

MEDIUM EXTENDED AIR DEFENSE SYSTEM (MEADS)



The Medium Extended Air Defense System (MEADS) is designed to be a highly mobile air defense system to protect maneuver forces and fixed assets. The system should provide area and point defense capabilities against multiple, simultaneous, 360° attacks by ballistic missiles, large caliber rockets, fixed-wing and rotary-wing aircraft, unmanned aerial vehicles (UAVs), cruise missiles, tactical air-to-surface missiles (TASMs), and anti-radiation missiles (ARMs). It is required to be strategically deployable (C-130 roll on / roll off) and tactically mobile (able to keep up with the maneuver forces).

A MEADS battery will include rotating surveillance and fire control radars, launchers, Patriot Advanced Capability-3 (PAC-3) missiles, and battle management command, control, communications and intelligence elements. All system components will be employed in a distributed architecture using high-capacity tactical communications. Netted and distributed sensors will provide continuous, redundant, and optimized target tracking. MEADS will be interoperable with other Army, Joint Service, and allied systems expected to participate in joint/combined operations in the 21st Century.

Although the MEADS and Patriot air and missile defense systems have similar threat sets, Patriot employs the PAC-2 missile against many threats (aircraft, UAVs, TASMs, and ARMs), while MEADS will use the PAC-3 missile against all threats.

BACKGROUND INFORMATION

MEADS is an international co-development program between the United States, Germany, and Italy. The material developer and contracting authority is the NATO MEADS Management Agency (NAMEADSMA). International direction and oversight is provided to NAMEADSMA by the three National Armaments Directors (USD(AT&L) for the United States) and the MEADS Steering Committee. The U.S. Steering Committee representative is the Army PEO for Air and Missile Defense. The U.S. MEADS National Product Office oversees U.S. requirements development and reports to the U.S. Steering Committee representative. U.S. oversight is accomplished through the IPT process. The international nature of the MEADS program adds additional complexity to the test strategy development process.

The MEADS program is now in a three-year Risk Reduction Effort (RRE), which began on July 10, 2001. It will enter the design and development phase after Milestone B, which is scheduled for

2QFY04. Milestone C is planned for FY09, with IOT&E to begin in FY10. The full-rate production decision is scheduled for FY12.

TEST & EVALUATION ACTIVITY

Two U.S. T&E IPT meetings were held during this reporting period to begin planning the test program. The T&E IPT needs to develop a robust test strategy that builds on the PAC-3 missile testing conducted as part of the Patriot program. A U.S. Lethality Working Group has been formed to develop a U.S. LFT&E Strategy. T&E activity will be limited during RRE, but contractor testing will lead up to an RRE Exit Demonstration in which a prototype MEADS fire control radar will detect and track fixed-wing aircraft, and digital simulations of other MEADS elements will generate missile-fire solutions and conduct virtual intercepts.

TEST & EVALUATION ASSESSMENT

The MEADS mission is complicated by having to operate in areas that can be densely populated with both friendly forces and threat targets. The MEADS system must acquire, track, and identify both friendly and threat targets, fuse the data, and then effectively engage and kill the threat targets. The difficulty associated with MEADS development is high.

Because of the requirement to engage and destroy a broader target set and a more diverse intercept space (360 degree coverage) than those of other missile defense systems, the T&E program will be complex. The MEADS test program will leverage PAC-3 missile testing, but the full extent of this testing is not yet known, since some PAC-3 capabilities are being deferred and the PAC-3 follow-on test program is not currently defined. The Patriot program will conduct little or no PAC-3 missile testing against much of the MEADS threat set. There are currently no plans to flight test PAC-3 missiles against ARMs, TASMs, large caliber rockets, UAVs, rotary winged aircraft, or high altitude cruise missiles. Additionally, PAC-3 missile flight tests have only been limited to a few specific TBM threats.

MEADS is an international co-development program managed by a NATO agency that is not bound by U.S. laws and regulations. However, the U.S. acquisition community must ensure that the MEADS test program is adequate to assess the effectiveness, suitability, survivability, and lethality of the system against the entire U.S. MEADS threat set. The 1998 U.S. MEADS TEMP would be a valuable tool for facilitating the development of an international test and evaluation plan.