

AeroNet Wireless Broadband LLC

Statement in Support of Experimental License Application

AeroNet Wireless Broadband LLC (“AeroNet”), pursuant to Section 5.63(c)(1) of the Commission’s Rules, provides this statement in support of its application for a new experimental Special Temporary Authority (“STA”) to conduct an additional technology trial using spectrum in the 3550-3650 MHz band transmitting from two access point locations in the San Juan, Puerto Rico area. AeroNet requests an STA term equal to the shorter of (a) six (6) months from grant of this application, or (b) AeroNet’s grant of authority from a Spectrum Access System (“SAS”) and Dynamic Protection Area (“DPA”)-enabled SAS software to operate the authorized equipment and facilities on a General Authorized Access (“GAA”) basis.

Background

AeroNet is a fixed wireless service provider that provides broadband service to approximately 8,000 customers in Puerto Rico. It relies on a combination of unlicensed and lightly-licensed spectrum and fiber optics to provide these services.

AeroNet’s operations, infrastructure, equipment and customer base were affected by the windstorms and damage caused by Hurricanes Irma and Maria. In the aftermath of the storms, AeroNet has focused on rebuilding and returning to normal operating conditions. As of today, approximately 99% of AeroNet’s customers have resumed their regular commercial services. AeroNet has taken substantial strides and expended significant resources to resume operations. On January 30, 2019, the FCC granted AeroNet a six-month STA (FCC File No.: 2045-EX-ST-2018) to conduct a technology trial using spectrum in the 3550-3650 MHz band transmitting from two access points in the San Juan, Puerto Rico area. The STA expired on July 1, 2019. Over the past month, Aeronet has reviewed its findings from the initial STA. Aeronet has been encouraged by its initial trial and now believes that additional testing is necessary in order to make final determination as to the use of the equipment.

To meet these objectives, AeroNet intends to continue to experiment with upgraded access point and customer premise equipment (“CPE”). Based on its initial STA, research and understanding of the technical rules for the Citizens Broadband Radio Service (“CBRS”), AeroNet believes that software-defined, LTE-based access point equipment manufactured by Blinq Networks can be a successful deployment option, and that in mid-band spectrum may offer consumers the best combination of throughput, propagation, cost and performance in areas where access to competitive broadband services is lacking. As it continues to restore and improve fixed broadband service in Puerto Rico, AeroNet expects to gain a better “real world” understanding of the benefits, challenges and costs associated with deployment of the equipment.

Trial Objectives

AeroNet has identified the following objectives of the proposed trial:

- Test CBRS LTE RF propagation characteristics in line-of-sight and non-line-of-sight environments
- Test CBRS LTE RF propagation characteristics in indoor and outdoor installation scenarios
- Test CBRS LTE three 20-megahertz channel carrier aggregation capability and performance
- Validate ability to offer 100/25 Mbps speed with CBRS carrier aggregation

Overall, the second STA will provide AeroNet with additional information to help make its future equipment, expansion and network investment plans. Assuming the trial is successful and the CBRS rules are not changed in a manner that effectively prohibits participation by small broadband providers for Priority Access Licenses (“PALs”), AeroNet plans to utilize a combination of PAL and GAA “license by rule” spectrum in the entire 150 megahertz of 3550-3700 MHz spectrum.

AeroNet believes that the ability to share the 3550-3700 MHz band under the control of the SAS and ESC represents a positive change in spectrum management policy and will eventually result in extremely efficient and widespread use of this 150 megahertz of spectrum for both small cell technologies for mobile wireless broadband and higher power technologies for fixed wireless broadband in rural and underserved locations. As a fixed wireless broadband provider, cost-effectiveness is an important factor in AeroNet's future deployment and investment decisions.

In order to meet the defined objectives of the trial, AeroNet seeks a new STA to use spectrum in the 3550-3650 MHz band, transmitting from the two access point locations identified in this application. AeroNet plans to deploy LTE-based equipment and a DPA-enabled SAS on an experimental basis to determine equipment and technology performance and the market potential resulting from 150 megahertz of mid-band spectrum. In sum, this experiment will inform AeroNet's business, investment, technology and deployment decisions as it plans to restore, expand and upgrade its fixed broadband network.

If successful, AeroNet plans to seek market trial authority to gain information on consumer acceptance of broadband using 3.5 GHz spectrum.

Description of Trial

Because the Commission has not yet certified equipment for use with the SAS or the ESC in the CBRS band, AeroNet plans to trial BlinQ transmission equipment from two locations and Gemtek CPE at 10 locations. Power limits and out-of-band emission limits will conform to the Part 96 rules for Category B CBSDs that the Commission

adopted in the *CBRS Order* and the Order on Reconsideration and Second Report and Order.¹

AeroNet will conduct the experiment in its existing area of operations in the San Juan area of Puerto Rico. AeroNet has access to and is transmitting from existing towers and operation in this area with personnel on site to monitor deployment and operation, which will ensure that there will be no harmful interference to Incumbent Access users, and to remedy harmful interference in the unlikely event it occurs. Commission records show that there are no Fixed Satellite earth stations in the 3600-3650 MHz band operating near the test area.² Likewise, there appear to be no ground-based radar facilities in or near the planned trial area that would require ESC or coordination with incumbents.³

To the extent necessary, AeroNet agrees to accept the following special conditions on its experimental STA:

(1) All transmitting and/or receiving equipment used in the study shall be owned by the licensee.

(2) Prior to equipment authorization or a determination of compliance, the device must be accompanied by a conspicuous notice worded as follows: "This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained."

(3) Licensee is required to ensure that trial devices are either rendered inoperable or retrieved by them from trial participants at the conclusion of the trial. Licensee is required to notify trial participants in advance that operation of the trial device is subject to this condition.

(4) If any interference occurs, the licensee of this authorization will be subject to immediate shut down.

(5) Non-approved equipment must be labeled.

(6) Non-approved equipment must be retrieved.

Further, to the extent necessary, AeroNet will provide notice to and coordinate with government interests that may be affected by the trial operations.

Contribution to the Radio Art

In accordance with Section 5.63(c)(1), AeroNet expects that the trial will add to what had been learned in the initial STA and will further contribute to the radio art. The

¹ See *Amendment of the Commission's Rules with Regard to the 3550-3650 MHz Band*, Order on Reconsideration and Second Report and Order, 31 FCC Rcd 5011 (2016).

² See *Amendment of the Commission's Rules with Regard to the 3550-3650 MHz Band*, Notice of Proposed Rulemaking and Order, 27 FCC Rcd 15594 (2012), at Appendix A.

³ See Letter dated from Paige R. Atkins, NTIA, to Julius P. Knapp, FCC, GN Docket No. 12-354 (dated March 24, 2015), at Enclosures 1 and 2.

CBRS is a new service in which commercial and Federal uses will share a spectrum band, with use governed by an SAS and ESC. It has been characterized as a test-bed for innovation and as a paradigm shift in spectrum management. In connection with its market trial, AeroNet expects to learn a significant amount of information about equipment capabilities and limitations, interference protection and mitigation, customer acceptance at various speeds and price points, and integration of its service and equipment with the SAS and ESC. Because AeroNet will make test data available to BlinQ, the manufacturer also will gain important information that can be used to improve equipment performance and development.