

Lockheed Martin Corporation
Carpentersville, New Jersey Earth Station
STA Request for LEOp TT&C Operations
May 2010
Attachment

Description

Lockheed Martin Corporation (“Lockheed Martin”) requests special temporary authority (“STA”) to operate its Carpentersville, New Jersey Ku-band fixed earth station (see File No. SES-LIC-20081103-01443, as amended)¹ to provide telemetry, tracking and control (“TT&C”) functions during the post-launch and transfer orbit phases of operation for the Astra 3B satellite that will be operated by SES-Astra. Astra 3B is currently scheduled for launch on May 21, 2010, and Lockheed Martin would need to begin test transmissions in preparation for the launch on or about May 18, 2010.² To the extent required to meet this timetable, Lockheed Martin requests expedited treatment of the instant STA request.

Lockheed Martin specifically seeks authority to transmit on the 17.304 GHz and 18.095 GHz telecommand uplink channels, with the lower channel being designated as the prime telecommand channel. The earth station would receive telemetry signals from the Astra 3B satellite on the 11.70175 GHz and 11.44625 GHz and 11.44675 GHz channels, with the higher-frequency channel being designated as the prime telemetry channel. Although the mission duration for the TT&C operations requested here is 10 days, Lockheed Martin requests a 30-day STA to enable it to accommodate any slippage in the launch date without the need for additional authority from the Commission.

Although the transmit frequencies Lockheed Martin seeks to use for the Astra 3B TT&C support operations are not included in Lockheed Martin’s former license for Call Sign E920702 and current application for the Ku-band antenna in File No. SES-LIC-20081130-01443 (under Call Sign E7541), Lockheed Martin notes that the Commission previously authorized Lockheed Martin STA requests for launch and early-operations TT&C support using frequencies in the ranges sought in the instant STA request. *See* Request of Lockheed Martin Corp. for STA to Support LEOp TT&C Functions for EchoStar-7, File No. SES-STA-20020208-00160 (STA to support launch and early operations TT&C functions for EchoStar-7 satellite using 17.3-17.8 GHz band frequencies for Earth-to-space telecommand transmissions) (“EchoStar-7 TT&C STA”). The EchoStar-7 TT&C STA request included a radiation hazard study for this frequency range that Lockheed Martin hereby incorporates by reference. *See* EchoStar-7 TT&C STA at Attachment 3. Lockheed Martin has used the Carpentersville earth station facility for similar

¹ The pending application in File No. SES-LIC-20081103-01443, under Call Sign E7541, was filed on a provisional basis to replace Lockheed Martin’s inadvertently non-renewed license for a 14.2 meter Ku-band antenna at the Carpentersville, NJ site under Call Sign E920702. Lockheed Martin’s petition to reinstate the license for Call Sign E920702, as well as the “replacement” application it filed in the alternative under File No. SES-LIC-20081103-01443 and Call Sign E7541, are pending.

² The test transmissions that would begin on or about May 18 would occur over a period of approximately three days. During these tests, the earth station would not be communicating with any satellite; instead, the transmissions will be made with the antenna at zenith to verify RF functionality.

receive operations in support of the launch and early-operations TT&C functions for Intelsat-15 in November 2009. *See* Request of Lockheed Martin Corp. for STA to Support LEOp TT&C Functions for Intelsat-15, File No. SES-STA-20091111-01449 (filed November 11, 2009) (STA to support launch and early operations functions for Intelsat-15 satellite using 11.45-11.7 GHz band frequencies for space-to-Earth telemetry reception) (“Intelsat-15 TT&C STA”).

Lockheed Martin’s proposed transmissions on both transmit frequencies will use the emission designators for telecommand functions that are proposed in the pending license application, or will use carriers that do not exceed the highest e.i.r.p., e.i.r.p. density, and bandwidth prescribed in the application for the telecommand carriers. When no commands are being sent, a CW carrier that is within the emission envelope proposed in Lockheed Martin’s application, as amended, would be present. *See* File No. SES-AMD-20081219-01664, at Schedule B. The information in the Schedule B portion of Lockheed Martin’s pending application in File No. SES-LIC-20081130-01443, as amended, is hereby incorporated by reference. Lockheed Martin notes that it is possible that during an unexpected emergency with the satellite, the power levels proposed for the earth station in the 2008 application (as amended) may need to be exceeded to help recover the satellite. Under these extremely unlikely circumstances, Lockheed Martin will make every effort to coordinate such operations with affected users, and will take all reasonable steps to swiftly eliminate any harmful interference caused. Lockheed Martin fully understands that all of its proposed launch and early-operations TT&C support for the Astra 3B launch will be on a strictly non-harmful interference, non-protected basis.

The limited operations Lockheed Martin proposes in support of the launch of Astra 3B – operations Lockheed Martin and the satellite operator will coordinate in advance with any and all potentially affected entities that operate communications systems in compliance with the Table of Frequency Allocations during the limited period of use – are required in the public interest. Lockheed Martin’s earth station will be part of a global network of control facilities that will be used to position the satellite as it progresses from transfer orbit to its final location. The safe and orderly use of the entire geostationary orbital resource and protection of the hundreds of satellites from the U.S. and other countries that operate there depends in no small part on ensuring that the Astra 3B satellite is controlled while over North America, and Lockheed Martin’s earth station thus will serve a limited-duration, but nonetheless vital function.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, Astra 3B is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following cell phone number: (609)-865-2658 and/or station number: (908) 859-4050.

The antenna to be used for this STA is already built. It is the same antenna that was previously authorized under Call Sign E920270 and that is now the subject of the pending application and reinstatement request described in Note 1 above, and, as noted, has been authorized for use on an STA-basis to support other satellite launches.

In sum, Lockheed Martin requests authority to operate its Carpentersville, NJ Ku-band earth station antenna to provide critical TT&C services during the launch and early operations phase of the Astra 3B satellite, for a term of 30 days commencing May 18, 2010.