

## **Description of Operations and Public Interest Statement**

Lockheed Martin Corporation (“Lockheed Martin”) requests special temporary authority (“STA”) to operate its Carpentersville, New Jersey fixed earth station (*see* File No. SES-LIC-20081103-01443, as amended; Call Sign 7541) to provide tracking, telemetry and control (“TT&C”) functions during the post-launch and early orbit phases (“LEOP”) of operation for the Eutelsat 65 West A satellite (“E65WA”). E65WA is destined for operation at the nominal 65° West longitude orbital location (65° W.L.), and is currently scheduled for launch on or about March 4, 2016 aboard an Arianespace launch vehicle from the Centre Spatial Guyanais in Kourou, French Guiana. Accordingly, Lockheed Martin requests to begin test transmissions on March 2, 2016 in preparation for the scheduled launch.<sup>1</sup>

### **1. Requested STA Operations**

Lockheed Martin specifically seeks authority to transmit signals at the center frequencies 13.752 and 14.000 GHz for in transit telecommand communications (Earth-to-space). It will receive telemetry signals from the satellite (space-to-Earth) at the center frequencies 10.9497 GHz and 11.2003 GHz. These frequencies are appropriate for TT&C operations as they are near the band edges, as required by the FCC’s Rules. *See* 47 C.F.R. § 25.202(g). In both cases, the higher channel overlaps the authority contained in Lockheed Martin’s current FCC license. Lockheed Martin acknowledges that the FCC will need to coordinate this use with NTIA with respect to federal spectrum users at 13.75-14.0 GHz, including the Tracking and Data Relay Satellite System’s forward space-to-space link pursuant to footnote US337 of the U.S. Allocation Table. 47 C.F.R. § 2.106. With regard to 10.9497 and 11.2003 GHz, Lockheed Martin acknowledges that its earth station can operate on an unprotected basis.

Lockheed Martin’s proposed transmissions will use total input power and emissions for Ku-band telecommand that will fall below the highest input power, EIRP, EIRP density, and bandwidth prescribed for the telecommand carriers in its FCC license. Additional technical parameters for the STA operation are set forth in the table on page 3 of this attachment. When no commands are being sent, a CW carrier that is within the emission of Lockheed Martin’s currently authorized operation would be present. *See, e.g.*, File No. SES-AMD-20081219-01664, at Schedule B. All of Lockheed Martin’s proposed TT&C transmit operations in support of the E65WA launch will be on a strictly non-harmful interference, non-protected basis. *See* 47 C.F.R. § 25.282. Lockheed Martin notes that it is possible that during an unexpected emergency with the satellite, the authorized power levels for the earth station 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

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<sup>1</sup> The test transmissions that would begin on or about March 2<sup>nd</sup> 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.

steps to swiftly eliminate any harmful interference caused, consistent with the non-harmful interference, non-protected status of the temporary operations proposed.

Lockheed Martin is requesting that the duration of this STA be a total of thirty (30) days commencing March 2, 2016 to cover a short-term slippage in the anticipated dates of the various phases of operation; it nonetheless expects that all Carpentersville operations in support of the launch will be completed within approximately three weeks after the E65WA satellite is launched. Lockheed Martin designates Michael Usarzewicz as the contact person that will be available whenever transmission to, or reception from, E65WA 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.

## **2. Grant of the Requested Authority Will Serve the Public Interest**

Lockheed Martin believes that the limited operations it proposes in support of the launch of the E65WA satellite are required in the public interest. E65WA will be a state-of-the-art high-capacity, tri-band satellite designed to target fast-growing markets across Latin America. Its high-power Ku-band payload will enable direct-to-home reception of digital and HD channels across Brazil with small (60cm) antennas and will facilitate corporate connectivity in Central America, the Caribbean and the Andean region. The E65WA satellite also features Trans-Atlantic C-band capacity for cross-continental video transmission and distribution and a multi-spotbeam Ka-band payload that will promote broadband access across Latin America, notably Brazil. Among other beneficial uses, the satellite will provide a unique solution for live TV transmissions of the Rio de Janeiro Olympics to Latin America and Europe and further afield via Eutelsat's global fleet.

Lockheed Martin's Carpentersville earth station will be part of a global network of control facilities that will be used for transfer orbit support services, guiding the satellite to its final geosynchronous orbital location, and for in-orbit testing. No end user service will be provided within the United States at any time. The safe and orderly use of the geostationary orbital resource and protection of the satellites licensed by the U.S. and other countries that operate there depends in on ensuring that the E65WA satellite is controlled while over North America *en route* to its final position; Lockheed Martin's earth station thus will serve a vital function.

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As outlined above, Lockheed Martin requests authority to operate its Carpentersville, NJ earth station antenna to provide critical TT&C services during the launch and early operations phase of the E65WA satellite, for a term of 30 days commencing March 2, 2016.

**Operating Parameters for Proposed Carpentersville, NJ Ku-Band TT&C LEOP STA**

SITE NAME (or identifier):	Carpentersville, NJ – Call Sign E7541
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***Antenna location***

Longitude (deg, min, sec- NAD 83)	75 ° 11 ' 27.8 " W
Latitude (deg, min, sec- NAD 83)	40 ° 38 ' 39.1 " N
Antenna Height In Meters:	19.14m centerline (AGL)
Ground Elevation (AMSL)	54.86m/180ft

***Antenna Characteristics (size & gain)***

Size	14.2m
TX Gain	63.5 dBi @ 14.0 GHz
RX Gain	62.9 dBi @ 12 GHz
Antenna Model	14.2 KFPA
Antenna Manufacturer	TIW (GD SATCOM)

Maximum HPA Power    2 kW

Satellites Arc to Coordinate: 6° to 149° W.L.

Satellites Desired: E65WA LEOP

***RF Characteristics***

Downlink	10.9497 GHz LHCP, RHCP, H, V 11.2003 GHz RHCP, LHCP, H, V
Uplink	13.752 GHz RHCP, LHCP, H, V 14.000 GHz LHCP, RHCP, H, V

**Telecommand (Uplink) Carrier Parameters**

Type of Service (Broadcast Data TTC)	TTC
Emission Designator	850KFXD
Data Type	BPSK/NRZ-L
Modulation:	FM
Polarization:	LHCP, RHCP, H, V