EXHIBIT A

Modification of Ka band Aeronautical Antenna Blanket License
Description of Application and Waiver Requests

By this application, ViaSat, Inc. ("ViaSat") seeks to add a new aeronautical earth station ("AES") terminal type to its existing blanket license, Call Sign E120075, File No. SES-LIC-20140427-00404) ("Ka band Aero License"), which authorizes operations in the 28.35-29.1 GHz and 29.5-30.0 GHz portions of the Ka band for uplink communications and the 18.3-19.3 GHz and 19.7-20.2 GHz portions for downlink communications. ViaSat requests authority to add 4,000 Mantarray model M32 terminals operating on these same frequencies and communicating with the same spacecraft and in the same coverage areas as the currently-authorized AES antenna type. The terminals will be operated on aircraft while in-flight, as well as at fixed locations while on the ground.

To the extent necessary, ViaSat seeks a waiver of the U.S. Table of Frequency Allocations in Section 2.106 of the Commission's rules ("U.S. Table"), and the Commission's Ka-band band plan, to operate mobile terminals in frequencies allocated for FSS and to operate GSO FSS downlink transmissions in the 18.8-19.3 GHz portion of the Ka band allocated for NGSO FSS. Such waivers were already granted in license call sign E120075, and ViaSat does not believe new waivers are needed for a new terminal type, but makes this request out of an abundance of caution.

This application is consistent with the existing regulatory framework for the Ka band. As detailed below, ViaSat's proposed operations are fully consistent with the PFD levels referenced in Section 25.138, and with the off-axis-EIRP levels in Section 25.138 except with respect to a few exceedances that have been coordinated with all operators of satellite systems within 30 degrees of the satellite points of communication. Thus, the proposed antenna would operate without causing harmful interference to primary operations.

Grant of ViaSat's request for authority to deploy these antennas would promote the public interest. The proposed M32 terminals are nearly identical to the currently-authorized M40 version, but are narrower in width and thus facilitate mounting on narrow body commercial and private aircraft. Therefore, authorization to operate these terminals would expand deployment of ViaSat's Exede service to a broader range of aircraft-types. As such, these terminals will be critical to meeting the rapidly growing consumer demand for high-speed mobile broadband services on aircraft to support high-bandwidth applications, including streaming video, over a myriad of mobile, Wi-Fi-enabled devices while in-flight. Thus, grant of this application will advance the Commission's goals of ubiquitous mobile broadband deployment.

I. TERMINAL PERFORMANCE

Details regarding the proposed terminal operations are contained in the Technical Description attached as Attachment 1. As illustrated by the antenna patterns contained in Exhibit B and Exhibit C and discussed in the Technical Description, the antenna is consistent with the Section 25.138(a)(1) off-axis EIRP density levels in the GSO plane. The antenna patterns

provided are for bottom, middle and top frequencies in the uplink band in the azimuth plane for off-axis angles of +/- 10 degrees and +/- 90 degrees. ViaSat is unable to provide patterns to +/- 180 degrees, as specified in Section 25.138(d)(1)(A) because the near-field range available for obtaining measurement data was limited to 90 degrees. ViaSat has developed simulated data for the antenna for off-axis angles out to +/- 180 degrees and found no exceedances beyond 90 degrees. ViaSat thus requests a limited waiver to provide measured patterns to 90 degrees, rather than 180 degrees.

ViaSat does not seek protection for the downlink operations of these proposed terminals. The receive patterns referenced in Section 25.138(e) are required only to ensure that protection is only provided to the extent the proposed antenna complies the performance levels specified in Section 25.209. Because ViaSat seeks to operate on a non-interference basis, receive patterns are not being provided.

Similar to the already-authorized M40 terminal, this antenna exceeds the Section 25.138 levels in certain parts of the elevation plane. Specifically, the off-axis EIRP density of the main lobe exceeds the Section 25.138(a)(2) mask in the elevation plane. In addition, and similar to the M40 terminal, the off-axis EIRP density exceeds the mask at four discrete "grating" lobes in the elevation plane far removed from the main lobe. These grating lobes could intersect the GSO arc when aircraft are operated in a limited number of geographic areas such that the antenna is oriented at a skewed angle, relative to the GSO arc, of approximately 25 degrees. As discussed below, ViaSat has coordinated the envelope of the potential exceedances of the Section 25.138 off-axis EIRP density levels with the operators of all potentially affected GSO and NGSO systems.

