



Highlights of [GAO-03-597](#), a report to Subcommittee on Strategic Forces, Senate Committee on Armed Services

## Why GAO Did This Study

The Department of Defense's Missile Defense Agency (MDA) is developing a ballistic missile defense system designed to counter a wide spectrum of ballistic missile threats. A future element of this system is the Space Tracking and Surveillance System (STSS). STSS will eventually be composed of a constellation of satellites that will work together to detect and track missiles throughout all phases of their flight. GAO was asked to analyze MDA's approach to demonstrate capabilities for STSS.

## What GAO Recommends

To optimize MDA's approach to demonstrating space-based missile tracking capabilities, GAO recommends that MDA focus spending to assessing what needs to be done to complete work on existing satellite components so that it has a reasonable basis for its cost and scheduling estimates. GAO also recommends that MDA assess alternatives to its current strategy that may offer opportunities to reduce risks and gain more knowledge. In commenting on a draft of this report, DOD partially concurred with two of our recommendations and concurred with two others. In its comments, DOD stated that it would not be prudent to delay launching satellites given the need to make overall ballistic missile defense system sensor assessments.

[www.gao.gov/cgi-bin/getrpt?GAO-03-597](http://www.gao.gov/cgi-bin/getrpt?GAO-03-597).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Katherine Schinasi at (202) 512-4841 or [SchinasiK@gao.gov](mailto:SchinasiK@gao.gov).

## MISSILE DEFENSE

# Alternate Approaches to Space Tracking and Surveillance System Need to Be Considered

## What GAO Found

MDA purposely adopted a strategy that would evolve STSS over time rather than trying to make a big leap in its capability, deferring some requirements, and calling for competition in the development of the sensors aboard the satellite. Recent decisions, however, will limit MDA's ability to achieve its original goals as well as the knowledge that could be gained from its satellite demonstrations. Specifically:

- MDA recently reduced its efforts to sustain competition by eliminating funds set aside to procure an alternative satellite sensor from a competing contractor. It now plans to fund only efforts to design an alternative sensor. If it chooses to pursue STSS as part of the missile defense system, STSS may end up being more expensive in the future because MDA could be locked into a single contractor for the design and production of the large constellation of satellites.
- MDA decided to delay development and launch of new demonstrators in order to focus on completing development of two legacy satellites. MDA already knows that it would like to pursue different designs and different technologies for its target system given that the legacy satellites do not support a producible design. As a result, delaying work on the next generation of satellites will delay work that could offer a better basis from which MDA could build an operational capability.
- MDA's decision to launch in 2007 lacks important knowledge. MDA has established a launch date before it has completed its assessment of the working condition of the equipment it needs to assemble in order to finish building the two satellites it would like to launch. As a result, it does not know the extent of work that must be done or how much it will cost because the number components found to be in working or non-working order have not yet been identified.

MDA has considered pursuing alternate approaches, but all are constrained by the need to participate in 2006-2007 missile defense tests. These approaches include (1) launching the legacy satellites in 2008 instead of 2007 and (2) stopping work on the legacy satellites and focusing instead on developing new demonstrators. Both of these approaches would enable MDA to inject more competition into the STSS program, reduce scheduling risks, and demonstrate more capabilities. However, they also have drawbacks; primarily, they would delay MDA's ability to make informed trade-offs on missile defense sensors.