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BALLISTIC MISSILE DEFENSE

Actions Needed to Improve Planning and Information on Construction and Support Costs for Proposed European Sites



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Highlights of [GAO-09-771](#), a report to congressional requesters

Why GAO Did This Study

The Missile Defense Agency (MDA) estimated in 2008 that the potential costs of fielding ballistic missile defenses in Europe would be more than \$4 billion through 2015. Planned ballistic missile defenses in Europe are intended to defend the United States, its deployed forces, and its allies against ballistic missile attacks from the Middle East. They are expected to include a missile interceptor site in Poland, a radar site in the Czech Republic, and a mobile radar system in a still-to-be-determined European location.

GAO was asked to evaluate the Department of Defense's (DOD) plans for missile defense sites in Europe and address to what extent DOD has (1) planned for the sites' implementation and (2) estimated military construction and long-term operations and support costs. Accordingly, GAO reviewed key legislation; examined policy and guidance from MDA, the Army, the Air Force, and the Army Corps of Engineers; analyzed budget documents and cost estimates; and visited sites in Poland and the Czech Republic.

What GAO Recommends

GAO is recommending that DOD clarify roles and responsibilities, refine military construction cost estimates, and define who is responsible for operations and support costs for the European sites. DOD generally agreed, stating that steps are being taken to address these issues, but that operations and support cost estimates will not be completed in time for the 2011 budget.

[View GAO-09-771](#) or [key components](#). For more information, contact John Pendleton at 404-679-1816 or pendletonj@gao.gov.

BALLISTIC MISSILE DEFENSE

Actions Needed to Improve Planning and Information on Construction and Support Costs for Proposed European Sites

What GAO Found

DOD has begun planning for the construction and implementation of the European missile defense sites, including coordinating with international partners and U.S. stakeholders; however, several challenges affecting DOD's implementation of ballistic missile defenses in Europe remain. First, neither Poland nor the Czech Republic has ratified key bilateral agreements with the United States, limiting DOD's ability to finalize key details of the sites, such as how security will be provided. Second, DOD's efforts to establish the roles and responsibilities of key U.S. stakeholders for the European sites remain incomplete because MDA and the services have not yet made important determinations, such as establishing the criteria that must be met before the transfer of the European missile defense sites from MDA to the Army and Air Force. Since 2002, MDA has been directed by DOD to begin planning for the transfer of missile defense elements, including the direction to coordinate with the services on resources and personnel needed to provide an effective transition of responsibility. Without clear definitions of the roles that MDA and the services will be responsible for and agreement on criteria for transfer, DOD will continue to face uncertainties in determining how the European Interceptor Site and the European Midcourse Radar Site will be sustained over the long term.

DOD's cost estimates for military construction and operations and support have limitations and do not provide Congress complete information on the true costs of ballistic missile defenses in Europe. Key principles for cost estimating state that complete cost estimates are important in preparing budget submissions and for assessing the long-term affordability of a program. Further, according to DOD military construction regulations, the Army Corps of Engineers typically certifies that key construction design milestones have been met and verifies military construction cost estimates before the estimates are submitted as budget requests. However, DOD's original military construction estimates in the fiscal year 2009 budget did not include all costs, primarily because MDA submitted the estimates before accomplishing key design milestones and without a review by the Army Corps of Engineers. Consequently, DOD's projected military construction costs for the interceptor and radar sites could potentially increase from DOD's original \$837 million estimate to over \$1 billion. DOD operations and support cost estimates are also incomplete because they do not include projected costs for base operations that will be managed by the Army and Air Force. Key cost factors that will affect these estimates, such as how security will be provided at the sites, remain undefined. In addition, MDA and the services have not yet agreed on how the operations and support costs for the interceptor and radar sites will be funded over the long term. As a result, Congress does not have accurate information on the full investment required for ballistic missile defenses in Europe.

