170
Eutelsat 133 WA*	132.85 W	Kapolei, HI	Hawaii Pacific Teleport	E010236
Telstar 12	109.2W	South Jordan, UT	LBiSat LLC	E030342

* = Non-U.S.-licensed satellite included on Ku-band Permitted List

7.0 LICENSEE CERTIFICATION

I, Simon McLellan, Chief Engineer of Row 44, Inc. ("Row 44") and Global Eagle Entertainment, Inc. ("Global Eagle"), hereby certify that Row 44/Global Eagle:

- (1) will continue to comply with the requirements of paragraphs (a)(6), (a)(9), (a)(10), and (a)(11) of Section 25.227 of the Commission's Rules and the conditions of its existing license; and
- (2) has confirmed, as shown by the Eutelsat coordination letter submitted with this application, that the ESAA operations proposed herein are within coordinated parameters for adjacent satellites up to 6 degrees away on the geostationary arc.



Simon McLellan
Chief Engineer
Row 44, Inc., a subsidiary of
Global Eagle Entertainment, Inc.

March 12, 2019

EXHIBIT A

Eutelsat Coordination Certification Letter
for E133 WA at 132.85° W.L., dated March 12, 2019

March 12, 2019

Federal Communications Commission
International Bureau
445 12th Street, S.W.
Washington, D.C. 20554

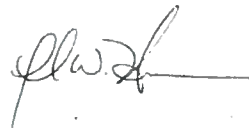
Re: Engineering Certification for Eutelsat 133 WA at 132.85° West Longitude

To Whom It May Concern:

Satélites Mexicanos S.A. de C.V. dba Eutelsat Americas confirms that Global Eagle Entertainment, Inc. ("GEE") is seeking to modify its existing Federal Communications Commission ("FCC") blanket authorization (Call Sign E080100) for operation of Ku-band Earth Stations Aboard Aircraft ("ESAA") as an application of the fixed-satellite service ("FSS") and consistent with ITU RR 5.504A with the above-referenced Eutelsat satellite Eutelsat 133WA:

- a) The proposed operation of the ESAA transmit/receive terminals at the power density levels defined between GEE and Eutelsat is consistent with existing satellite coordination agreements with operators of all satellites within six degrees of orbital separation from Eutelsat 133 WA.
- b) If the FCC authorizes the operation proposed by GEE, Eutelsat will include the power density levels as prescribed and within the satellite coordination agreements, in all future satellite network coordination with adjacent satellite operators for Eutelsat 133 WA.

Sincerely,



Erik W. Hansen
VP, North America
Eutelsat Americas

Accepted by GEE:



Simon McLellan
Chief Engineer
Global Eagle Entertainment, Inc.

