

EXPERIMENTAL LICENSE REQUEST OF T-MOBILE LICENSE LLC

**T-Mobile License LLC
Form 442
Exhibit I**

NARRATIVE STATEMENT

Pursuant to Section 5.3, Section 5.53, and Section 5.61 of the Commission's rules, 47 C.F.R. §§ 5.3, 5.53, 5.61, T-Mobile License LLC ("T-Mobile") hereby respectfully requests an experimental license authorization for the purpose of determining the suitability of spectrum in the 1755-1780 MHz and 2155-2180 MHz bands for commercial mobile broadband services, and to examine technical co-existence with a limited number of incumbent Federal operations, in a defined number of geographic locations, that may remain in the band for an undefined length of time. T-Mobile currently holds special temporary authority ("STA") to conduct this testing under call sign WF9XQW. The submission of this application therefore also serves to replace and extend T-Mobile's existing STA, granted under File Number 0373-EX-ST-2012, which is scheduled to expire on December 1, 2012. The technical parameters and facilities requested herein are unchanged from those previously authorized under that STA. Pursuant to Section 5.61(b) of the Commission's rules, T-Mobile hereby seeks a regular experimental license and, to the extent necessary, an extension of its existing STA during the pendency of this application.

In support of this request, the following is shown:

- 1) Applicant's Name, Address, and FCC Registration Number ("FRN"):

T-Mobile License LLC
12920 SE 38th Street
Bellevue, WA 98006
FRN: 0001565449

- 2) Description of Operation and Purpose of Test:

T-Mobile is a wireless provider, providing service nationally in the PCS and AWS-1 spectrum bands. T-Mobile operates both an HSPA+ 4G network as well as a GSM network and has announced that it is deploying LTE in the AWS-1 band. The experimental authority requested herein will enable T-Mobile to undertake testing of the 1755-1780 MHz and 2155-2180 MHz bands to determine their suitability for commercial mobile broadband services, in particular the effect of existing Federal government operations on the use of this spectrum for mobile Long Term Evolution ("LTE") service. The wireless

industry, the FCC, and NTIA all have a great interest in evaluating this band and determining the feasibility of making it available for shared federal and commercial wireless use. Testing will focus on the ability of Federal and commercial users to share the spectrum while still protecting critical federal operations. In addition, data will be collected on the effects on commercial operations from the existing Federal uses in this band.

T-Mobile, CTIA and the wireless industry have been working closely with the FCC and NTIA to obtain authority for testing of devices in the 1755-1780 MHz and 2155-2180 MHz bands. To effectuate this, industry needs to obtain operating authority from the FCC that is fully coordinated with NTIA. T-Mobile offered to be the applicant on behalf of industry for this testing. T-Mobile took the lead in a similar fashion when testing interference between AWS-3 spectrum proponents and existing AWS-1 licensees. T-Mobile expects that, similar to the AWS-1 process, interested parties will be able to participate in the process even though they are not the licensee. As part of this process, interested parties, including federal incumbents, will participate in the formation of testing plans, work with NTIA in selecting test locations and participate in any and all tests that are conducted. T-Mobile would expect that the output of testing will be data that all interested parties will be free to analyze for effects on their current or future technology plans for use of the 1755/2155 MHz spectrum.

Since T-Mobile received its initial STA, T-Mobile has made substantial progress on its planned testing. Specifically, T-Mobile and other interested participants have worked closely with the Department of Defense (DoD) and have reached an agreement on the DoD systems that will be the primary focus of the studies. Also, T-Mobile, AT&T Inc., and Verizon Wireless are entering into a Memorandum of Understanding and Non-Disclosure Agreement with DoD to enable greater information exchange. Together with its industry partners, T-Mobile has hired two contractors to perform monitoring, simulation, and lab simulations. T-Mobile, with the cooperation of the DoD, has also identified the military bases at which these systems operate, and has conducted site visits to finalize arrangements for monitoring at three of the locations. T-Mobile anticipates that site visits for remaining locations will be completed by early December.

To perform successful testing, T-Mobile and its partners plan to: (1) monitor DoD operations to more fully understand their operations, (2) perform simulation work to understand potential interference, (3) conduct laboratory tests to study interaction and explore compatibility between LTE technologies and the DoD systems, and (4) conduct field tests to confirm the previous analysis. Not only is this preliminary work necessary to provide the most meaningful results and analysis, but it is also necessary to comply with the terms of the existing STA, specifically the Commission's requirements that T-Mobile be aware of and prevent potential interference issues, and that it coordinate any testing with relevant parties.