Furthermore, the power flux-density at the earth's surface produced by emissions from each of the satellite points of communication is within the -118 dBW/m^2/MHz limit set forth in Section 25.138(a)(6). In fact, the interference profile of the downlinks to the proposed terminals from the satellite points of communication is no different from that of the "traditional" VSAT terminals already authorized on these satellite networks for consumer broadband services.

II. PROTECTION OF KA BAND OPERATIONS AND WAIVER REQUESTS

ViaSat seeks authority to operate the proposed terminals subject to the same waivers of the Ka band allocations in the U.S. Table[1] and the Commission's Ka-band band plan[2] to allow the proposed mobile terminal operations in the 18.3-19.3 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz and 29.5-30.0 GHz frequencies, granted in the ViaSat Ka band Aeronautical Authorization. As demonstrated below, the proposed terminals comply with the requirements of Section 25.138 and thus are compatible with other Ka band FSS satellite operations.

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1 47 C.F.R § 2.106.

2 *See Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, First Report and Order, 11 FCC Rcd 19005 (1996).

Grant of authority for the proposed terminals subject to the waivers granted in the Ka band Aero License would facilitate ViaSat's ability to expand its Exede satellite broadband service to a broader range of aircraft, thus, allowing ViaSat to continue to make efficient use of Ka band frequencies and existing FSS satellite infrastructure to expand its aeronautical mobile applications and to satisfy increasing demand for ubiquitous Internet connectivity. ViaSat has completed coordination of the proposed antenna with each of the satellite operators of GSO networks within 30 degrees of the target satellites. ViaSat has also completed coordination with O3b, which is the only relevant commercial NGSO system in the 18.8-19.3 GHz and 28.6-29.1 GHz band segments.

As explained below, ViaSat would ensure that its proposed terminal operations would not cause harmful interference into primary operations in each of these bands. ViaSat also would accept any harmful interference into its operations caused by primary uses. Because the proposed operation are consistent with the existing downlink power levels of ViaSat-1 at 115.1º W.L. and WildBlue-1 and ANIK-F2 at 111.1º W.L., ViaSat does not believe that any further coordination is required under US334, but ViaSat stands ready to engage in that coordination if required.

A. GSO FSS Operations

The proposed terminals will operate within ViaSat's existing Ka band FSS network. The Commission has acknowledged the potential for mobile satellite services in the Ka band to be able to coexist with FSS and has granted the Ka band Aero License upon a demonstration that such operations were coordinated with all potentially impacted satellite operators and would not cause harmful interference to primary users. ViaSat has coordinated the technical parameters of the M32 antenna with all potentially impacted satellite operators—specifically, all of the operators of Ka band GSO satellite networks within thirty degrees of ViaSat-1 at 115.1º W.L. and WildBlue-1 and ANIK-F2 at 111.1º W.L.

ViaSat demonstrates in the Technical Description how the pointing mechanism and transmit power control make mobile operations possible in the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-29.1 GHz and 29.5-30.0 GHz bands without causing harmful interference into adjacent networks. Thus, the proposed terminal operations are compatible with and will not cause harmful interference into FSS systems. As described above and in the Technical Description, the proposed antenna complies with the Section 25.138 EIRP spectral density limits in the GSO plane. Further, the antenna control unit and closed loop tracking system allow the terminal to be pointed accurately at the satellite while in motion, thereby protecting adjacent satellite operations. The pointing mechanism for the proposed terminals is the same as for the currently-authorized M40 antennas and will comply with the same maximum pointing error limits approved in the ViaSat Ka band Aeronautical Authorization.

The antenna does not comply with the Section 25.138(a)(2) EIRP spectral density limits in certain areas of the elevation plane. The antenna pattern shows off-axis exceedances for the main lobe. The currently-authorized M40 antennas operate subject to a condition that they cease transmissions if the antenna-to-GSO skew angel exceeds 60 degrees in order to avoid a scenario where the main-beam exceedances in the elevation plane would impact the GSO arc.

