

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
AC BidCo E120106 STA Request for AMC-4 at 134.9 WL July 2017

1. Applicant

Name: AC BidCo LLC Phone Number: 312-517-5566
DBA Name: Fax Number:
Street: 111 N Canal St., Suite 1500 E-Mail: melias@gogoair.com
City: Chicago State: IL
Country: USA Zipcode: 60606
Attention: Marguerite Elias

File # SES-STA-20170725-00796
E120106
Call Sign E120106 Grant Date 8-2-17
(or other identifier)
Term Dates From: 8-2-17 To: 10-3-17
Approved: Marguerite Elias



Applicant: AC BidCo LLC
File No.: SES-STA-20170725-00796
Call Sign: E120106
Special Temporary Authority



File # SES-STA-20170725-00796
E120106
Call Sign E120106 Grant Date 8-2-17
(or other identifier)
Term Dates
From: 8-4-17 To: 10-3-17
Approved: Paul E. Haddad

AC BidCo LLC (AC BidCo) is granted extension of special temporary authority for 60 days, beginning on August 4, 2017, to operate up to 200 ESAAs terminals (0.74 meter ThinKom, model 2KuAntenna) to communicate with the AMC-4 satellite (Call Sign S2135) at the 134.9° W.L. orbital location. Operations are authorized using the 14.0-14.50 GHz (Earth-to-space) and 11.7-12.2 GHz (space-to-Earth) frequency bands. Operations must be in accordance with the relevant technical limits specified in its current E120106 authorization are subject to the following additional conditions:

1. Operations are on an unprotected and non-harmful interference basis. AC BidCo, 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 AC BidCo's coordination agreements with the National Science Foundation and the National Aeronautics and Space Administration pertaining to operation of ESAAs in the Ku-Band.
3. Operation pursuant to this authorization outside the United States in the 14.0-14.5 GHz 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 14.47-14.50 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 ESAA must not operate in a manner that would produce predicted 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)/(m² MHz) for THETA < 40; -112 dB(W)/(m² MHz) for 40 < THETA < 90g. 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. Operation pursuant to this authorization must conform to the terms of coordination agreements between the operator of AMC-4 and operators of other Ku-band geostationary satellites within six angular degrees of AMC-4 (Call Sign S2135). In the event that another GSO Fixed-Satellite Service (FSS) space station commences operation in the 14.0-14.5 GHz band at a location within six degrees of any of these space stations, ESAAs operating pursuant to this temporary authority shall cease transmitting unless and until such operation has been coordinated with the new space station's operator or AC BidCo demonstrates that such operation will not cause harmful interference to the new co-frequency space station.
6. AC BidCo must operate in accordance with the off-axis EIRP spectral densities supplied in obtaining the satellite operator certification for AMC-4 (Call Sign S2135), attached as an exhibit to the application. AC BidCo shall automatically cease emissions within 100 milliseconds if the ESAA transmitter exceeds the off-axis EIRP spectral-densities supplied to the target satellite operator and transmission shall not resume until AC BidCo conforms to the off-axis EIRP spectral densities supplied to the target satellite operator.
7. AC BidCo must take all necessary measures to ensure that the operation authorized 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 1.13 10. 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) 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/cm² 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/cm².

8. AC BidCo 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. AC BidCo has specified the following contact information: +1 866-943-4662 and noc@ACBidCoair.com.

9. ESAs 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.

10. ESAs 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 ESA to determine if it is malfunctioning, and each ESA must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed-satellite service network.

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

12. For each ESA transmitter AC BidCo shall maintain records of the following data for each operating ESA, 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 ESA is transmitting. The ESA 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. AC BidCo shall comply with any pertinent limits established by the International Telecommunication Union to protect other services allocated internationally.

15. In connection with the provision of service in any particular country, AC BidCo is obliged to comply with the applicable laws, regulations, rules, and licensing procedures of that country.

16. Grant of this authorization is without prejudice to any determination that the Commission may make regarding AC BidCo's pending or future applications.

17. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at AC BidCo's risk.

18. 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.