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Abbreviations

BMDS	Ballistic Missile Defense System
DOD	Department of Defense
MDA	Missile Defense Agency
NATO	North Atlantic Treaty Organization

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United States Government Accountability Office
Washington, DC 20548

August 6, 2009

The Honorable Daniel K. Inouye
Chairman
Committee on Appropriations
United States Senate

The Honorable Tim Johnson
Chairman
Subcommittee on Military Construction, Veterans Affairs,
and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Robert C. Byrd
United States Senate

The Missile Defense Agency (MDA) was created in 2002 in order to develop ballistic missile defenses comprising land-, air-, and sea-based elements—such as missiles and radars—working together as an integrated system and intended to intercept ballistic missiles in all phases of flight. MDA has spent almost \$56 billion since 2002 on developing and fielding an initial ballistic missile defense capability and is on course to spend about \$50 billion more over the next 5 years. As part of this system, MDA plans to field a missile interceptor site in Poland designed to intercept incoming ballistic missiles launched from the Middle East, a radar site in the Czech Republic capable of tracking incoming missiles and guiding interceptors to their targets, and a mobile radar system to be strategically placed in a still-to-be-determined European location to provide additional warning of potential ballistic missile threats. While MDA has taken the lead in developing the sites thus far, the Army has been designated the lead military service to operate and support the European Interceptor Site in Poland and the mobile radar system, and the Air Force has been designated lead military service for the European Midcourse Radar Site in the Czech Republic. MDA estimated in 2008 that the potential costs of the planned ballistic missile defenses in Europe through 2013 would be more than \$4 billion—approximately \$837 million for military construction; \$612 million for operations and support at the sites; and \$2.6 billion for development, testing, and procurement costs.

Although the Department of Defense (DOD) is moving forward with planning and site analysis for the ballistic missile defense sites in Europe, the new administration indicated in 2009 that it is reviewing U.S. national

policy on missile defense and has not yet stated its plans for the future of ballistic missile defenses in Europe. Some critics of the proposed ballistic missile defenses in Europe argue that testing of the system to date has been insufficient to verify that it will function as intended. In light of those concerns, Congress has placed limitations on the use of funds for the acquisition or deployment of missiles at a European site until the Secretary of Defense certifies that the proposed interceptors have demonstrated a high probability of working in an operationally effective manner and the ability to accomplish the mission.¹ Further, the deployment of the ballistic missile defense sites in Europe has been the subject of debate in the parliaments of both Poland and the Czech Republic, and the Russian government has adamantly protested U.S. plans in those countries. However, the North Atlantic Treaty Organization (NATO) has indicated its support for ballistic missile defenses in Europe and is pursuing ways to link its own missile defense efforts with those of the United States.

We have previously reported on a number of challenges facing DOD as it develops and fields ballistic missile defenses. For instance, we recently testified that to meet President Bush's goal of putting in place an initial set of ballistic missile defense capabilities beginning in 2004, the Secretary of Defense granted MDA a significant amount of funding and decision-making flexibility, exempting the agency from many traditional DOD requirements for weapon system development, acquisition, and oversight. Although this exemption allowed MDA to quickly develop an initial ballistic missile defense capability, this approach has also resulted in several management challenges.² For example, MDA has not yet provided baselines necessary to measure its progress on cost, schedule, and testing. Further, some of MDA's production and fielding decisions have gotten ahead of its testing schedule, raising concerns about system efficacy.³ Finally, DOD's plans for long-term operations and support are incomplete,

¹ National Defense Authorization Act for Fiscal Year 2008, Pub. L. No. 110-181, § 226 (2008), and Duncan Hunter National Defense Authorization Act for Fiscal Year 2009, Pub. L. No. 110-417, § 233 (2008).

² GAO, *Defense Management: Key Challenges Should be Addressed When Considering Changes to Missile Defense Agency's Roles and Missions*, [GAO-09-466T](#) (Washington, D.C.: Mar. 26, 2009).

