

EXPERIMENT DESCRIPTION

The goal of this experiment is to test and continue development of an experimental distributed radar network. The experiments will consist of a low power radar transmitter, capable of transmitting linear frequency modulation (LFM) pulses with 80 to 160 MHz bandwidth. There will be two additional low power radar transmitters capable of 100 MHz LFM pulses. The radar transmitters will operate in either the 2.988 – 3.18 GHz or the 3.438 – 3.52 GHz bands. Each of the radar transmitters will consist of a USRP x310 and an RFSpace TSA 600 antenna.

There will be up to 4 radar receivers that have collocated two-way time transfer transmitters to wirelessly synchronize the receivers. Both the Ziva Z1s and AMD / Xilinx Zynq RFSoc ZCU208s serve as the two-way time transfer devices. There will be up to 4 Ziva Z1 transmitters and up to 2 Xilinx Zynq RFSoc ZCU208 transmitters. The Ziva Z1 transmitters operate from 3.3846 – 3.4154 GHz and the ZCU208 transmitters operate from 4.2 – 4.7 GHz.

The radar transmitter(s) will transmit downrange towards a mobile reflector, and the receivers will process the reflections.

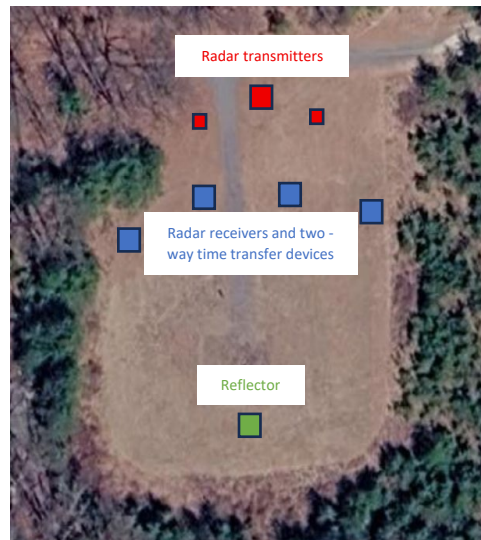


Figure 1: Layout of Experiment Site

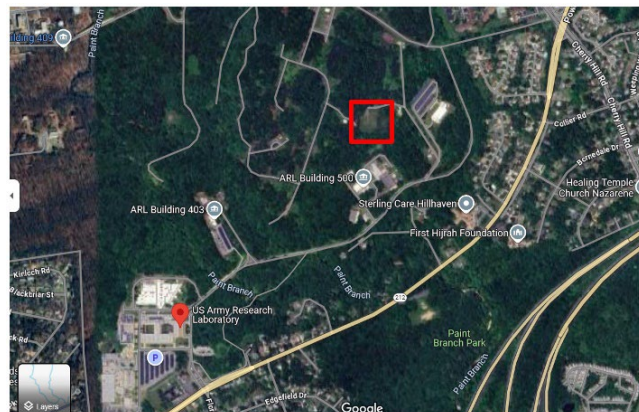


Figure 2: Experiment Site Location