



April 27, 2018

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

RE: Request for Renewal of Experimental License
Call Sign WG2XRE; ELS File No. 0204-EX-CR-2018

Dear Mr. Knapp,

Motorola Solutions, Inc. respectfully seeks a 12-month renewal (through June 30, 2019) of the above-referenced experimental license issued by the Federal Communications Commission ("FCC") under call sign WG2XRE, with the modifications requested below to delete one location and reduce the power levels at the remaining sites. Specifically, the license as modified would authorize Motorola Solutions to conduct limited operations in the 758-768/788-798 MHz band ("Band Class 14") subject to non-interference safeguards described below at its facilities in Schaumburg, Illinois, and at its laboratory in Plantation, Florida, from base stations that would operate at an effective radiated power ("ERP") not to exceed 15 Watts per sector and with mobiles that would not exceed an ERP of 2 Watts.

Motorola Solutions is a leading manufacturer and integrator of mobile radio equipment for the public safety and homeland security community and is continually engaged in the design and development of new and innovative communications solutions. Renewal of the experimental license requested herein is vital to the company to support its activities. Motorola Solutions takes seriously good engineering practices to conduct extensive and comprehensive tests on prototype devices and solutions to ensure their functionality, reliability, and acceptability to support critical communications needed by public safety personnel and first responders. Motorola Solutions is concerned not only about safety of the public, but also the safety of our public safety community. It is therefore critical to Motorola Solutions to test devices fully and thoroughly to ensure they are sufficiently robust to meet the requirements and specifications of public safety personnel and first responders.

Motorola Solutions also affirms the primary status of the First Responder Network Authority ("FirstNet") as the licensee in the 758-768/788-798 MHz band. Motorola Solutions understands that FirstNet has a similar interest in ensuring the functionality, reliability, and acceptability of devices and products that support the public safety community. Motorola Solutions also appreciates that FirstNet seeks to protect against interference to existing and future users of Band Class 14 spectrum. Motorola Solutions shares that concern with FirstNet and, in fact, considers it an obligation not to cause

interference when it conducts its experimental activities. Indeed, any other stance would be inconsistent with the company's underlying mission and objectives.

Motorola Solutions coordinated its earlier license renewal request with FirstNet staff to address the concerns it had about the potential for interference to existing or future operations on Band Class 14 from the experimental activities of Motorola Solutions. As a result of those discussions, Motorola Solutions established a detailed and comprehensive compliance plan to protect Band Class 14 operations and users. See *also* Attachments to Application for Renewal of WG2XRE, ELS File No. 0174-EX-CR-2017. For the staff's reference, the Plan is also copied below. If appropriate, Motorola Solutions will also coordinate the instant license renewal request with FirstNet staff and respectfully requests an opportunity to conduct and complete any required coordination before the Commission takes any action on this application for renewal, including but not limited to grant or dismissal.

NON-INTERFERENCE PROGRAM:

In response to the mutual goals of Motorola Solutions and FirstNet to prevent interference to existing and future operations on Band Class 14 spectrum, Motorola Solutions has developed, and is committed to, the following "Non-Interference Program" comprised of operational, technical and procedural requirements to govern its activities under the experimental license requested herein. Many of the commitments presented below were previously established in coordination with FCC staff and Motorola Solutions and have already been specified on the license Motorola Solutions seeks to renew; others expand on those requirements to advance the interests of all parties to mitigate interference. Motorola Solutions would accept these commitments as "Special Conditions" incorporated into its renewed experimental license. In addition, it understands and agrees that its license will be modified to reflect the commitments described below related to the technical specifications (e.g., power levels and radius of operations) and the deletion of the location at Palatine, Illinois.

- (1) Motorola Solutions agrees that its experimental operations will be secondary and shall not cause interference to FirstNet operations or those approved to operate in Band Class 14, including narrowband or broadband operations (i.e., FirstNet Spectrum Management Lease Agreement ("SMLA") licensees/current incumbents). Motorola Solutions agrees that any failure to prevent interference shall result in immediate suspension of the experimental authority until such time, as determined by FirstNet, that the experimental operations may continue.**
- (2) Motorola Solutions acknowledges that although FirstNet may not yet have deployed in the geographic areas covered by the license, if FirstNet or its assignees or lessees plan to deploy in the areas during the term of the license, Motorola Solutions shall be required to modify its experimental activities or cease operations entirely to prevent interference to such**



MOTOROLA SOLUTIONS

deployment. Motorola Solutions may also be required to obtain any necessary concurrence letters from FirstNet or its assignees or lessees.