³ GAO, *Defense Acquisitions: Production and Fielding of Missile Defense Components Continue with Less Testing and Validation Than Planned*, [GAO-09-338](#) (Washington, D.C.: Mar. 13, 2009).

making the transition and transfer of the ballistic missile defense elements from MDA to the services difficult.⁴

In requesting this review, you expressed interest in the completeness of DOD's plans for the ballistic missile defense sites in Europe, including questions about whether MDA's initial \$4 billion estimate for the planned European capabilities includes the full costs associated with construction and operations and support of the sites. In this context, you asked GAO to evaluate DOD's plans for the ballistic missile defense sites in Europe and address to what extent DOD has (1) planned for the initial implementation of ballistic missile defenses in Europe, to include coordination with key international partners and U.S. stakeholders, and (2) estimated total military construction and long-term operations and support costs for ballistic missile defenses in Europe.

For both objectives, we reviewed key legislation related to ballistic missile defenses in Europe, DOD policy and guidance on military construction and estimating costs, and DOD's overall approach for preparing to support ballistic missile defense. To determine to what extent DOD has planned for the initial implementation of ballistic missile defenses in Europe, we conducted site visits in Poland and the Czech Republic; met with DOD, State Department, and host nation officials to discuss the efforts under way to plan for the sites; and examined key documents, including agreements with the host nations, memorandums of agreement between key U.S. stakeholders, and MDA, Army, Air Force, and Army Corps of Engineers documents for planning and site preparation. We evaluated the collaboration efforts among the agencies to determine whether DOD, Army, Air Force, and State Department officials followed key practices that can help agencies enhance and sustain their collaborative efforts.⁵ To determine the extent to which DOD has estimated total costs for ballistic missile defenses in Europe, we examined budget documents, including DOD's fiscal year 2009 Future Years Defense Program (including budget data for fiscal years 2008-2013), MDA's fiscal year 2009 military construction cost estimates, MDA's fiscal year 2010 budget submission, and the Army's projected military construction cost estimates, and

⁴ GAO, *Missile Defense: Actions Needed to Improve Planning and Cost Estimates for Long-Term Support of Ballistic Missile Defense*, [GAO-08-1068](#) (Washington, D.C.: Sept. 25, 2008).

⁵ GAO, *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005).

reviewed key principles for developing accurate and reliable cost estimates.⁶ We also discussed the cost estimates with MDA, the Army, the Air Force, and the Army Corps of Engineers-Headquarters and Europe District to determine the completeness of the military construction and operations and support costs. We discussed the results of our analyses on these objectives with DOD and State Department officials. Our scope and methodology is discussed in more detail in appendix I.

We conducted this performance audit from October 2008 to August 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Results in Brief

DOD has begun planning for the construction, implementation, and operations and support for the European missile defense sites, including coordinating with international partners and U.S. stakeholders; however, several challenges remain that are affecting DOD's plans for ballistic missile defenses in Europe. First, neither Poland nor the Czech Republic has ratified the bilateral Ballistic Missile Defense Agreements and bilateral supplementary agreements to the NATO Status of Forces Agreement. The ratification votes remain delayed, in part, because of a desire on the part of both the Polish and Czech parliaments to wait for an indication from the new U.S. administration on its policy toward ballistic missile defenses in Europe. As long as these agreements remain unratified, DOD's ability to finalize key details about how the sites will operate, such as whether security will be provided by the host nation, will be limited. Second, DOD's efforts to establish the roles and responsibilities of key U.S. stakeholders for the European sites remain incomplete because MDA and the services have not yet made important determinations, such as establishing the criteria that must be met before the transfer of specific European missile defense sites to the services. MDA has been directed by DOD since 2002 to

