Experimental Authorization Request
Experimentation Description

Booz Allen Hamilton Engineering Services, LLC, requests an FCC-issued Experimental Authorization in order to conduct development, testing, and demonstrations of deployable LTE systems for public safety response.

Booz Allen Hamilton is actively engaged in the development and integration of LTE technology for Government, Public Safety and FirstNet applications and this license will be used to develop systems and employment methodologies for deploying LTE systems for disaster response and other public safety requirements. The systems operated under this license will not be used to provide mission critical communications for actual emergency situations.

The proposed development, test, and demonstration activity will be conducted over a period of twenty-four months from date of issue. Because of the complex nature of the technological development work being conducted, a six-month period of operations is insufficient to complete the anticipated work program.

The proposed experimental work will consist of both laboratory testing and field testing of LTE systems and devices. The laboratory testing will evaluate the compatibility and configuration parameters, along with user applications, of various LTE user devices (obtained from any potential LTE product vendors as they become available) on various LTE networks from both commercial product vendors and built using experimental hardware. The field testing will consist of operational tests of deployable LTE systems and user equipment from multiple vendors and experimental hardware using satellite backhaul in single-site and multiple-site configurations.

The goal of the testing is to understand the compatibility and performance of user devices and LTE systems from a variety of vendors, develop configuration requirements for devices and systems, and to evaluate Band 14 coverage and performance in the environment. In particular, the field testing will evaluate the ability to extend coverage of deployable systems by linking multiple temporary base stations together using point-to-point radio links. Handoff and overlap performance will also be tested during this portion of the work.

Benefits of the proposed work include:

- Technical contribution to the use of deployable LTE systems for FirstNet.
- FirstNet and public safety representatives are welcome to witness and participate in testing activities.
- A technical report on the findings of the development and testing work will be provided to the FCC and to FirstNet upon completion of the work.

The technical parameters of the proposed system include:

- 10, 5, and 3 MHz Bandwidth, 2 x 2 MIMO operation
- 2 x 40W transmitter power output at outdoor deployable base stations
- User devices from all potential Band 14 vendors will be evaluated
- 200 mW typical user device power output
- Downlink frequency band 758 – 768 MHz
- Uplink frequency band 788 – 798 MHz
- Indoor low power laboratory operation under 1 Watt
- Up to four deployable itinerant macrocells and associated user devices operating within 10-km radius of fixed site
- Outdoor operation at low and full power levels
- Omnidirectional and sector antennas for outdoor testing
- Deployable systems will use base station antenna heights of 17 meters or less

The proposed operation is not expected to cause any harmful interference since the FCC ULS database does not show any licensed users of the 758-768 and 788-798 MHz Band 14 spectrum within 50 kilometers of the proposed fixed site location. Indoor laboratory operations are at low power and unlikely to cause harmful interference outside the building. Outdoor operations will be of a limited, itinerant nature and will be coordinated with operations of any other licensees in the area.

As with all experimental operations, Booz Allen Hamilton Engineering Services understands that operations are secondary to those of licensed users such as FirstNet, and that demonstration operations must cease in the event that FirstNet or other licensed users experience interference. Booz Allen Hamilton Engineering Services will retain the ability to shut the system off in the event that interference is reported. The single point of contact for this operation is:

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