

## **Exhibit 1**

### **PUBLIC INTEREST STATEMENT**

#### **1. Introduction**

By the instant application (“Application”), Fortem Technologies, Inc. (“Fortem”) requests that the Commission grant Special Temporary Authority (“STA”) to permit Fortem to operate the facilities (the “Facilities”) specified in the instant application from 08/16/18 to – 02/16/19.

#### **2. Purpose and Nature of the Operation**

Fortem Technologies specializes in worldwide real-time AI-enabled airspace security and safety. This experimental STA is requested to test the complete DARPA MFP Phase 1 system with the appropriate 2-way digital datalink used in the final system. 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.

This activity is necessary to test a prototype system being developed for the DARPA Mobile Force Protection (MFP) Phase 1 contract, which requires utilization of non-ISM frequency bands.

Contract Information is as follows:

Agency: DARPA Mobile Force Protection (MFP) Phase I

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 Fortem Technologies engineering team with technical support from the datalink manufacturer, Microhard, as necessary.

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 53-55 channels of 1-MHz spacing within the frequency range of 1812 MHz to 1868 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**

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

With respect to interference mitigation, Fortem Technologies 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 Fortem Technologies stands ready to work with FAA to identify any reasonably necessary restrictions for the system.

### **4. Stop Buzzer**

Fortem Technologies 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: Rick Wilson; Mobile: (801) 244-4837

Secondary: Spencer Prows 608- 358-8051 or Mikko Valimaki ; Mobile: (801) 376-7975

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