

Radio Physics Solutions
Experimental STA Application
File Number: 1597-EX-ST-2020

Explanation of Experiment and Need for STA

Overview:

Radio Physics Solutions is a UK company that has developed a stand-off threat detection system. This technology, which currently operates on spectrum from 71-86 GHz, is used to detect lethal threats such as suicide bombs, automatic weapons, and large magazines at a distance to keep crowded areas safe from threats.

The benefit of early detection is that security personnel have greater situational awareness, and they are able to react more quickly to intervene and try to prevent needless violence.

This application seeks temporary authorization for experimentation with the technology at some specific locations for the reasons explained more fully below.

Need for an STA:

Radio Physics was contacted by the US Navy recently regarding its Optracon 3 system. The US Navy is interested in a demonstration of the technology for purposes of determining whether this technology is appropriate to protect US military installations. The Navy demonstration will include the Transportation Security Administration as a participant, so that TSA can simultaneously see the performance of the product and learn how the product could be used for standoff threat detection at US transportation hubs such as airports and train stations. The demonstrations scheduled by the Navy and TSA are set to start in mid-November, just after travel is expected to resume between the US and the UK. The demonstrations will last a few months. From what Radio Physics has learned this year, it is seeking a six-month demonstration period in case there are any pandemic-related delays in the current schedule.

Technical Synopsis:

- Spectrum Requested: 71-86 GHz
- Duty Cycle: 50%
- Sweep time: 300 microseconds through 15 GHz, no dwell on any frequency
- Radar signal: FMCW radar, using directional, high gain, antenna, with downtilt

Procedural Information:

Radio Physics has been asked to participate in a demonstration of its technology for some US government customers starting on November 15, 2020. Radio Physics has been preparing a market trial application to submit to OET. This opportunity to demonstrate technology for the US government is important to the future of Radio Physics and its product development, so Radio Physics is submitting an additional experimental license STA application prior to submitting a

market trial request. In the event that this demonstration proves successful, Radio Physics will consult OET about rolling this testing into a future request for market trial.

Description of Experiment:

This application is being filed to demonstrate the Radio Physics Optracon 3 standoff threat detection system for the US Navy and the Transportation Security Administration. The demonstration will show the federal agencies – potential RPS customers – how the system performs at a distance and how it detects person-borne threats. Then, the system’s alert functions will be demonstrated to allow the federal agencies an opportunity to conceptualize how this sort of detection system could provide them with better protection for US military installations and transportation hubs.

Location of Tests

Radio Physics is seeking authorization for the installation and testing of its technology at three locations associated with the Johns Hopkins Applied Physics Laboratory, as JHU/APL has a contract with the US Navy for this sort of activity.

The locations are:

- JHU/APL Building 14 – 11100 Johns Hopkins Road, Laurel, MD
- JHU/APL Building MP4 – 7703 Montpelier Road, Laurel, MD
- JHU/APL Building RPI – 9055 Guilford Road, Columbia, MD

The first demonstration is currently scheduled for November 16, 2020, depending on the possibility of travel from the UK to the US, and any attendant quarantine requirements associated with travel. Because this technology offers a tremendous opportunity for the Navy and TSA to enhance safety, they are eager to move forward as quickly as possible with the demonstration and then on to their review of the Optracon product.

Time of Use:

The product will be installed, and the installation will be checked for proper performance. Then, specific tasks related to system performance and illustration of the many features of the Optracon system will be conducted. The product will remain on after a successful installation. The purpose of this is to test the long-term stability of the system and its performance in real-world conditions. Radio Physics notes: while the Optracon system will be “on” the radio component will not be on unless a person is detected by the video systems. The RF is only on when a person is being scanned for a threat, which means that the RF is mostly off.

No Likelihood of Potential Interference:

Radio Physics has had its product tested with respect to licensees in the relevant bands and with respect to vehicular radar. In all the tests, there was no harmful interference from the Radio Physics system to the other operators.

Radio Physics has analyzed its product with reference to a number of vehicular radar standards. Radio Physics will monitor and test its installations to ensure that there are no instances of harmful interference to other operations.

Radio Physics will not illuminate any public roadways in this installation and testing. The systems are installed with directional antennas, with downtilt.

Stop Buzzer Point of Contact:

Alan Whitfield, CTO
Radio Physics Solutions
alan.whitfield@rpssys.com
+44 7967 053133

Conclusion:

Radio Physics is seeking an STA for demonstration of its stand off threat detection system, Optracon3, to the US Navy and the Transportation Security Administration. This application seeks authorization for six months, to accommodate potential schedule changes that could result from travel restrictions or other implications of the coronavirus pandemic.

If there are any questions about this application, please contact Anne Cortez, WFS, at 520-360-0925 or alc@conspecinternational.com.