

**1. Introduction**

By the instant application (“Application”), BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) requests that the Commission grant Special Temporary Authority (STA) to operate the facilities (the “Facilities”) specified in the instant application.

**2. Purpose of the Operation**

The testing conducted by BAE Systems is a critical part of the manufacture and delivery of military systems provided to the Armed Forces in support of Homeland Security as well as war efforts. In support of Internal Research and Development, the purpose of this authority is to perform developmental/prototype testing on a new radar.

A waiver of the Station ID requirements of 47 CFR §5.115(a) is respectfully requested.

**3. Transmitting Equipment**

| Manufacturer | Model No. | Number of Units | Experimental Yes or No |
|--------------|-----------|-----------------|------------------------|
| BAE Systems  | EXPTRXKa  | 1               | Yes                    |

**4. Directionality/Orientation**

The following information is provided with respect to the directional antennas to be used:

| Antenna  | Beamwidth at Half-Power Point | Orientation in Horizontal Plane | Orientation in Vertical Plane |
|----------|-------------------------------|---------------------------------|-------------------------------|
| 2x2 Horn | 8                             | Horizontal                      | Horizontal                    |

**5. Interference Mitigation**

BAE Systems 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. In addition, the following factors will help mitigate any interference issues:

- The antenna under test has an 8-degree beamwidth in both azimuth and elevation. It has an electronically steerable beam with -9 dB first sidelobe, all others 20 dB or lower. Generally during testing, emission will be limited to periods of less than 15 minutes, and only periodically with an overall duty cycle of less than 25% during tests. During testing, targets will primarily be located on the ground and emission will be typically limited to no more than 20 degrees above the horizon. These typical test conditions will represent 90% or more of the testing done under this license.

- Most testing will be limited to ground-based operation with the emitting antenna generally located no higher than 10 feet from the ground and the elevation of the main beam not exceeding +20 degrees elevation. Other tests, from a tower, will have the antenna directed down toward the ground.
- For the airborne UAV testing:

Around Merrimack, NH:

Mobile airborne operations with the furthest waypoints lying on a radius of 2 km from the following center point coordinates: 42°48' 39" N; 71° 29' 19" W

The maximum flight ceiling planned is 1km (3333 ft.) above ground level (AGL). Ground elevation above sea level at the center point coordinates is 60m (213 ft.) at this location. The nearest airport to the center point coordinates is 4 km from the center point coordinates.

Around Litchfield, NH:

Mobile airborne operations with the furthest waypoints lying on a radius of 2 km from the following center point coordinates: 42° 48' 22" N; 71° 25' 33" W

The maximum flight ceiling planned is 1km (3333 ft.) above ground level (AGL). Ground elevation above sea level at the center point coordinates is 60 m (213 ft.) at this location. The nearest airport to the center point coordinates is 5 km from the center point coordinates.

- Outdoor testing will not be frequent. Testing will be sporadically planned and executed throughout the course of this license, typically for one to three days at a time at an expected frequency of several times a month. Testing will typically only occur between the hours of 8AM and 6PM EST on week days.

**6. Stop Buzzer**

The following will be available by wireless telephone and will act as the “stop buzzer” if any issues arise during testing:

|            |                               |
|------------|-------------------------------|
| PRIMARY:   | Eduardo Martony, 603-305-4284 |
| SECONDARY: | Ray Patel, 817-401-0310       |