Description of Experimental Program

In its 6 GHz Report & Order, the Commission designated additional spectrum for unlicensed operations, envisioning its use for "new innovative technologies and services that will advance the Commission's goal of making broadband connectivity available to all Americans, especially those in rural and underserved areas." *Unlicensed Use of the 6 GHz Band*, 35 FCC Rcd 3852, 3853 (2020). Through this application for experimental 6 GHz experimental license, Skybeam, LLC ("Skybeam") seeks to advance these goals through testing of equipment manufactured by Tarana Wireless, Inc. within the UNII-5 and UNII-7 bands to collect additional data on the use of these bands for delivery of enhanced fixed wireless broadband services on a shared basis with incumbent users. Of particular interest is the benefit of larger channel size and channel bonding across frequency bands.

Skybeam is authorized to deploy and evaluate Mimosa 6 GHz equipment from a tower location in Kaufman, TX. Skybeam will likely phase out the Mimosa trial at Kaufman, TX when the authorization expires in December 2023. Skybeam now proposes deployment and evaluation of Tarana equipment from the same location in Kaufman, TX to compare the performance of equipment from the two manufacturers. The experimental operations will involve field deployment and testing of Tarana 6 GHz radio technology from a single sectorized access point antenna with deployment on four azimuths and will communicate with up to twenty-five CPE units per sector located within an eight-mile radius of the Access Point. These CPE units represent only a small percentage of the existing customers within the covered area. The proposed operations will allow Skybeam to further evaluate the greater throughput capabilities available in the UNII-5 and UNII-7 bands, including the potential for offering gigabit service via fixed wireless facilities.

Although the trial will involve deployment at customer locations, the deployment will involve existing customers, with CPE equipment located side-by-side with existing equipment and will therefore permit evaluation of the performance of different equipment, spectrum and bandwidth. New customers may be added to the trial as needed to maintain a consistent level of CPE deployment, in the event of customer cancellations, but in no case will use of the 6 GHz band be marketed to customers as a new or augmented service offering. Except for the need to install new equipment at customer sites, the use of the test equipment will be seamless and transparent to customers. All equipment deployed to customer sites will be retrieved at the conclusion of the experimental testing program unless the customer can use the equipment without alteration under the Part 15 rules when authorized by the FCC.

The trial will involve varied channel loading to evaluate the equipment performance. Using two 40 MHz channels per sector, twenty-five units per AP sector should allow Skybeam to fully utilize the spectrum and evaluate equipment performance in real-world conditions.

Skybeam's data collection program will operate without causing harmful interference to incumbent users. Skybeam will work with any nearby licensed incumbents that it identifies, based on information provided in the FCC's databases, to ensure that its operations will avoid any harmful impact on such existing users.

The BN 6 GHZ (Access Point), sector antennas will provide 16.4 dBi gain, which when connected to 91mW output power will result in 2.43 W IRP.

The RN 6 GHZ CPE antennas will provide 14.8 dBi gain, which when connected to 131 mW output power will result in 2.43 W ERP.