
# LOCAAS™ Flight Test

**LOCAAS successfully detects, tracks, and attacks a moving target in an operator-in-the-loop engagement.**

AFRL, in partnership with LockheedMartin, recently conducted anoperator-in-the-loop (OITL) flight test ofLOCAAS, a low-cost autonomous attacksystem. LOCAAS consists of a wide-areasearch, miniature munition equippedwith a scanning laser detection andranging (LADAR) seeker. According toMr. Jack Cocchiarella, AFRL programmanager, “This test demonstrated thecapability to integrate automatic targetvehicle identification with a two-waysatellite data link, allowing OITLredirection of the LOCAAS to engage adesired target.”

The test team at Eglin Air Force Base,Florida, launched the LOCAAS flighttest vehicle (FTV) from a King Air 200aircraft, and it flew more than 40 nmi inapproximately 15 min (see Figure 1). ATechnical Directions, Inc., J45Gturbojet engine powered LOCAAS'flight as it used its LADAR seeker tosearch, identify, and report on targets ina designated mission search area.

Figure 1. The LOCAAS FTV mounted on the underside of the launch aircraft

An Air Force (AF) flight-ratedoperator served as the OITL,retargeting the LOCAAS FTV to attack apop-up, moving, time-sensitive target(TST) elsewhere on the range. Onceredirected, the FTV calculated andflew an optimal intercept path to theTST. The operator interfaceconsisted of a ruggedized laptopcomputer running a modifiedversion of the AF’s Portable FlightPlanning System’s FalconView mapoverlay software. This softwareenabled the operator to monitor andredirect the LOCAAS FTV asdesired, continuously relayingrelevant moving target trackinformation (as received from anexternal source) to support theengagement. Although not used in theflight test, an abort command wasavailable for the operator to terminatethe attack up to the point ofengagement.

The test team used Globalstar satellitecommunications to link the LOCAASFTV to the OITL interface and theexternal targeting source, representinga detailed simulation of the Network-Centric Collaborative Targeting(NCCT) system developed by L-3Communications (see Figure 2). TheNCCT system fused tracking andidentification information from severalsimulated intelligence, surveillance, andreconnaissance (ISR) sensor platformsto provide refined composite trackingof the TST. The NCCT link alsoallowed the LOCAAS FTV to act as anontraditional ISR sensor input toNCCT. The LOCAAS FTV successfullydetected three stationary target vehiclesand transmitted high-confidenceposition tracking and identificationinformation regarding these vehicles toNCCT for subsequent integration intocomposite tracking data for use by otheroperational systems. During the flighttest, the operator monitored real-timeFTV weapon state information andnear-real-time location updates of allNCCT-tracked targets.

The operator interface

was alsolinked to a Cooperative AttackMunitions Real-Time Assessment testbed, which simulated three computergenerated,"virtu munitions as theycooperatively searched an area adjacentto the FTV. Once cued by the operator,the virtual munitions performed acoordinated attack on the threestationary targets previously detectedand reported by the FTV.

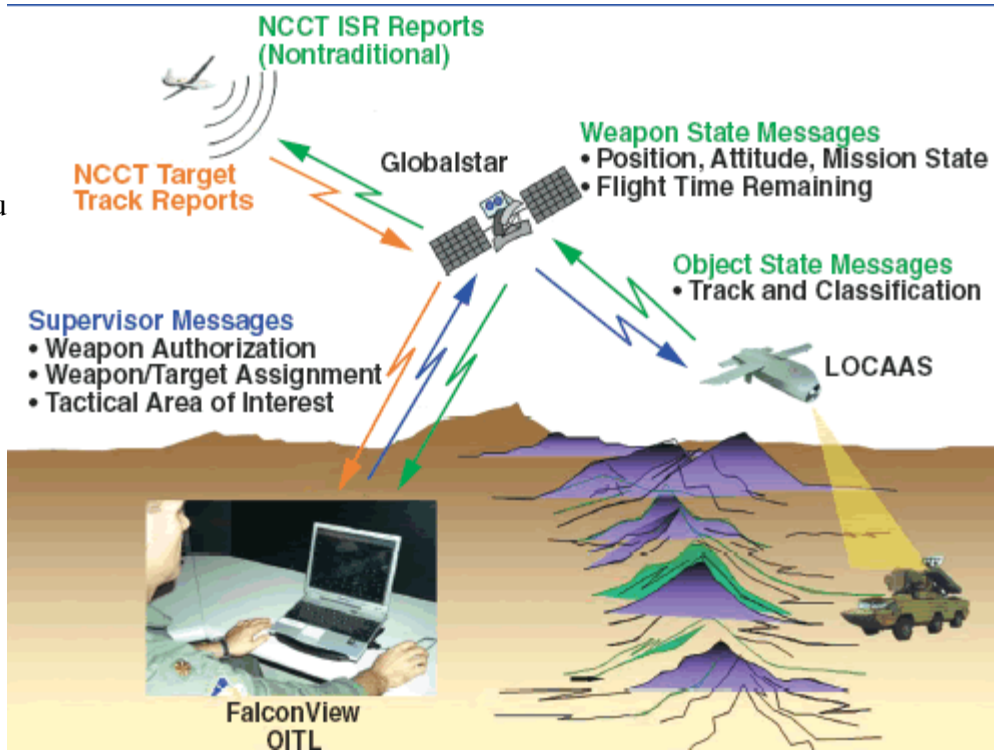


Figure 2. Graphical depiction of the elements and interfaces utilized during the LOCAAS flight test

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