⁶ Key principles for developing accurate and reliable cost estimates are drawn from DOD guidance and our *Cost Estimating and Assessment Guide*. Department of Defense, Office of the Secretary of Defense, Cost Analysis Improvement Group, *Operating and Support Cost-Estimating Guide* (Washington, D.C., May 1992 and October 2007), and GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

begin planning for the transfer of missile defense elements, including the direction to coordinate with the services on resources and personnel needed in order to deliver an effective transition of responsibility. In addition, our prior work assessing interagency collaboration has shown that agreed-upon roles and responsibilities that clarify who will do what, organize joint and individual efforts, and facilitate decision making are important to agencies' capability to enhance and sustain their collaborative efforts. While the Army has been designated lead service for the European Interceptor Site and the Air Force has been designated lead service for the European Midcourse Radar Site, the specific responsibilities related to these roles remain undefined. Roles and responsibilities for these missile defense elements are to be established in Overarching Memorandums of Agreement between the services and MDA and annexes to those agreements specific to each missile defense element, but these important agreements remain incomplete because MDA and the services have not yet made important determinations, such as establishing the criteria that must be met before the transfer of specific European missile defense sites to the services. Without establishing specific roles and responsibilities for the sites and defining key criteria that will guide the transfer of the elements from MDA to the Army and Air Force, uncertainty will persist about how the European Interceptor Site and the European Midcourse Radar Site will be sustained over the long term. The delay in ratification creates an opportunity for DOD and MDA to address some of the planning challenges DOD faces for the European sites. We are therefore recommending that MDA, the Army, and the Air Force use this time to finalize the Overarching Memorandums of Agreement that detail the specific roles and responsibilities for the European sites and clearly define the criteria that must be met before the transfer of those sites from MDA to the Army and Air Force.

Although DOD has provided congressional decision makers with some information on the military construction and operations and support costs for the European Interceptor Site and European Midcourse Radar Site, DOD's estimates have limitations and do not provide Congress complete information on those costs. Key principles for cost estimating state that complete cost estimates are important in preparing budget submissions and for assessing the long-term affordability of a program. MDA's initial cost estimates for total military construction and operations and support costs for ballistic missile defenses in Europe have significant limitations.

- DOD's original estimate to construct both sites did not include all costs. The \$837 million estimate did not fully account for the cost of power and utilities at the sites, among other things. This was primarily

because MDA submitted the estimates for its 2009 budget before accomplishing key design milestones and without a review by the Army Corps of Engineers. According to DOD military construction regulations, the Army Corps of Engineers, as construction agent, typically certifies that key construction design milestones have been met and verifies military construction cost estimates before the estimates are submitted as budget requests. Additionally, DOD's initial military construction cost estimates did not include any Army or Air Force base operating support facilities costs, such as housing, or account for possible currency fluctuations. Consequently, DOD's projected military construction costs for the European Interceptor Site and the European Midcourse Radar Site are expected to increase significantly from DOD's original \$837 million estimate in the fiscal year 2009 budget. In May 2009, an Army Corps of Engineers official estimated that military construction costs for the sites could potentially increase to over \$1 billion. Despite the expected increase in military construction costs, DOD has not provided Congress updated military construction estimates since the initial estimates were submitted in February 2008 with the fiscal year 2009 budget request. As a result of these limitations in the initial estimates, DOD and congressional decision makers do not have accurate information on the full military construction investment required for ballistic missile defenses in Europe.

- Total operations and support costs are also uncertain. DOD estimated operations and support costs totaling \$612 million for the European Interceptor Site and European Midcourse Radar Site in its fiscal years 2008-2013 Future Years Defense Program. However, these estimates are incomplete because DOD's operations and support cost estimates, for example, do not include estimates for base operations managed by the Army and Air Force. Although MDA and the Army and Air Force have initiated the development of total operations and support cost estimates, key cost factors that will affect these estimates, such as how security will be provided at the sites, remain undefined. Furthermore, MDA and the Army and Air Force have not yet agreed on how the operations and support costs for the European Interceptor Site and the European Midcourse Radar Site will be funded over the elements' life cycles or who will pay for these costs. This has been a persistent issue that is important to address as these costs are typically over 70 percent of a system's total lifetime cost.

