FACT SHEET

MDA FACT SHEET

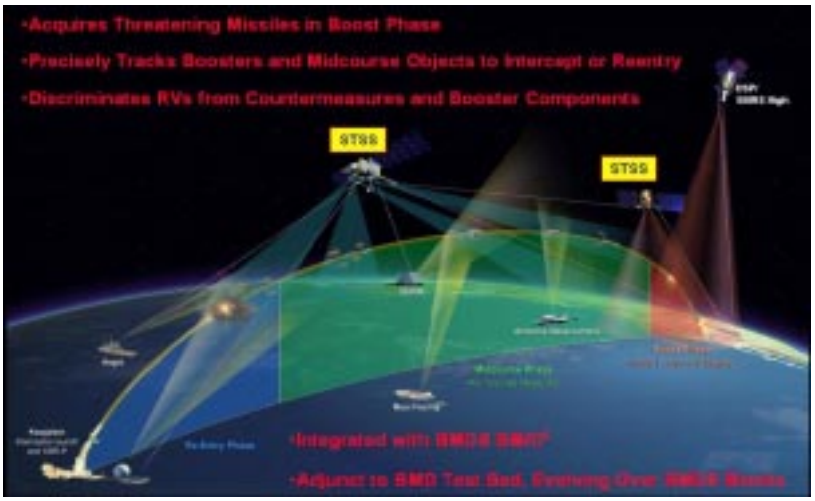
SPACE TRACKING AND SURVEILLANCE SYSTEM (STSS)

INTRODUCTION

In FY02 the Space Tracking and Surveillance System (STSS) program was restructured to reduce risk and fully incorporate the program into the Missile Defense Agency (MDA) evolutionary acquisition, spiral development approach. STSS is part of the MDA's process of reducing system risk by pursuing a variety of sensor technologies. MDA is also investigating sensor alternatives on land-, sea-, air- and space-based platforms.

DESCRIPTION

The restructured STSS will develop a series of interoperable Research and Development (R&D) satellites and supporting ground infrastructure for the detection, tracking and discrimination of ballistic missiles. As technology matures and as lessons are learned from previous development spirals, capabilities will increase.



BLOCK 2004 TEST BED

The element will first support the BMDS Block 2004 Test bed through the assembly and test of the SBIRS Surrogate Test Bed (SSTB). The SSTB is a low cost, primarily Government effort to integrate existing ground and airborne data collection assets emulating SBIRS sensors with an initial configuration of a ground station. The SSTB will participate in MDA flight tests, test some tracking and discrimination algorithms, and exercise the interface into the Ballistic Missile Defense System and Battle Management/Command and Control (BM/C2) and Communication.

BLOCK 2006 TEST BED

In support of the Block 2006 test bed, the first two R&D satellites will be launched. They will leverage existing Government Furnished Equipment hardware to contribute a low risk meaningful capability to the BMDS test bed. The Block 2006 satellites will demonstrate the ability to acquire, track, and discriminate midcourse objects with space based infrared sensors. Initial satellites will be integrated into the battle management command and control element (BMC2), demonstrating the interface and communication between STSS and the BMC2, and enabling tasking and fusion of the multiple infrared and radar sensors. Particular emphasis is on demonstration of the ability to close the fire control loop with BMD interceptor elements. TRW is on contract to deliver the Block 2006 capability, and to work with the program office on the content for Block 2008 and beyond.

Block 2008 and Beyond

Following the spiral development process, new technologies will be inserted into subsequent R&D satellites, reducing the associated schedule risk and demonstrating increasing capability for an eventual operational system. Incremental improvements can be expected in the areas of satellite lifetime, focal plane arrays, cryocoolers, data processors, algorithms, communications, and BMC2 integration. MDA is working to define the capability goals of the program beyond the Block 2006 satellites with a Request for Proposals expected by the third quarter of FY03.

A key aspect of the program is subcontractor competition at the payload level. Northrop Grumman and Raytheon will each develop designs for the acquisition and tracking sensors for second-generation satellites. TRW and the Space-Based Infrared System program office will assess each design and make an assessment of which design will be flown first. Schedule for the launch of second-generation satellites will be driven by technical content and funding, developed within the context of MDA-generated system goals.

The eventual operation system constellation size is still under review. Recent analysis has shown the value of a relatively small constellation (9-12) to ensure satellite-to-satellite communications. Increased coverage of key threat regions could be attained with a somewhat larger constellation (18-20) and world-wide stereo coverage with an even larger constellation (25-30).

Near Term Plans

During FY 2003, the STSS element will:

- Conduct a design review for the first two R&D satellites using FDS legacy hardware
- Begin development of a satellite ground operations center capable of supporting satellite operations for a heterogeneous constellation
- Begin integration into the BMDS test bed
- Develop interfaces with the BMC2
- Continue technology risk reduction efforts primarily in the area of cryocoolers, focal planes, and radiation-hardened parts for incorporation into future satellite development cycles, and
- Continue algorithm development efforts for initial and future cycles, particularly in the area of mission management, scheduling and the technically challenging area of midcourse tracking and discrimination.

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