Because the aperture of the M32 terminal is narrower than that of the M40 terminal, the beamwidth of the main beam is wider in azimuth. Thus, as skew angle increases and moves toward elevation pattern, the exceedances could impact the GSO arc sooner. Therefore, ViaSat will inhibit transmissions from the M32 terminals at 55 degrees, rather than 60 degrees.

The antenna pattern also shows off-axis exceedances for four grating lobes along the elevation axis and well outside of the GSO. The grating lobes would intersect the GSO arc only when the aircraft is traveling within certain geographic locations in which the GSO arc appears skewed with respect to the local horizon of the antenna, or when the aircraft is banking at certain angles while in flight. Due to the high speeds at which aircraft travel, any intersection of a grating lobe with the GSO arc likely would be fleeting. Moreover, due to the large off-axis angles where these grating lobes occur, the actual level of interference to any GSO satellite is well below the 6% delta T/T threshold that triggers satellite coordination. However, ViaSat satisfies the coordination requirements of Section 25.138(b) to ensure that adjacent GSO systems are adequately protected from any higher power operations.

Based on an analysis of worst-case assumptions, ViaSat determined that ViaSat-1 and AMC-16 (at 85º W.L.) are the only GSO FSS satellite networks that would be potentially affected by these grating lobes.[3] ViaSat has self-coordinated its own operations on ViaSat-1 and has coordinated with SES, the operator of AMC-16. Although the delta T/T for the AMC-16 satellite arising from the worst-case assumptions regarding these grating lobes is less than 2 percent, ViaSat has coordinated its operation of the terminals with the operations on AMC-16 out of an abundance of caution. But in any event, ViaSat is the lessee of all of the capacity on AMC-16 and is the only party that could be affected.

Moreover, ViaSat will comply with all existing license conditions in the ViaSat Ka band Aeronautical Authorization, including requirements (i) regarding data logging and (ii) to coordinate with all future GSO space station operations within 30 degrees of the target satellites. ViaSat will also cease transmissions if the antenna-to-GSO skew angel exceeds 55 degrees.

B. NGSO FSS Operations in the 18.8-19.3 GHz and 28.6-29.1 GHz bands

ViaSat will operate the proposed terminals in the 28.6-29.1 GHz band is on a secondary basis, and in the 18.8-19.3 GHz band is on a non-conforming basis. The Commission has approved operation of the ViaSat-1 satellite in these bands, and has acknowledged that ViaSat can operate in these bands while protecting the primary NGSO FSS operations.[4] The same, previously-approved capability of ViaSat-1 to cease operations in these bands in the event of an in-line event between ViaSat's communications and the NGSO system's communications will also avoid interference from communications with proposed terminals into NGSO systems. Each of the proposed terminals will be dynamically controlled and can shut down operations in

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3 *See* Technical Description for additional detail regarding the analysis.

4 *See* File Nos. SAT-LOA-20110722-00132, as amended (granted Oct. 14, 2011); SAT-LOI-20080107-00006, as amended (granted Aug. 18, 2009).

the bands in which NGSO systems have priority when an NGSO satellite is within the minimum line-of-sight separation angle established through coordination.

As discussed in the Technical Description and summarized above, the sidelobes of the proposed antenna exceed the Section 25.138(a)(2) limits in the elevation plane at the main lobe and at the four discrete points identified. ViaSat has coordinated the operation of the proposed antenna with O3b, which currently is the only potentially impacted NGSO FSS system. ViaSat will coordinate its aeronautical terminal operations with any future potentially affected NGSO applicants.

III. RADIATION HAZARD ANALYSIS

A radiation hazard analysis for the proposed M32 antenna is attached hereto as Exhibit D. As demonstrated by the results of the analysis, operation of the proposed AES terminals will not result in exposure levels exceeding the maximum permissible exposure limits (MPE) for protection of both General Population/Uncontrolled Environment and Occupational/Controlled Environment. The automatic shut-down capabilities described in the analysis, coupled with the terminal's use of uplink power control and non-continuous operation, ensures that the general population will not be exposed to harmful levels of electromagnetic radiation.