Without credible and complete military construction and operations and support cost estimates, DOD and congressional decision makers will have difficulty making funding decisions and assessing the affordability of

ballistic missile defense plans over the program's life cycle. To provide military construction costs for ballistic missile defenses in Europe that are based on the best available data, we are recommending that MDA, in coordination with the Army and Air Force, provide Congress annually, in alignment with the budget, updated military construction cost estimates for the European Interceptor Site and the European Midcourse Radar Site that among other things reflect the data gathered from all site design efforts since project initiation and account for all projected military construction costs for the sites, including Army and Air Force base support facility requirements. To provide for more complete military construction estimates for future ballistic missile defense sites, such as the still-to-be-determined European site for the mobile radar system, we recommend that MDA follow DOD military construction regulations by utilizing the Army Corps of Engineers to complete required site design and analysis work and verify all military construction cost estimates before submitting cost estimates to Congress. We further recommend that MDA and the Army and Air Force complete life cycle operations and support cost estimates for the European Interceptor Site and the European Midcourse Radar Site and clearly define who is responsible for funding these operations and support costs over the elements' life cycles.

In written comments on a draft of this report, DOD concurred with three and partially concurred with two recommendations. DOD concurred with our recommendation for MDA and the Army and Air Force to finalize Overarching Memorandums of Agreement and element-specific annexes. DOD also concurred with both of our recommendations to improve military construction cost estimates for ballistic missile defense sites. DOD partially concurred with our two recommendations to improve fiscal stewardship of DOD's operations and support resources. In general, DOD stated that it is taking steps to address the issues we identified in the report, but that life cycle operations and support cost estimates would not be complete in time for the fiscal year 2011 budget submission. By implementing our recommendations to improve planning and information on construction and support costs for the proposed European sites, DOD would be better positioned to prepare for the near- and long-term sustainment of the sites and congressional decision makers would have enhanced ability to evaluate the investment required to implement ballistic missile defenses in Europe. The department's comments are reprinted in appendix II.

Background

When MDA was given the mission to develop a global integrated Ballistic Missile Defense System (BMDS), DOD's intention was for MDA to develop missile defense elements, such as the proposed interceptor and radar sites in Europe, and then transfer the elements to the lead services designated to operate and support them. We have previously reported that the transition process may, for some missile defense elements, end at a point that DOD calls transfer—which is the reassignment of the MDA program office responsibilities to a service.⁷ According to MDA and Office of the Under Secretary of Defense for Acquisition, Technology and Logistics officials, not all BMDS elements will ultimately transfer; the decision to transfer them will be made on a case-by-case basis and the conditions under which this may happen will be identified in agreements between MDA and the services for each element.

In September 2008, we reported that DOD has taken some initial steps to plan for long-term operations and support of ballistic missile defense elements, but planning efforts to date are incomplete because of difficulties in transitioning and transferring responsibilities from MDA to the services and in establishing operations and support cost estimates.⁸ We noted that DOD has established limited operations and support cost estimates for ballistic missile defense elements in its Future Years Defense Program, DOD's 6-year spending plan; however, the estimates do not fully reflect the total life cycle cost of the BMDS. As a result, we reported that the operations and support costs that had been developed were not transparent to DOD senior leadership and congressional decision makers and recommended that DOD establish a standard process for long-term support planning for the BMDS and a requirement to estimate BMDS operations and support costs.

⁷ [GAO-08-1068](#).

⁸ [GAO-08-1068](#).

