

**STA REQUEST
AND DESCRIPTION OF OPERATIONS**

1. Introduction

By the instant application ("STA Request"), BAE Systems Information and Electronic Systems Integration Inc. ("BAE Systems") requests that the Commission grant special temporary authority ("STA") to permit BAE Systems to operate the facilities (the "Facilities") specified in the instant STA Request. STA is requested for a period of six (6) months, with a commencement date of January 10, 2007.

2. Purpose and Nature of the Operation

BAE Systems Sensor Systems (S2), a business unit within the Electronics and Integrated Solutions operating group within BAE Systems Inc., will conduct the testing specified in this STA Request. S2 is a leader in developing, testing and building technical systems for the U.S. Department of Defense and the United States' allies in avionics, targeting, and identification. S2's lines of business include precision targeting, situation awareness, electronic identification, surveillance, and reconnaissance systems.

The testing for which authority is requested in the instant STA Request represents developmental testing of the transmission parameters of a single element omni-directional antenna for a classified program. To measure the antenna transmission parameters, the antenna under test serves as a transmitting antenna of the radiation for which this license is required. Testing is required to tune and adjust the transmission amplitude and phase of the radiated signal to ensure proper operation of the antenna.

This experiment is to be performed as part of the company's implementation of a government contract involving a highly sensitive classified military program. The specific name and application of this antenna and the associated system it is being developed for, and the relevant contractor information, when disclosed together with the frequency of operation, as identified herein, is classified at the Special Access Required (SAR) level. BAE Systems' antenna testing is critical to the development of this classified system, of which the antenna being developed is a part, and to the conformance of the system to the specifications. The classified system will aid in the deployment of the war fighter and have application to homeland security as well as for other classified purposes.

STA is required to conduct the initial required risk-reduction aspects of this classified program, including fabrication and testing of an antenna aperture, as well as follow-on testing of components for a prototype, which is anticipated to commence in early January and to continue through the following six months.

In order to meet applicable contractual deadlines, it is necessary to obtain expedited grant of this STA Request so that testing can commence by the beginning of January. Accordingly, a Request for Expedited Processing – which requests expedited processing and grant by January 10, 2008 – has been simultaneously submitted.

3. Mitigation of Interference

Aspects of this STA Request and experiment which mitigate interference concerns include the following:

- The frequency bands specified in the STA Request are comparable to those which have previously been authorized to BAE Systems at other locations (See, e.g., File Nos. 0154-EX-PL-2005; 0391-EX-ST-2005).
- The test structure places the transmitter at a distance of 12 feet from the receiver which allows for testing at an ERP of 0.1mW, or less.
- During the entire period of testing under this experimental authority, the transmitter will be operational for approximately 4 hours, during the period from 7AM to 5PM, on each of approximately 40 days over the entire 6-month period of this STA.
- The location of the transmitting antenna at approximately 3 feet above the ground will further mitigate the likelihood of interference during the test periods.

4. Antennas – Directionality/Orientation

The antenna consists of a single element operating in a dual mode and tested independently with the following parameters:

- The antenna element is omni-directional in the horizontal plane and radiates vertical polarization.
- The half-power point vertical beam width is 60°.
- The ERP is less than 0.1mW, mean.
- The overall height of the antenna/ground plane assembly is less than 3ft. above the ground.

5. Test Structure

Testing is to be performed so as to measure, and adjust as may be required, the transmission amplitude and phase of the antenna under test. The measurement of these transmission parameters is performed with the Agilent 8753E Network Analyzer serving

as the transmitter. We are requesting 20 discrete frequencies, separated by approximately 10 MHz, from 15MHz to 205 MHz to perform our measurements. If it is not possible to be granted 20 frequencies a minimum of 15 frequencies would be adequate. Radiation from the antenna under test, the source antenna, is received by approximately eight monopole antennas located at a radial distance of approximately 12 feet from the antenna under test and mounted on the same ground plane. The ground plane is approximately 16 feet square. The same Agilent 8753E Network Analyzer serves as the receiver for the measurement of relative transmission amplitude and phase. The transmitter output terminal is connected to the antenna element through a 6dB pad and a length of coaxial cable, approximately 25 feet in length.

6. Antenna Efficiency/ERP

Antenna efficiency of this electrically small (in wavelengths) antenna has been calculated to be 5% maximum, at the highest test frequency. The ERP of 0.1mW or less includes the effect of the attenuation of the 6dB pad at the transmitter output terminal and the length of coaxial cable (approximately 25 feet) used to connect the transmitter to the antenna.

7. Frequency Requirements

From among the frequency bands specified in the STA Request, 20 discrete frequencies with a +/-100 KHz operating bandwidth spaced approximately 10MHz apart are requested for this test program. We are requesting 20 discrete frequencies, separated by approximately 10 MHz, from 15MHz to 205 MHz to perform our measurements. If it is not possible to be granted 20 frequencies a minimum of 15 frequencies would be adequate. No specific frequencies within these bands are required for this developmental testing. BAE Systems intends to select the required test frequencies from the bands approved by the Commission. It is noted that the bands specified in this STA Request (or bands similar thereto) have previously been granted to BAE Systems (See, e.g., File Nos. 0154-EX-PL-2005; 0391-EX-ST-2005), and as a result should assist in the expedited coordination of this STA Request. There is no need to include any government bands as long as we can satisfy the need for 15 to 20 discrete frequencies spaced approximately equally within the 15 MHz to 205 MHz frequency bands of interest.

8. Stop Buzzer

BAE Systems hereby advises that Ralph Hernandez will be available by telephone at 631-262-8072 and will act as a “stop buzzer” if any issues regarding interference arise during testing.

For the foregoing reasons, expedited approval of this STA Request is in the public interest, convenience and necessity.