

## REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Lockheed Martin Corporation (“Lockheed Martin”) hereby seeks Special Temporary Authority to operate a developmental system that Lockheed Martin is testing in connection with a Defense Advanced Research Projects Agency (“DARPA”) program.

Lockheed Martin has made every effort to limit both the area of operation as well as the frequencies required to satisfy the proposed testing. Testing is designed to occur during two testing periods of up to 4 hours a day for 3-5 days within a week. We expect several weeks of total testing to validate the proof of concept and system functionality. An individual test consists of transmissions of up to 30 minutes. Within an individual test, we expect to switch among bands (UHF, S, and X) multiple times a minute to understand channel performance characteristics. The frequencies requested in the current STA cover the frequencies that DARPA requires for post-production use of the system.

*Prior Coordination.*

Lockheed Martin brings to the FCC’s attention that it has cleared the use of the X-band frequencies with operator Planet for the six-month duration of this STA request. Notice of that prior consent is attached to the application.

**Areas of Operation.**

Lockheed Martin has identified two areas of operation.

- (1) Ground (fixed) operations will be conducted at the Lockheed Martin facility in Goodyear, AZ, to conduct initial testing of the data link between transmitter and receiver.
- (2) Ground-to-air operations will be conducted between a fixed transmitter and an airborne receiver, in the area identified by the following coordinate points. Bi-directional radio communications will be conducted only within this area of operation:



Coordinates: 33° 44.45 N / 113° 38.32 W  
 33° 33.74 N / 113° 45.35 W  
 33° 15.60 N / 112° 24.20 W  
 33° 05.38 N / 112° 29.58 W

Flights will be conducted at up to 10,000 ft AGL.

**Frequency Requirements.**

The DARPA program requires that Lockheed Martin's equipment be able to transmit in the UHF, S, and X bands. Given the bandwidth requirements of such operations, we have selected frequencies in each of the bands to account for the full bandwidth required to test (1) proof of concept and system verification to support anticipated future operational needs and (2) channel characterization.

The instant STA request seeks transmit authority on two X- band frequencies. (A separate STA request has been submitted, covering authority for UHF and S-band frequencies.)