



# FACT SHEET

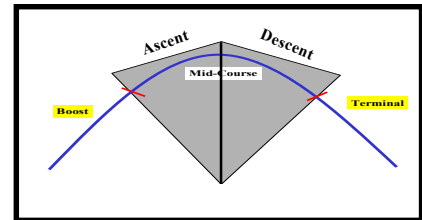


MDA FACT SHEET

## SEA-BASED MIDCOURSE

### MISSION

As an element of the Ballistic Missile Defense System (BMDS), Sea-Based Midcourse Defense (SMD) will provide the capability for U.S. Navy surface combatants to utilize Hit-To-Kill technology to destroy and negate medium to long range ballistic missiles throughout their midcourse trajectory with particular emphasis on the ascent phase midcourse exo-atmospheric battlespace. SMD will maximize defense-in-depth by acting synergistically with the boost, Ground-Based Midcourse and terminal defense layers of the BMDS. The mobility afforded by U.S. Navy ships, while forward deployed or on fleet missile defense patrol, will defend the nation, deployed U.S. forces, friends and Allies from enemy ballistic missiles.



### PROGRAM DESCRIPTION



The SMD element is comprised of two principal efforts. The first effort is the continued testing and completion of the Navy AEGIS Lightweight Exo-Atmospheric Projectile (LEAP) Intercept (ALI) Flight Demonstration Program. The ALI is a series of near-term flight tests occurring in FY2001 and FY2002 that will demonstrate integration of the AEGIS Weapon System (AWS) and Standard Missile-3 (SM-3) to hit a theater ballistic missile in the exo-atmosphere. Success in ALI will lead to system design and development for a contingency SMD capability in the FY2004 to FY2005 timeframe that could be used in a real world emergency. The second principal SMD effort is a concept definition phase that will focus on developing a more capable SMD element for deployment in the FY 2008-2010 timeframe. Contractor studies will be initiated in FY2002 to develop innovative system concepts that will maximize the use of known, deployed technologies as well as those technologies expected to be available in the deployment timeframe. Additionally, risk reduction activities (RRAs) will be conducted to increase the technology readiness levels (TRLs) of key technologies in the areas of ship integration, weapons control, radar suite, missile, launcher, and battle management/command and control

(BMC2). These RRA's will be combined with the most promising system concepts as part of test beds in which the performance of components can be verified and integrated to perform MDA element level development tests, eventually leading to SMD incremental capability deployments.

### FLIGHT TESTING

- AEGIS Lightweight Exo-Atmospheric Projectile (LEAP) Intercept (ALI) – DT-1A
  - 9 Flight Tests at Pacific Missile Range Facility, HI (4QFY99 - 2QFY03)
- Threat Representative Testing (TRT) – DT-1B and DT-1C flight test series
  - Flight Tests at Pacific Missile Range Facility, HI against threat representative unitary and separating TBM targets (3QFY03–2QFY05)

JANUARY 2002

## RECENT ACTIVITY

- Sep 99/Feb 01: Critical Measurements Program (CMP)-3A & 3B completed. Airborne Surveillance Test bed SM-3 Captive Carry successfully gathered IR tracking data from target missile.
- 25 Jan 01: FTR-1A mission successfully completed, fully certifying the SM-3's Mk-136 Third Stage Rocket Motor (TSRM), and third stage stability and control. The SM-3 IR seeker was energized and tracked the target.
- 3 Feb 01: Development Unit-3 ground test, the first "full-up" test of the Mk-142 Solid Divert Attitude Control System (SDACS), successfully completed.
- 22 Mar 01: Quick Reaction Launch Vehicle (QRLV)-1 mission completed. Mission demonstrated a simulated ascent phase intercept of a threat representative non-separating target with an ALI configured SM-3 in the exo-atmospheric battlespace.
- 25 May 01: X-Band HPD Radar Critical Design Review (CDR) complete
- 25 Jan 02: Flight Mission (FM-2) successfully completed. Designed to check the guidance, navigation and control of the Kinetic Warhead (KO) the missile intercepted the target providing an engineering data bonus to the test.

## SEA-BASED TEST PROGRAM

The test program for the Sea-Based Midcourse Defense (SMD) element focuses on the progressive retirement of system risks by developing and testing upgrades in incremental steps. The TERRIER Lightweight Exo-Atmospheric Projectile (LEAP) Program, which included four flight tests between 1992 and 1995, demonstrated that LEAP could be integrated with a tactical missile for exo-atmospheric theater ballistic missile defense. The Aegis LEAP Intercept (ALI), Flight Demonstration Program builds upon the lessons learned from the TERRIER-LEAP program and emerging technologies. The goal of the ALI tests (FTR-1 to FM-7) is to demonstrate an exo-atmospheric Hit To Kill intercept of a theater ballistic missile (TBM) target with an Aegis Weapon System (AWS) controlled engagement of a Standard Missile 3 (SM-3). ALI flight tests at sea began in September 1999 at the Pacific Missile Range Facility. Following successful completion of ALI, a series of intercept tests against threat representative targets are planned. The first series of these tests, Flight Missions (FM) 8-10, will conduct intercepts of ballistic missiles with non-separating unitary payloads. Success with these missions will lead to testing against threat representative targets with separating payloads (FM 11-13) in the FY04-05 timeframe. Flight testing beyond FM-13 will support the spiral evolution of the SMD system.

In addition to the aforementioned testing, the SMD element will conduct critical experiments in order to gain additional data to reduce program risk. For the Critical Experiment series, SMD will collect data using test beds, early engineering prototypes, and calibrated flight test instrumentation to reduce risk for the evolving radar, seeker, missile, and ship systems designs.

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