Experimental License Request

Ford Motor Company ("Ford") is one of the leading American multinational automakers and is highly regarded for manufacturing quality automobiles with the highest level of safety features in the industry.

Ford envisions a world of connected vehicles where seamless connectivity among vehicles, infrastructure, network, and pedestrians will enhance road safety and will save human lives. Over the last decade, Ford has devoted a large amount of resources to develop the technology to further that goal. Several wireless communication technologies, such as Bluetooth, Wi-Fi, and Satellite, are widely used in Ford vehicles to provide GPS positioning, infotainment services, and driver safety enhancements.

With the advent of 5G networks and small cell infrastructures, private cellular networks can be deployed as an alternative to Wi-Fi. These private networks are secure, cost-efficient, and can be used as an LTE/5G network within buildings and outdoors with much higher coverage and capacity compared to only Wi-Fi based solutions.

For the experiment requested in the instant application, Ford intends to evaluate Citizens Broadband Radio Service ("CBRS") equipment as a solution for private LTE/5G networks for Connected Vehicle services. The automotive industry is on the move, as connected car technology brings greater value to manufacturers and drivers. In the connected car, telematics monitor safety and efficiency, while navigation, infotainment and self-driving transform the driving experience.

The scope of the experiment covers the setup of a temporary CBRS wireless network within a Ford parking structure on Ford's Dearborn, MI campus. Details on the transmitting equipment are provided in the technical sections of this application. The objective of this experiment is to evaluate the capabilities of CBRS, with Ford's main goals focused on achieving better coverage, higher capacity compared to the existing wireless solutions.

In particular, the specific objectives of this private cellular network experiment will be:

1. Gaining experience with installation and operation of a private cellular network for connected vehicle services.
2. Evaluating system throughput and performance under different scenarios.
3. Analyzing the performance of network in handover scenarios.
4. Evaluating Subscription Management Protocols for private cellular networks.
5. Providing proof of concept for connected vehicle applications in Ford Motor Company.

As with standard field area network systems, the fixed wireless LTE/5G equipment will be automated to transmit/receive intermittent information between the transmitter and the endpoint devices. The proposed experiment will be conducted during normal business hours for Ford operations. Consistent with the requirements of Rule Section 5.107, system management and

monitoring will be handled from Ford's Dearborn campus. Ford requests an 18-month experimental license for this experiment to fully evaluate the use of CBRS equipment for LTE/5G networks in Connected Vehicle services and to make adjustments as needed.