

Robert Bosch LLC
Request for Grant of Special Temporary Authority
Field Sensor Testing for Smart Agriculture System
File No. 0353-EX-ST-2019

Narrative Exhibit Describing Operation

This application, filed by Robert Bosch LLC, an international manufacturer of tools, automotive equipment, industrial and consumer products, requests a final, further grant of special temporary authority during a period of six months (April 4, 2019 through October 4, 2019) to continue experiments conducted pursuant to prior STAs originally issued in July of 2018 (WN9XAG, 1170-EX-ST-2018 and WN9XME, 1672-EX-ST-2018). It is requested to operate Bosch sensors in the same five, separate agricultural areas in California previously authorized with identical facilities and operating parameters. It is anticipated that this will be the final testing of this system before commercial development and equipment authorization procedures.

Bosch is testing a gateway connecting in-field sensors for “smart agriculture” to the Cloud. The tests are for the purpose of proof-of concept testing in orchards. The original three locations authorized were two fields (almond and pistachio orchards) near Firebaugh, CA and a citrus orchard near Visalia, CA. Two other orchards were added at 384 Santa Trinita Avenue, Sunnyvale, CA and 3044 Mauna Loa Court, San Jose, CA.

The sensors will be deployed in all orchards and will collect information about the health of the trees. They sensors transmit data to the gateway via Bluetooth. The gateway collects the data and sends it via an LTE connection to the Bosch cloud in Germany. One gateway collects from one to six sensors. Three to six gateways will be deployed at five different sites. There will be between one and six sensors per gateway providing information to the Gateway. This system is not yet certified in the United States, hence the need for this STA. Verizon has been and will be the service provider for the LTE component of the system. The Bluetooth component is in the 2.4 GHz range, 2400-2483.5 MHz, at a power level of 10 mW. The module itself is certified using a standard Bluetooth emission designator.

For the LTE connection, the protocol will be LTE CAT-M1 and the Gateway will utilize Bosch technology using the u-blox SARA-R410M chips which are currently certified. The bands used will be band 4 (1710-1755 MHz uplink) and band 13 (777-787 MHz uplink). The power level will be less than 194 mW.

The Stop Buzzer contact in the United States remains Mr. Fabian Henrici, Senior project manager for Business Development, AE Scouting North America who works at the Bosch offices in Sunnyvale, CA. Mr. Henrici’s direct phone number is 650-785-1666. He is an employee of Bosch.

Though no interference is anticipated since LTE facilities will be provided by Verizon, nevertheless all operation will cease in the event of an interference complaint and not resume unless and until it is resolved to the satisfaction of any complainant. All conditions attached to

the originally issued STAs will be complied with again with respect to the renewed term of this STA.

Should any question arise concerning this application, kindly notify undersigned counsel.

Christopher D. Imlay
Booth, Freret & Imlay, LLC
14356 Cape May Road
Silver Spring, MD 20904-6011
(301) 384-5525 telephone
(301) 384-6384 facsimile
chris@imlaylaw.com