

## End to End Testing – Examples

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### **Cargo Aircraft Example**

**3.4 Operational Evaluation Approach.** Operational testing of the C-100 cargo aircraft will employ the mission profiles as required by the CPD and described below. The missions will demonstrate delivery of time-sensitive/mission-critical supply items and/or personnel over operational/tactical distances to forward-deployed forces in remote and austere locations. Approximately 50 missions will demonstrate all variations of the mission profiles. Missions will include short notice logistical re-supply, casualty evacuation, troop movement, and aerial sustainment. The C-100 will operate to and from smaller, unimproved tactical landing strips and improved airfields up to the maximum cargo gross weight. The C-100 will be off-loaded to tactical rotary-wing aircraft and ground vehicles to demonstrate transloadability at Forward Operating Bases (FOBs) located near supported tactical units. The ability to rapidly reconfigure the C-100 will be evaluated. To evaluate adverse weather capability, the C-100 will conduct missions during day, night, night vision goggles (NVG), Visual Meteorological Conditions (VMC), and Instrument Meteorological Conditions (IMC).

The first three mission profiles (Mission profiles are described in an Annex) will be flown under day/night/NVG conditions to improved and unimproved runways, carrying various load configurations (463L pallets, troops, and vehicles), and will require 20 missions and approximately 64.0 flight hours.

Mission profiles 4 and 5 will include aircraft reconfiguration for aeromedical evacuation. Missions will be flown under day/night/NVG conditions to improved runways carrying various load configurations (463L pallets, troops, vehicles, and litter patients), and will require 16 missions and approximately 48.0 flight hours.

Mission profiles 6 and 7 will demonstrate single and multiple airdrops (four static line airlifts with door bundles and static line paratroop drops, and four military freefall airlifts). Airdrop missions will be flown under day/night/NVG conditions and will require eight missions and approximately 30 flight hours to demonstrate.

Mission profile 8 will demonstrate aerial sustainment under day/night/NVG conditions to improved runways, and will require approximately five missions and 34 flight hours.

Mission profile 9 will demonstrate self-deployment under day/night, visual flight rules/instrument flight rules (VFR/IFR), and will require one mission and approximately 40 flight hours.

### **Army Munition Example**

**3.4 Operational Evaluation Approach.** The guided missile will be evaluated end-to-end. It is not possible to conduct the end-to-end mission in a single event due to availability of the unit, availability of real-time imagery of the test area, and delays between firing missions caused by the need to collect target data. Instead, the evaluation will be based on two operational events. The ground IOT&E will test the ability of a fire support unit to plan, target, and execute

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guided missile missions. The flight IOT&E will test the unit's ability to fire guided missiles and examine the missile's effects on actual threat targets. During the ground phase, an operational unit will target and execute guided missile missions while executing other missions at an operational pace. Using satellite imagery of the actual test targets, the unit will mensurate the image using fielded equipment to estimate the target's location. Using fielded command and control equipment, the unit will determine the number of missiles and aimpoints. The mission information will be sent through the command and control chain to the launcher, which will dry-fire the missile. The flight phase will execute the missions generated during the ground phase. The test officer will digitally send a fire mission with aimpoints and number of missiles (determined in the ground IOT&E) to a battery command post. The battery will forward the fire missions to the launcher, which will move to a launch point and, after a brief safety delay, fire the missiles. The flight phase targets are threat-representative targets with threat-approved countermeasures. The Army Research Laboratory will conduct a damage assessment for each mission. The assessments are a critical component of the LFT&E strategy.

*Details of the ground IOT&E, flight IOT&E, and LFT&E would be provided in other sections of the TEMP.*