

PUBLIC INTEREST STATEMENT

1. Introduction

By the instant application ("Application"), Dynetics, Inc. ("Dynetics") requests that the Commission grant a 2 year conventional experimental license to permit Dynetics to operate the facilities (the "Facilities") specified in the instant Form 442.

2. 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 delivers the "Power of Solutions," providing complete lifecycle analysis, engineering, and hardware, to support customer missions.

The requested license, a continuation of the operations previously authorized under STA under call sign WM9XAP, is requested is to test the complete DARPA MFP system with the appropriate 2-way digital datalink used in the final system. Dynetics has received notification the government has exercised an option on phase 1 to continue the work beyond 6 months. In addition, Dynetics has been notified of a pending award for phase 2 of the program. The license will permit testing under the phase 1 option and the phase 2 award.

Operations are required on a temporary-fixed and airborne basis at and around Huntsville, AL (Antennas 1 and 2); Harvest, AL (at 00AL, Epps Airpark) (Antennas 3 and 4); and Hurtsboro, AL (at AL05, Sehoy Airport) (Antennas 5 and 6). When airborne mobile, the facility will be mounted on an unmanned aircraft flying at a maximum altitude of 400 ft (122 m) AGL and within visual line-of-sight of the operator. When operating at an airport, operations will be coordinated with the airport owner.

This activity is necessary to test a prototype system being developed for the DARPA Mobile Force Protection (MFP) contract, which requires utilization of non-ISM frequency bands.

Contract Information is as follows:

Agency:	DARPA Mobile Force Protection (MFP)
Contract No. :	HR0011-17-9-0017
Government POC:	Jean-Charles (JC) Lede
	703-526-2844, jc.lede@darpa.mil

The testing will be directed by the Dynetics engineering team with technical support from the datalink manufacturer, Microhard, as necessary.

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

The digital datalink can operate with 8 different modulations, including BPSK, QPSK, and QAM, and different data rates, as follows:

BPSK_1/2
QPSK_1/2
QPSK_3/4
16QAM_1/2
16QAM_3/4
64QAM_2/3
64QAM_3/4
64QAM_5/6

The data rates and modulation schemes are divided into 3 modes with maximum emission bandwidths of approximately 2, 4, and 8 MHz. The three emission designators identified represent the maximum emission bandwidths for these modes using 64QAM_5/6 modulation.

The digital datalink can operate on any of 20-26 channels of 1-MHz spacing within the frequency range of 1812 MHz to 1839 MHz. The requested action frequency range represents the maximum usable emission bandwidth when operated on the lowest and highest available channels.

The fixed ground station and the mobile airborne station have the same performance specifications including modulating schemes, bandwidth, and transmitter power, 1 Watt. The ground station will use a higher-gain antenna with a gain of 8 dBi with an estimated transmission line loss of 2 dB. The airborne station will use a lower-gain antenna of 3 dBi with an estimated transmission line loss of 1 dB. Both antennas have omnidirectional radiation patterns in azimuth. One ground station will communicate with up to 4 airborne stations. Each airborne station transmits information to the ground station forming a two-way datalink. All stations (ground and airborne) will be operating simultaneously at each location. The group of stations (a total of 5 stations) will always be at the same general location.

3. 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. With respect to interference mitigation, 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 FAA to identify any reasonably necessary restrictions for the system.

4. Stop Buzzer

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: Baron Johnson; Mobile: (352) 339-5272

Secondary: Steve Norris; Mobile: (256) 585-7885

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