

## **Exhibit 1**

BAE Systems Information and Electronic Systems Integration Inc. (“BAE Systems”) seeks Commission consent for an Experimental Special Temporary Authority for the facilities specified herein.

The requested STA is sought as an extension and continuation of the operations previously authorized under STA call sign WI9XPG (0445-EX-ST-2015), which permitted operations within or adjacent to the frequencies licensed to FirstNet. Pursuant to applicable policy which allows authority on these frequencies only pursuant to STA, and because BAE Systems requires continued operations on these frequencies, this filing is being presented as an STA seeking authority for a 6 month period. Because the prior granted STA under WI9XPG is scheduled to expire on January 2, 2016, grant of the instant application is respectfully requested by January 2, 2016 to allow for uninterrupted operations supporting the contracts listed below.

The requested facilities are intended for continued operation of the frequencies authorized in WI9XPG in conjunction with the currently granted parameters under call sign WF2XAK. Because the requested facilities in this application are within or adjacent to the frequencies licensed to FirstNet, a separate application has been submitted to the Commission for these frequencies, to allow for separate review of these frequencies.

### **I. General Purpose of the Experiment**

Continued testing conducted under this STA, the prior granted WI9XPG and the WF2XAK license 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, and in support of the following contract and other efforts:

Customer: United States Army, PM SAI  
Government Agency: ACC-APG DIVISION C  
Contract No.: W15P7T-14-D-C015  
Customer POC: ABEER AMEER  
POC Telephone #: 443-861-5363  
POC email: ABEER.J.AMEER.CIV@MAIL.MIL

As a general matter, continued operation of the requested facilities (along with the granted license under call sign WF2XAK) will permit BAE Systems to test the functionality of individual antenna elements prior to their assembly into an antenna array. The elements will be swept over a broad frequency range and measured for amplitude and phase response. The elements will then be assembled into an array and the assembly measured at multiple discrete frequencies to determine the pattern and phase performance of the antenna assembly. The transmissions on the subject frequencies will be solely ground-based, fixed transmissions, initiated from BAE Systems’ antenna range at the company’s campus location at Litchfield, NH (42-48-22 N.Lat; 071-25-33 W.Long. (NAD83)).

### **II. Directionality/Beamwidth and Orientation of Antennas**

The following information describes the directionality, beamwidth and orientation of the antennas associated with these requested transmissions (all below 6m):

### Directional Antennas

Manufacturer	Model #	Quantity	Gain (Nominal)	3dB BW E (Vertical)	3dB BW H (Horizontal)
SA	26-0.1	1	+8 dBi	60°	120°
SA	29-0.1	2	+8 dBi	60°	120°
SA	27-1.0/8	1	+8 dBi	9°	1.5°
SA	28-1.0/8/10	1	+8 dBi	9°	4.5°
Sanders	1/2 Horn	1	+8 dBi	60-30°	N/A
Sanders	Dual Horn	1	+8 dBi	60-30°	60-30°
Sanders	1/2 Horn	1	+8 dBi	60-45°	N/A
Condor	AS-48461	1	+5-18 dBi	60-10°	60-10°
AEL	H-1498	1	+8-12 dBi	60-30°	60-30°
SA	28-2.0/8/10	1	+8 dBi	60-30°	60-30°

### Non-Directional Antennas

Manufacturer	Model #	Quantity	Gain (Nominal)	3dB BW E (Vertical)	3dB BW H (Horizontal)
Sanders	1/4Mon	4	-5.2 dBi	OMNI	N/A
Sanders	TASES 36	2	-60 to -5dBi	OMNI	N/A
Sanders	TASES 24	2	-31.5 to +1.1 dBi	OMNI	N/A
Sanders	TASES 12	2	-10 to -5	OMNI	N/A
Sanders	Slant	1	-20 to -5	OMNI	N/A

### **III. Transmitting Equipment and Additional Signal Amplification**

Transmitting Equipment (all non-experimental):

Manufacturer	Model	Quantity
HP	HP8753A	2
HP	HP8753D	2
HP	HP8753E	2
HP	HP8510B	1
HP	HP8510C	1
HP	HP8340B	1
HP	HP8341	1
HP	HP8643A	1

Additional signal amplification may be utilized as follows:

Power Amplifiers	Model	Frequency Band	Power Output	Quantity
OPHIR	5069	.5MHz to 500MHz	8W	1
OPHIR	5094	1MHz to 1000MHz	3W	1
OPHIR	5160	.8GHz to 4.2GHz	7W	1
ENI	510L	1.7MHz to 500MHz	9.5W	1
ENI	603L	.8 MHz to 1000MHz	3W	1

**IV. Note Regarding Output Power/ERP Figures**

For the purpose of completion of the attached form, antenna efficiency has been assumed to be 100%. Therefore, the transmitter power and the radiated power are reported as equal (i.e., both the Output Power and the ERP are reported as “.007 W”). In practice the antenna efficiency and cable loss between the transmitter and the antenna will be considered and the transmitter power adjusted to achieve the approved output radiated power level.

**V. Note Regarding “Mean” Power Designation**

In the attached form, the power levels are reported as a “Mean” value. The transmitter will not be left on continuously due to the nature of the experiment and the need to physically reposition the unit under test between measurements, cycle through frequencies, change elevation angles of the transmit antenna, etc. where the transmit power is reduced to zero. The actual duty cycle of the transmit system is approximately 7%. Mean power is therefore a more accurate representation of the applicant’s proposed activity.

**VI. Stop Buzzers**

The “Stop Buzzer” contacts in the event of any interference are as follows:

- Mr. Sean Hallinan – (603) 361-5959;
- Mr. Richard C. Ball - (603) 318-6913;
- and
- BAE Systems Emergency Services Center - (603) 885-3842