

Description of Operations and Public Interest Statement

Pursuant to 47 CFR 25.120 of the Commission's Rules, Lockheed Martin Corporation ("Lockheed Martin") hereby requests Special Temporary Authority ("STA") for a period of thirty (30) days to operate its Carpentersville, New Jersey fixed earth station (Call Sign E7541) to provide telemetry, tracking, and control ("TT&C") functions during the Electric Orbit Raising ("EOR") period of operation, ranging, and electric propulsion monitoring for the SES-12 satellite.

SES-12 is destined for in-service operation at 95.0° E.L., and is currently scheduled for launch in late May 2018, aboard Falcon 9 heavy rocket, from Cape Canaveral, Florida. Accordingly, Lockheed Martin requests authority to begin communications on May 28, 2018, in preparation for the start of EOR.¹

1. Requested STA Operations

The EOR TT&C and ranging signals will be transmitted partly in the standard Ku-band for which Lockheed Martin already has authority under Call Sign E7541. As to the instant request for STA, Lockheed Martin seeks herein authority to communicate with SES-12 as a point of communication on three extended Ku-band frequencies, which fall outside of the currently authorized Ku-band transmit frequencies for the earth station. In all other respects, operation of the earth station will be consistent with the parameters set forth under the existing permanent authority.

In order to demonstrate compliance with FCC Report and Order 96-377 regarding operations in the extended Ku-band, Lockheed Martin submits herewith an analysis that states that the proposed operations pose no risk of interference either to U.S. Navy shipboard radar operations or to NASA TDRSS links.

The all-electric propulsion system of SES-12 requires extended support for the completion of the mission. Accordingly, Lockheed Martin is requesting that the duration of this STA be a total of thirty (30) days. Further, a request for extension of the instant STA request for an additional one hundred eighty (180) days is being filed concurrently to cover the entire period required to complete EOR and the in-orbit testing being conducted by the launch provider.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to SES-12 is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following phone numbers:

¹ The proposed test transmissions would occur over a period of approximately two to 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.

(609) 865-2658 (cellular)
(908) 859-4050 (earth station desk)

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 SES-12 satellite serve the public interest. Lockheed Martin understands that the SES-12 satellite will provide direct-to-home broadcast and other high-throughput communications services in the Middle East and the Asia-Pacific region, including India and Indonesia. Lockheed Martin's Carpentersville earth station will be part of a global network of control and ranging facilities that will be used solely to position the satellite as it progresses from transfer orbit to its final location and to calibrate electric propulsion. No end user service will be provided within the United States at any time. The safe and orderly use of the entire geostationary orbital resource and protection of the hundreds of satellites licensed by the U.S. and other countries that operate there depends in no small part on ensuring that the SES-12 satellite is controlled while over North America en route to its final geostationary orbital position. In this regard, Lockheed Martin's earth station thus will serve a vital function.

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Lockheed Martin requests authority to operate its Carpentersville, NJ earth station antenna to provide critical TT&C and ranging services during the EOR mission of the SES-12 satellite, for a term of 30 days, commencing May 28, 2018.

TECHNICAL DETAILS OF SPECIAL TEMPORARY AUTHORITY

Satellite Characteristics

Satellite: SES-12 Electric Orbit Raising
Orbital Location: 95.0° E.L.
Manufacturer: Airbus Space & Defence
Launch Vehicle: Falcon 9 Heavy

* * *

Earth Station Characteristics

Antenna: 14.2-m TIW Systems
Antenna Location: 40°38' 39.1" N / 075° 11' 27.8" W

Telecommand Uplink Frequencies (those with * are subject of STA request):

13996.5 MHz (LHCP/RHCP)*
13998.0 MHz (LHCP/RHCP)*
13999.5 MHz (LHCP/RHCP)*
14494.5 MHz (LHCP/RHCP)
14496.0 MHz (LHCP/RHCP)
14497.5 MHz (LHCP/RHCP)
14499.0 MHz (LHCP/RHCP)

Telemetry Downlink Frequencies:

11449.5 MHz (LHCP/RHCP)
11703.5 MHz (LHCP/RHCP)

Antenna Gain: 63.5 dBi @ 14 GHz
Antenna Power: 19.1 dBW (into the flange)
Maximum EIRP: 83.0 dBW for all carriers
EIRP Density: 23.0 dBW/4kHz
Uplink Emission: 800KF2D
Downlink Emission: 300KG2D

