

**1. Introduction**

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

**2. Purpose of the Operation**

The testing conducted 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.

BAE Systems manufactures and tests RF systems as well as antennas for DOD as well as other governmental customers. The testing specified in this application will be conducted by BAE Systems Information and Electronic Systems Integration Inc., which is a major producer of electronic warfare systems, protection systems, and tactical surveillance and intelligence systems for all branches of the armed forces.

The BAE sensor will perform a radar ground survey of parts of the specified area to mature algorithm solutions for military solutions. Each area will be identified prior to flight and coordinates relayed to the pilot for a scripted flight.

All areas of opportunity for data collect will be coordinated with the FAA and Pilot. The timing, weather collection opportunities will vary as seasons change with ground traffic and for the New Hampshire, Alabama, and Florida locations.

**3. Contract Information**

Not applicable.

**4. Station ID**

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

**5. Transmitting Equipment**

Manufacturer: BAE Systems  
Model No: SWTOTE150  
No. Units: 1  
Experimental: Yes

## 6. Ground-Based Transmissions

Temporary Fixed Ground Operations Concord, NH, within 0.5 km, centered around  
Latitude: 43° 12' 15" N, Longitude: -71° 30' 29" W

### Directionality/Orientation of Airborne Transmissions (all antennas):

Is directional antenna (other than radar) used? Yes

(a) Width of beam in degrees at the half power point: +/- 15 Degrees

(b) Orientation in horizontal plane: Variable depending on the roll/pitch/yaw of the aircraft

(c) Orientation in vertical plane: Variable depending on the roll/pitch/yaw of the aircraft

## 7. Airborne Transmissions

Maximum Altitude: 3000m (for all airborne operations)

### Airborne Antenna #1 (NH):

Centerpoint City/State:

Merrimack, NH

Centerpoint Coordinates (NAD):

Latitude: 42° 48' 36 N

Longitude: -71° 29' 19" W

Radius around centerpoint:

16 km

Ground Elevation AMSL at Centerpoint Coordinates:

60 m

Distance to Nearest Aircraft Landing Area:

4 km

### Airborne Antenna #2 (FL):

Centerpoint City/State:

Okaloosa County, FL

Centerpoint Coordinates (NAD):

Latitude: 30°34'10" N

Longitude: -86°22'16" W

Radius around centerpoint:

32 km

Ground Elevation AMSL at Centerpoint Coordinates:

26 m

Distance to Nearest Aircraft Landing Area:

0 km

### Airborne Antenna #3 (AL):

Centerpoint City/State:

Huntsville, AL

Centerpoint Coordinates (NAD):

Latitude: 34°38'30" N

Longitude: -86°46'19" W

Radius around centerpoint:

32 km

Ground Elevation AMSL at Centerpoint Coordinates:

187 m

Distance to Nearest Aircraft Landing Area:

0 km

### Directionality/Orientation of Airborne Transmissions (all antennas):

Is directional antenna (other than radar) used? Yes

(a) Width of beam in degrees at the half power point: +/- 15 Degrees

(b) Orientation in horizontal plane: Variable depending on the roll/pitch/yaw of the aircraft

(c) Orientation in vertical plane: Variable depending on the roll/pitch/yaw of the aircraft

**Additional Flight Details and Patterns attached at Attachment 1**

## **8. 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:

- Generally during testing, emission will be limited to short periods of less than 5 minutes, and only periodically with an overall duty cycle of less than 30% during tests. During testing, areas of interest will primarily be located on the ground or over the ocean and emission will be typically limited to no more than 10 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 airborne operation with the emitting antenna generally located between 15 and 3,000 meters from the ground and the elevation of the main beam not exceeding +10 degrees elevation. Other tests, from a tower, will have the antenna directed down toward the ground.
- 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.
- Outdoor testing will not be continuous. Emissions will be active for short durations no longer than 5 minutes at a time (maximum) with an average on-time more on the order of 1 minute. During a test, emissions will be activated for these durations periodically with several minutes between emissions at a minimum, if not longer. The mean ERP of the platform will be less than 3kW during times of radiation. Overall, during a full day of testing the expected total time spent emitting would be on the order of 30 to 60 minutes on average.

## **9. Stop Buzzer**

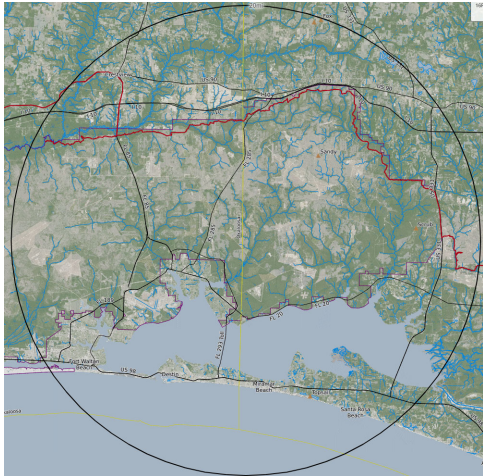
The following will be available by wireless telephone and will act as the "stop buzzer" if any issues arise during testing:

PRIMARY: Cameron Johns, 603-722-3701  
SECONDARY: Ed Martony, 603-305-4284

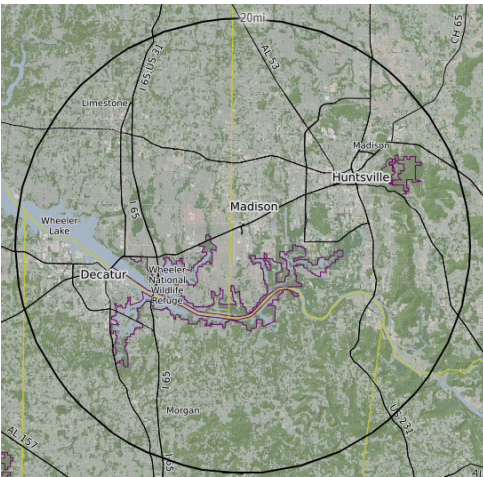
**Attachment 1 – Flight Areas of Operation**



*Airborne Antenna #1 – BAE Merrimack*



*Airborne Antenna #2 – Okaloosa County*



*Airborne Antenna #3 – Huntsville International Airport*