Request for Special Temporary Authority to Communicate with VIASAT-1

ViaSat, Inc. ("ViaSat") requests Special Temporary Authority ("STA") to use certain earth station facilities to communicate with its Ka-band VIASAT-1 satellite to enable in-orbit testing and short-term operations at 109.2º W.L. and also while VIASAT-1 is drifted to its ultimate location at 115.1º W.L. The 109.2º W.L. location is not occupied at Ka band and thus is available for these operations.

STA is requested for a period not to exceed ninety (90) days from the date of launch, which is expected to occur in late July or early August 2011.[1] ViaSat anticipates being able to notify the Commission about the precise scheduled launch date of VIASAT-1 prior to actual grant of this STA.

ViaSat is filing concurrently the following requests for STA to operate earth stations to communicate with VIASAT-1 at 109.2º W.L. The Commission currently has before it the pending applications referenced below, which contain the salient technical parameters that are not contained in this STA request:

Antenna Type	**Antenna Location**	**Pending Application**
TT&C and Gateway	Rapid City, SD	E110015 SES-LIC-20101217-01585 SES-AMD-20110128-00074
TT&C and Gateway	Milford, UT	E110026 SES-LIC-20110228-00212 SES-AMD-20110502-00541
Gateway	Denver, CO	E110048 SES-LIC-20110328-00379 SES-AMD-20110502-00537
User Terminal	Vicinity of Green Bay, WI	E100143 SES-LIC-20101217-01585 SES-AMD-20110128-00074
User Terminal	Vicinity of Phoenix, AZ	E100143 SES-LIC-20101217-01585 SES-AMD-20110128-00074
User Terminal	Vicinity of San Diego, CA	E100143 SES-LIC-20101217-01585 SES-AMD-20110128-00074

These STAs will allow ViaSat to conduct in-orbit testing of VIASAT-1 immediately after its launch, perform TT&C at 109.2º W.L., and drift the spacecraft from 109.2º W.L. to 115.1º W.L. They also will enable short-term operations at 109.2º W.L. with less

[1] The proposed STA operations would commence after the satellite is located at 109.2º W.L. by ViaSat's satellite manufacturer, which is expected to occur approximately 11 days after launch.

than full two-degree spacing from other existing Ka band satellite operations—namely, ViaSat's WildBlue service on WildBlue-1 and Anik F2 at 111.1º W.L. Such short-term operations generally will be consistent with the parameters specified in the pending applications cited above or in the VIASAT-1 authorization, and will allow ViaSat to gather valuable technical data that could assist in the development, coordination and/or operation of broadband satellite systems at locations where the "offsets" required by the Commission's safe flight policies do not allow full two-degree spacing. Thus, the proposed operations at 109.2º W.L. present a unique opportunity to create a controlled environment for evaluating actual Ka-band broadband operations at less than two-degree spacing.

ViaSat is coordinating the proposed operations with operators of commercial Ka-band satellites within six degrees of 109.2º W.L. In the unlikely event that harmful interference nonetheless occurs, ViaSat will take all appropriate steps to eliminate the interference. In addition, ViaSat has initiated the US334 coordination process for the proposed operations.

ViaSat has evaluated the potential for an overlapping station-keeping volume with another spacecraft near 109.2º W.L. No satellite system is currently located at 109.2º W.L., and ViaSat is unaware of any other system that will be located in the immediate vicinity during these proposed operations.

In-orbit testing will consist of performance verification testing of each beam on VIASAT-1. The Rapid City and Milford gateways will provide TT&C and backup TT&C functionality during the testing and will operate at power levels consistent with regular operations. The Denver gateway will be used to transmit and receive test signals, and, consistent with industry practices and as detailed below, that gateway will temporarily need to transmit to the spacecraft at higher-than-normal power levels during certain tests.

