

DESCRIPTION OF EXPERIMENT

Introduction

AURA Network Systems OpCo, LLC (“AURA”) seeks special temporary authority (“STA”) for six months to use 454.675-454.975 MHz and 459.675-459.975 MHz, which are associated with the general aviation air-ground radiotelephone service (“AGRAS”),¹ in order to test different radio configurations on the ground and in the air at varying altitudes up to 10,000 feet.

Purpose and Technology

The tests will allow AURA to determine the most effective combination of equipment and network parameters to securely and reliably enable voice, data, and navigation capabilities for manned and unmanned aircraft in different conditions and at different altitudes.² Testing will occur in the air on manned aviation aircraft. Additional testing will be performed on the ground with unmanned systems in a controlled environment.

AURA proposes to commence testing on November 2, 2020,³ and anticipates that testing will take place over six months on an intermittent basis at the Mt. Hamilton location listed in this application. The radius of operations will be limited to 49.7 miles (80 kilometers).

AURA understands that use of the requested frequencies pursuant to an experimental authorization is limited for the purposes of testing radio equipment at the location.

Transmitting Equipment and Antenna

For its experiments, AURA will utilize software-defined radios operating a 802.16-based air interface and a ultra high frequency (“UHF”) omnidirectional antenna using vertical polarization. The equipment was built by Ondas Networks Inc., a California-based wireless networking company that designs and manufactures radios for mission critical applications.⁴

The antenna will extend only 4.6 meters above the ground. The ground’s elevation at the antenna site is 531 meters above mean sea level. The distance to the nearest aircraft landing area is 4.4 kilometers. Mt. Hamilton’s peak to the Northeast will shield the antenna from aircraft.

¹ See 47 C.F.R. § 22.805.

² See 47 C.F.R. § 5.3(j) (“Stations operating in the Experimental Radio Service will be permitted to . . . [d]evelop[] radio technique, equipment, operational data or engineering data, including field or factory testing or calibration of equipment, related to an existing or proposed radio service.”).

³ The proposed date is at least 10 days after the filing of this application, consistent with Commission rules. See 47 C.F.R. § 5.61(a)(2) (“Applications for STA must be submitted . . . at least 10 days prior to the proposed operation.”).

⁴ Ondas Networks, *Company Overview*, <https://www.ondas.com/company-overview/> (last visited Oct. 21, 2020).

Frequencies

AURA already has primary use of the AGRAS spectrum via its *de facto* transfer lease of KWU510,⁵ which is located roughly 20 miles away (32.2 kilometers). The Commission's rules prohibit other parties from licensing the requested spectrum for primary use at nearby locations,⁶ eliminating the risk of harmful interference to co-channel users.

Location of Operations

The tests will occur from the transmitters' location at 15825 Mt. Hamilton Road, Mt. Hamilton, CA 95140.⁷

Stop Buzzer

At all times in which the transmitters are in use, AURA will maintain a single point of control and stop buzzer capability. The stop buzzer contact will be capable of addressing interference concerns and resolving any harmful interference through any and all available means.

The stop buzzer contact information is:

Name:	Michael Gagne
Telephone:	(240) 508-6220
Email:	mgagne@auranetworksystems.com

Interference Protection and Deference to Licensed Users

AURA has exclusive use of the requested channels in this area, eliminating the risk of harmful interference to co-channel users,⁸ and commits to respecting adjacent-band users. Should any interference occur as a result of its experiments, AURA will take immediate steps to resolve the interference, including discontinuing operations, if necessary.

Request for Waiver

AURA requests a waiver of the station identification requirements in Section 5.115 of the Commission's rules.⁹ Grant of the requested waiver will serve the public interest by allowing AURA to determine the most effective combination of equipment and network parameters to securely and reliably enable voice, data, and navigation capabilities for manned and unmanned aircraft in different conditions and at different altitudes.

⁵ See Call Sign KWU510, Lease ID L000040308 (*de facto* transfer lease of KWU510 from A2G Communications LLC to AURA).

⁶ See 47 C.F.R. § 22.813(a) (imposing distance separation requirements of 497 miles for co-channel authorizations).

⁷ The precise coordinates are provided in the FCC form for this STA.

⁸ See Call Sign KWU510, Lease ID L000040308; *see also* 47 C.F.R. § 22.813(a).

⁹ 47 C.F.R. § 5.115.