Date
28 February 2019

	Forward 45cm	Return 45cm 1M	Return 45cm 1M
SPACE SEGMENT			
Satellite	E133WA	E133WA	E133WA
Orbital Position	-132.85	-132.85	-132.85
Transponder	F2	F2	F2
Bandwidth (MHz)	72	72	72
Uplink frequency (MHz)	14041.6700	14041.6700	14041.6700
Downlink frequency (MHz)	12541.6700	12541.6700	12541.6700
Uplink Coverage	Steerable 2 Receive	Steerable 2 Receive	Steerable 2 Receive
Downlink Coverage	Steerable 2 Transmit	Steerable 2 Transmit	Steerable 2 Transmit
Uplink Polarization	X	X	X
Downlink Polarization	Y	Y	Y
IPFD setting (dBW/m ²)	-85	-85	-85
I/O Multicarrier (dB)	8.4	8.4	8.4
OBO Multicarrier (dB)	3.7	3.7	3.7
CARRIER PARAMETERS			
Service category	DATA	DATA	DATA
Topology	OUTBOUND	INBOUND	INBOUND
Modem Manufacturer	Other	HNS	HNS
Modem reference		HN/HX	HN/HX
Technology	DVB-S2	OTHER	OTHER
Pilots	OFF	N/A	N/A
Frame	Normal	N/A	N/A
Modulation	4 PSK	4 PSK	4 PSK
FEC	1/2	1/2	1/2
Spreading Factor	1	1	1
Roll Off (%)	20	25	25
Spectral efficiency (bps)	0.99	1	1
Reed Solomon (n/k)	1	204/188	204/188
Symbol rate (Mbaud)	13	1.064	1.064
Useful Bit rate (Mbps)	12.855	1.064	1.064
Overall Bit rate (Mbps)	12.855	1.064	1.064
E _p /N ₀ (dB)	1.7	4	4
E _s /N ₀ (dB)	1.65	4	4
BER		0.	0.
CARRIER RESOURCES			
Transponder mode	Linear	Linear	Linear
I/O carrier (dB)	14.05	32.55	32.55
OBO carrier (dB)	9.35	27.85	27.85
Bandwidth consumption (MHz)	15.6	1.33	1.33
Power consumption (MHz)	19.6	0.277	0.277
IPFD carrier (dBW/m ²)	-103.05	-120.55	-120.55
GROUND SEGMENT - UPLINK			
Earth Station Code			
Country	United States of America - US		
Location	Kapolei	REMOTE	REMOTE
Longitude (°)	-158.09	-158.09	-158.09
Latitude (°)	21.34	21.34	21.34
Distance (km)	36955.62	36955.62	36955.62
satellite G/T towards transmit station (dB/K)	4	3	3
Elevation angle (°)	52.08	52.08	52.08
Azimuth angle (°)	127.66	127.66	127.66
Antenna size (m)	8	0.45	0.45
Atmospheric losses (dB)	0.2	0.2	0.2
Uplink EIRP (dBW)	59.49	42.	42.
Post PA losses (dB)	4	0.5	0.5
Operating HPA Power (clear sky) (W)	1.25	6.24	6.24
HPA Rating (W)	24.86	6.24	6.24
GROUND SEGMENT - DOWNLINK			
Earth Station			
Country		United States of America - US	United States of America - US
Location	REMOTE	Kapolei	Kapolei
Longitude (°)	-158.09	-158.09	-158.09
Latitude (°)	21.34	21.34	21.34
Distance (km)	36955.62	36955.62	36955.62
Antenna G/T towards satellite (dB/K)	11.88	36.48	36.48
Elevation angle (°)	52.08	52.08	52.08
Azimuth angle (°)	127.66	127.66	127.66
Antenna size (m)	0.45	8	8
Atmospheric Losses (dB)	0.3	0.3	0.3
Satellite EIRP towards receive station (dBW)	49.5	43	43
System temperature (K)	117	161.43	161.43

RESULTS

Uplink Path Length (km)	36955.62	36955.62	36955.62
Thermal Uplink C/N (dB)	14.01	6.38	6.38
Aggregated C/I Uplink (dB)	25	16.	16.
Uplink Propagation Losses (dB)	206.74	206.74	206.74
Downlink Path Length (km)	36955.62	36955.62	36955.62
Thermal Downlink C/N (dB)	3.43	13.9	13.9
Aggregated C/I Downlink (dB)	18.51	18.65	18.65
Downlink Propagation Losses (dB)	205.76	205.76	205.76
C/N+I Overall (dB)	2.91	5.09	5.09
E _v /N ₀ Overall (dB)	2.96	5.09	5.09
Clear Sky Link Margin (dB)	1.26	1.09	1.09