DOD Has Made Progress in Planning for Ballistic Missile Defenses in Europe with International Partners and Key U.S. Stakeholders, but Challenges Remain

DOD has begun planning for the construction and implementation of the European missile defense sites; however, challenges affecting DOD's implementation of ballistic missile defenses in Europe remain. First, neither Poland nor the Czech Republic has ratified key bilateral agreements with the United States, limiting DOD's ability to finalize key details of the sites, such as how security will be provided. Second, DOD's efforts to establish the roles and responsibilities of key U.S. stakeholders for the European sites remain incomplete. Without clear definitions of the roles that MDA and the services will be responsible for and agreement on criteria for transfer, DOD will continue to face uncertainties in determining how the European Interceptor Site and the European Midcourse Radar Site will be sustained over the long term.

DOD Has Made Progress in Planning for European Missile Defenses

DOD has made progress in planning for the construction, implementation, and operations and support for the European missile defense sites. In 2002, the President signed National Security Presidential Directive 23 that called for missile defense capabilities to protect the United States, its deployed forces, and its allies.⁹ As part of that direction, MDA considered several European sites where it could base a missile defense capability to provide additional U.S. protection and could provide a regional defense for its European allies against a missile launch from Iran. DOD approached both Poland and the Czech Republic about basing elements of its proposed European missile defense system, and MDA briefed the President about the potential capability in 2003. Both U.S. and Polish officials told us that Poland was a likely host site because many of the trajectories from Iran went through Poland. In May 2006, the Czech government sent a formal letter to the United States to request that the United States consider placing missile defense assets in the Czech Republic. DOD has completed site selection and begun site design for the European Interceptor Site in Poland and the European Midcourse Radar Site in the Czech Republic.

European Interceptor Site

The proposed European Interceptor Site is located outside of Slupsk, Poland, near the Baltic Sea. The site is planned to consist of 10 two-stage, silo-based interceptors—modified versions of the three-stage interceptors located at Fort Greely, Alaska, and Vandenberg, California. The site is designed to protect the U.S. homeland and U.S. allies from incoming ballistic missiles launched from the Middle East. The initial MDA estimate

⁹ The White House, National Security Presidential Directive 23, *National Policy on Ballistic Missile Defense* (Dec. 16, 2002).

indicated that the site would be operational by 2013, and the Army is the lead service that will be tasked with operating and supporting the interceptor site once it becomes operational. Site analysis is under way at the European Interceptor Site, but no physical site preparation or construction has begun. The photograph in figure 1 was taken at the site in February 2009 and shows the area where the planned interceptor field will be located.

Figure 1: Proposed Site for Interceptor Field at Redzikowo Air Base in Poland



Source: GAO.

European Midcourse Radar Site

The proposed European Midcourse Radar Site is located at the Brdy military training area, approximately 90 kilometers southwest of Prague, Czech Republic. This land-based X-band radar will provide ballistic missile tracking data to the European Interceptor Site as well as the greater BMDS. The radar proposed for deployment to the Czech Republic is currently located at Kwajalein Atoll in the Marshall Islands. The radar will undergo an upgrade before its installation in the Czech Republic. The Air Force is the lead service that will be tasked with operating and supporting the radar site once it becomes operational, which MDA initially estimated would occur in 2013. Site analysis is under way at the European Midcourse Radar Site, but no physical site preparation or construction has begun.

Mobile Forward-Based Radar

As part of ballistic missile defenses in Europe, DOD is considering the placement of an AN/TPY-2 mobile forward-based radar at another site in Europe in addition to the European Interceptor Site and the European Midcourse Radar Site. The transportable, land-based X-band radar is being considered in order to provide additional warning of ballistic missile launches from a location that is closer to Iran. The site for this radar has not yet been proposed, and at this time, negotiations with potential host nations have not been authorized.

