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VIA IBFS

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Application of ViaSat, Inc.; FCC File Nos. SES-LIC-20120427-00404 and SES-STA-20120815-00751 (Call Sign E120075) – Ex Parte Presentation

Dear Ms. Dortch:

Row 44, Inc. (“Row 44”) hereby responds to the October 15, 2012 letter filed by ViaSat, Inc. (“ViaSat”) memorializing its October 11, 2012 meeting with International Bureau staff.¹ The information presented by ViaSat to the Bureau does not adequately address, and in some respects exacerbates, the deficiencies in its current request for Special Temporary Authority (“STA”).

At the outset, Row 44 notes that ViaSat is simply incorrect in its assertion that the ViaSat proposal to deploy a non-conforming, non-complaint antenna to provide aeronautical mobile-satellite service (“AMSS”) in the Ka-band is of no concern to Row 44, or to other Ku-band providers of AMSS service. *See* ViaSat 10/15 *Ex Parte* Letter, Attachment at 1. As demand for such services continues to grow, and the number of airlines seeking to offer such services to passengers increases, the interest in the potential for Ka-band satellite capacity to augment existing Ku-band services is likely to grow as well. Row 44 is currently exploring options for possible implementation of Ka-band service in the future, and therefore is concerned that the initial AMSS offerings in this spectrum not compromise future use of the band for long-term, high-quality services. Introduction of a less than state-of-the-art AMSS antenna could have an

¹ Letter from John P. Janka and Elizabeth R. Park, Counsel to ViaSat, to Marlene H. Dortch, Secretary, FCC, dated October 15, 2012 (“ViaSat 10/15 *Ex Parte* Letter”).



adverse impact on other service providers by placing undue constraints on the use of the band, by establishing the potential for grandfathering of an antenna that actually limits use of the band for other services, and/or by creating a negative impression in the marketplace of the Ka-band AMSS service generally. For all of these reasons, Row 44 is keenly interested in this proceeding and believes that the ViaSat application must be fully vetted through a complete public notice and comment cycle before the pending STA request can be considered.

ViaSat's October 11, 2012 presentation continues to adhere to the unfounded notion that its Ka-band mobile-satellite service ("MSS") use falls squarely within the lenient coordination provisions established for fixed-satellite service ("FSS") antennas that do not fall within the standards established for FSS performance. *See* ViaSat 10/15 *Ex Parte* Letter, Attachment at 1. This construction of the rules stretches them beyond their breaking point. The existing FSS rules have never been applied to the use of a non-compliant antenna for the provision of MSS in the Ka-band. Accordingly, there is no basis for accepting as sufficient evidence of coordination ViaSat's mere statements that it has informed the affected operators and they have acquiesced to its proposal.

As Row 44 has previously noted, given the relatively early phase of development and deployment of Ka-band FSS services, it is not yet established that MSS applications should be permitted in the Ka-band on even the significantly more stringent terms applicable to the far more mature Ku-band FSS, where signed coordination letters with the affected operators must be submitted as part of an MSS application. *See* Row 44 Petition to Deny or Dismiss at 6 (filed September 5, 2012). The premise of permitting such use at Ku-band is that established operators are in the best position to evaluate the potential for adverse impact on their existing operations.² But in the Ka-band FSS spectrum, there are many viable orbital locations for which no space station has been licensed or applied for, so that significant portions of the orbital arc are not "protected" by established service providers. This consideration is particularly relevant in this instance where, by its own admission, ViaSat's antenna produces grating lobes with potential interference impact well outside the typical $\pm 6^\circ$ coordination zone in areas where Ka-band satellites have yet to be licensed.

ViaSat's most recent presentation reveals that it has not even completed coordination with all of the Ka-band licensees impacted by its proposal, as it notes that it "is currently coordinating with the satellite operator" of a recently authorized system. *See* ViaSat 10/15 *Ex Parte* Letter, Attachment at 2. This development underscores the fact that the Ka-band is still evolving as new applications are filed for previously undeveloped orbital locations, and mere reliance on coordination with existing providers, at least at this relatively early stage of development, may not be sufficient to protect either the interests of potential future providers or the overall public interest in the sound development of FSS and complementary MSS services in the band.