Because T-Mobile intends to conduct these tests in a variety of locations, including in designated areas near satellite uplink facilities, near Federal aeronautical facilities, and in selected major cities, T-Mobile requests that it be granted authority to operate throughout the continental United States. T-Mobile shall consult and coordinate with NTIA and Federal agencies, including DoD Area Frequency Coordinators,, on the specific geographic areas prior to any testing.

This authorization will serve the public interest by providing the wireless industry, Commission, and NTIA with necessary information that will enable these groups to further assess the feasibility of sharing this spectrum.

4) Dates of Operation:

T-Mobile requests that the Commission grant an experimental license with a term of two years. T-Mobile anticipates that it will complete the first three phases of its testing (see section 3 above) by the end of Q1 2013, with the timing of the fourth phase contingent on the results of the first three phases. T-Mobile anticipates that it will complete its testing in less than two years after the initial date of this authorization. *See* 47 C.F.R. § 5.71(b).

5) Class(es) of Station(s):

During this testing, T-Mobile will deploy both fixed base stations operating in the 2155-2180 MHz spectrum as well as mobile stations in the 1755-1780 MHz band. Base station locations (and corresponding radii of operation for mobile units) will be fully coordinated with NTIA and Federal incumbents (in the 1755-1780 MHz band), as well as fixed microwave incumbents (in the 2155-2180 MHz band) prior to any testing or specific location being made operational.

6) Location(s) of Proposed Operations:

T-Mobile requests full continental United States authority for this experimental authorization. As noted above, any locations of testing will be fully coordinated with NTIA and the Federal government prior to operations and will focus on areas and systems where Federal incumbents are operating that may continue to operate for an extended or permanent period in the 1755-1780 MHz spectrum.

For each location approved, T-Mobile will provide a “Stop Buzzer” name and phone number for that specific location as part of the coordination with NTIA federal users. T-Mobile will cease operations in the event an authorized user notifies the licensee of harmful interference and shall not commence operations again at this location until further approval is received.

7) Equipment To Be Used:

T-Mobile will work with its existing infrastructure and handset vendors to select representative LTE base station and handset equipment for testing. As part of the coordination process with NTIA and Federal government, T-Mobile will provide technical specifications of all tested equipment prior to any experimental testing.

8) Frequencies Desired:

T-Mobile requests operating authority for the 1755-1780 MHz (for mobile operations) and 2155-2180 MHz (for fixed base station operations) bands. Specific frequencies for testing will be determined in full cooperation with NTIA, Federal incumbents and fixed microwave station licensees for each tested location.

9) Power Levels:

For the 1755-1780 MHz band: 0.32 W (23 dBm +/- 2 dB) peak maximum transmitter power output

For the 2155-2180 MHz band: 80 W (for 20 MHz LTE carrier) peak maximum transmitter power output

10) Type of Emission, Modulation Technique, and Bandwidth Required:

Type of Emission	Modulation	Bandwidth
4M47G7D	QPSK	5 MHz
4M47W7D	16-QAM	5 MHz
8M95G7D	QPSK	10 MHz
8M95W7D	16-QAM	10 MHz
18M00G7D	QPSK	20 MHz
18M00W7D	16-QAM	20 MHz

T-Mobile has created the emission designator and calculated the necessary bandwidth in accordance with Sections 2.201 and 2.202 of the Commission's rules.

11) Overall Height of Antenna(s) Above Ground:

Base station heights will be lower than 200 meters and will likely be placed at existing T-Mobile or industry partner base station locations to ensure full compliance with FAA requirements. Location and antenna heights will be fully coordinated with NTIA and Federal incumbents prior to any operation.

For purposes of the Antenna Registration portion of the application, T-Mobile has identified a T-Mobile-owned tower, Antenna Registration Number

1046206, in Seattle, WA. This tower is representative of a tower that would be used by T-Mobile in the course of conducting this testing, and has received clearance by the FAA.

12) Contact Information:

Steve Sharkey
Chief, Engineering and Technology Policy
Federal Regulatory
T-Mobile USA, Inc.
202.654.5918
steve.sharkey@t-mobile.com

Tom Dombrowsky
Engineering Consultant
Wiley Rein LLP
202.719.7236
tdombrowsky@wileyrein.com