

Detailed Description of Scenario Associated with STA Application

The STA request is to support the flight testing of new leading-edge airborne military radar. The development and testing of the radar development and test is funded under contract from DARPA (contract number FA8750-15-C-0023)

The radar transmits 1 kW of peak power with a high-gain (+31.3 dBi) electronically steerable array (ESA) antenna. The radar will be operate in two (non-simultaneous) frequency bands, 8.1-8.9 GHz and 9.2-10.0 GHz. The modulating signals will be a variety of arbitrary waveforms, and will have instantaneous bandwidths up to 800 MHz in each band.

The airborne radar is mounted in a manned fixed-wing aircraft and will radiate onto a ground-based radar reflector test array, called the Southeast Michigan Array (SEMA). It is located near the Willow Run Airport in Ypsilanti Michigan. It contains trihedrals, dihedrals, no-return-area, and vegetation. This array has been used for many tens of airborne radar data collections tests since the early 1980s.

The airborne radar, nor any other airborne or ground-based equipment will have any jamming or anti-jamming mechanisms on it. With the exception of air-ground voice communications (which we are separately seeking a license), there will not be any other transmissions from the air or the ground.

The manned aircraft will fly at a variety of straight-line and circle flight paths between 10 km and 40 km. We have experience coordinating with the two major local airports (Willow Run, Ypsilanti and Detroit Metropolitan, Romulus) to coordinate compatible/safe flight lines and times-of-day.