

Explanation of Experiment

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 authorization for experimentation with the technology at some specific locations for the reasons explained more fully below. This application requests authorization identical to the operations authorized under WQ9XBY, an STA granted in late February 2020. The STA authorized operations to start on March 1, 2020. Just as the company was getting ready to initiate testing, all travel from the UK, where Radio Physics is based, was stopped due to the coronavirus pandemic. This application seeks authorization for the testing, which is still needed, at a time when travel can resume.

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

Description of Experiment:

This application is being filed for two specific testing purposes. The first purpose of this testing is to work on a range of systems integration issues that have been posed to Radio Physics by law enforcement and security personnel. The system integration testing will work to advance the effectiveness of integrating the Radio Physics technology into the video/CCTV camera systems that are often deployed in areas needing security. Radio Physics needs to be able to test the speed of threat detection to alarm and alerts in a real-world scenario to improve the performance of its system.

Radio Physics has been working on developing performance standards for its products. Existing CCTV, monitoring, and portal scanning systems need to be integrated with the Radio Physics technology so that a holistic security plan can be developed that will effectively take advantage of the enhanced situational awareness that the Radio Physics product has been designed to address. By working with law enforcement and security experts in the US, Radio Physics will be able to improve the way its technology is incorporated into a multi-layered security and threat assessment program.

Second, Radio Physics is working on developing its training manual for law enforcement and security personnel. It needs to be able to operate a test system to allow its staff to fine-tune the training procedures and protocols needed for any users that might be seeking to use the technology. This training manual will be particularly important for any potential users when the Radio Physics product might be available for sale in the US. The sophistication of US security personnel and law enforcement makes it ideal to develop the training materials with the best and brightest of users. That is why this part of the system testing and development has been scheduled in the US. These law enforcement personnel will help RPS explore the contingencies that need to be addressed in the training materials.

At all times, Radio Physics will be responsible for its technology during this testing.

Location of Tests

Radio Physics has applied for authorization to undertake system integration and training development, using its technology, at a number of locations in the US. Radio Physics proposes to bring two-four units to the US for these purposes. Those units will be moved from location to location to accommodate the variety of integration and training tasks that are required. The reason for these various locations is that the Radio Physics partners are spread across the country. Each wants to work within its own environment.

The locations are:

- South Kearns Elementary School, Kearns Utah
- Roosevelt Elementary School, Mill Creek, Utah
- Cy-Fair High School, Cypress, Texas
- Spring Woods High School, Houston, Texas
- New York City - City Hall Plaza
- Met Life Stadium, East Rutherford, New Jersey

Radio Physics anticipates that it will conduct testing in New York for approximately one month. After that, the system will move to New Jersey, then on to Texas, and finish up in Utah. Each site has unique integration challenges, which will give Radio Physics the chance to learn how to create operations manuals for system integration across many diverse situations.

Each site also has unique partners with differing challenges, from dense, pedestrian areas in an urban setting to protection of more suburban facilities. These different environments require use of the product to develop specifically applicable training protocols.

Time of Use:

The product will be installed, and the installation will be checked for proper performance. Then, specific tasks related to integration or training will be conducted at each site. The product will remain on after each successful installation. The purpose of this is to test the long-term stability of the system and its performance in real-world conditions.

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.

Since this testing was initially authorized earlier this year, 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:

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Conclusion:

Radio Physics is seeking an experimental license to continue its authorization to test its stand off threat detection system as it undergoes systems integration testing and development and to work on its training materials. Because Radio Physics' partners in this work are located around the US, this application seeks authorization at a number of locations. The technology will be moved from site to site as work is completed. The program of integration and testing was been scheduled for 6 months, but the pandemic precluded travel or testing. This application seeks authorization for two years, to accommodate the testing when it might be possible to start.

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