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Highlights

Highlights of [GAO-03-441](#), a report to Congressional Requesters

Why GAO Did This Study

The Department of Defense (DOD) would like to build a capable missile defense system that paces an ever-evolving threat. This is an expensive and risky endeavor because it requires a diverse set of technologies to be quickly developed, integrated, and deployed across an array of platforms. DOD estimates that it will need \$50 billion for missile defense research and development over the next 6 years and likely additional funds in subsequent years. GAO was asked to review the Missile Defense Agency's (MDA) strategy for this investment and determine what knowledge-based practices characteristic of successful programs are being adopted by MDA; what significant practices are not being adopted; and whether MDA is following the practices that it has adopted.

What GAO Recommends

GAO is recommending that DOD prepare life cycle cost estimates for missile defense elements before beginning integration activities and explore the option of setting aside funds to produce and operate the missile defense system over the long term.

www.gao.gov/cgi-bin/getrpt?GAO-03-441.

To view the full report, including the scope and methodology, click on the link above. For more information, contact Robert Levin at (202) 512-4841 or levinr@gao.gov.

MISSILE DEFENSE

Knowledge-Based Practices Are Being Adopted, but Risks Remain

What GAO Found

Our work has shown that programs are most successful when they evolve products over time rather than try to make big leaps in capability and when the programs adopt knowledge-based acquisition processes. Similarly, MDA is taking an evolutionary approach to developing the missile defense system by developing capabilities in spirals or “blocks” rather than attempting to deliver all desired capabilities at one time. The agency intends to facilitate this approach by keeping requirements flexible before beginning activities to integrate technologies into a planned block, following a knowledge-based development plan, and demonstrating that technologies work as intended before beginning system integration of a block. In addition, the agency is seeking to involve stakeholders—such as the military services and operational testers—early in the development effort.

However, MDA has not adopted some knowledge-based practices regarding long-term investment decision making and, as a result, the missile defense program's success could be hampered. First, MDA is not making an early determination of the full cost of a capability. Such an estimate would help decision makers more effectively evaluate which technologies to include because they offer the best capability for the funds invested. Second, DOD is not allocating a “wedge” of funds in its Future Years Defense Plan for system production and operations. Without this wedge, DOD may not have the funds needed to procure and maintain the missile defense system.

In addition, the President's directive to begin fielding a missile defense capability by 2004 places MDA in danger of getting off track early and impairing the effort over the long term. This danger is highlighted by MDA's decision to not follow some of its knowledge-based practices as it develops the first block of the system. For example, MDA is beginning system integration of its first block with immature technology and limited testing. While doing so may help MDA meet the President's deadline, it also increases the potential that some elements may not work as intended.

Examples of Missile Defense Elements



Source: Missile Defense Agency.

Left: ground-based interceptor; right: satellite sensors.