

**Request for Special Temporary Authority**

**I. Introduction**

By the instant application (“Application”), Dynetics, Inc. (“Dynetics”) requests that the Commission grant Special Temporary Authority (“STA”) to permit Dynetics to operate the facilities (the “Facilities”) specified in the instant application from March 1, 2018 to September 1, 2018.

**II. Purpose and Nature of the Operation**

Dynetics, headquartered in Huntsville, Alabama, delivers high-quality, high-value engineering, scientific, and information technology (IT) solutions to customers within the U.S. government and a range of other market segments. Dynetics provides complete lifecycle analysis, engineering, and hardware, to support customer missions.

An experimental STA is requested to conduct ground-based transmissions as part of the testing of the wireless two-way data link for the Gremlins Air Vehicle prototype UAS. This activity is necessary to support the AFRL Gremlins Phase II contract for initial testing of the Gremlins system. The applicable contract information is as follows:

|                 |   |
|-----------------|---|
| Agency:         | Air Force Research Labs (AFRL)  |
| Contract No:    | FA8650-16-C-7618  |
| Government POC: | Mr. Juan Martinez, 937.713.6652, <a href="mailto:juan.martinez.22@us.af.mil">juan.martinez.22@us.af.mil</a> |

Waiver of the Station ID rules set forth at Section 5.115 is respectfully requested.

Operations are required on a temporary-fixed basis at and around Huntsville, AL (Antenna 1) and on a temporary-fixed basis at and around Phoenix Mesa Gateway Airport in Mesa, AZ (Antenna 2). Operations at the two locations will not occur at the same. Operations in Mesa, AZ will be at the Phoenix Mesa Gateway Airport: 33°18'15.42"N, 111°39'30.53"W; 5835 S Sossaman Rd, Mesa, AZ 85212. When operating at the airport, operations will be coordinated with the airport authority.

**A. Power Levels**

All stations have the same performance specifications including modulating schemes, bandwidth, and transmitter power, 4 Watts. The ground stations at both Huntsville, AL and Mesa, AZ will use an omnidirectional (azimuth) antenna with a gain of 1 dBi. Thus the ERP of the ground stations will be a maximum of 5 Watts, mean (average).

## **B. Equipment and Technical Specifications**

The wireless data link, FGBR-115RA-2 developed by FreeWave Technologies, has a 2-level Gaussian Frequency Shift Keying (FSK) modulation. The FGBR-11RA-2 will be used in a single frequency, no frequency hopping, mode. The transmitter utilizes an occupied bandwidth of approximately 230.4 kHz. Only two ground stations will be used simultaneously at each location.

## **III. Interference Mitigation**

Dynetics is well aware of its obligations under Part 5 of the Commission's rules to avoid interference to co-channel licensees in non-experimental services, and will take all steps to ensure compliance with this obligation.

A minimum of two frequencies within the requested action frequency range are required for this experimental activity. Therefore, if required, Dynetics will work with the Commission and/or other stakeholders to identify a smaller action frequency range or as a minimum, two specific frequencies within the requested action frequency range to avoid interference to co-channel licensees in non-experimental services.

Dynetics understands that FAA (or other government stakeholders) may restrict radiation to certain azimuth and/or elevation sectors in order to ensure that the proposed Facilities do not pose a threat of interference to adjacent emitters. Accordingly, this is to confirm that Dynetics stands ready to work with the Commission and/or FAA to identify any reasonably necessary restrictions for the system.

## **IV. Stop Buzzers**

Dynetics advises that the following will be available by wireless telephone and will act as "stop buzzers" if any issues regarding interference arise during testing:

**Primary:** Chris Statler (256-503-9283)

**Secondary:** Samuel Petersen (573-578-7748)

For the foregoing reasons, Dynetics respectfully submits that approval of this Application is in the public interest, convenience and necessity.