



R/C UAV Testing on Government Contract

RE: Form 442 Q4: Government Project Description, Exhibit

File Number: EL235462

Confirmation Number: 0796-EX-ST-2020

Date: 15 May 2020

Systems & Technology Research (STR) is leading an effort on the DARPA Mercury program. The program involves a series of technology maturation tests to be performed by the STR team throughout CY2020 at Fort Devens MA culminating in a system test not addressed within this request.

The contract number is FA8650-19-C-7927. The contracting agency is USAF, AFMC, Air Force Research Laboratory, 2130 Eighth Street, Building 45, Wright-Patterson AFB, OH 4543307541

This test is being conducted as part of the Mercury Program. Mercury is a classified DoD mission which includes the use of several UAVs carrying classified payloads. The UAVs must autonomously fly to predetermined waypoints, hover at those waypoints, and return to base.

The frequency request is specific to the requirement to test the RF Payload functionality onboard the aircraft. The RF Payload test is designed as a bent pipe test, with a ground transmitter illuminating the aircraft payload, and the payload re-transmitting the signal back to the ground receiver. A series of tests between August and December are planned. Up to 4 sequential day tests will be held in August, September, October, November, and December. Tests will be held at Fort Devens Restricted Operation Zone for UAV operations. The test area is approximately 1 km by 0.5 km.

The test includes a ground transmitter composed of a signal generator, power amplifier, and a horn antenna. The aircraft will receive the signal, add a delay, and re-transmit to the ground receiver over an omni-directional antenna on board the aircraft.

This test will confirm the fundamental functionality of the RF payload during flight, providing significant risk mitigation prior to the system demonstration at a government facility.

Tests will be conducted by Systems & Technology Research, LLC (STR) and the Charles Stark Draper Laboratory, Inc. (Draper) at the Devens Reserve Forces Training Area in Devens, MA. The Air Force Research Laboratory (AFRL) will serve as the Lead Test Organization (LTO). The test team is comprised of members from AFRL/RYZ, STR, Draper, GeoScout, L3Harris, and Centauri.