

## **Exhibit 1**

### **1. Introduction**

By the instant application ("Application"), 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 application. By this STA, BAE Systems seeks authority to evaluate the Retroactive Array for Coherent Transmission (ReACT) system. ReACT is an experimental development system funded by DARPA. The ReACT system has two components: 1) AS2, which is common to all configurations operating at 350 MHz, and 2) CLW, which operates in multiple frequency bands, depending on the configuration. The intention of the application is to obtain permission to transmit on these frequencies while testing at BAE Systems in Merrimack, New Hampshire for what is currently anticipated to be a limited period, sporadically from August 18, 2014 to February 18, 2015. As such, issuance of STA is appropriate pursuant to Commission rules and policies.

### **2. Purpose of the Operation**

The testing at the Merrimack Antenna Test Facilities 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.

Specifically, this demonstration will be conducted to show that physically separated phased arrays can aggregate coherently combined power on a location through the use of precise timing and localization information distributed over a wireless network. ReACT will dramatically change the way in which arrays are fielded, allowing small arrays on disconnected platforms to be "stitched together", as if they were nodes on a single network.

Waiver of the Station ID rules set forth at Section 5.115 is respectfully requested.

The contract information applicable to this experiment is as follows:

Agency: Defense Advanced Research Projects Agency (DARPA)

Contract No. HR0011-14-C-0064

Contract POC:

N. Tina Stuard  
675 N. Randolph Street  
Arlington, VA 22203-2114  
571-218-4621  
tina.stuard@darpa.mil

BAE Systems requests that the Commission authorize operations to support the above contract activity as well as IR&D activity. Accordingly, it is requested that the Station Class be specified as "XT" or "XD" to allow operation not only for the DARPA contract specified above, but also for Internal Research & Development activity.

### 3. Other Issues

#### A. Transmitting Equipment

| Mfg.                    | Model Number                 | No. of Units | Experimental? |
|-------------------------|------------------------------|--------------|---------------|
| Ettus*                  | CBX                          | 8            | Yes           |
| Ettus*                  | SBX                          | 8            | Yes           |
| Microhard Systems, Inc. | IP2421 Series with Enclosure | 8            | No            |

\*A National Instruments Company

The Ettus USRP (Universal Software Radio Peripheral) boards above are assembled with the amplifiers listed below.

#### B. Additional Signal Amplification

| Mfg.              | Model Number | No. of Units | Experimental? |
|-------------------|--------------|--------------|---------------|
| Minicircuits      | GVA-84+      | 8            | Yes           |
| Hittite Microwave | HMC453ST89   | 2            | Yes           |

#### C. Prevention of Interference

BAE Systems hereby advises the Commission that the tests to be conducted under the requested Commission authorization are to be conducted near the center of BAE Systems' Merrimack, New Hampshire facilities. Such location will result in the separation of the test facilities from other existing transmit or receive facilities.

ReACT will be tested initially in a laboratory environment without free space radiation. When operating out of doors, transmissions will be limited in duration, most often a few hours over a 12 hour daylight period. In addition, there will be periods of days or weeks between outdoor testing.

Testing will also be limited to specific bands. That is, we will test VHF for a few days, then several weeks later test at UHF, then several weeks later test at L-Band, etc. up to C-Band; possibly repeating a specific band. It is very unlikely that we will operate in multiple bands simultaneously.

#### D. Stop Buzzers

Primary: Primary: George Moynihan - (603) 689-8630

Alternate: BAE Systems Emergency Services Center - (603) 885-3842