

## 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”),<sup>1</sup> in order to conduct market trials using autonomous flight systems.<sup>2</sup>

### Purpose and Technology

An experimental STA will allow AURA to test its radios with autonomous aircraft at eight locations in California and North Carolina.<sup>3</sup> Testing will be performed in the air and on the ground.

AURA proposes to commence testing on August 1, 2021, and anticipates that testing will take place over six months on an intermittent basis at the eight locations listed in this application.<sup>4</sup> 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 to conducting its market trials.<sup>5</sup>

### *Transmitting Equipment and Antenna*

At each location, AURA will utilize no more than six software-defined radios operating a 802.16-based air interface. The radios were built by Ondas Networks Inc., a California-based wireless networking company that designs and manufactures radios for mission critical applications.<sup>6</sup>

The antennas will be placed on buildings at airports in each location. In no instance will the antennas extend more than 19.685 feet (6 meters) above an existing structure.<sup>7</sup> Additionally, radios will be placed on autonomous aircraft.

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<sup>1</sup> See 47 C.F.R. § 22.805.

<sup>2</sup> See 47 C.F.R. §§ 5.6(k), 5.602.

<sup>3</sup> See 47 C.F.R. § 5.3(k) (“Stations operating in the Experimental Radio Service will be permitted to conduct . . . market trials.”); 47 C.F.R. § 2.803(c)(1) (“The following marketing activities are permitted . . . activities conducted under market trials pursuant to subpart H of part 5 of this chapter . . .”).

<sup>4</sup> 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.”).

<sup>5</sup> See 47 C.F.R. § 5.602.

<sup>6</sup> Company Overview, Ondas Networks, <https://www.ondas.com/company-overview/> (last visited July 8, 2021).

<sup>7</sup> 47 C.F.R. § 5.61(b)(11).

## Frequencies

AURA already has primary use of the AGRAS spectrum via *de facto* transfer leases of spectrum licensed to A2G Communications, LLC.<sup>8</sup> The Commission's rules prohibit other parties from licensing the requested spectrum for primary use at nearby locations,<sup>9</sup> reducing the risk of harmful interference to co-channel users.

## Location of Operations

The market trials will occur within the radius of operations at the following locations:

	Address	City	State	ZIP	Latitude	Longitude
1.	81 John Glenn Drive	Concord	CA	94520	37-58-59.6 N	122-03-23.3 W
2.	3000 Baumann Road	Rio Vista	CA	94571	38-11-36.2 N	121-42-13.1 W
3.	550 Eagle Court	Byron	CA	94514	37-49-42.4 N	121-37-33.0 W
4.	200 Fred Kane Drive	Monterey	CA	93940	36-35-13.0 N	121-50-34.0 W
5.	4912 Wing Way	Paso Robles	CA	93446	35-40-22.4 N	120-37-37.5 W
6.	Camp Roberts	San Miguel	CA	93451	35-43-08.9 N	120-46-04.6 W
7.	John Brantley Blvd.	Morrisville	NC	27560	35-52-39.5 N	078-47-14.9 W
8.	1210 Aviation Drive	New Bern	NC	28562	35-04-22.3 N	077-02-34.9 W

## 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, reducing the risk of harmful interference to co-channel users,<sup>10</sup> 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.

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<sup>8</sup> See e.g., Call Sign KWU424, Lease No. L000040300 (granted Dec. 24, 2019) (located in Rocky Mount, NC, which is 72 miles and 93 miles from the two North Carolina locations requested in this application).

<sup>9</sup> See 47 C.F.R. § 22.813(a) (imposing distance separation requirements of 497 miles for co-channel authorizations).

<sup>10</sup> See e.g., Call Sign KWU424, Lease No. L000040300; see also 47 C.F.R. § 22.813(a).

## **Request for Waiver**

AURA requests a waiver of the station identification requirements in Section 5.115 of the Commission's rules.<sup>11</sup> 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 data and navigation capabilities for autonomous aircraft as part of this market trial.

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<sup>11</sup> 47 C.F.R. § 5.115.