Program Description

(a) The Joint Air-to-Ground Missile (JAGM) program, contract number W31P4Q-12-C-0003, will generate military Ka-Band radar capable of detecting, classifying and tracking moving and stationary vehicle targets. The radar will operate by transmitting an ensemble of frequency agile, phase modulated pulses. Energy reflected by the target will be separated from energy reflected by the background (ground clutter) via signal processing techniques. Target detection, classification and tracking algorithms will be executed by software. Testing of the radar will be conducted in a laboratory, in a tower facility (approximately 30-80 feet above the ground), on a testing tarmac while mounted on an RV, and via helicopter and/or jet aircraft captive flight tests (CFT's).
For the CFT's, the radar will be mounted to the exterior of the helicopter or the front nose of an aircraft.

(b) The objectives are to demonstrate the ability of the radar to:

i.) Detect moving and stationary targets at predicted ranges with the predicted probability of detection and probability of false alarms.

ii.) Classify stationary targets at predicted ranges with predicted probability of correct classifications.

iii.) Track moving and stationary targets at predicted ranges with the predicted angular accuracy.

(c) The radar development effort is unique in that the radar is integrated with a semi-active laser sensor in a common aperture configuration. The radar's performance must be achieved via transmission through optical elements and opto-mechanical structures. This concept affords the opportunity to implement sensor fusion algorithms and concepts.