In order to allow the Denver gateway to test each beam in each direction (both uplink and downlink), the spacecraft will be oriented at various times to position a given beam over Denver for the appropriate test. In closed-loop tests, the satellite will be oriented such that both the uplink and downlink beams being tested are positioned over the Denver gateway. In open-loop uplink tests, each uplink beam will be positioned over the Denver gateway, which will result in the corresponding downlink beam illuminating a different geographic area than under regular operations (with that signal not intended to be received by any earth station). Open-loop downlink tests will be performed on a "noise loaded" basis (there will be no uplink transmission), with each downlink beam under test being positioned over the Denver gateway.

Tests that involve uplink transmissions will be performed using unmodulated CW carriers transmitted from the Denver site. In certain cases, this will involve a maximum uplink power level of 85 dBW, which exceeds the level specified in the pending applications and the VIASAT-1 authorization. Operations at these higher-than-normal power levels will be short-term (*i.e.*, typically several minutes) and limited to two specific frequencies that, consistent with Section 25.138, are being coordinated with adjacent satellites. Those frequencies currently are planned to be at 28.61 GHz and 29.75 GHz, but could be anywhere within the 28.1-29.06 GHz and 29.5-30.0 GHz ranges, depending on coordination. The corresponding downlink power level

of 73 dBW is higher than the level authorized for VIASAT-1, and the resulting pfd will be -89 dBW/m^2/MHz, which exceeds the limit in Section 25.208(e). Those frequencies currently are planned to be 18.81 GHz and 19.95 GHz, but could be anywhere within the 18.81-19.26 GHz and 19.7-20.2 GHz ranges, depending on coordination of the corresponding uplink band. While ViaSat does not believe that the brief duration of the testing at these power levels will result in harmful interference to terrestrial users, it bears emphasis that all remaining terrestrial users in these frequency ranges operate on a secondary basis, and are not entitled to interference protection in any event.[2] To the extent necessary, ViaSat seeks a waiver of Section 25.208(e) to allow the testing operations described above.

The Commission has granted U.S. market access for the Isle of Man/United Kingdom-authorized VIASAT-1 satellite at 115.1º W.L., and has passed on the technical specifications of this spacecraft.[3] While at 109.2º W.L., VIASAT-1 currently is intended to operate pursuant to a satellite authorization that Industry Canada has granted to Ciel Satellite Limited Partnership. The *DISCO II* presumption of "market access" applies to Canadian-licensed spacecraft, and the Commission consistently has approved the use of Canadian spacecraft to provide WTO-covered services (*i.e.*, excluding DBS, DTH and DARS) to, from, and within the United States.[4] ViaSat will not use these STAs to provide DBS, DTH or DARS service over VIASAT-1.

ViaSat will make available a 24/7 point of contact in the event that any issues arise in connection with the operations under the requested STAs. Personnel will be on duty at all times during the STA period and can be contacted at (720) 493-7300.

The proposed operations are a critical step in ensuring that VIASAT-1 will be fully operational after its upcoming launch and upon arrival at 115.1º W.L. Furthermore, the proposed operations will allow ViaSat to gather valuable technical data that could assist in the development, coordination and/or operation of broadband satellite systems in a less-than-full-two-degree-spaced environment. Moreover, all appropriate arrangements are in place with ViaSat's manufacturer and launch provider to enable the launch into and testing of VIASAT-1 at 109.2º W.L. Thus, grant of the requested STAs would serve the public interest, convenience and necessity.

---

2 *See* 47 C.F.R. § 101.147(r) (stations operating in the 18.8-19.3 GHz band are no longer co-primary with Part 25 services after June 8, 2010).

3 *See* SAT-LOI-20080107-00006; SAT-AMD-20080623-00131; SAT-AMD-20090213-00023 (Call Sign S2747), grant stamped Aug. 18, 2009.

4 *See e.g., Telesat Canada, Petition for Declaratory Ruling for Inclusion of Anik F2 on the Permitted Space Station List, Petition for Declaratory Ruling to Serve the U.S. Market Using Ka-band Capacity on Anik F2*, File Nos. SAT-PDR-20010906-00082, SAT-PDR-20020321-00027, Order, DA 02-3490 (rel. Dec. 18, 2001); *see also Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, Report and Order, 12 FCC Rcd 24094, 24112, 24135 ¶¶ 39, 94 (1997).