

1. Introduction

By the instant application (“STA Request”), BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) requests that the Commission grant a Special Temporary Authority (STA) application to permit BAE Systems 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.

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. This unit's lines of business include Electronic Warfare/Electronic Protection, Electronic Warfare/Information Warfare, Integrated Defense Solutions, and Mission Electronics with products and services spanning the whole electromagnetic spectrum.

This application seeks Commission approval for a new Special Temporary Authority (STA) to permit the continued testing of an electronic payload installed on a small unmanned aircraft system at five (5) different locations. The tests will continue to demonstrate the feasibility of providing our warfighters unique communications capabilities enabled by airborne small form factor electronics. A STA is requested to authorize transmission operations in all 5 locations in support of activity pursuant to the following government contract:

Agency:	Air Force Research Laboratory
Contract Number:	FA8650-19-C-7925
Government POC:	Amanda Morris Program Manager AFRL/RYMR 2241 Avionics Circle, Bldg 620 Wright-Patterson AFB, OH 45433 937-713-8976 office

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

Temporary-fixed and airborne operations will occur at each of the 5 locations, as follows:

(1) Moorestown, NJ (AEGIS - Naval Sea Systems Command):

Temporary-fixed operations within 0.1 km of the specified centerpoint coordinates

Mobile airborne operations with the furthest waypoints lying on a radius of 5 km from the specified centerpoint coordinates. The maximum flight ceiling planned is 1524 meters above ground level (AGL). Ground elevation above sea level at the center point coordinates is 20m at this location. The nearest airport to the center point coordinates is South Jersey Regional Airport 15.3km from the center point coordinates.

(2) Kekaha, Hawaii (Pacific Missile Range Facility-Barking Sands (PMRF)):

Temporary-fixed operations within 0.2km of the specified centerpoint coordinates

Mobile airborne operations with the furthest waypoints lying on a radius of 100 km from the specified centerpoint coordinates. The maximum flight ceiling planned is 1524 meters above ground level (AGL). Ground elevation above sea level at the center point coordinates is 6.7m at this location. The nearest airport to the center point coordinates is Honolulu (HNL) Airport 10km from the centerpoint.

(3) Oahu, Hawaii (Pearl Harbor Navy Base):

Temporary-fixed operations within 0.3km of the specified centerpoint coordinates

Mobile airborne operations with the furthest waypoints lying on a radius of 150 km from the specified centerpoint coordinates. The maximum flight ceiling planned is 1524 meters above ground level (AGL). Ground elevation above sea level at the center point coordinates is 6m at this location. The nearest airport to the center point coordinates is 3.2 km from the centerpoint.

(4) Naval Auxiliary Landing Field (NALF) San Clemente Island CA

Temporary-fixed operations within 0.3km of the specified centerpoint coordinates

Mobile airborne operations with the furthest waypoints lying on a radius of 150 km from the specified centerpoint coordinates. The maximum flight ceiling planned is 1524 meters above ground level (AGL). Ground elevation above sea level at the center point coordinates is 56m at this location. The nearest airport to the center point coordinates is 46.3 km from the centerpoint.

(5) Navy Base San Diego, San Diego, California

Temporary-fixed operations within 0.3 km of the specified centerpoint coordinates

Mobile airborne operations with the furthest waypoints lying on a radius of 150 km from the specified centerpoint coordinates. The maximum flight ceiling planned is 1524 meters above ground level (AGL). Ground elevation above sea level at the center point coordinates is 4m at this location. The nearest airport to the center point coordinates is 3 km from the centerpoint.

3. **Interference Mitigation**

BAE 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:

- Operation of the requested facilities in the known licensed frequency ranges of 2000 to 4000MHz, 5000 to 7000MHz and 8000 to 12000MHz will not be continuous. Rather, authority for only sporadic operation of the facilities within any single frequency band is requested during the authorized timeframe. The transmitters will issue highly intermittent transmissions of short duration, which will significantly limit the potential for interference to authorized users. Each transmission issued by the device will be no longer than 100 microseconds in length, repeated every 10 milliseconds for a maximum of 10 minutes every 30 minutes. Testing periods will not exceed six hours per day during the approval period.
- 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.
- 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. 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.
- In the off state, no measurable power will be radiated.
- At Pacific Missile Range Facility-Barking Sands (PMRF) Kekaha, Hawaii and Pearl Harbor Navy Base Oahu, Hawaii as well as NUC San Clemente Island, Moorestown facility and Navy Base San Diego all operations will be coordinated with the local spectrum management office.
- BAE Systems has selected the test frequencies and bandwidths to avoid commonly used FAA ATC frequencies, known paging services and known public safety frequencies.
- BAE Systems understands that FAA (or other stakeholders) may require certain limited azimuth and/or elevation orientations in order to ensure that the proposed facilities do not pose a threat of interference to adjacent emitters. Accordingly, this is to confirm that BAE Systems stands ready to work with FAA to identify any reasonably necessary restrictions for the system.
- All ground-based testing will be limited to base operation.

4. **Stop Buzzer**

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

PRIMARY:	Keith Britain (973) 534-1316
SECONDARY:	Samantha DiFrancisco (781) 860-2628