

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 115W B (May 2016)

1. Applicant

Name:	Row 44 Inc.	Phone Number:	818-706-3111
DBA Name:		Fax Number:	
Street:	4353 Park Terrace Drive	E-Mail:	smclellan@geemedia.com
City:	Westlake Village	State:	CA
Country:	USA	Zipcode:	91361
Attention:	Mr Simon McLellan		



File # SES-STA20160512-00428  
5080100  
Call Sign 5-19-16 Grant Date 5-19-16  
(or other identifier)  
Term Dates  
From: 5-19-16 To: 7-18-16  
Approved: [Signature]

Applicant: Row 44, Inc.  
Call Sign: E080100  
File No.: SES-STA-20160512-00428  
Special Temporary Authority (STA)

Row 44, Inc. is granted special temporary authority for a period of 60 days, beginning May 19, 2016 to operate its, 0.62 meter TECOM Ku-Stream antenna, earth stations aboard aircraft (ESAA) to communicate with Eutelsat 115 West B satellite (S2938) at 114.9° W.L. orbital location using the 14.05 to 14.47 GHz (Earth-to-space) and 11.7-12.2 GHz (space-to-Earth) frequency bands. Operations must be in accordance with the technical specifications contained in Row 44, Inc.'s application and are subject to the following conditions:

1. Operations under this grant of special temporary authority must be on an un-protected, non-harmful interference basis, i.e., while operating under this temporary authority Row 44, Inc. must not cause harmful interference to, and must not claim protection from interference caused to it by, any other lawfully operating radiocommunication system. Row 44, Inc. must cease operations immediately upon notification of such interference and must immediately inform the Commission, in writing, of such an event.
2. ESAA operations in the 14.2-14.47 GHz band shall not exceed the EIRP density limits specified in the current earth station authorization, Call Sign E080100, IBFS File No. SES-MFS-20150424-00270.
3. Operation pursuant to this authorization outside the United States in the 14.2-14.47GHz band must be in compliance with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band.
4. When operating in international airspace within line-of-sight of the territory of a foreign administration where Fixed Service networks have a primary allocation in the 14.0-14.5 GHz band, an aircraft earth station must not produce ground-level power flux density (pfd) in such territory in excess of the following values unless the foreign administration has imposed other conditions for protecting its FS stations:  $-132 + 0.5 \times \text{THETA}$  dB(W/(m<sup>2</sup> MHz)) for  $\text{THETA} \leq 40^\circ$  ;  $-112$  dB(W/(m<sup>2</sup> MHz)) for  $40^\circ < \text{THETA} \leq 90^\circ$ . Where: THETA is the angle of arrival of the radio-frequency wave in degrees above the horizontal, and the aforementioned limits relate to the pfd and angles of arrival that would be obtained under free space propagation conditions.
5. Operations pursuant to this authorization must conform to the terms of coordination agreements between the operator of the Eutelsat 115 West B satellite (S2938) and operators of other Ku-band geostationary satellites within six angular degrees of the Eutelsat 115 West B satellite (S2938). In the event that another GSO Fixed-Satellite Service (FSS) space station commences operations in the 14.0-14.5 GHz band at a location within six degrees of any of these space stations, aircraft earth stations operating pursuant to this temporary authority shall cease transmitting to that space station unless and until such operation has been coordinated with the new space station's operator or Row 44, Inc. demonstrates that such operation will not cause interference to the new co-frequency space station.



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6. Row 44, Inc. must take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at [www.fcc.gov/oet/rfsafety](http://www.fcc.gov/oet/rfsafety)) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers. The licensee shall ensure installation of terminals on aircraft by qualified installers who have an understanding of the antenna's radiation environment and the measures best suited to maximize protection of the general public and persons operating the aircraft and equipment. A terminal exhibiting radiation exposure levels exceeding 1.0 mW/cm<sup>2</sup> in accessible areas, such as at the exterior surface of the radome, shall have a label attached to the surface of the terminal warning about the radiation hazard and shall include thereon a diagram showing the regions around the terminal where the radiation levels could exceed 1.0 mW/cm<sup>2</sup>.

7. Row 44, Inc. must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein. The licensee shall have available, at all times, the technical personnel necessary to perform supervision of remote station operations.

8. Aircraft earth stations authorized herein must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.

9. Aircraft earth stations authorized herein must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each aircraft earth station to determine if it is malfunctioning, and each aircraft earth station must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.

10. Stations authorized herein must not be used to provide air traffic control communications.

11. Operation in the territory or airspace of any country other than the United States must be in compliance with the applicable laws, regulations, and licensing procedures of that country, as well as with the conditions of this authorization.

