T-Mobile USA, Inc.
Request for Part 5 Experimental
Special Temporary Authority
ELS File No. 1711-EX-ST-2016

NARRATIVE STATEMENT

Pursuant to Sections 5.3 (j) and Section 5.61 of the Commission's rules, 47 C.F.R. §§ 5.3(j), 5.61 (2016), T-Mobile USA, Inc. ("T-Mobile") hereby respectfully requests experimental special temporary authority ("STA") from December 19, 2016 to June 19, 2017, to evaluate the technical performance of pre-commercial LTE-U equipment. The experiments will operate in AWS-1 spectrum licensed to T-Mobile as well as in unlicensed 5 GHz spectrum (in a downlink-only mode). The testing will be in a highly controlled field environment that will help T-Mobile to allow the pre-commercial testing of new products outside of a lab environment but in a controlled and managed manner.

A. Purpose of Operation and Need for STA:

T-Mobile is working with equipment vendors to conduct product testing of new LTE-U equipment. The trials at the various locations listed below will allow T-Mobile to test prototype equipment in outdoor and indoor setting prior to equipment certification. The trials will consist of up to 10 small cells and access points that will use the transmission parameters detailed below in Section C. Mobile units will operate within the RF coverage area of the small cell stations. The mobiles will be receive-only in the unlicensed 5 GHz band but will also include an LTE transmitter that will operate in the AWS-1 spectrum. T-Mobile anticipates using as many as 20 mobile units at each location.

B. Location of Proposed Operation:

T-Mobile intends to conduct testing in 25 locations with the address and approximate reference coordinates (in Datum: NAD83) of each of the fixed locations:

Address	Latitude	Longitude
5810 Pineland Dr, Dallas, TX	32° 52' 37.2"	96° 45' 23.0"
7225 Fair Oaks Ave, Dallas, TX	32° 52' 26.8"	96° 45' 24.1"
8401 Park Lane, Dallas, TX	32° 52' 16.3"	96° 45' 35.3"
8567 Park Lane, Dallas, TX	32° 52' 13.1"	96° 45' 17.3"
6050 Melody Lane, Dallas, TX	32° 52' 2.6"	96° 45' 34.9"

Address	Latitude	Longitude
6250 Ridgecrest Rd, Dallas, TX	32° 52' 1.6"	96° 45' 18.4"
6741 Eastridge Rd, Dallas, TX	32° 52' 3.7"	96° 45' 2.9"
6801 Larmanda St, Dallas, TX	32° 52' 0.5"	96° 44' 49.92"
6392 123rd Ave N, Largo, FL	27° 53' 0.7"	82° 43' 31.4"
6455 118th Ave N, Largo, FL	27° 52' 44.9"	82° 43' 32.9"
7519 SR-688, Largo, FL	27° 53' 39.8"	82° 44' 31.2"
7105 SR-688, Largo, FL	27° 53' 38.9"	82° 44' 8.2"
7253 142nd Ave N, Largo, FL	27° 54' 5.0"	82° 44' 23.6"
1388 CR-501, Largo, FL	27° 54' 22.4"	82° 44' 44.5"
134 ½ 5th street, Montebello, CA	34° 0' 29.4"	118° 6' 18.0"
1208 E Burnett St., Long Beach, CA	33° 48' 2.8"	118° 10' 33.6"
3737 ½ 15th St, Long Beach, CA	33° 47’ 9.0”	118° 8' 52.8"
3000 184th Street SW, Lynnwood, WA	47° 49' 47.9"	122° 16' 22.5"
1717 Litton Drive, Stone Mountain, GA	33° 49' 58.3"	84° 11' 35.0"
3700 Mansell Road, Suite 100, Alpharetta, GA	34° 2' 17.5"	84° 17' 42.4"
600 Town Center Dr., Dearborn, Michigan	42° 18' 44.1"	83° 13' 4.3"
575 Bellevue Square, Bellevue WA	47° 36' 56.2"	122° 12' 13.5"
5186 Avenue U, Brooklyn, NY	40° 36' 35.8"	73° 55' 10.9"
1300 W Sunset Rd Las Vegas NV	36° 3' 49.8"	115° 2' 23.6"
655 W Craig Rd North, Las Vegas, NV	36° 14' 18.9"	115° 9' 2.1"

C. Technical Specifications:

1. Frequencies Desired

T-Mobile will be using AWS-1 spectrum for the testing as well as unlicensed 5 GHz spectrum. Specifically, T-Mobile will be transmitting in accordance with the table below:

Device Type	Transmit Frequency Band (MHz)	Conducted TX Power (dBm)	Maximum Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	ERP (dBm)	ERP (W)	Maximum Transmission Bandwidth (MHz)	Emissions Designator	Technology
Small cell and Access Point	5150-5250	30	6	36	4.0	33.83	2.4	20 20/40	40M0F7D	LTE-U 802.11
Small cell and Access Point	5725-5850	30	6	36	4.0	33.83	2.4	20 20/40	40M0F7D	LTE-U 802.11
Mobile	5150-5250 5725-5850	24	3	27	0.5	24.83	0.3	20/40	40M0F7D	802.11
Small cell	2110-2155	30	6	36	4.0	3.8	2.4	20	20M0F7D	LTE
Mobile	1710-1755	24	3	27	0.5	24.83	0.3	20	20M0F7D	LTE

2. Equipment To Be Used

T-Mobile will be using prototype equipment that has not yet received FCC certification. This equipment will be provided by a number of vendors.

D. Protection Against Causing Interference:

T-Mobile is requesting use of the AWS-1 and unlicensed 5 GHz spectrum bands. T-Mobile will only operate AWS-1 in bands that it has licenses for in the different locations. T-Mobile understands that it must accept any interference from any users of this band and that all operations by T-Mobile will be on a secondary basis. T-Mobile has established a point of contact identified below with "kill switch" authority should any interference occur to primary licensed services. Should interference occur, T-Mobile will take immediate steps to resolve the interference, including, if necessary, arranging for the discontinuance of operation.

E. Restrictions on Operation:

T-Mobile is not seeking authority to perform a market study under the requested STA. Moreover, no fees will be charged to entities using the equipment during this test. Entities will be advised in accordance with Section 2.803 of the Commission's rules, 47 C.F.R. §2.803, 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:

T-Mobile submits that issuance of the STA as requested is in the public interest, convenience, and necessity. Grant of an STA will help T-Mobile to develop and test innovative equipment to provide service to consumers.

G. Contact Information:

Technical Contact and "Stop Buzzer/Kill Switch:"

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