

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 HellasSat 4/SaudiGeoSat 1 ("HS4") satellite, which Lockheed Martin has manufactured.

HS4 is destined for in-service operation at 39.0° E.L. Owing to changes in the launch schedule, the launch itself has shifted to not earlier than February 5, 2019, aboard an Ariane 5 ECA rocket, from Guiana Space Center. Also, because of the recent lapse in funding for most Federal agencies, Lockheed Martin is only just now able to submit the instant request for continuation of its existing authority.

Lockheed Martin requested authority to begin communications on January 15, 2019, in preparation for the start of EOR.¹ The all-electric propulsion system of HS4 requires extended support for the completion of the mission.

Accordingly, Lockheed Martin is requesting herein extension of its initial request for an additional thirty (30) days, from February 15, 2019, to cover the period required to conduct initial EOR and in-orbit testing being conducted by the launch provider. The all-electric propulsion system of HS4 requires extended support for the completion of the mission.

1. Requested STA Operations

The EOR TT&C and ranging signals will be transmitted in the standard C-band for which Lockheed Martin has authority under Call Sign E7541. As to the instant request for STA, Lockheed Martin seeks herein authority to communicate with HS4 as a point of communication on two C-band frequencies that fall outside of the currently authorized transmit frequencies for the earth station.

The proposed TT&C operations in support of the HS4 launch will be on a strictly non-harmful interference, non-protected basis. When no commands are being sent, a CW carrier that is within the emission of the licensed operation would be present. In the case of an anomaly, extraordinary measures, such as increasing power, may be necessary; if such measures are required during this STA period, Lockheed Martin will notify the FCC within seven (7) business days that such measures were needed.

¹ STA was granted under FCC File No. SES-STA-20181114-03202.

Lockheed Martin incorporates by reference the radiation hazard study that was included with its most recent filings at the FCC. In addition, Lockheed Martin is submitting herewith a Frequency Coordination and Interference Analysis Report prepared by Comsearch.

The all-electric propulsion system of HS4 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 HS4 is to occur through the subject earth station. Mr. Usarzewicz can be reached at the following phone numbers:

(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 HS4 satellite serve the public interest. Lockheed Martin understands that the HS4 satellite will provide to provide in-orbit backup, redundancy services for HellasSat 3 and further expansion over Europe and Southern Africa, through increased Ku-band capacity.

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 HS4 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 HellasSat 4/SaudiGeoSat 1 satellite, for a term of 30 days, from February 15, 2019.

TECHNICAL DETAILS OF SPECIAL TEMPORARY AUTHORITY

Satellite Characteristics

Satellite: HellasSat 4/ SaudiGeoSat 1 Electric Orbit Raising
Orbital Location: 39.0° E.L.
Manufacturer: Lockheed Martin Corporation
Launch Vehicle: Ariane 5 ECA

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Earth Station Characteristics

Antenna: 14.2-m TIW Systems
Antenna Location: 40°38' 39.1" N / 075° 11' 27.8" W
Telecommand Uplink Frequencies:
5928.0 MHz (LHCP/RHCP)
6422.0 MHz (LHCP/RHCP)
Telemetry Downlink Frequencies:
4199.0 MHz (LHCP/RHCP)
3704.25 MHz (LHCP/RHCP)
Antenna Gain: 57.3 dBi @ 6 GHz
Antenna Power: 34.0 dBW (into the flange)
Maximum EIRP: 91.5 dBW for all carriers
EIRP Density: 19.0 dBW/4kHz
Uplink Emission: 1M50F2D
Downlink Emission: 1M00G8D