



## Space Tracking and Surveillance System

The Missile Defense Agency is pursuing the Space Tracking and Surveillance System program as a space-based sensor component of the Ballistic Missile Defense System. The program uses sensors capable of detecting visible and infrared light. The Space Tracking and Surveillance System will become part of a constellation of land-, sea-, air-, and space-based Ballistic Missile Defense System sensors.



### Overview

- Two research and development satellites will be launched into low earth orbit in 2008.
- A ground segment will be developed to operate the satellites. This ground segment will be designed for re-use with subsequent research and development satellites.
- The Space Tracking and Surveillance System Demonstration Program will demonstrate the key functions of a space based sensor, passing missile tracking data to missile defense interceptors with the accuracy and timeliness necessary to enable them to successfully intercept missile targets.
- Lessons learned from the on-orbit operation of the demonstration satellites will provide a sound foundation to proceed with the fielding of an operational constellation.

### Initial Program

- The demonstration satellites consist of refurbished hardware originally built as flight demonstration satellites.
- Two satellites will be launched together on a single Delta II launch vehicle in 2008.
- The Space Tracking and Surveillance System ground station will become operational approximately one year ahead of the launch date, allowing adequate time to train operators. The ground segment will communicate with the missile defense Command, Control, Battle Management and Communication system.
- The Space Tracking and Surveillance System will perform on-orbit testing of sensor performance against ground targets, airborne targets and short and long range ballistic missile targets.
- The Demonstration satellites are expected to be available for two to four years after launch.

### Future Development Program

- The Future Development Program will take lessons learned from design, development and early on-orbit testing of the Demonstration Program satellites and use them to upgrade the Space Tracking and Surveillance System.
- By upgrading ground station and spacecraft software, this effort will improve the Demonstration Satellite experiment, reduce risk for the Space Tracking and Surveillance System Follow-on program, and improve the contingency operations capability.

### Follow-on Program

- The Missile Defense Agency is continuing to plan for the operational constellation of Space Tracking and Surveillance System satellites to enable missile tracking.
- Improvements will be made in satellite lifetime, producibility, and ability to process and communicate missile tracking data to interceptors.