2. Contact			
Name:	Karis Hastings	Phone Number:	202-599-0975
Company:	SatCom Law LLC	Fax Number:	
Street:	1317 F Street, N.W. Suite 400	E-Mail:	karis@satcomlaw.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20004 -
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 SESMFS2017072500793 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 CGB - Mobile Satellite Earth Stations			
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		08/04/2017	
7. City/Mobile		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: STA Narrative 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.)	<p>AC BidCo LLC respectfully requests special temporary authority for 60 days to allow ESAA terminals to communicate with the AMC-4 satellite, call sign S2135, at 134.9 deg. W.L. in the conventional Ku-band frequencies for service to North America and the Pacific Ocean, including in U.S. airspace. AC BidCo requests STA pending action on its modification</p>
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 Marguerite Elias	15. Title of Person Signing Exec. Vice President and General Counsel
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

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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.

12. Description

AC BidCo LLC respectfully requests special temporary authority for 60 days to allow ESAA terminals to communicate with the AMC-4 satellite, call sign S2135, at 134.9 deg. W.L. in the conventional Ku-band frequencies for service to North America and the Pacific Ocean, including in U.S. airspace. AC BidCo requests STA pending action on its modification application, File No. SES-MFS-20170725-00793. See attached narrative.

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

AC BidCo LLC (“AC BidCo”), which holds a license to operate an earth station aboard aircraft (“ESAA”) network,¹ hereby requests special temporary authority (“STA”) for a period of 60 days commencing as soon as possible but no later than August 4, 2017, to permit up to 200 ThinKom model 2Ku ESAA terminals to communicate in the conventional Ku-band with the U.S.-licensed AMC-4 satellite at 134.9° W.L. Grant of the requested STA will serve the public interest by allowing AC BidCo to meet customer demand for additional capacity over North America and the Pacific Ocean, including in U.S. airspace. AC BidCo has submitted a modification application amendment to add satellites including AMC-4 as authorized points of communications for its ESAA network,² and seeks STA pending action on that application.

Background

AC BidCo is currently authorized to operate Ku-band terminals with specified satellites for ESAA service in U.S. airspace, foreign airspace, and the airspace over international waters. AC BidCo’s license was issued based on demonstration that the proposed network would enhance competition in the provision of in-flight broadband service to air travelers and airline crew members and that the planned operations were fully consistent with technical standards designed to ensure protection of other authorized communications networks. In order to enhance and expand its ESAA operations, AC BidCo is seeking authority to add AMC-4 as a point of communication for its ESAA network.

STA Request

Pending action on the AC BidCo Modification, AC BidCo seeks STA to permit its ThinKom ESAA terminals to commence communications with AMC-4 to meet customer demand. The AC BidCo Modification contains complete information regarding AC BidCo’s proposed operations with this spacecraft, and AC BidCo incorporates that information by reference herein. The modification also includes a letter confirming that AC BidCo’s proposed operations of the ThinKom ESAA terminals are consistent with coordination agreements with operators of the satellites within six degrees on either side of 134.9° W.L., and a copy of the letter is attached hereto for the Commission’s convenience.

¹ See Call Sign E120106, File No. SES-MFS-20170109-00015, granted July 21, 2017 (the “AC BidCo ESAA License”).

² See Call Sign E120106, File No. SES-MFS-20170725-00793 (the “AC BidCo Modification”).

AMC-4 is U.S.-licensed, and a request to reassign the satellite from 67° W.L. to 134.9° W.L. is currently pending before the Commission.³ The technical parameters of the proposed operations with AMC-4 are consistent with those specified in the AC BidCo ESAA License.⁴

AC BidCo seeks STA to use AMC-4 capacity for ESAA operations on a primary basis in the 14-14.5 GHz uplink spectrum and in the 11.7-12.2 GHz downlink spectrum, consistent with the satellite's license as modified pursuant to the AMC-4 Relocation Application and with the Commission's orders in the ESAA proceeding.⁵ Communications with the satellite will be supported by a teleport in Woodbine, MD.⁶

AMC-4 will provide coverage of North America and the Pacific Ocean. AC BidCo requires access to this capacity to ensure that it has sufficient bandwidth to meet near-term customer demand for in-flight connectivity.

AC BidCo emphasizes that the scope of this STA request is limited. AC BidCo is only seeking authority to add AMC-4 as an authorized point of communication for a limited number of ThinKom ESAA terminals. AC BidCo is otherwise prepared to operate consistently with the terms and conditions set forth in the existing AC BidCo ESAA License. In addition, AC BidCo is willing to operate pursuant to the STA on an unprotected, non-harmful interference basis.

