

Experimental License Application

Justification

pdvWireless, Inc. (“PDV”) is a private wireless communications carrier and provider of mobile workforce communication and location-based solutions in the United States. PDV Spectrum Holding Company, LLC is a wholly owned subsidiary of PDV and the entity created to hold its FCC Spectrum.

I BACKGROUND

In 2014, PDV took assignment of the 900 MHz Land Mobile Radio (LMR) licenses from Sprint Corporation (“Sprint”), spectrum that operates under Part 90 of the FCC rules. This nationwide portfolio of commercial licenses, most of which had been purchased through FCC auctions, had been used in Sprint’s nationwide iDEN network.

Using Motorola’s MOTOTRBO technology, PDV has deployed its suite of advanced digital 2-way voice and data services in seven of the largest metropolitan areas in the United States: New York, Chicago, Dallas, Houston, Washington-Baltimore, Philadelphia and Atlanta. The company’s solutions focus on enhancing the productivity of its customers’ field-based workers and the efficiency of their dispatch and call center operations. The company offers dedicated, wide area two-way radio networks that provide private push-to-talk (PTT) communications services to primarily dispatch-centric businesses, such as electric and gas utility field services, refineries, construction, distribution, transportation, waste management, and hospitality industries.

In an effort to increase the efficiency of the 900 MHz LMR spectrum, PDV 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, including those classified as Critical Infrastructure Industry (RM-11738) within the 900MHz band. This proposal would require realignment of the 900 MHz band. Subsequently, the FCC initiated a Notice of Inquiry (WT 17-200) which requests comments on the future use of the 900 MHz LMR spectrum band. Ameren intends to use PDV 900 MHz channels as proposed in the experimental license in a broadband and NB-IoT configuration. Currently, the 900 MHz licenses 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 a LTE carrier is currently 200KHz, the existing 900 MHz band configuration prevents the deployment of broadband services.

II REQUEST FOR CONVENTIONAL EXPERIMENTAL RADIO LICENSE

A Purpose of Test

While the issues involved in RM-11738 are being considered by the FCC, PDV requests a Special Temporary Authority experimental radio license to test LTE equipment on 900 MHz spectrum. The purpose of the testing is technical radio research: it is intended to confirm that up

to 3 MHz broadband service can be deployed on 900 MHz spectrum using LTE-certified Band Class 8 equipment without causing interference to systems operating on spectrum adjacent to the proposed 900 MHz broadband allocation. The testing will comply with Rule Section 5.84 and will not cause interference to either co-channel or adjacent channel licensees authorized pursuant to the current 900 MHz band plan. It will be conducted on MTA channels held by PDV and interleaved B/ILT channels that have never been applied for and remain vacant in the test area. The testing will also be a “proof of concept” opportunity, whereby PDV can validate the benefits of wireless broadband connectivity. The testing will confirm that LTE data speeds and capacity can support the important fixed field-area functions and applications that are currently conducted on narrowband systems or on legacy copper-based circuits that may be de-constructed

B Technical Parameters of Test

This project aims to leverage PDV’s expertise and existing private broadband network solution set to implement a realistic communications network that is utility relevant. This TSA is the first step (Phase 1) toward a greater potential collaboration with PDV through Energy Systems Integration Facility (ESIF) High Impact Project designation and/or further TSA or CRADA supported work.

Multiple current projects within NREL’s Power System Engineering Center (PSEC) focus on the development and practical implementation of advanced distribution management systems (ADMS’s) requiring communication capability either between devices or between a centralized ADMS controller and multiple pieces of utility equipment (e.g., capacitor bank controllers, voltage regulator controllers, etc.). These communication pathways are often ideally implemented using hardwired connections when completing evaluations in the lab.

The expected outcome of this entire engagement is quantified understanding of how the communications portion of an ADMS impacts the overall grid-level performance of such systems when the communication network is a private broadband network leveraging LTE technology. Based on this understanding and lab results a report gathering the results from the laboratory evaluation of multiple ADMS/control use cases over a laboratory implementation of an LTE network will be published.

PDV requests the instant experimental license for 24 months.