

### **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 post-launch and early orbit phases ("LEOP") of operation for the Intelsat 36 satellite ("IS-36").

IS-36 is a Space Systems Loral Model SSL-1300 satellite and licensed by the Federal Communications Commission for operation at the 68.5° East Longitude orbital location (68.5° E.L.).<sup>1</sup> IS-36 is scheduled for an upcoming launch aboard a Ariane 5 launch vehicle from the European Spaceport in Kourou, French Guiana on August 24, 2016.

Accordingly, Lockheed Martin respectfully requests to begin test transmissions on August 20, 2016 in preparation for the launch.<sup>2</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 ten (10) days after the IS-36 satellite is launched.

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

Lockheed Martin specifically seeks authority to transmit telecommand signals at the center frequencies 6722.0 MHz and 6724.5 MHz for in transit telecommand communications (Earth-to-space).

The proposed TT&C operations in support of the IS-36 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 C-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. In addition, Lockheed

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<sup>1</sup> See FCC File No. SAT-LOA-20151231-00089 (S2948).

<sup>2</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.

Martin is submitting herewith a Frequency Coordination and Interference Analysis Report prepared by Comsearch.

Lockheed Martin designates Michael Usarzewicz to be the contact person that will be available whenever transmission to, or reception from, IS-36 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 IS-36 satellite serve the public interest. Lockheed Martin understands that the IS-36 satellite has been licensed by the FCC to provide media and content distribution services in Africa and South Asia. 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 IS-36 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 IS-36 satellite, for a term of 30 days, commencing August 20, 2016.

Operating Parameters for Proposed Carpentersville, NJ C-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    57.3 dBi @ 6.0 GHz  
 RX Gain    53.9 dBi @ 4.0 GHz  
 Antenna Model                                      14.2 KFPA  
 Antenna Manufacturer                            TIW (GD SATCOM)

Maximum HPA Power                              650W

IS36		
<b>Telecommand uplink</b>		
TC1 frequency (MHz)	6722	6724.5
TC1 polarization	RHCP	RHCP
Modulation: Coding and Rate	FM/BPSK, 250	FM/BPSK, 250
Max occupied RF bandwidth	850kHz	850kHz
Emission type		
<b>Telemetry downlink</b>		
TM1 frequency (MHz)	3652	3652.5
TM1 polarization	LHCP	LHCP
Max occupied RF bandwidth	300kHz	300kHz
Emission type		
Modulation: Coding and Rate	PM/PCM, 4800	PM/PCM, 4800

<b>Final Satellite Position</b>		
Satellite Commercial name:	Intelsat 36	
Orbital Location:	68.5 EL	