

Persistent Systems, LLC
Form 442 Experimental License Modification Application
WJ2XWT
File No. 0183-EX-CM-2019

NARRATIVE EXPLANATION OF OPERATION AND NATURE OF APPLICANT

Persistent Systems, LLC wishes to modify by this application a granted Experimental License, WJ2XWT (0898-EX-CN-2018) in several respects: (1) to add a new antenna with the same geographic coordinates but with an increased radius of operation, so as to permit sector antenna tests at Fort Collins, Colorado; and (2) to add an additional antenna with respect to one frequency band already included, so as to permit higher ERP for testing, again with the same geographic coordinates as the existing antenna.

Persistent is a Limited Liability Company based in New York City. It is an American manufacturer of high speed, secure data networking equipment for both military/defense and industrial, non-government applications. Principally, Persistent manufactures scalable mobile networking systems based on Wave Relay MANET (Mobile Ad Hoc Networking) Technology. Persistent's products permit voice, video, and situational awareness to mobile users with no reliance on fixed infrastructure. For more than a decade, Persistent has been a pioneer in developing advanced MANET technology and commercializing it in the Defense and Industrial sectors.

Persistent has ongoing R&D activities to develop MANET products for Army, Navy Air Force and other Defense Department deployment, and for the Department of Homeland Security, which necessitate a longer period of testing and deployment at its facilities in New York City and at Fort Collins, Colorado than would be available pursuant to a grant of Special Temporary Authority. Experimental licenses to allow development and proof-of-concept testing of equipment manufactured by Persistent have been granted in the past few years for similar purposes at other locations.

One purpose of this modification application is to permit research and development of Sector Antenna systems for Persistent's products for deployment at military and other Federal facilities on Federal Government S-Band and Lower C-Band frequencies. Specifically, the Sector Antennas that are being developed now are under development for both the United States Air Force and for the Department of Homeland Security (and specifically for Customs and Border Protection). Entirely terrestrial operation is proposed to be conducted with respect to radio modules in the band 2200-2290 MHz which will be for MANET systems and component products for military and DHS deployment only, using the sector antennas under test. The center frequencies 2277.00 MHz and 4700 MHz (with a 20 megahertz occupied bandwidth emission) are the preferred frequencies within the band 2200-2290 MHz to provide a consistent benchmark for testing and evaluation in this environment. Those are not necessarily the frequencies or bands on which the agencies will ultimately use the Sector Antennas. However, the bandwidth of the sector antennas under test include the entirety of 2200-2290 MHz and the channel 4700 MHz. Frequency changes can be conducted remotely should the need to do so arise to avoid

interference. All operation will cease immediately in case of any reported interference and not resume until the complaint is resolved to the reasonable satisfaction of the complainant.

The second purpose of this application is to permit testing of tracking antennas using higher ERP than was specified in WJ2XWT initially for one of the frequency ranges granted in WJ2XWT. This is entirely terrestrial operation proposed to be conducted with respect to radio modules in the band 2200-2290 MHz which will be for MANET systems and component products for military deployment only using the tracking antenna under test. Though the center frequency 2277.00 MHz (with a 20 megahertz occupied bandwidth emission) is the preferred frequency within the band 2200-2290 MHz to provide a consistent benchmark for testing and evaluation in this environment, the frequency agility of the system and the data modules includes 2200-2290 MHz in 5 MHz steps. Frequency changes can be conducted remotely should the need to do so arise to avoid interference. All operation will cease immediately in case of any reported interference and not resume until the complaint is resolved to the reasonable satisfaction of the complainant.

A final purpose of this modification is to extend the radius of operation to 161 km instead of 32 km, as the testing of the path lengths and reliability of the system requires longer path lengths than were originally specified in the original application for this authorization.

There are two stop buzzer contacts for this operation. The first is Mr. Ty Mellon, Systems Engineer at Persistent Systems, LLC in New York, who can be reached directly at 646-518-8958. His e-mail address is tmellon@persistentsystems.com.

An additional stop buzzer contact for this operation is Ms. Temeasha Scott, RF Network Engineer at Persistent Systems, LLC in Fort Collins, who can be reached at 646-518-8966, or by mobile phone at 706-409-6820. Her e-mail address is tscott@persistentsystems.com.

Other inquiries can be directed to communications counsel for the applicant:

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