

Radio Physics Solutions  
Experimental STA Request  
File Number: 1510-EX-ST-2018

### **Explanation of Experiment and Need for STA**

Radio Physics Solutions (RPS) is developing a radio-based threat detection system. The MiRTLE® patented technology fuses proprietary millimeter wave radar techniques with artificial intelligence to provide instant standoff threat detection of concealed person-borne threats. The system is being developed to detect a range of threats including hand guns, knives, assault weapons, and suicide bomb vests.

### **Need for an STA**

RPS has been asked to participate in the ASIS security trade show at the Las Vegas Convention Center, September 23-27, 2018. The nature of the demonstration is short, and an STA is appropriate in this instance.

### **Technical Synopsis**

Spectrum Needed: 77-112 GHz  
Location: Operations are ONLY indoors  
Limited time of use: about 2 hours per day, intermittently  
Power level limited: 3.2 mW signal, with only 7.77 W ERP

### **Description of Operations**

RPS has been asked to demonstrate its MiRTLE technology at a security systems trade show to illustrate its potential effectiveness in detecting threats, in particular to protect schools. The proposed operations will take place intermittently, within the convention center, to demonstrate the technology for select potential development partners. Because the MiRTLE system works best at about 20 meters, the system demonstrations will be scheduled only at times when the exhibit hall is mostly empty, so that the demonstration can be controlled.

The system works most effectively when it operates across 35 GHz, and RPS is seeking that authorization for this demonstration.

RPS has undertaken other demonstrations under the authority of WM9XDS and WM9XHF. The proposed operations here are similar, with a slight adjustment to the spectrum selected to accommodate previous conditions.

### **Location of Operations and Time of Use**

RPS expects to schedule demonstrations prior to the exhibit hall being open in the morning and after the exhibit hall closes for the day. The operations will be indoors in the convention center, and the area where demonstrations will take place is going to be controlled.

The demonstrations are expected to take about 5-10 minutes. As a result, RPS expects to use the spectrum for a maximum of 2-3 hours per day, depending on how many demonstrations are expected. That time of use will be sporadic. For instance, if a demonstration shows something interesting, the MiRTLE system will be turned off for the participants to discuss what they are seeing and how the system is working.

### **No likelihood of interference to other operations**

RPS is working with spectrum that is very effective in this technological application. However, it is not spectrum that will propagate very far, because the wavelengths are so short. As a result, with operations limited to indoor use, and an elevation angle of 0 °, the signal should be harmless to other operations.

### **Stop Buzzer Point of Contact**

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### **Conclusion**

RPS is seeking an STA to allow it to demonstrate its MiRTLE standoff threat detection system at the ASIS conference in Las Vegas, NV in late September. The proposed demonstrations are intended to help RPS discuss with potential partners the best ways to adapt and further develop its technology.

Should there be any questions about this application, please contact Anne E. Cortez, Esq. of Washington Federal Strategies, 520-360-0925 or [alc@conspecinternational.com](mailto:alc@conspecinternational.com).