Form 442 Question 4: Government Project Description

The proposed experiment fulfills requirements for work supported by the Department of the Air Force under Air Force Contract No. FA8702-15-D-0001. The program is developing technology to improve the performance and protection of communication signals.

MIT Lincoln Laboratory is developing a communications capability for the Department of Defense. In order to have a successful transition to the warfighter, the developed technology needs to be tested and evaluated in ground-to-ground and air-to-ground flight tests. Four communications nodes have been developed as shown in the figure below. Each node contains an electronically scanned phased array antenna. One node will be located on board an aircraft with the antenna mounted on the underside of the fuselage. Three nodes will be transportable and will be located at various ground sites within the operating area. The ground nodes will not be mobile during testing. The ground node antenna will be mounted on a tripod less than six meters above ground level. The airborne node will be operated at altitudes between 5,000 ft and 10,000 ft in the specified mobile area of operations. Ground node to ground node testing will be conducted during initial system tests and pre-flight testing. During flight tests, communications will be tested between the airborne and ground nodes. All flight operations will be conducted using procedures and equipment that meet or exceed all FAA requirements.