

1. Introduction

By the instant application (“Application”), BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) requests that the Commission grant a 2 year experimental license to permit BAE Systems to operate the facilities specified in the instant application.

2. Purpose of the Operation/Program of Research/Objectives/Contributions

The testing to be conducted under the requested experimental authority at BAE Systems’ Huntsville, AL campus locations is a critical part of the development, manufacture and delivery of military systems provided to the Armed Forces in support of Homeland Security as well as war efforts. Specifically, the experiment involves the use of a GPS re-radiation system to test GPS navigation systems inside BAE Systems’ engineering prototype and product development lab for Precision Guidance Kits (PGK).

This experiment will be conducted in support of the following contract:

Agency: US Army Precision Fire and Mortars SFAE-AA-CAS-PFM

Contract No.: DOTC-19-05-INIT510

POC Name

and Tel: Randal Shorr, LRPKG Program Lead
Phone: 973.724.7436
Cell: 973.787.4891
randal.j.shorr.civ@army.mil
B162-S Picatinny Arsenal, NJ 07806-5000

This GPS re-radiation system permits BAE Systems to verify the proper installation and operation of the internal navigation system for a military target location system product. Without the system, BAE Systems engineers must leave the facility to test products under development. Often these prototypes are not robust enough to allow exposure to weather; this greatly limits the testing operations and severely impacts the product development schedule. Additionally, outside testing is greatly limited due to restrictions in lab equipment that may be operated in that environment. By operating the system, BAE Systems’ engineers and technicians can work more efficiently. A wired repeater system would not be a feasible alternative as the receiver antenna is an integral part of the system under test.

Various commercial manufacturing operations are using in-building repeaters to streamline navigation system diagnosis and repair times. BAE Systems seeks to realize similar benefits and quickly provide products to the United States military forces.

3. Waiver of Station ID Requirements

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

4. Compliance with NTIA GPS Re-Radiation Criteria
– Section 8.3.28 of NTIA Regulations – See Attachment 1

The system BAE Systems seeks to operate will re-radiate the GPS L1 (1575.42 MHz) and L2 (1227.60 MHz) signals. A common system (dual band) consisting of one active antenna, one passive antenna, and one amplifier will be used for both frequencies at each site. BAE Systems hereby confirms that the proposed operations are in full compliance with Section 8.3.28 of the NTIA regulations governing re-radiation of GPS signals. See Attachment 1 for the calculations demonstrating compliance with the NTIA criteria.

5. Mitigation of Interference

The manufacturing site is located in the basement level of an existing facility and the other two sites are located inside metal buildings. These buildings attenuate the already low power of GPS signals to a level below the useable threshold of its navigation systems.

6. Other Issues

A. Directional Antenna Data. The following is provided with respect to the directional antennas to be used in this experiment.

Width of Beam at Half-Power Point	Orientation in Horizontal Plane	Orientation in Vertical Plane
180°	270°	135°

B. Stop Buzzers.

Listed below are the “Stop Buzzer” 24/7 points of contact for the application of GPS re-radiation devices. *See Manual of Regulations and Procedures for Federal Radio Frequency Management § 8.3.28(9) (rev. Sept. 2006)*

PRIMARY: Michael Hodnett Systems Engineer BAE Systems 400 Jan Davis Drive NW. Huntsville, AL 35806 (256) 210-2621 Direct/VM Michael.hodnett@baesystems.com	ALTERNATE: James Biaglow BAE Systems 400 Jan Davis Drive NW. Huntsville, AL 35806 (256) 690-8957 Direct/VM james.biaglow@baesystems.com
--	--