DOD Has Begun Negotiations and Planning with International Partners and U.S. Stakeholders

The State Department and DOD have negotiated the key bilateral Ballistic Missile Defense Agreements necessary to move forward on the European interceptor and radar sites. In 2008, the United States, Poland, and the Czech Republic signed bilateral Ballistic Missile Defense Agreements that formally approved the basing of the European Interceptor Site and the European Midcourse Radar Site, and both agreements are now waiting for ratification by the Polish and Czech parliaments. The Ballistic Missile Defense Agreements are the first of several necessary agreements expected to govern the fielding of ballistic missile defenses in each country. The Ballistic Missile Defense Agreements establish the rights and obligations of the United States, Poland, and the Czech Republic specific to each site and provide general guidelines on personnel, construction, and land use, among other things.

A second key set of agreements, supplementary arrangements to the NATO Status of Forces Agreement, are expected to govern ballistic missile defense at both sites. The overall NATO Status of Forces Agreement was created soon after the NATO alliance was established in 1949 and sets the general status of forces for member nations as they operate in each others' territories. The supplementary Status of Forces Agreement adds mission-specific matters addressed only broadly in the NATO Status of Forces Agreement, such as the legal status of U.S. civilian and military personnel working at each site. The Czech Republic and the United States have negotiated a supplementary Status of Forces Agreement, and it is now waiting for ratification by the Czech parliament. However, the supplementary Status of Forces Agreement with Poland had not been completely negotiated as of June 2009. After the Ballistic Missile Defense Agreements and supplementary Status of Forces Agreements are ratified by each host nation's parliament, implementing arrangements will be negotiated. The implementing arrangements will serve as the executing documents for both of these agreements and address the day-to-day working relationship between the countries on a range of issues, including security.

NATO's overall role in European ballistic missile defense is still under consideration. Although NATO has not been party to the bilateral negotiations between DOD and the host nations, DOD and NATO have worked together to begin addressing interoperability of the U.S. BMDS and NATO's Active Layered Theater Ballistic Missile Defense system. NATO has also taken recent steps to show support for the European Interceptor Site and European Midcourse Radar Site. For example, NATO's 2008 Bucharest Summit Declaration recognized that ballistic missile proliferation poses an increasing threat to NATO, and recognized that the European missile defense sites would provide a "substantial contribution" to NATO's protection. NATO stated that it is exploring ways to link U.S. missile defense assets with current NATO missile defense efforts.

DOD has also made progress in coordinating with key U.S. stakeholders and by establishing the Army Corps of Engineers-Europe District as the construction agent for both sites. DOD has established lead services for both the interceptors and the radar and the Army and Air Force have identified which command will be specifically tasked to lead each ballistic missile element. The Army's Space and Missile Defense Command has been assigned as the lead command for the European Interceptor Site and the Air Force Space Command is the lead command for the European Midcourse Radar Site. As lead services, both the Army and Air Force have conducted planning sessions and negotiation of roles and relationships with MDA. For example, MDA and the Army and Air Force are establishing roles and responsibilities for the long-term operations and support of the European sites through negotiation of Overarching Memorandums of Agreement and ballistic missile defense element-specific annexes to the overarching agreements. However, with the exception of the Overarching Memorandum of Agreement between MDA and the Army, completed in January 2009, these agreements are not yet complete.

In addition, the Army Corps of Engineers-Europe District is the construction agent for both the European Interceptor Site and the European Midcourse Radar Site. As such, the Corps is responsible for issuing and commissioning site preparation and construction contracts for the sites. The Corps will manage the contracts to ensure that the sites are developed and constructed to meet MDA and service facility requirements. However, no contracts can be issued or site preparation commissioned until the Ballistic Missile Defense Agreements and supplementary Status of Forces Agreements with the host nations are signed and ratified. For the Czech Republic, construction may begin after ratification of agreements between the United States and the Czech Republic; however,

for Poland, construction may begin only after ratification of the agreements by both countries. MDA officials told us that since Poland and the Czech Republic did not ratify their respective agreements by spring 2009, both sites will experience construction delays based on target construction completion dates of the first quarter of fiscal year 2013 for the radar site and the second quarter of fiscal year 2013 for the interceptor site.

