

**Robert Bosch LLC  
Request for Grant of Special Temporary Authority  
Field Sensor Testing for Smart Agriculture System  
File No. 1170 - EX-ST-2018**

## **Narrative Exhibit Describing Operation**

This application, filed by Robert Bosch LLC, an international manufacturer of tools, automotive equipment, industrial and consumer products, requests a grant of special temporary authority during a period of three months (July 28, 2018 through October 28, 2018) to operate Bosch sensors in three separate agricultural areas in California. Bosch has developed 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 three locations are two fields (almond and pistachio orchards) near Firebaugh, CA and a citrus orchard near Visalia, CA.

The sensors will be deployed in 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 three different sites. This system is not yet certified in the United States, hence the need for this STA. Verizon has been contacted by Bosch and will be the service provider for the LTE component of the system. Bosch is presently making final arrangements with Verizon for this testing. There will be between one and six sensors per gateway providing information to the Gateway.

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 is 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.

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

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