RAIN FADE ANALYSIS

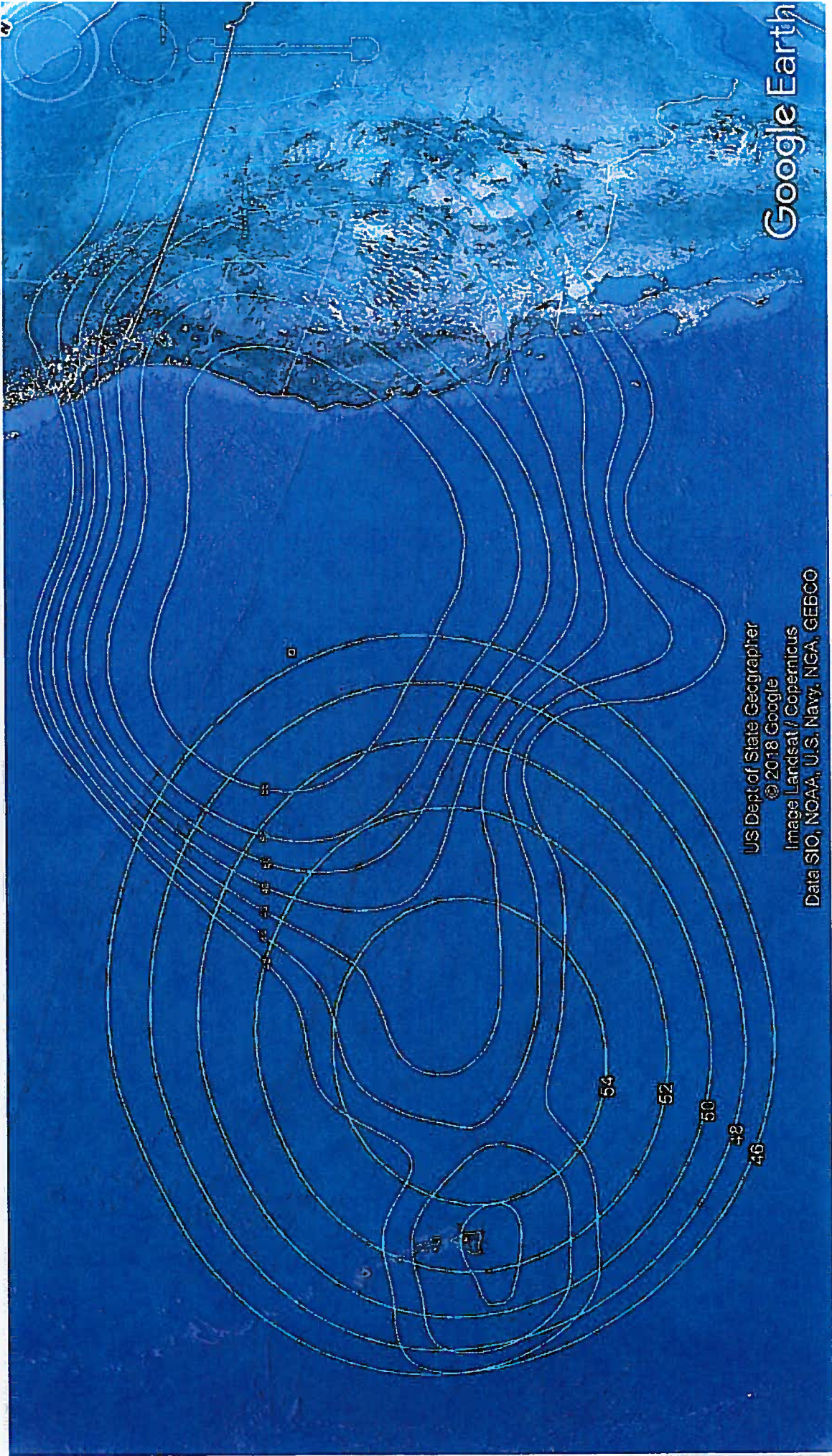
UPPC maximum rain fade compensation (dB)	10	0	0
Uplink Rain Fade assumed in Link Budget (dB)	11.26	1.09	1.09
Carrier IBO under assumed uplink rain fade (dB)	15.31	33.64	33.64
Carrier OBO under assumed uplink rain fade (dB)	10.61	28.94	28.94
Link Margin under assumed uplink rain Fade (dB)	0	0	0
Provision to downlink degradation due to interference scaled to downlink fade conditions (dB)	0.1	0.44	0.44
Downlink Rain Fade assumed in Link Budget (dB)	0.48	2.63	2.63
Downlink G/T degradation due to rain (dB)	0.91	2.38	2.38
Downlink C/N under assumed rain fade (dB)	2.03	8.88	8.88
Link Margin under assumed downlink Rain Fade (dB)	0	0	0

RAIN AVAILABILITY PREDICTION

Uplink reference rain rate (ITU-R P.837)	65.52	65.52	65.52
Availability corresponding to assumed uplink rain fade	99.981	98.745	98.745
Downlink reference rain rate (ITU-R P.837)	65.52	65.52	65.52
Availability corresponding to assumed downlink rain fade	97.286	99.772	99.772
Availability corresponding to assumed (uncorrelated) uplink and downlink rain fade	97.267	98.516	98.516

SUMMARY

Bandwidth (MHz)	15.6	1.33	1.33
Power Equivalent Bandwidth (MHz)	19.6	0.277	0.277



US Dept of State Geographer
© 2018 Google
Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth

FCC IBFS - Electronic Filing**Submission_id :IB2019000717****Successfully filed on :Mar 12 2019 7:50:25:210PM**

The current authorization of Call Sign E080100 expires on Aug 5 2024 1:10:00:000PM. The filing of a modification application does not automatically extend the expiration date of an authorization. In addition, grant of a modification will not extend the expiration date unless that is the modification sought. In general, an application for renewal of the authorization must be filed separately in order to extend the expiration date.

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