² *See, e.g., Row 44 Inc.*, 24 FCC Rcd 10223, 10233-34 (¶ 24) & n.58 (IB/OET 2009).



The relatively small number of operating Ka-band satellites is of particular concern in this instance because of the significant questions that remain concerning operation of the Viasat Mantarray antenna. These include:

- The Mantarray antenna does not comply with Section 25.138 of the FCC's Rules in either azimuth or elevation. *See* ViaSat Application, Narrative at 4. Row 44 has pointed out previously that the grating lobes that intersect the geostationary arc can potentially affect a very broad swath of the orbital arc. *See* Row 44 Petition to Deny at 4-5.
- Skew angles are exacerbated by aircraft pitch and roll, making excessive skew likely to occur in the range of 22-31 degrees, resulting in the potential for harmful interference throughout the continental U.S. *Id.*
- The Viasat application claims compliance with Section 25.138(a)(6), which provides that "power flux-density at the earth's surface produced by emissions from a space station for all conditions, including clear sky, and for all methods of modulation shall not exceed a level of -118 dBW/m²/MHz," but provides no supporting documentation to justify this statement. *See* ViaSat Application, Narrative at 4.
- Viasat states that its positioner tracking accuracy has a one sigma (RMS) value of 0.09 degrees in azimuth and 0.45 degrees in elevation. *See* ViaSat Application, Technical Description at 6.³ A reasonable estimate of the accuracy along the geostationary arc can be computed in terms of the skew angle alpha. For example, the accuracy along the geostationary arc for a skew angle equal to 30 degrees is estimated to be 0.3 degrees, resulting in a three sigma error of 0.9 degrees. If the skew angle is 50 degrees, the one sigma and three sigma errors are 0.4 and 1.2 degrees, respectively. Accordingly, the Viasat tracking error substantially exceeds 0.2 degrees, and is unacceptable under current standards for MSS antennas operating in FSS bands. *See, e.g.,* 47 C.F.R. § 25.221(a)(1)(ii) & (iii); *Panasonic Avionics Corporation*, 26 FCC Rcd 12557, 12570 (¶ 26(k)) (IB/OET 2011).

Finally, the future development of the Ka-band, the role that applications employing mobile earth stations will play in it, and the standards that must be applied to mobile earth terminals using the band are still under discussion both in North America and in Europe, as

³ Notably, ViaSat was sharply critical of Row 44's 2008 Ku-band AMSS network proposal because it referenced antenna accuracy in terms of an RMS (root mean square) value rather than on the basis of "peak" mispointing. *See* ViaSat Petition to Deny, FCC File No. SES-LIC-20080508-00570, at 6 (filed June 27, 2008). ViaSat nonetheless feels unconstrained from relying on the same RMS approach here, despite its assertion then that this "would allow for some measure of significant mispointing in the direction of other geostationary spacecraft." *Id.*



ViaSat itself is constrained to admit. *See* ViaSat 10/15 *Ex Parte* Letter, Attachment at 2. In the absence of final decisions in these fora, or even a full public comment cycle on the underlying ViaSat application, which is the first of its kind, it would be premature to grant ViaSat temporary authority to operate a non-compliant antenna that may or may not pass muster under the standards ultimately adopted for Ka-band AMSS and other MSS offerings.

For all of the foregoing reasons, the Bureau should, at a minimum, defer processing of the ViaSat STA request until it is in a position to accept the underlying application for filing, has placed the application on Public Notice, and has solicited and received comments from the general public on the application for permanent licensing. Even then, it would be appropriate to defer final action on the STA request until more is known about the standards that will ultimately govern the use of earth stations on mobile platforms in the Ka-band. Given the fact that such decisions may come in the relatively near-term, there is no basis for expediting consideration of one proposal ahead of the establishment of relevant domestic and international standards.

Respectfully submitted,

s/ David S. Keir

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