

### **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 E7451) to provide telemetry, tracking and control ("TT&C") functions during the post-launch and early orbit phases ("LEOP") of operation for the JCSAT-16 satellite.

JCSAT-16 is destined for in-service operation at 150.0° E.L., and is currently scheduled for launch by mid-August aboard a Falcon 9 launch vehicle from Cape Canaveral, Florida.

Accordingly, Lockheed Martin requests to begin test transmissions on August 10, 2016 in preparation for the launch.<sup>1</sup> Further, Lockheed Martin is requesting that the duration of this STA be a total of thirty (30) days to cover any 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 fourteen (14) days after the JCSAT-16 satellite is launched.

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

Lockheed Martin specifically seeks authority to transmit telecommand signals at the center frequencies 13751.0 MHz and 13753.0 MHz for in transit telecommand communications (Earth-to-space), and to receive telemetry signals from the satellite (space-to-Earth) at the center frequencies 12201.5 MHz and 12203.5 MHz.

The proposed TT&C operations in support of the JCSAT-16 launch will be on a strictly non-harmful interference, non-protected 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 above-referenced FCC license. When no commands are being sent, a CW carrier that is within the emission of the licensed operation would be present. However, 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.

Lockheed Martin incorporates by reference the radiation hazard study and Schedule B information that were included with its most recent filings at the FCC.

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<sup>1</sup> 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.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, JCSAT-16 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 JCSAT-16 satellite serve the public interest. Lockheed Martin understands that the JCSAT-16 satellite has been licensed by the Japanese administration for the provision of communications services to Japanese satellite operator SKY Perfect JSAT. Lockheed Martin's Carpentersville earth station will be part of a global network of control facilities that will be used solely to position the satellite as it progresses from transfer orbit to its final location. 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 JCSAT-16 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 services during the launch and early operations phase of the JCSAT-16 satellite, for a term of 30 days, commencing August 10, 2016.

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

SITE NAME (or identifier):	<b>Carpentersville, NJ – Call Sign E7541</b>
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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:	19.2 m
Ground Elevation (AMSL):	85.7 m

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

Size	14.2
TX Gain	63.5 dBi @ 14.0 GHz
RX Gain	62.9 dBi @ 12.0 GHz
Antenna Model	14.2 KFPA
Antenna Manufacturer	TIW (GD SATCOM)

Maximum Power (at Flange)                      500 W

<b>General</b>		
<b>Satellite Name</b>	<i>Commercial name for the satellite</i>	JCSat 16
<b>Orbital Location</b>	<i>Longitude of the satellite in-service location</i>	150deg.E
<b>IOT location</b>	<i>Longitude of the location where the IOT testing will be conducted</i>	150deg.E
<b>Mission Duration</b>	<i>Describe in months the amount of time the antenna is required for the mission</i>	.5 month
<b>Expected launch date</b>	<i>Planned satellite launch date</i>	16-Aug-16
<b>Operator</b>	<i>Name of the operator of the satellite</i>	SSL
<b>Manufacturer</b>	<i>Name of the manufacturer of the satellite</i>	SSL
<b>Telecommand Uplink</b>		
<b>TC1 Center Frequency</b>	<i>Center frequency of TC1 in MHz</i>	13753.00
<b>TC1 Bandwidth</b>	<i>TC1 carrier maximum occupied RF bandwidth in kHz</i>	1000
<b>TC1 Start Frequency</b>	<i>Calculated start frequency for TC1 carrier</i>	13752.50
<b>TC1 End Frequency</b>	<i>Calculated end frequency for TC1 carrier</i>	13753.50
<b>TC1 Polarization</b>	<i>Polarization for TC1 carrier</i>	LHCP
<b>TC2 Center</b>	<i>Center frequency of TC2 in MHz</i>	13751.00

<b>Frequency</b>		
<b>TC2 Bandwidth</b>	<i>TC2 carrier maximum occupied RF bandwidth in kHz</i>	1000
<b>TC2 Start Frequency</b>	<i>Calculated start frequency for TC2 carrier</i>	13750.50
<b>TC2 End Frequency</b>	<i>Calculated end frequency for TC2 carrier</i>	13751.50
<b>TC2 Polarization</b>	<i>Polarization for TC2 carrier</i>	LHCP
<b>Data Rate</b>	<i>Data rate for command carriers</i>	1 kbps
<b>Modulation Type(s)</b>	<i>Type(s) of modulation for command carriers (i.e. FM, BPSK etc.)</i>	1000bps, NRZ-L/BPSK/FM
<b>Emission Designator(s)</b>	<i>ITU standard code to represent bandwidth and modulation of a carrier (i.e. 800KF8D). See Emission Designator tab for more information</i>	1M00F2DAN
<b>Ranging Uplink</b>		
<b>Bandwidth</b>	<i>Ranging carrier maximum occupied RF bandwidth in kHz</i>	1000
<b>Modulation Type</b>	<i>Type of modulation (i.e. FM, QPSK, 16QAM, etc.)</i>	CW-FM
<b>Emission Designator(s)</b>	<i>ITU standard code to represent bandwidth and modulation of a carrier (i.e. 800KF8D). See Emission Designator tab for more information</i>	1M00F8XJN
<b>Telemetry downlink</b>		
<b>TM1 Center Frequency</b>	<i>Center frequency of TM1 in MHz</i>	12201.50
<b>TM1 Bandwidth</b>	<i>TM1 carrier maximum occupied RF bandwidth in kHz</i>	1500
<b>TM1 Start Frequency</b>	<i>Calculated start frequency for TM1 carrier</i>	12200.75
<b>TM1 End Frequency</b>	<i>Calculated end frequency for TM1 carrier</i>	12202.25
<b>TM1 Polarization</b>	<i>Polarization for TM1 carrier</i>	HP
<b>TM2 Center Frequency</b>	<i>Center frequency of TM2 in MHz</i>	12203.50
<b>TM2 Bandwidth</b>	<i>TM2 carrier maximum occupied RF bandwidth in kHz</i>	1500
<b>TM2 Start Frequency</b>	<i>Calculated start frequency for TM2 carrier</i>	12202.75
<b>TM2 End Frequency</b>	<i>Calculated end frequency for TM2 carrier</i>	12204.25
<b>TM2 Polarization</b>	<i>Polarization for TM2 carrier</i>	HP
<b>Data Rate</b>	<i>Data rate for command carriers</i>	16 kbps
<b>Modulation Type(s)</b>	<i>Type(s) of modulation (i.e. FM, BPSK, etc.)</i>	PM, BPSK PCM/NRZ-L
<b>Emission Designator(s)</b>	<i>ITU standard code to represent bandwidth and modulation of a carrier (i.e. 800KF8D). See Emission Designator tab for more information</i>	1M00G8DAN