

Attachment

Description of Application for Modification of License

1.0 OVERVIEW

This application seeks to modify the current Row 44, Inc. (“Row 44”)¹ Ku-band Earth Stations Aboard Aircraft (“ESAA”) license (Call Sign E080100) to add AMC-1 at 129.15° W.L. as an additional point of communication operating at skew angles ranging up to fifty-five degrees.² The requested changes relate solely to the 0.62 meter TECOM Ku-Stream antenna, which is identified as Remote Terminal #2 in the existing Row 44 license. No other changes in the technical parameters contained in the current ESAA license are proposed.

The Schedule B information submitted with this application contains only the parameters that apply specifically to communication with the AMC-1 satellite and do not supersede maximum parameters currently specified in the Row 44 license. The requested maximum parameters in this modification application are all within the scope of the existing license.

The requested addition of AMC-1 to the Row 44 license will provide enhanced service to airline passengers on flights operating in North American airspace and in the Pacific Ocean and Caribbean regions by allowing increased system capacity and service availability. Row 44 seeks these modifications subject to all terms and conditions set forth in its current license.³

Row 44 seeks to implement service on AMC-1 subject to this modification application as soon as practicable, and respectfully requests that this modification application be placed on Public Notice as quickly as possible in order to facilitate this projected implementation schedule. Row 44 is also filing a contemporaneous request for Special Temporary Authority to permit modified service using AMC-1 in advance of final action this modification application.

¹ The in-flight connectivity business established by Row 44 now operates under the name Global Eagle Entertainment, which is the parent company of Row 44 (*see* File No. SES-T/C-20121203-01063). As Row 44 remains the name of the FCC licensee, that designation is used in this application.

² The FCC authorized the relocation of AMC-1 to its current location at 129.15° W.L. on May 28, 2015 (File Nos. SAT-MOD-20140730-00085 and SAT-AMD-20150219-00006). *See* FCC Public Notice, Report No. SAT-01088, DA No. 15-645, at 1 (released May 29, 2015).

³ *See* Row 44 Inc., Radio Station Authorization, Call Sign E080100, File No. SES-MFS-20150424-00270 (Sat. Div., granted September 16, 2015).

2.0 TECHNICAL DESCRIPTION, LINK BUDGETS AND PREDICTED COVERAGE AREA

Exhibit A includes a technical description of the proposed changes, a depiction of the geographic coverage contours in relation to combinations of EIRP and skew angle (skew angle ranging from 25° to 55° for AMC-1), as well as representative link budgets. *See* 47 C.F.R. § 25.227(b)(4).

3.0 COORDINATION & COMPLIANCE WITH SECTION 27.227(a)(1)

Row 44's intended operations will not cause harmful interference into adjacent satellites operating in accordance with FCC's two-degree spacing policy. SES, the target operator, has not yet entered into a coordination agreement with SkyPerfect JSAT, the operator of Horizons-1 at 127° W.L., which is the only Ku-band FSS satellite operating in the same frequency bands in which Row 44 intends to operate using AMC-1. Coordination of Row 44's operations, however, should not be required under Section 25.227(b)(2), as the antenna will be fully compliant with Section §25.227(a)(1)(i)(A) of the Commission's Rules with respect to the plane of the geostationary ("GSO") arc. *See* 47 C.F.R. §25.227(a)(1)(i)(A).

However, in directions other than along the GSO arc, the TECOM antenna will exceed the off-axis EIRP spectral density values set forth in the Commission's rules. *See* 47 C.F.R. §25.227(a)(1)(i)(B). This separate off-axis EIRP spectral density mask is principally intended to protect non-geostationary ("NGSO") FSS systems, of which there are none currently operating or licensed by the Commission in the Ku-band. 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.

