Motorola Solutions, Inc.
FRN: 0002861649
Request for Part 5 Experimental
Special Temporary Authority
ELS File No. 0821-EX-ST-2019

NARRATIVE STATEMENT

Pursuant to Section 5.3(e) and (g) and Section 5.61 of the Federal Communications Commission ("FCC") rules, 47 C.F.R. §§ 5.3(e), (g), 5.61 (2018), Motorola Solutions, Inc. respectfully seeks an experimental special temporary authority ("STA"), beginning **June 15, 2019**, to operate on channels in the 3550-3700 MHz band allocated to the Citizens Broadband Radio Service ("CBRS") to meet a customer request to conduct proof-of-concept testing of prototype equipment at a location in Indianapolis, Indiana that is outside the NTIA exclusion zone.

A. Purpose of Operation and Need for STA:

Motorola Solutions is a leading manufacturer of mobile radio equipment for the critical infrastructure and public safety community and is continually engaged in the design and development of new and innovative communications systems. The experimental authority requested herein will allow the company, among other things, to: (1) support initial proof-of-concept testing of the functionality and reliability of base station and client systems under development for customer trials, and (2) collect coverage, throughput, and other performance data needed to assess the specific requirements and equipment needed to support future tests to evaluate and meet the needs of potential users within the CBRS spectrum allocation.

Specifically, Motorola Solutions proposes to demonstrate prototype equipment at a customer-selected location in Indianapolis, Indiana. To accommodate set-up requirements as well as to ensure all operations up to demonstration and tear-down are covered by the STA, Motorola Solutions respectfully requests that the FCC grant the authorization for the period June15th through December 15, 2019.

Grant of an STA will allow Motorola Solutions to demonstrate prototype systems, thereby obtaining critical technical data and feedback so that Motorola Solutions may enhance the efforts to design, develop and improve its equipment to meet the communications needs of potential users operating in the CBRS band.

B. Locations of Proposed Operation:

A limited number of temporary fixed and portable units would be operated within a radius of 5.0 kilometers of the test site in Indianapolis, Indiana, at the coordinates 39 45' 58.9" N Latitude; 86 10' 06.1"W Longitude (in Datum: NAD83) as specified in the accompanying application.

C. Technical Specifications:

1. Frequencies Desired

Motorola Solutions requests authorization to operate within the CBRS allocation of 3550-3700 MHz utilizing 5, 10, and 20 MHz TDD channels with 5, 10, and 20 MHz of bandwidth in an LTE waveform, as specified in the accompanying application.

2. Effective Radiated Power

All power levels will comply with the limits set forth in the FCC's rules, including those relating to human exposure to radiation.

The temporary fixed base units will operate at +25 dBm transmitter power output ("TPO") utilizing antennas, during various phases of testing, exhibiting an +8 dBd omni-directional radiation pattern. The system will, therefore, be deployed and configured to operate with a mean effective radiated power ("ERP") of not more than 2 Watts (+33 dBm). The subscriber units will operate at a mean power level not to exceed 250 mW ERP (+23 dBm). Motorola Solutions will reduce the actual powers to the minimum level needed for successful operation, based on set-up and testing at the site of the exercise.

3. Modulation and Emissions

Motorola Solutions proposes to operate using TDD OFDMA LTE modulation on the downlink and TDMA/TDD LTE modulation of the uplink. Uplink and downlink will operate on the same channel utilizing bandwidths of 5 MHz, 10 MHz, and 20 MHz. The representative emission designators are 5M00W7W, 10M0W7W, and 20M0W7W for the downlink period of operation upon the channel and 5M00WXW, 10M0WXW, and 20M0WXW for operation during the uplink period of the TDD LTE channel in use. Other emission modes may be utilized, but in no event will the emissions extend beyond the frequency band requested.

Prior to operation, Motorola Solutions will select an appropriate center frequency of operation based upon spectrum scans and a review of the FCC's databases to determine the existence of any licensed services, including earth stations, operating within the test area. Additional channel quality methods will also be used during each test activation to support its analysis needs while avoiding the potential for interference.

4. Antenna Information

No antennas will be installed in a fashion that will require approval under Federal Aviation Administration ("FAA") or FCC rules and regulations.

5. Equipment To Be Used

Motorola Solutions proposes to conduct the demonstration by deploying up to two (2) temporary fixed base station units outdoors and up to five (5) base station units indoors. Motorola Solutions will also utilize up to twenty-five (25). Motorola Solutions will limit the power, area of operation, and transmitting times to the minimum necessary to support an effective demonstration and collection of data yet at the same time avoid the potential for interference.

D. Protection Against Interference:

Motorola Solutions understands that it must accept interference from any other users of the CBRS band and that all operations by Motorola Solutions would be on a secondary basis and must not cause interference to operations approved to operate in the band. Motorola Solutions will also coordinate with and obtain required consent from existing licensees authorized to operate in the band.

In addition, Motorola Solutions recognizes that multiple STAs might have been requested and granted for operation in the same area to other entities, that these entities must effectively coordinate their operations, and that failure to do so may result in immediate suspension of the STA. Motorola Solutions has established a point of contact ("POC") identified below with "kill switch" authority, and it agrees to cease operations immediately upon receipt of request to the POC.

Nevertheless, Motorola Solutions does not expect that the proposed operation will cause interference with any licensed operation. Should interference occur, however, Motorola Solutions will take immediate steps to resolve the interference, including if necessary arranging for the discontinuance of the operation.

E. Restrictions on Operation:

Motorola Solutions is not seeking authority to perform a market study of unapproved devices under the requested STA. Moreover, the demonstration will not involve live-duty operations by first responders or others involved in the protection of life or property. In addition, no fees will be charged to entities using the equipment during this test. After the test is completed, Motorola Solutions will disassemble the test facilities.

Entities will be advised in accordance with Section 2.803 of the FCC's rules, 47 C.F.R. §2.803 (2018), that any unapproved devices which have not been authorized as required by the FCC are not being offered for sale or lease, or sold or leased, until authorization is obtained.

F. Public Interest Statement:

Motorola Solutions submits that issuance of an STA as requested is in the public interest, convenience, and necessity. Grant of an STA will allow Motorola Solutions to support the development of innovative equipment that will accommodate critical communications needs of potential users.

G. Contact Information:

Technical Point of Contact ("POC") and "Stop Buzzer/Kill Switch:"

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