

Request for Special Temporary Authority

Booz Allen Hamilton, requests an FCC-issued Special Temporary Authority (STA) in order to conduct technical development, testing, and demonstration of LTE communications for port and harbor military and homeland security operations.

Booz Allen Hamilton is actively engaged in the development of LTE technology for Public Safety and FirstNet applications and is extending this technology into a number of defense-related applications.

The proposed operations will be conducted from June 1 through August 31, 2016 on and in the waters adjacent to Joint Base Pearl Harbor Hickam in Honolulu, Hawaii. Operations will be itinerant and temporary in nature and will involve setting up temporary LTE networks to provide network communications in a maritime and port environment. The goal of the LTE demonstration is to provide a validated, credible, and repeatable demonstration of how LTE technology can be used to provide advanced communications to a variety of military operations. These operations include both warfare and national security/emergency preparedness missions.

This environment is directly analogous to operating environments that will be faced by FirstNet in terms of providing advanced communications for public safety users operating in harbor and port security and maritime disaster response situations. As such, supporting this demonstration will provide useful information to FirstNet, Industry, and US Government agencies involved in emergency and disaster response such as the US Coast Guard, National Guard, FEMA, and other US military branches.

The proposed operations would consist of two fixed-site single-sector 700 MHz Band 14 LTE macrocells, and one portable suitcase-sized microcells.

The vendor providing the macrocell is General Dynamics, while the deployable microcell technology built by Booz Allen, with LTE user equipment such as dongles, modems, and routers from General Dynamics. Booz Allen Hamilton, will be providing system integration and testing services and will be responsible for the over the air operation of the system.

Band 14 is desired for conducting this testing for the following reasons:

- 700 MHz provides optimal propagation characteristics for maximum coverage range.
- Band 14 is currently awaiting deployment in areas outside the BTOP test sites and thus presents a low probability of causing or receiving interference during testing.

Benefits to FirstNet in providing this STA concurrence include:

- Formal testing under rigorous military conditions will provide useful information on LTE user experience and system operation under real-world conditions
- Coverage measurements of 700 MHz Band 14 performance in port and maritime areas will provide useful data for FirstNet rural coverage design.
- Operational testing of vendor LTE devices will provide useful feedback for further product development.
- Firsthand demonstration to the US Government of the benefits of LTE technology that may inform future relationships between the Government and FirstNet.
- A detailed technical report will be provided to FirstNet upon completion of testing that will contain information on the performance of the LTE system infrastructure, user devices, coverage, and throughput.

The technical parameters of the proposed system include:

- 10 MHz Bandwidth, 2 x 2 MIMO and 1 x 1 SISO operation
- 2 x 20W and 1x5W transmitter power output
- Downlink frequency band 758 – 768 MHz
- Uplink frequency band 788 – 798 MHz
- Single-sector directional or omnidirectional temporary base station operation
- Two deployable macrocells and one portable microcell
- Antenna height above ground of 175' on Ford Island and 70' at Bishop Point
- Portable microcell primarily for shipboard use
- User devices to include integrated modems, USB dongles, and LTE routers for use with laptop computing devices and video sources and displays
- Portable microcells and user devices operating within 10-km radius of Ford Island

The proposed operation is not expected to cause any harmful interference since the FCC ULS database does not show any co-channel licensed users of the 758-768 and 788-798 MHz Band 14 spectrum within 50 kilometers of the proposed operational location in Honolulu, HI. None of these locations are close to any of the current Band 14 BTOP early adopter test sites.

As with all STA operations, Booz Allen Hamilton 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 will retain the ability to shut the system off in the event that interference is reported. The single point of contact for this STA operation is:

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