

October 15, 2008

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Application of Row 44, Inc. (Call Sign E080100)
IBFS File Numbers SES-LIC-20080508-00570, SES-AMD-20080619-00826,
SES-STA-20080711-00928, SES-STA-20080811-01049, SES-AMD-20080819-01074,
SES-AMD-20080829-01117 and SES-STA-20080903-01141 and
IB Docket Nos. 07-101, 05-20 and RM-11429

Dear Ms. Dortch:

The Boeing Company (“Boeing”), by its attorneys, requests that the Commission refrain from taking any action on the above-referenced applications of Row 44, Inc. until the remaining outstanding technical issues are resolved in a manner that ensures that Row 44’s proposed operations will not be a source of harmful interference. Further, Boeing urges the Commission to finalize and adopt service rules for aeronautical mobile-satellite services (“AMSS”) to establish objective requirements that can be used when preparing and evaluating applications to provide AMSS in the United States.

As the Commission is aware, the above referenced applications have fostered a lengthy series of amendments, pleadings, and competing technical statements. This is primarily because application processing and service rules have not been adopted governing the licensing and operation of AMSS networks.¹ As a result, disagreement and confusion exists regarding the rules and policies that currently apply to such applications and services in the absence of specific AMSS regulations. Further, the absence of clear rules and procedures heightens the need for the Commission to scrutinize closely AMSS

¹ See *Reply of Viasat, Inc.*, IBFS File Number SES-LIC-20080508-00570, at 3 (Aug. 7, 2008) (“*Viasat Reply*”); *Petition to Deny of Viasat, Inc.*, IBFS File Number SES-LIC-20080508-00570, at 2 (June 27, 2008) (“*Viasat Petition*”).

applications to ensure that the proposed services do not cause harmful interference to authorized networks.²

The confusion regarding AMSS application requirements exists with respect to fundamentally critical issues – such as whether an AMSS applicant must demonstrate (rather than simply assert) that its aircraft terminals can maintain 0.2 degree peak pointing accuracy³ – and relatively less important procedural issues – such as whether an opposition to a petition to deny an AMSS application is subject to the filing deadlines of Section 25.154(c)⁴ or 25.154(e)⁵ of the Commission's rules. The confusion involves a wide range of other relevant issues. For example, Row 44 and Viasat have disputed:

- whether both forward and return link budgets must be included with an AMSS application,⁶
- whether such link budgets must be representative of proposed services in all parts of the country, and using all proposed satellites,⁷
- whether transmit elevation patterns must be submitted with an AMSS application in a manner that is in accordance with Section 25.132(b),⁸
- whether an applicant must explain how its AMSS antenna will account for the pitch, yaw, and roll that are common in aircraft flight dynamics,⁹
- whether an applicant that plans to employ spectrum spreading technology must explain in detail its use of that technology in its AMSS application,¹⁰
- whether an AMSS applicant must comply with the Section 25.222(a)(6) requirement applicable to ESV networks with respect to a satellite tracking accuracy of 0.2 degrees peak, or 0.2 degrees root mean square.¹¹

² See *Viasat Reply* at 3.

³ See *Viasat Petition* at 4-6; *Row 44, Inc.'s Statement Pursuant to Section 25.154(e) of the Commission's Rules and Opposition to Viasat, Inc.'s Petition to Deny*, IBFS File Number SES-LIC-20080508-00570, SES-AMD-20080619-00826, at 8 (July 23, 2008) ("*Row 44 Opposition*").

⁴ See *Viasat Reply* at 1 n.1.

⁵ See *Row 44 Opposition* at 1 n.1.

⁶ See *Viasat Reply* at 4-6; *Row 44 Opposition* at 4-5; *Viasat Petition* at 3.

⁷ See *Viasat Petition* at 3 (arguing that link budgets must be provided for all three satellites proposed for operations).

⁸ See *Viasat Reply* at 7-8 (Aug. 7, 2008) (arguing that the provided patterns do not comply with Section 25.132(b)); *Row 44 Opposition* at 3 (claiming transmit elevation patterns were provided); *Viasat Petition* at 4 (claiming no patterns were provided).

⁹ See *Viasat Reply* at 8; *Viasat Petition* at 4 n.8.

¹⁰ See *Viasat Reply* at 9-10 (arguing that Row 44's original application did not adequately disclose its plans to use spectrum spreading technology); *Row 44 Opposition* at 31 (arguing that spectrum spreading will be used to prevent interference).

¹¹ See *Viasat Reply* at 10-12; *Row 44 Opposition* at 8; *Viasat Petition* at 6.

- whether an AMSS applicant must calculate its antenna gain at the input of the antenna to demonstrate compliance with Section 25.209, or whether the applicant can take allowances for expected losses between the power amplifier and the antenna,¹²
- whether extensive transmit/receive flight testing is a prerequisite to a grant of AMSS authority,¹³
- whether AMSS applicants that have completed coordination with adjacent satellite operators pursuant to Section 25.220 are eligible for expedited processing as a non-routine earth station application,¹⁴ and
- whether the fact that the Commission has accepted an application for filing indicates that the Commission has concluded that it is substantially complete.¹⁵

As a result of this confusion, the Commission has been forced to issue two letters to Row 44 instructing the company to provide additional information and clarification.¹⁶ Row 44 has responded by filing three amendments supplementing and revising its AMSS proposal, necessitating additional public notice and further comment.¹⁷

During the resulting delay, Row 44 has filed three additional applications for special temporary authority (“STA”) to conduct demonstrations and testing while its lead application remains pending.¹⁸ These STA applications have resulted in even more paperwork for the Bureau, which arguably could have been avoided if clear and objective processing rules for AMSS applications were in place.