12. For each ESAA transmitter, Row 44, Inc. must maintain records of the following data: a record of the aircraft location (i.e., latitude/longitude/altitude), transmit frequency, channel bandwidth and satellite used shall be time annotated and maintained for a period of not less than one year. Records shall be recorded at time intervals no greater than one (1) minute while the AES is transmitting. The ESAA operator shall make this data available, in the form of a comma delimited electronic spreadsheet, within 24 hours of a request from the Commission, NTIA, or a frequency coordinator for purposes of resolving harmful interference events. A description of the units (i.e., degrees, minutes, MHz ...) in which the records values are recorded will be supplied

along with the records.

13. Antenna elevation for all operations must be at least 5 degrees above the geographic horizon while the aircraft is on the ground.

14. Row 44, Inc. must comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.

15. Grant of this authorization is without prejudice to any determination that the Commission may make regarding pending of future applications or future requests for special temporary authority.

16. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Row 44, Inc.'s risk.

This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately. Petitions for reconsideration under Section 1.106 or applications for review under Sections 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within thirty days of the date of the public notice indicating that this action was taken.

<b>2. Contact</b>	
<b>Name:</b> David S. Keir	<b>Phone Number:</b> 202-429-8970
<b>Company:</b> Lerman Senter PLLC	<b>Fax Number:</b> 202-293-7783
<b>Street:</b> 2001 L Street, NW Suite 400	<b>E-Mail:</b> dkeir@lermansenter.com
<b>City:</b> Washington	<b>State:</b> DC
<b>Country:</b> USA	<b>Zipcode:</b> 20036 -4946
<b>Attention:</b>	<b>Relationship:</b> 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	
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 05/19/2016	
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	Attachment 2: Coordination Letter      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;"> <p>Request for special temporary authority to operate on an interim basis using space segment capacity on the Eutelsat 115 West B satellite for service in the U.S. pending action of forthcoming application. See Attached Narrative.</p> </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 &quot;party to the application&quot;; for these purposes.	<p style="text-align: center;"> <input checked="" type="radio"/> Yes      <input type="radio"/> No </p>
14. Name of Person Signing Simon McLellan	15. Title of Person Signing Chief Engineer & VP Systems Engineering
<p style="text-align: center;"> <b>WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT</b>          (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). </p>	

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

## 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 115 West B ("E115WB") satellite at 114.9° W.L. Row 44 is preparing to file an amendment to its currently pending modification application, File No. SES-MFS-20150928-00635 ("Modification Application"), seeking to modify its ESAA license to operate with E115WB as a point of communication ("Amendment"). Prior to grant of that authority, Row 44 seeks permission to operate using E115WB on a non-protected, non-harmful-interference basis.

Row 44 seeks interim authority to employ capacity on E115WB as this capacity is already available to it for flights transiting Canadian airspace, and it desires to enhance the availability of its service by allowing gate-to-gate connectivity on flights beginning and terminating in the Pacific Northwest, Alaska and the northeastern U.S. Row 44's operations would otherwise remain consistent with all terms and conditions of its current license. Proposed operations on E115WB would be limited to conventional Ku-band capacity frequencies at 11.7 to 12.2 GHz (downlink) and 14.05 to 14.47 GHz (uplink).

Row 44's operations will not cause harmful interference into adjacent satellites operating in accordance with FCC's two-degree spacing policy. Although the proposed operations are not fully compliant with Section §25.227(a)(1)(i) of the Commission's Rules, Row 44 has obtained, and provides as an attachment hereto, a coordination certification from Eutelsat in accordance with Sections 25.227(b)(2) of the Commission's Rules. Row 44's operations will also be fully consistent with its existing agreements with the National Science Foundation and the National Aeronautics and Space Administration, and will adhere to the terms and conditions of Row 44's current license.

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 the applicant "plans to file a request for regular authority for the service." *See* 47 C.F.R. § 25.120(b)(3). This is the case here, where Row 44 anticipates filing for permanent authority via an amendment to its pending Modification Application within the next thirty days.

Grant of the authority requested in this instance will promote the public interest by permitting Row 44 to provide enhanced service to existing customers using capacity on the E115WB satellite. Additional use of the E115WB space segment will help maintain effective coverage of transcontinental routes that begin or end in U.S. airspace. Grant of the requested STA is consistent with Commission policy and will not adversely affect other authorized operations.



Row 44 acknowledges that favorable FCC action on this STA request would be without prejudice to the ultimate determination the FCC will make regarding its pending Modification Application and the forthcoming amendment thereto. In addition, Row 44 acknowledges that any action taken pursuant to a grant of the requested STA will be at its own risk.

\* \* \* \* \*

The conventional Ku-band capacity that Row 44 seeks to use on E115WB is already available to it and in use for provision of service on flights transiting Canadian airspace. Accordingly, Row 44 respectfully requests that the FCC grant it authority by May 19, 2016, for a period of sixty (60) days, to use the E115WB satellite as a point of communication in the conventional Ku-band in the United States using TECOM AMES now operating under its FCC ESAA network license.



