

## **Exhibit C**

### **Coordination Letters**



September 5, 2013

Satélites Mexicanos, S.A. de C.V.  
Paseo de la Reforma No. 222 Pisos 20 y 21  
Col. Juárez, CP 06600, Mexico, D.F.

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

**Re: Engineering Certification with respect to SatMex 8 at 116.8° W.L.**

To Whom It May Concern:

This letter certifies that Satélites Mexicanos S.A. de CV ("SatMex") understands that Row 44, Inc. ("Row 44") 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. Row 44 is seeking to modify its FCC authorization to add satellites as additional points of communication, including the SatMex 8 satellite at 116.8° West Longitude.

SatMex further understands that Row 44'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 Row 44'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 gimballed 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 Row 44's existing FCC license, under which it will continue to operate for all flights within U.S. airspace. Outside the continental United States, Row 44 will operate at higher skew angles to maximize coverage, 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 Satmex 8, Row 44 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. Row 44 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).

SatMex acknowledges that the use of the above referenced transmit/receive antenna by Row 44 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 Row 44 in its application, SatMex will include the antenna, as described above, in all future satellite network coordinations with other adjacent satellite operators. Row 44 shall comply with all such coordination agreements reached by the satellite operators.

In order to prevent unacceptable interference into adjacent satellites, SatMex has been informed, and Row 44 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).

Moreover, Row 44 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, Row 44 has agreed that it will terminate transmissions immediately upon notice from the affected parties.





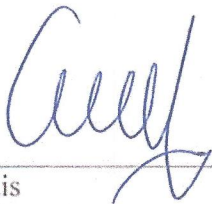
FCC International Bureau

September 5, 2013

Page 3 of 3

Based on Row 44'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 Row 44's Ku-band ESAA blanket FCC License as outlined here to include SatMex 8 at 116.8° W.L. as an additional point of communication.

Sincerely,



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



Acceptance by Row 44, Inc.:

Row 44 affirms that the information provided to SatMex and reflected in this coordination letter is true and accurate to the best of Row 44's knowledge, information and belief, and that it shall comply with all relevant coordination agreements, as provided herein.



John Guidon  
Chief Technical Officer  
Row 44, Inc.



1601 Telesat Court  
Ottawa, ON, Canada  
K1B 5P4

EN2013-009  
12 September 2013  
By email

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

To Whom It May Concern:

This letter certifies that Telesat Canada ("Telesat") is aware that Row 44, Inc. ("Row 44") is seeking FCC authorization to access the Telstar-14R (T14R) satellite at 63W as a point of communication for its aeronautical mobile-satellite service ("AMSS") using transmit/receive antennas that are not fully compliant with the FCC's antenna gain requirements.<sup>1</sup> However, as detailed below, and based on the description of the service as provided by Row 44, the terminals shall comply with off-axis EIRP spectral density levels as coordinated by Telesat with neighboring satellite operators, which are higher than those contained in the FCC's two-degree spacing rules.<sup>2</sup>

Telesat understands that Row 44 shall operate an aeronautical earth station ("AES") terminal specifically designed for the Row 44 system and manufactured by TECOM. We understand that the TECOM is a mechanically steered, flat-plate AES with one transmit/receive aperture designed to meet the technical requirements for both U.S. and international AMSS operations. The basic characteristics of the TECOM AES, as provided by Row 44, are summarized in Table 1.

**Table 1. TECOM Antenna Characteristics**

Characteristic	TECOM
Frequency	Uplink 14.05 GHz to 14.47 GHz (actual use); downlink 10.7 GHz to 12.75 GHz (capability; actual use TBD)
Aperture Size	0.62m
Max. Input Power Density	-14 to -12 dBW/4 KHz
Transmit Gain	28.8 dBi
Max. Uplink EIRP	40.8 dBW
Max. Downlink EIRP Density	13 dBW/4 KHz
G/T	11.6 dB/k
Tracking Rate	20 Hz
Pointing Accuracy	Pointing Error <0.2 degrees peak

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<sup>1</sup> See 47 CFR §25.209

<sup>2</sup> See 47 CFR §25.218(f)

Telesat has been advised by Row 44 that the TECOM terminals are designed to comply with, and will be installed in accordance with, the FCC's rules and policies governing Ku-band earth stations aboard aircraft ("ESAAs") adopted in new Section 25.227 of the rules.<sup>3</sup> Furthermore, we have been advised by Row 44 of the following: (1) the TECOM antenna maintains its pointing towards the intended satellite throughout the full range of maneuvers of a commercial aircraft; (2) the antenna is pointed based on aircraft position and attitude information obtained from the standard commercial aircraft ARINC 429 data bus; (3) the pointing error of the TECOM antenna shall be less than 0.2° peak; (4) the pointing error shall be continuously monitored and if, for whatever reason, it exceeds 0.5 degrees, all signal transmissions shall be automatically inhibited within a period of 100 msec;<sup>4</sup> and (5) QPSK and octal-PSK modulation is employed.

We have been advised by Row 44 that the Row 44 system avoids interference to other satellite operations by limiting off-axis EIRP spectral density to levels coordinated for the service on T14R through various means, including: (i) limiting transmit power spectral density by restricting the transmit power of the terminal according to the selected/appropriate carrier bandwidth; (ii) limiting the off-axis gain of the antenna projected along the GSO by inhibiting transmissions when the skew angle exceeds a specified threshold; and (iii) monitoring pointing error, and inhibiting transmissions when the error exceeds a threshold of 0.5 degrees.

In summary, the AMSS terminal operations, as described above for Row 44's planned operations on the T14R satellite, fall within the operating parameters previously coordinated with adjacent satellite operators, and should not cause unacceptable interference to them. Telesat shall include consideration of the aspects of the subject non-conforming earth station operation in relevant future satellite network coordination agreements.

Sincerely,



Elisabeth Neasmith, P. Eng  
Manager, ITU and Spectrum Coordination  
Office of CTO  
Telesat

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<sup>3</sup> 47 C.F.R. § 25.227

<sup>4</sup> See 47 C.F.R. § 25.222(a)(7) (Ku-band ESVs) and § 25.226(b)(1)(iv)(B)(Ku-band VMESs)