Terminal High-Altitude Area Defense (THAAD)

Executive Summary
- The Terminal High-Altitude Area Defense (THAAD) ground and flight test programs continue to make progress.
- The Missile Defense Agency (MDA) will begin integrating THAAD into the Ballistic Missile Defense System (BMDS) in FY07.
- The program is on track to support the transition of two fire units to the Army in FY09 and FY11.

System
- The THAAD ballistic missile defense system consists of five major components:
  - Missiles
  - Launchers
  - Radars
  - THAAD Fire Control/Communications (TFCC)
  - Unique THAAD support equipment
- THAAD will accept target cues from the Aegis Ballistic Missile Defense System, satellites, and other external sensors.
- THAAD will complement the PATRIOT system.

Mission

U.S. Strategic Command will employ THAAD to protect critical assets worldwide. THAAD is designed to destroy the full-range of theater ballistic missile threats to troops, military assets, and allied territories using hit-to-kill technology. The THAAD Kill Vehicle can intercept an incoming threat ballistic missile in the high endoatmosphere or exoatmosphere, minimizing the effects of weapons of mass destruction on battlefield troops and civilian populations.

Activity
- MDA continued planning, testing, and qualifying THAAD ground and flight test components:
  - November 22, 2005 - Flight Test THAAD 01 (FTT-01). A component-level missile characterization flight (no target). This test demonstrated missile egress, booster/kill vehicle (KV) separation, KV shroud separation, Divert and Altitude Control System operation, and KV control.
  - May 11, 2006 - FTT-02. This test demonstrated integrated THAAD radar, launcher, TFCC, and Interceptor closed-loop operations and engagement functions against a simulated unitary target.
  - July 12, 2006 - FTT-03. The first fully integrated THAAD flight test that successfully demonstrated seeker characterization as it intercepted a unitary target.
  - September 13, 2006 - FTT-04. The first intercept test planned against a separating target with warfighters conducting all operations. The test was only partially completed because the target failed during flight and was destroyed by range safety personnel. THAAD demonstrated integrated radar, launcher, fire control, and missile closed loop operations. The radar tracked the target and completed discrimination on the target after range-commanded destruction. The THAAD interceptor was not launched. Due to the lack of another target, MDA is addressing FTT-04 test objectives in a later flight test.
  - MDA also completed the developmental high-speed sled track tests of the kill vehicle.
- THAAD and PATRIOT completed radio frequency interoperability and compatibility exercises.
- MDA restructured the ground test program into two parts (pre- and post-fire unit fielding) to expedite fielding of the first fire unit.

Assessment
- THAAD remains in the early stages of developmental testing. Operational capability is largely unproven.
- MDA conducted a disciplined test program to qualify the missile for the first flight test. This approach surfaced several problems that were corrected and resulted in three successful flight tests this year.

- MDA is progressively integrating warfighters as operators of the THAAD radar, launcher, and fire control components, allowing the users to effectively begin developing and validating tactics, techniques, and procedures early in the development phase.
- THAAD has not yet participated in any integrated BMDS tests. MDA plans to integrate THAAD into the BMDS when THAAD flight testing begins at the Pacific Missile Range Facility, Hawaii, in April 2007.
- The current ground and flight test program is designed to incrementally (simple to complex) evaluate THAAD capabilities. Planned testing will support MDA's plan to transition two fire units to the Army in FY09 and FY11.
- While the test program is comprehensive, the test schedule is ambitious and success-oriented to support fielding the first fire unit. Actual and projected delays in target development and production are already causing schedule turbulence and test program changes.

Recommendations

- Status of Previous Recommendations. There were no FY05 recommendations submitted for THAAD.
- FY06 Recommendation.
  1. MDA should review its priorities and processes for target development and procurement to ensure timely production of targets to support THAAD flight testing.