

This requested STA is to support a Cooperative Independent Research and Development (IRAD) activity aimed at demonstrating interoperability solutions for 5th Generation to 5th Generation Fighter (F-22 to F-35) and 5th Generation to 4th Generation Fighter (e.g., F-22 to F-16, F-15). This IRAD activity is supported by the Air Force and the Air Combat Command (ACC).

This STA request supports flight test integration and demonstration of the radio operation in a dynamic flight environment. The flight test events are scheduled to be conducted in Yuma, AZ using a F-35 surrogate platform (Experimental 737 tail # N35LX) and a Cessna aircraft (tail # N97826) with the final demonstration flight substituting a F-22 (tail # 06-109) for the Cessna. This flight test is required to support major acquisition strategies for current and next generation platforms and is supported by two Major Commands (MAJCOMs).

The flight test activities will be conducted via 3 sorties of short duration (1-2 hours per mission) within the 30 day window requested by this STA. The first two sorties are tentatively scheduled to be conducted in the late November time frame and the final flight demonstration will be conducted in the middle to late December time frame. The window provides the ability to work around aircraft availability, weather, and maintenance issues. The sorties themselves can be scheduled to in off-hours to minimize any potential, but unlikely impact. We have identified a stop buzzer contact during the period of each flight test, in case of any need to interrupt operations – Matt Yetzer, 682-429-1790.

The radio waveform to be used in the demo under the STA is a wide band, low-power, direct sequence spread spectrum system developed to be frequency agnostic. To support the near term timeframe of the testing, we are using available, legacy prototype hardware, which operates in the 1710 – 1755 MHz and 1805 – 1850 MHz bands. The waveform contains features designed to make the waveform undetectable by other systems. It is expected that these features, coupled with the low radiated power spread over a large bandwidth, will result in no impact to commercial or federal systems operating simultaneously in this band. As an added precaution, the flight plan will keep all air platforms that are radiating in an orbit to prevent energy being radiated outside the range at levels that could potentially impact licensed users.

The flight test is expected to demonstrate the Technology Readiness Level (TRL) of the capability and features of the waveform. Any future production system would be built to operate in approved frequencies for federal government operations, as specified by the Air Force in coordination with the NTIA.