In light of the foregoing discussion, Row 44 respectfully requests a temporary waiver, to the extent required in the absence of an operational Ku-band NGSO FSS network, of the off-axis EIRP limits set forth in Section 25.227(a)(1)(i)(B). There is precedent for such a waiver with respect to the Vehicle-Mounted Earth Station application of mobile FSS⁴, and no reason not to extend this same latitude to providers of ESAA operating under similar circumstances. In this particular case, waiver is also supported by the public interest in facilitating the continued

⁴ *See, e.g.,* ThinKom Solutions Inc., File No. SES-LIC-20120822-00768, Call Sign E120174, Application, Technical Annex at 19 (granted March 8, 2013); RaySat Antenna Systems, LLC (now Gilat North America, LLC), File No. SES-MFS-20120517-00446, Application, Narrative at 23, and License, Call Sign E060448, at Condition 6582 (granted April 1, 2013) ("The request for waiver of off-axis EIRP spectral density limits for regions outside the GSO arc is granted under the condition that Raysat Antenna Systems, LLC must protect future NGSO satellite system authorizations").

development of robust in-flight connectivity, which will be fostered by expanding the space segment capacity available to the Row 44 network as requested in this modification application.

Row 44's operations, as modified, will continue to conform to the terms of its existing coordination agreements with the National Aeronautics and Space Administration ("NASA") and the National Science Foundation ("NSF"), as required under Condition 90057 its current ESAA license.⁵

4.0 RADIATION HAZARD STUDY

Because no increase in transmit power or EIRP characteristics is requested in this modification application, the radiation hazard assessment submitted, pursuant to Section 25.227(b)(8) of the Commission's Rules, as Exhibit C to the application in FCC File No. SES-MFS-20150424-00270 continues to be accurate with respect to the maximum operational parameters requested for Row 44's earth station network, and that study is incorporated herein by reference.

5.0 SPACECRAFT, FREQUENCY & BEAM COVERAGE

See chart on next page


⁵ Row 44's coordination agreements with NASA and NSF pre-date the adoption of current rule Sections 25.227(c)(1) & (d)(1), which provide for Public Notice to allow comment on coordination agreements governing operations of ESAA networks in frequency bands shared with NASA and NSF facilities. Accordingly, to the extent necessary, Row 44 requests that the Public Notice issued announcing acceptance of this modification application include the referenced notifications concerning Row 44's existing coordination agreements with NASA and NSF.

Spacecraft, Frequency & Beam Coverage Table

Satellite	Location	Beam Coverage Area	Tx (GHz)	Rx (GHz)	Satellite Operator
AMC-1	129.15W	North America, Pacific & Caribbean	14.05-14.47	11.7-12.2	SES
AMC-2	80.85W	North America, Caribbean & North Atlantic	14.05-14.47	11.7-12.2	
AMC-3	67.0 W	North America, Atlantic & Caribbean	14.05-14.47	11.7-12.2	
AMC-9	83.0W	North America, Caribbean & North Atlantic	14.05-14.47	11.7-12.2	
SES-1	101.0W	North America & Caribbean	14.05-14.47	11.7-12.2	
SES-6*	40.5W	Atlantic Ocean	14.05-14.47	10.95-11.2; 11.45-11.7	
IS-19	166.0E	Pacific Ocean	14.05-14.47	12.25-12.75	Intelsat
Eutelsat 115WA (Satmex 5)*	114.9W	North America & Pacific Ocean	14.05-14.47	11.7-12.2	Eutelsat
Eutelsat 117WA (Satmex 8)*	116.8 W	North America & Caribbean	14.05-14.47	11.7-12.2	
T11N†	37.5W	North Atlantic Ocean	14.05-14.47	11.45-11.7; 11.7-12.2	Telesat
Estrella do Sul (T14R)*	63.0W	North Atlantic Ocean, Canada & Caribbean	14.05-14.47	11.7-12.2	
Horizons 1*	127.0W	North America & Pacific Ocean	14.05-14.47	11.7-12.2	JSAT

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

† = T11N is a U.S.-licensed satellite (Call Sign S2357) operated by Telesat Canada

 = New Point of Communication requested in this modification application

6.0 LICENSEE CERTIFICATION

I, Simon McLellan, Chief Engineer and Vice President of Systems Engineering of Row 44, Inc., hereby certify that Row 44, Inc. 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.

s/ Simon McLellan

Simon McLellan
Chief Engineer &
VP Systems Engineering
Row 44, Inc.

September 28, 2015