- (3) Motorola Solutions shall establish a point of contact (POC) for its experimental operations and shall send the such contact information to the Governor-appointed FirstNet Single Point of Contact within the proposed license locations. Motorola Solutions agrees to cease operations at the request of FirstNet immediately upon receipt of such a request to the POC until such time, as determined by FirstNet, that operations may continue. The POC and "stop-buzzer" contact for operations in Illinois is Gregory Buchwald, DMTS Engineer / CTO Office, Motorola Solutions, Inc.; Email Greg.Buchwald@motorolasolutions.com; Cell: 815-351-4020. The POC and "stop-buzzer" for operations at Plantation, FL is Mark Solak, Project Manager, Motorola Solutions, Inc.; Office: 847-576-3081; Cell: 847-341-0223; CELEX58@motorolasolutions.com.
- (4) Motorola Solutions agrees that the operations shall be limited to testing, experimentation, or trial and will not involve live-duty operations by first responders or others to protect life, property, or safety. The experimental operations are not intended for the provision of regular public safety mission-critical communications or the delivery of live transmissions in duties to protect life, property or safety.
- (5) Before commencing any experimental operations, Motorola Solutions shall verify that there is no current potential for interference with FirstNet operations or those approved to operate in Band Class 14 per special temporary authority ("STA")/experimental license ("EL") license (i.e., SMLA licensees/current incumbents). Motorola Solutions shall analyze information in the FCC's license databases to determine that the proposed operation would not interfere or create a significant potential for harmful interference with any public safety operations in Band Class 14. Motorola Solutions shall also coordinate with the Governor-appointed FirstNet Single Point of Contact to request available information about the status of any plans by FirstNet or its assignees or lessees to deploy in the area during the term of the license.
- (6) Motorola Solutions shall conduct its experimental activities in Band Class 14 under the following technical guidelines, designed to mitigate interference:
 - a. When feasible, testing must be conducted only within an anechoic chamber or Faraday cage;
 - b. When feasible, testing must be conducted only within an indoor location with the greatest possible attenuation characteristics;
 - c. Testing in an outdoor environment shall be subject to the following limitations:



- i. Operations shall be limited to geographic areas where there are no operations by FirstNet or its assignees or lessees, unless Motorola Solutions has received concurrence for such operations;
- ii. Prior to commencing every test transmission, Motorola Solutions shall monitor for any transmissions by FirstNet or its assignees ("FirstNet-Approved Operations") that would receive interference from the test transmissions, and Motorola Solutions shall not commence test transmissions until it has verified that the FirstNet Approved Operations have ceased or would not receive interference;
- iii. The operations shall be limited to the shortest possible duty cycle/time of day needed to obtain valid engineering data, but in no event may the operations exceed an average duty cycle of 20% (e.g., not more than 2 days per week during the period 8-5pm and 11pm-5am or the equivalent);
- iv. The operation of any base stations shall be limited as follows:
 - 1. Motorola Solutions shall deploy not more than one temporary base station at Schaumburg, Illinois, and two temporary base stations at Plantation, Florida;
 - 2. Base station antennas shall be placed at the lowest height needed to obtain valid engineering data, but may not be mounted more than 6 meters above ground level or a building, so as to reduce transmissions toward any FirstNet or other operations on Band Class 14;
 - 3. Base station antennas shall use downtilt and/or directional antennas when feasible to reduce transmissions toward any FirstNet or other operations on Band Class 14; and
 - 4. Base stations must operate with the minimum power needed to obtain valid engineering data, but in no case more than 15 Watts effective radiated power (ERP) per sector and no more than 6 sectors per base station, for a total ERP of 90 Watts;
- v. The operation of any portable/mobile devices shall be limited as follows:
 - 1. Portable/mobile units to be deployed will be limited to the number needed to obtain valid engineering data, but not more than 6 units per location;
 - 2. Portable/mobile units shall operate within the smallest possible radius of a temporary base station, but not more than 2 km from such base station; and
 - 3. Portable/mobile units must operate with the minimum power needed to obtain valid engineering data, but in no case more than 2.0 Watts ERP; and



- (7) Motorola Solutions understands that any primary operations have no obligation to mitigate any interference that might be present to the experimental operations of Motorola Solutions. Motorola Solutions agrees to accept interference from any other user of Band Class 14 and that it must coordinate operations with other authorized Band Class 14 STA/EL holders (e.g., during trade shows, multiple experimental authorizations might be requested and granted; it is the responsibility of each STA/EL holder to coordinate operations among themselves effectively). Motorola Solutions agrees that any failure to coordinate effectively will result in immediate suspension of its experimental authority until such time, as determined by FirstNet, that the operations may continue.**
- (8) Motorola Solutions agrees that any press release to be issued regarding the license, the operations, or the use of Band Class 14 spectrum relating to the license shall be coordinated with and receive written sign-off from FirstNet prior to release.**
- (9) Motorola Solutions recognizes that a separate concurrence from FirstNet will be required for renewal or extension of the requested license, if needed, beyond the term of the license as renewed.**

Motorola Solutions appreciates the FirstNet's and the FCC's consideration of this matter and respectfully requests that FirstNet act as expeditiously as possible to provide any needed concurrence and that the FCC renew the license as requested. Grant of the instant application is in the public interest, as such action will allow Motorola Solutions to continue testing and evaluating the propagation characteristics and reliability of prototype devices and systems designed to support public safety and homeland security communications.

Respectfully submitted,

/s/

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