

December 12, 2013

Julius Knapp
Chief, Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20510

RE: Experimental License Service Application,
File No. 0317-EX-PL-2012

Dear Chief Knapp,

Nokia Solutions and Networks US LLC (formerly Nokia Siemens Networks US LLC) ("NSN") in the attached application is seeking the renewal of an experimental license for operation in the 758-768/788-798 MHz spectrum that is licensed to the First Responder Network Authority ("FirstNet") in order to continue ongoing experimentation in the Village of Arlington Heights, Illinois that NSN has been conducting since July 2011 at the NSN Campus and in downtown from October 2011 to the present.

As you may be aware, NSN has been testing for evaluation purposes the use of "small cell" solutions in Arlington Heights. The Village of Arlington Heights was chosen for this experiment since NSN has a major facility in the village, which includes global research and development (R&D) for small cell and other mobile broadband solutions. The experiment includes the downtown area of the village in order to study network operation in an environment with a scale applicable to small cell network architectures and is representative of an area with fluctuating mobile traffic and demand patterns.

During the previous two-plus years, NSN has deployed three generations of small cell equipment and various licensed and unlicensed wireless backhaul technologies. Measurements have been made on these numerous topology combinations and used as the basis of "lessons learned" sharing sessions with NSN's key and potential customers. A presentation summarizing some of the key findings was made to FCC staff at an on-site visit in 2012. NSN wishes to continue with this technology trial with commercial grade products that we anticipate bringing to market soon. These products will be of a smaller form factor with greater traffic capacity and a higher transmit power capability compared to the previous pre-production trial equipment. The equipment locations and radius of operation will remain unchanged, but the small cell base station transmitter power may be increased from 1W to 5W for the purposes of showing improved in-building penetration and general increase in coverage. (Such an increase in power level would remain within the parameters of the existing license.)

The ongoing findings of the study are relevant for the continued expansion of mobile broadband networks, including methods of increasing the density of network coverage and the maximization of data throughput speeds. As 4th generation LTE networks are being deployed commercially, the implications are readily apparent for commercial networks. However, they are equally applicable to the emerging use of the spectrum by or associated with FirstNet. FirstNet's ultimate network architecture is likely to include a mix of macro and micro cell site infrastructure. The experimentation at issue in this application can be leveraged in understanding the performance of an LTE network in situations of importance to the FirstNet deployment, including extending localized coverage in difficult to reach areas such as urban canyons and inside buildings, adding capacity in "hot zone" areas, and managing shifting traffic patterns. In short, we believe that affording NSN the opportunity to continue this program of experimentation is squarely in the public interest.



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NSN intends to include this letter as part of the above-referenced application to affirm our complete understanding of the primary status of FirstNet as the licensee and our commitment to conducting operations under this license accordingly. Specifically, NSN confirms that it:

- Will not utilize the experimental license in conjunction with the provision of mission-critical communications.
- Has designated an overall project manager and a "stop-buzzer" contact for these experiments, identified in the attachment to this letter.
- Understands that the experimental license would only permit shared use of the subject radio frequencies and that it may have to coordinate with other entities licensed for experimental purposes.
- Recognizes that a separate concurrence from FirstNet will be required for renewal of this license.
- Affirms that all of its experimental operations will be secondary, such that they must not cause interference to narrowband or broadband operations authorized on a primary basis, including in the spectrum licensed to FirstNet. Narrowband or broadband operations authorized on a primary basis, including in the spectrum licensed to FirstNet, have no obligation to mitigate any interference that such primary operations may present to the Nokia Solutions and Networks experimental operations.
- Has analyzed information from the FCC's license databases and determined that the proposed operation would not interfere with, or create a significant potential for interference with, any public safety operations in the 700 MHz band. While a State of Illinois system utilizes a portion of the spectrum block for operation of vehicular repeaters under a waiver, based on discussions with the State, the operations proposed under this application are not expected to cause interference to the State's system. The application includes a letter of concurrence from the Illinois State Police STARCOM21 System Administrator for the proposed operation on its portion of the spectrum.
- Acknowledges that although FirstNet has not yet deployed in the geographic area covered by the application, if, during the term of this license, FirstNet or its assignees or lessees, plans to deploy in this area, Nokia Solutions and Networks may have to reduce the coverage or power levels of its experimental transmissions or cease them entirely to prevent interference to those operations.

Nokia Solutions and Networks appreciates your attention to this matter. If and when FirstNet grants its concurrence to our pending application, we trust that the licensing branch will be able to move as expeditiously as feasible to renew the experimental license as described herein. Please let me know if you have any questions or need additional information.

Yours sincerely,



Derek Khlopin
Head of Government Relations
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Nokia Solutions and Networks

ATTACHMENT

The designated project manager and "stop-buzzer" contact for the experimental operations to be conducted as proposed under the Experimental License Service Application filed by Nokia Solutions and Networks and pending under File No. 0317-EX-PL-2012, as amended by this letter is:

**Javier Lopez
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Mr. Lopez's contact information may be included on the face of any authorization issued by the Commission.