Even today, significant questions remain regarding the technical capabilities of Row 44’s proposed AMSS service, questions that must be resolved before the Commission grants Row 44 a blanket earth station authorization.¹⁹ For example, Row 44 still has not explained adequately how its proposed system can maintain 0.2 degree peak pointing accuracy as specified in Section 25.222(a)(6) of the Commission’s rules. As Boeing can affirm based on its own experience, the highly dynamic characteristics of an inflight environment make pointing accuracy extremely difficult to maintain. The

¹² See *Viasat Reply* at 12-13; *Row 44 Opposition*, Technical Annex at 3; *Viasat Petition* at 5 n.13.

¹³ See *Row 44 Opposition* at 5-6 n.8; *Viasat Petition* at 4.

¹⁴ See *Viasat Reply* at 2-3, 9; *Row 44 Opposition* at 1-3.

¹⁵ See *Viasat Reply* at 3-4; *Row 44 Opposition* at 3-4.

¹⁶ See Letter from Scott A. Kotler, Chief, Systems Analysis Brach, Satellite Division, International Bureau, FCC to David S. Keir, Leventhal Senter & Lerman PLLC (Aug. 25, 2008); Letter from Scott A. Kotler, Chief, Systems Analysis Brach, Satellite Division, International Bureau, FCC to David S. Keir, Leventhal Senter & Lerman PLLC (Aug. 7, 2008).

¹⁷ See IBFS File Numbers SES-AMD-20080619-00826, SES-AMD-20080819-01074 and SES-AMD-20080829-01117.

¹⁸ See IBFS File Numbers SES-STA-20080711-00928, SES-STA-20080811-01049, and SES-STA-20080903-01141.

¹⁹ See generally *Supplement to Petition to Deny of Viasat, Inc.*, IBFS File Numbers SES-LIC-20080508-00570, SES-AMD-20080619-00826, SES-STA-20080711-00928, SES-STA-20080811-01049, SES-AMD-20080819-01074, SES-AMD-20080829-01117 and SES-STA-20080903-01141 (Oct. 10, 2008) (discussing the remaining outstanding technical issues involving Row 44’s applications).

Commission should not permit Row 44 to simply assert that it will maintain 0.2 degree peak pointing accuracy without demonstrating adequately how it will accomplish this feat.

Absent a validated approach for maintaining pointing accuracy, Row 44 must explain how it will maintain connectivity with its aircraft transmit/receive terminals using power levels that are attenuated sufficiently to ensure that excessive levels of interference are not directed toward adjacent satellites. The link budgets that were eventually disclosed by Row 44 do not provide such a showing.

The Commission must resolve these outstanding issues before Row 44 can be authorized to operate AMSS terminals in the Ku-band. Equally important, however, the Commission should avoid yet another repeat of this ad hoc proceeding by moving expeditiously to finalize and adopt application processing and service rules for AMSS networks.

The process of adopting such rules would not be administratively burdensome. The previous proceeding addressing earth stations onboard vessels ("ESVs") and the ongoing proceeding regarding vehicle-mounted earth stations ("VMES") provide clear guidance regarding technically neutral requirements that could be adopted for AMSS. Further, the record in the AMSS rulemaking docket includes detailed comments from all segments of the satellite industry, comments that were remarkably consistent in their support for the adoption of AMSS service rules.

Boeing recognizes the temptation to conclude that additional AMSS applications may not be filed in the near future and therefore formal AMSS service rules and policies may be unnecessary. Such an assumption, however, would be misplaced.

As the manufacturer of aircraft that carry AMSS equipment, Boeing is aware that additional proposals to deploy AMSS networks in the United States are under development. Further, existing AMSS licensees can be expected to propose numerous refinements and improvements to their AMSS infrastructure to reduce costs and increase data rates and spectral efficiency. Many of these changes will necessitate new applications, or major modifications to existing authorizations. Far from nearing the end of this evolution in airborne satellite technology, it is more likely that we remain near the starting point.

The need for formal application processing and service rules for AMSS networks is also heightened by the pending proposal of the Utilities Telecom Council and Winchester Cator, LLC to add a secondary fixed service ("FS") allocation in the Ku-band. Before giving any further consideration to the UTC/Winchester proposal, the Commission should finalize and adopt service rules for AMSS networks that clearly delineate the interference protection levels that must be afforded by secondary FS links to AMSS systems. This can most appropriately be achieved by designating AMSS (along with VMES) as primary applications of the existing fixed satellite service ("FSS") allocation in the Ku-band.

AMSS networks are already used in the United States to serve the critical communications needs of major corporate executives and the highest levels of the federal government. The widespread commercial availability and use of AMSS networks to accommodate the general public's desire for 24/7 connectivity cannot be too far in the future.

The Commission should therefore help to facilitate this evolution in airborne broadband communications. First, the Commission should adopt clear and technology-transparent service rules for

AMSS networks. Second, the Commission should ensure that all applicants seeking authority to deploy AMSS networks, including applicants currently pending before the Commission, demonstrate adequately that they can provide their proposed services without resulting in harmful interference to other authorized users of the Ku-band.

Thank you for your attention to this matter. Please contact the undersigned if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce A. Olcott", with a large, stylized flourish above the name.

Bruce A. Olcott

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing **Letter** was mailed by first class mail, postage pre-paid, on this 15th day of October, 2008 to the following:

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