

Experimental License Application Justification

UPS is a global leader in logistics, offering a broad range of solutions including the transportation of packages and freight; the facilitation of international trade, and the deployment of advanced technology to more efficiently manage the world of business. UPS ships 20.7 million packages and documents each day within more than 220 countries and territories and operates out of 1800 facilities globally.

I BACKGROUND

UPS intends to deploy a single 1.4 MHz LTE eNodeB base station operating in FDD mode in the 900 MHz band (LTE Band 8) on spectrum licensed to Anterix (formerly pdvWireless) with the technical parameters described in this application, which are designed to reflect the standards proposed in WT Docket No. 17-200. The base station will be used initially to provide Internet connectivity to various client devices—smart phones, tablets, push-to-talk (PTT) devices, and edge routers supporting wired connectivity to computers and other network devices within a 10 kilometer radius of the site. After successfully demonstrating Internet connectivity, we intend to leverage the Anterix spectrum to migrate the user data plane to UPS's internal data network so testing can continue with production UPS applications. The subject eNodeB will then be deployed in a common network with a CBRS LTE infrastructure. The intent is to compare performance across the Anterix and CBRS RF networks, and ultimately demonstrate the ability for client devices to roam between them, as well as commercial LTE networks.

Anterix and the Enterprise Wireless Alliance (“EWA”) submitted a Petition for Rulemaking to create a 3X3 MHz allocation to facilitate broadband deployment for business enterprise entities, within the 900MHz band. The FCC released a Notice of Proposed Rulemaking (“NPRM”) on March 14, 2019 that would realign and modernize the 900 MHz band to allow for broadband service. Currently, the 900 MHz commercial licenses such as those held by Anterix are configured in 20 blocks of 10 contiguous 12.5 kHz channels (125 kHz) that cover entire Metropolitan Trading Areas (“MTAs”). Each block is separated by 10-channel allocations of site-specific Business/Industrial/Land Transportation (“B/ILT”) frequencies. Since the minimum channel size for an LTE carrier is currently 200KHz, the existing 900 MHz band configuration prevents the deployment of these services. UPS intends to use Anterix’s 900 MHz channels as proposed to create an experimental license for broadband service.

II REQUEST FOR CONVENTIONAL EXPERIMENTAL RADIO LICENSE

A Purpose of Test

The objectives of this program are 1) to test the functionality of various client devices with respect to the 39 MHz transmit/receive offset variant of this Band 8 deployment, 2) to document

the relative coverage and performance differences between this Band 8 deployment on the Anterix spectrum and the CBRS overlay operating in Band 48, and 3) to confirm the ability to operate a co-site Band 8 / Band 48 (CBRS) using common LTE core infrastructure, and allowing client roaming between the two RF networks.

B Technical Parameters of Test

The testing will involve wireless connectivity to fixed and mobile locations within a 10 kilometer radius of the transmitter site. Details on the transmitting equipment are provided in the technical sections of this application. It should be noted that this is experimental equipment only to the extent that it has not yet been certified for use on Part 90 spectrum; the models UPS plans to test are LTE Band Class 8 equipment that have been deployed worldwide at 900 MHz. UPS plans to deploy a single omni-directional antenna at the site, the details of which also are provided in the technical section of this application.

As with standard field area network systems, the testing of the fixed and mobile wireless LTE equipment will be automated to transmit/receive intermittent information between the transmitters and the end-point locations. While most of the monitored testing will take place during normal business hours (9AM-5PM), UPS anticipates that some data transmissions will occur throughout the 24-hour day. Consistent with the requirements of Rule Section 5.107, system management and monitoring will be handled remotely from UPS's Louisville, KY location, except for setup and any equipment adjustments that will be conducted by qualified personnel on site.

C Program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along lines not already investigated

To the best of our knowledge, no similar dual-band LTE implementation using the 39 MHz offset version of Band 8 and CBRS has yet been tested, and we believe this architecture has significant promise.

D An estimate of the length of time that will be required to complete the program of experimentation proposed in the application

UPS requests a 24-month term for the experimental license for a valid product development trial and to make adjustments to the testing as needed.