



Northrop Grumman Systems Corporation
Information Systems Sector

Civil Cyber & Security
7575 Colshire Drive
McLean, VA 22102

April 30, 2014

Julius Knapp, Chief
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Room TWA325
Washington, DC 20554

**Re: Special Temporary Authority Application
Northrop Grumman Systems Corporation
Application Number 0258-EX-ST-2014**

Dear Chief Knapp:

On April 2, 2014, Northrop Grumman Systems Corporation ("Northrop") filed the above-referenced application seeking special temporary authority (the "STA") to utilize 700 MHz spectrum that is licensed to the First Responder Network Authority ("FirstNet"). The FCC previously granted, and FirstNet previously provided its consent for, an STA to utilize the FirstNet spectrum under call sign WG9XHQ to build and operate a trial LTE network. The licensed STA expires on May 2nd. The current STA application proposes operations that are technically identical to WG9XHQ. Additional time is needed to test the trial network, facilitate visits from state and federal stakeholders, including FirstNet, and share important lessons learned about the concepts, applications, and functionality of the trial network. Accordingly, the above-referenced STA application requests an operation start date of May 2, 2014 and an operation end date of November 2, 2014.

The following sets forth general information regarding the proposed temporary operation (complete information is contained in the application):

- 1) The STA will enable Northrop to continue operating a trial 700 MHz LTE network in and between New York City and Northern Virginia. The objective is to use the 700 MHz LTE network with end-user devices and a backhaul system to test and develop enhanced first responder applications and solutions that will reside in the core network. The trial network will serve as an expository vehicle upon which advanced concepts of hypothetical first responder communications will be demonstrated.

- 2) In both locations, the trial network utilizes 758-768 MHz as the downlink band and 788-798 MHz as the uplink band.
- 3) One base station is deployed in Northern Virginia (in McLean), and two base stations are deployed in New York City (one in Brooklyn and one in Manhattan). Northrop obtained a permit for the New York City installations from the New York City Department of Buildings. No other government approvals are needed except for the consent of the Commonwealth of Virginia, the consent of FirstNet, and grant of the STA application by the FCC.
- 4) A fully redundant backhaul link has been deployed to couple the operations in New York and Virginia to a common LTE-evolved packet core.
- 5) Twenty experimental end-user devices are provisioned for testing and demonstration by Northrop employees. In the New York locations, the end user devices are operated within a radius of three miles or less of the base stations. In Northern Virginia, the end-user devices are operated indoors.
- 6) Northrop's temporary operations will not be used in actual mission-critical operations or in the delivery of live transmissions to protect life, property, or safety.
- 7) Northrop has implemented internal procedures to monitor and maintain control of the handsets and will promptly respond to any reports of harmful interference. Each unit will be registered to its recipient, and Northrop will maintain a record of each device so that each can be easily recalled at any time during testing and when testing is complete.
- 8) Northrop analyzed information from the FCC's license databases, and commissioned Comsearch to undertake an engineering study. That study determined that the proposed operation will not interfere with, or create significant potential interference with, public safety operations in the 700 MHz band, including the operations of the Commonwealth of Virginia pursuant to WPTZ775.
- 9) The Commonwealth of Virginia has provided its consent for the above-referenced STA application with the following conditions, which are identical to the conditions imposed by the Commonwealth when it consented to the STA authorized under WG9XHQ: STA operations must be strictly limited to the in-building parameters proposed in the application. Northrop must assume all causalities, risks, damages, and liabilities that may result from operations associated with the STA. If Northrop deviates from the terms of the STA, the Commonwealth can revoke its approval of the STA. Northrop filed the Comsearch engineering study with the FCC on October 18, 2013. Northrop also agreed to notify the Interoperability Coordinator, the Commonwealth Spectrum manager and the Virginia State Police if any upcoming test associated with the STA deviates from the STA as granted. Northrop also will notify the STARS

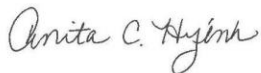
NOC prior to commencing any test and will only conduct such tests with the concurrence of the Virginia State Police. These coordinating activities have been undertaken by Northrop and the Commonwealth with success relative to the current STA, WG9XHQ.

10) Northrop understands that any STA granted by the Commission pursuant to this application will have secondary status, and that Northrop must accept any interference from primary status users of the FirstNet spectrum, including FirstNet. To the extent FirstNet deploys service over its spectrum before expiration of the requested STA, Northrop agrees to either modify or shut down its LTE demo network, as required, to ensure no interference to FirstNet. Moreover, Northrop agrees that, to the extent the FCC grants STAs to any third parties for use of FirstNet spectrum in the vicinity of Northrop's demo network operations, Northrop will work cooperatively with such third parties to coordinate operations without the need for intervention from FirstNet.

11) Northrop understands that FirstNet has the right to monitor its operations. Northrop also understands that if additional time for its trial is needed beyond November 2, 2014 that it will be required to file an application with the FCC and, once again, seek consent from the Commonwealth of Virginia and FirstNet.

If there are any questions regarding the STA application, please do not hesitate to contact me or our counsel, Jennifer Richter at Patton Boggs (202) 457-5666.

Respectfully submitted,

A handwritten signature in cursive script, reading "Anita C. Hyink".

Anita C. Hyink
Contracts Director