Ciudad de México, April 27th, 2016.  
DARI.2016.059

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

**Re: Engineering Certification with respect to E115WB at 114.9° W.L. (Ku4 Beam Coverage)**

To Whom It May Concern:

This letter certifies that Satélites Mexicanos S.A. de CV dba Eutelsat Americas ("EAS") understands 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. GEE is seeking to modify its FCC authorization to add satellites as additional points of communication, including the E115WB satellite at 114.9° West Longitude and under Ku4 Beam coverage.

EAS further understands that GEE's primary transmit/receive antenna is a steerable antenna manufactured by TECOM designed to provide bi-directional broadband services to aircraft in flight. The antenna is identified by the model number Ku-Stream 1000. It supports reception and transmission in the 11.70-12.2 GHz /14.05-14.47 GHz bands covered by GEE's existing FCC License. The antenna is an independent linear polarized array equivalent to a 0.62 meter parabolic antenna with a transmit gain of 28.8 dBi at 14.25 GHz and a receive gain of 31.1 dBi at 11.75 GHz. The antenna operates under gimbaled motor control to orient the antenna in azimuth, elevation and polarization and achieves a  $\pm 0.2$  degree pointing accuracy during active tracking of the intended satellite. The antenna complies with Section 25.209 of the FCC's Rules with respect to the off-axis co-polarization gain in the plane of the geostationary satellite orbit and to the off-axis cross polarization gain using the parameters of GEE's existing FCC license, under which it will continue to operate for all flights within U.S. airspace. Outside the continental United States, GEE will operate at higher skew angles to maximize coverage,

A handwritten signature in black ink, appearing to be a stylized name or set of initials.

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operating in conformity with European Telecommunications Standards Institute European Standard (EN) 302 186, Satellite Earth Stations and Systems (SES); Harmonized EN for satellite mobile Aircraft Earth Stations (AESs) operating in the 11/12/14 GHz frequency bands covering essential requirements under article 3.2 of the Radio & Telecommunications Terminal Equipment Directive.

The actual skew angle is constantly monitored by the antenna control system, and the aircraft transmitter will be muted in the event that a skew angle of  $\pm 35^\circ$  is exceeded. When communicating with E115WB, GEE will operate its antenna within the 14.05-14.47 GHz FSS uplink band and the 11.7-12.2 GHz FSS downlink band transmitting with a maximum equivalent isotropically radiated power (EIRP) of 38.8 dBW up to a 512 kbps carrier. GEE will maintain the return uplink EIRP level and the off-axis EIRP spectral density, by tight control of system operation that includes:

- 1) Maintaining pointing error to be  $\leq 0.2$  degrees, relative to the intended satellite;
- 2) Fault detection that terminates transmissions when out of tolerance conditions (including the antenna pointing error) are detected; and
- 3) Continuous monitoring/oversight by ground network operations center (NOC).

EAS acknowledges that the use of the above referenced transmit/receive antenna by GEE has the potential to receive harmful interference from adjacent satellite networks that may be unacceptable. The EIRP levels set forth above for the proposed system, installed and operated in accordance with the above conditions, are within the levels coordinated with the adjacent satellite operators and should not cause unacceptable interference into adjacent satellites operating in accordance with FCC's two-degree spacing policy. If the FCC authorizes the operations proposed by GEE in its application, EAS will include the antenna, as described above, in all future satellite network coordinations with other adjacent satellite operators. GEE shall comply with all such coordination agreements reached by the satellite operators.

In order to prevent unacceptable interference into adjacent satellites, EAS has been informed, and GEE acknowledges, that the antennas will be installed and operated in accordance with the above conditions and the terms of its FCC License. In particular, the proposed antenna will operate in compliance with the Commission's two-degree spacing requirements, including the pointing accuracy and shutdown requirements of Section 25.227(a) of the Commission's Rules that apply to ESAA. See 47 C.F.R. § 25.227(a).



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Moreover, GEE agrees that it will accept interference from transmissions to adjacent satellites in the 14.0-14.5 GHz band to the degree to which harmful interference would not be expected to be caused to an earth station employing an antenna conforming in all respects to the reference patterns defined in Section 25.209 of the FCC's rules. If the use of this antenna should cause unacceptable interference into other systems in this band, GEE has agreed that it will terminate transmissions immediately upon notice from the affected parties.

Based on GEE's commitment to the operating conditions stated above, satellites operating at two-degree spacing or more should not experience unacceptable interference as a result of the modification of GEE's Ku-band ESAA blanket FCC License as outlined here to include E115WB at 114.9° W.L. as an additional point of communication.

Sincerely,



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Hector Fortis  
Director of Regulatory and International Affairs  
Satélites Mexicanos Sa de CV

Acceptance by GEE, Inc.:

GEE affirms that the information provided to EAS and reflected in this coordination letter is true and accurate to the best of GEE's knowledge, information and belief, and that it shall comply with all relevant coordination agreements, as provided herein.

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Aditya Chatterjee  
Chief Technical Officer  
GEE, Inc.

