MISSILE DEFENSE AGENCY

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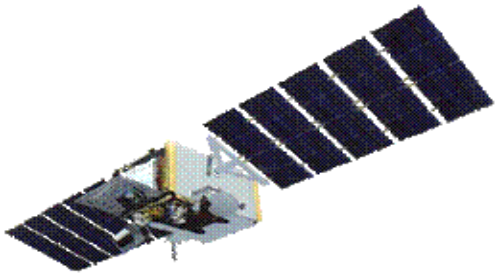
Fact Sheet

Space Tracking and Surveillance System

The Missile Defense Agency (MDA) operates the Space Tracking and Surveillance System (STSS). STSS constellation consists of two satellites orbiting at 1350 km, 58 degree inclination, with 120 minute orbital period. STSS uses sensors capable of detecting visible and infrared light and serves as an experimental space tracker for the Ballistic Missile Defense System (BMDS). On Sept. 25, 2009, MDA, NASA, and the Air Force teamed to successfully launch two satellites into low Earth orbit on a Delta II launch vehicle from Cape Canaveral, Fl. Both satellites are operating nominally on-orbit at the Missile Defense Integration & Operations Center, Schriever Air Force Base, Colorado. STSS is participating in integrated BMDS testing and providing risk reduction in support of a future missile defense space tracker.



Mission Objective

- Provide accurate tracks of midcourse re-entry vehicles to BMDS interceptors
- Boosting targets are detected by acquisition sensor
- Targets autonomously handed-off to track sensor
- Target 2-D Line-of-Sight reported to ground via Object Sighting Messages
- Ground forms high accuracy 3-D track
- 3-D tracks reported to the BMDS

Program Update and Accomplishments

- STSS satellites completed an on-orbit test series and achieved a critical milestone of demonstrating full calibrated performance of both satellites, their crosslink systems, and the acquisition and track sensor payloads
- First stereo collection on birth-to-death missile flight and provided the missile tracking data to the BMDS in near real-time
- First on-orbit receipt of an external cue and the use of the STSS crosslink to transmit that cue to the out-of-view satellite, resulting in stereo midcourse tracking and observation of missile intercept from low Earth orbit
- First Aegis BMD remote engagement based on STSS tracking data resulting in a successful missile intercept (FTM-20)

Program Outlook

- Validate remote sensor and fire control integration to influence the design and operations of the next generation space tracker
- Provide data supporting trade studies and analysis for BMDS systems
- Integrate space capabilities into the BMDS architecture and collaborate with Air Force Space Command to optimize the next generation satellites to support Space Situational Awareness (SSA)
- Participate in MDA test events and track available targets and missiles in all phases of flight and provide this data to the integrated BMDS
- Provide engineering and integration data for development of an operational BMDS space tracker to protect the U.S., its allies, and deployed forces