³ *SES Americom, Inc.*, Call Sign S2135, File No. SAT-MOD-20170518-00073, ("AMC-4 Relocation Application"). Pending action on the AMC-4 Relocation Application, the Commission has authorized the drift of AMC-4 to 134.9° W.L., *see SES Americom, Inc.*, Call Sign S2135, File No. SAT-STA-20170503-00070, granted June 7, 2017, and SES has requested special temporary authority for AMC-4 operations upon the satellite's arrival, *see SES Americom, Inc.*, Call Sign S2135, File No. SAT-STA-20170725-00108.

⁴ Operations of the ThinKom ESAA terminals with AMC-4 will not involve any increase in the maximum off-axis EIRP density levels previously described to the Commission for those terminals.

⁵ *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 14-14.5 GHz Frequency Bands*, Notice of Proposed Rulemaking and Report and Order, IB Docket Nos. 12-376 & 05-20, 27 FCC Rcd 16510 (2012); Second Report and Order and Order on Reconsideration, IB Docket No. 12-376, 29 FCC Rcd 4226 (2014) (collectively, the "ESAA Orders").

⁶ SES has applied for a license for the new Woodbine antenna, and a call sign has not yet been assigned to the application. *See SES Americom, Inc.*, Submission ID IB2017002019. Pending action on the license application, SES is seeking an STA to use the antenna to communicate with AMC-4 at 134.9° W.L. *See SES Americom, Inc.*, Submission ID IB2017002022.

Grant of the requested STA is consistent with Commission policy and will not adversely affect other authorized operations. AC BidCo's proposed operations with AMC-4 are consistent with coordination agreements with adjacent satellite operators and will also conform to the terms of AC BidCo's agreements with the National Science Foundation and the National Aeronautics and Space Administration. In addition, AC BidCo will comply with power flux density limits to protect terrestrial services outside the U.S.

Grant of the proposed STA will allow AC BidCo to respond to urgent customer demand for increased capacity on important air transport routes over North America and the Pacific Ocean, promoting competition in the provision of aeronautical services and expanding the availability of in-flight broadband to air travelers and crew members.

AC BidCo understands that any Commission grant of this STA will be without prejudice to the ultimate determination the Commission will make regarding the AC BidCo Modification. In addition, AC BidCo acknowledges that any action taken pursuant to a grant of the requested STA will be at AC BidCo's own risk.



Kimberly M. Baum
Vice President Spectrum Management & Development, Americas

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

July 25, 2017

Subject: Engineering Certification of SES Americom, Inc. for the AMC-4 Satellite

To whom it may concern,

This letter confirms that SES is aware that AC BidCo LLC. ("AC BidCo"), licensed by the Federal Communications Commission ("FCC") as AC BidCo LLC, is planning to file an application seeking a modification to its blanket authorization (the "Modification Application") to operate technically identical Ku-band Earth Stations Aboard Aircraft ("ESAA") pursuant to ITU RR 5.504A and Section 25.227 of the Commission's rules (Call Sign E120106). The Modification Application will seek authority for AC BidCo's ThinKom ESAA terminals to communicate with the AMC-4 satellite at 134.9° W.L., under the current ESAA rules, including Section 25.227.

Based upon the representations made to SES by AC BidCo concerning how it will operate on AMC-4 according to its letter dated July 25, 2017:

- SES certifies that it has completed coordination as required under the FCC's rules and that the power density levels specified by AC BidCo are consistent with any existing coordination agreements to which SES is a party with adjacent satellite operators within +/- 6 degrees of orbital separation from AMC-4.
- If the FCC authorizes the operations proposed by AC BidCo, SES will include the power density levels specified by AC BidCo in all future satellite network coordination with other operators of satellites adjacent to AMC-4.

Yours Sincerely,

A handwritten signature in blue ink that reads "Kimberly M. Baum".

Kimberly M. Baum

SES Americom, Inc.
4 Research Way
Princeton, NJ 08540
USA

Tel. +1 609 987 4000
Fax +1 609 987 4517
Enter sender e-mail
www.ses.com