

1. Introduction

By the instant application (“Application”), BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) requests that the Commission grant a Conventional Experimental License 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.

The objective of the Air Force Research Program is to collect RF and Camera ranging data from varying marine targets utilizing a surrogate Bell 407 Helicopter flight test platform. The Imbedded RF sensing Radar system will be attached to the nose of the aircraft and will be part of a larger system which includes special optical sensing equipment.

The BAE sensor will gather information on random ocean going vessels utilizing Marine Traffic Global Ship Tracking Intelligence System as example pictured above. Each ship will be identified and the coordinates will be relayed to the pilot to search and seek out vessels utilizing the RF Transmitter and sensing system.

All areas of opportunity for data collect will be coordination with the FAA and Pilot. The timing, weather collection opportunities will vary as seasons change with Marine traffic and for both the NH and Massachusetts locations

3. Contract Information

| | |
|-----------------|---|
| Agency: | AIR FORCE RESEARCH LABORATORY MUNITIONS DIRECTORATE (AFRL/RWK) |
| Contract No. | FA8651-20-C-0043 |
| Government POC: | PMO - Capt Frank Criasia 850-883-5910 Contracts Manager - Shawn Beauchamp 850-883-2123 |

4. Station ID

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

5. Ground and Airborne Transmissions

Ground-Based Transmissions

Ground Antenna #1:

North 43 11 45 West 71 28 36 Temporary Fixed Ground Pembroke NH 0.10 km radius

Ground Antenna #2:

North 41 55 31 West 70 46 23 Temporary Fixed Ground Carver MA 0.10 km radius

Antenna Height (both antennas):

Tip of antenna not more than 6 meters above ground

Directionality/Orientation of Ground-Based Transmissions (both antennas):

Is directional antenna (other than radar) used? Yes

(a) Width of beam in degrees at the half power point: +/- 10 Degrees

(b) Orientation in horizontal plane: -30 Degrees

(c) Orientation in vertical plane: 0 Degrees

Airborne Transmissions

Maximum Altitude: 1500m (for all airborne operations)

Airborne Antenna #1 (NH):

| | |
|---|---|
| Centerpoint City/State: | Portsmouth, NH |
| Centerpoint Coordinates (NAD): | Latitude: 43°04'18" N Longitude: 70°45'45" W |
| Radius around centerpoint: | 30 km |
| Ground Elevation AMSL at Centerpoint Coordinates: | 8 m |
| Distance to Nearest Aircraft Landing Area: | 7.4 km |

Airborne Antenna #2 (MA):

| | |
|---|---|
| Centerpoint City/State: | Sandwich, MA |
| Centerpoint Coordinates (NAD): | Latitude: 41°45'32" N Longitude: 70°29'38" W |
| Radius around centerpoint: | 30 km |
| Ground Elevation AMSL at Centerpoint Coordinates: | 6 m |
| Distance to Nearest Aircraft Landing Area: | 11 km |

Airborne Antenna #3 (MA):

| | |
|---|---|
| Centerpoint City/State: | Bourne, MA |
| Centerpoint Coordinates (NAD): | Latitude: 41°44'28" N Longitude: 70°35'56" W |
| Radius around centerpoint: | 30 km |
| Ground Elevation AMSL at Centerpoint Coordinates: | 9 m |
| Distance to Nearest Aircraft Landing Area: | 4 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: +/- 10 Degrees

(b) Orientation in horizontal plane: -30 Degrees

(c) Orientation in vertical plane: 0 Degrees

6. 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 10-degree directional fixed beamwidth in both azimuth and elevation. 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 10% during tests. During testing, targets will be located over the ocean in the direction of flight and 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.
- 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 every 3 months. Testing will typically only occur between the hours of 8AM and 6PM EST on week days.

7. Stop Buzzers

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

Primary: Mark Sousa (603-897-9356)
Secondary: Peter Dusaitis (603-546-8369)