Delayed Ratification of Key Agreements with Host Nations and Incomplete Agreements between MDA and the Services Present Challenges to DOD’s Planning and Implementation of Ballistic Missile Defenses in Europe

While DOD has made progress with key international partners and U.S. stakeholders on the planning and implementation of missile defenses in Europe, several challenges affect DOD’s ability to carry out its plans for the ballistic missile defenses in Europe. Neither Poland nor the Czech Republic has ratified either its overall Ballistic Missile Defense Agreement or a supplementary Status of Forces Agreement. The lack of ratified agreements limits DOD’s ability to negotiate specific details, such as security, that are expected to be formalized in implementing arrangements to each overall agreement. Table 1 shows the status of these key documents.

Table 1: Status of Key Bilateral Agreements

Key agreements	European Interceptor Site (Poland)	European Midcourse Radar Site (Czech Republic)
Ballistic Missile Defense Agreement complete?	Yes	Yes
Supplementary Status of Forces Agreement complete?	Negotiations ongoing	Yes
Agreements ratified?	No	No
Implementing arrangements complete?	To be negotiated after ratification ^a	To be negotiated after ratification

Source: GAO analysis of DOD data.

^aThe United States and Poland are currently negotiating a land use implementing arrangement before ratifying the agreements, per the European Interceptor Site Ballistic Missile Defense Agreement.

U.S. and Polish officials also told us that the ratification process in Poland is on hold until the supplementary Status of Forces Agreement is negotiated and the new administration establishes its policy toward ballistic missile defenses in Europe. Additionally, U.S. officials indicated that the ratification process is also on hold in the Czech Republic pending the new administration’s policy. While DOD’s \$7.8 billion fiscal year 2010 budget proposal for missile defense reflects an increased emphasis on bolstering near-term capabilities to respond to specific theater threats, as opposed to an overall long-term global ballistic missile defense capability,

DOD officials have stated that the European missile defense capability in particular will be reevaluated as part of DOD's Quadrennial Defense Review, which is expected to be completed in early 2010.

In the interim, the lack of negotiated and ratified agreements affects many aspects of DOD's ability to plan for the sites, ranging from the services' ability to plan for the numbers of personnel that will be required to the types of support infrastructure that will be needed for the personnel. For example, the exact numbers of security personnel needed at each site will not be finalized until the implementing arrangements are complete and decisions are made regarding the extent to which the Polish and Czech governments will contribute security personnel to the sites. In addition, U.S. European Command is leading meetings, working groups, and consultations on land use considerations in Poland, but the specific topics included in the land use implementing arrangement cannot be finalized until Poland and the United States have agreed on the contents of the bilateral supplementary Status of Forces Agreement.

Moreover, Congress has placed restrictions on DOD's ability to fund procurement, site activation, military construction, and deployment of a missile defense system at the sites until the agreements have been ratified. Both the 2008 and 2009 National Defense Authorization Acts prohibit DOD from funding such activities at the radar site until the Czech parliament ratifies and the Prime Minister approves the missile defense and supplementary status of forces agreements. However, in Poland such activities can begin only after ratification and approval of agreements by both countries. Once DOD is able to begin, construction of both European sites is expected to take approximately 3 years to complete. Completion of the sites' weapon systems installation, integration, and testing will continue after completion of construction.

Finally, DOD's efforts to finalize roles and responsibilities for the European sites remain incomplete because MDA and the services have not yet made important determinations, such as establishing the criteria that must be met before the transfer of specific European missile defense sites to the services. MDA has been directed by DOD since 2002 to begin planning for the transfer of missile defense elements, including the direction to coordinate with the services on resources and personnel needed to deliver an effective transition of responsibility. In addition, our prior work assessing interagency collaboration has shown that agreed-upon roles and responsibilities that clarify who will do what, organize joint and individual efforts, and facilitate decision making are important to agencies' abilities to enhance and sustain their collaborative efforts. While

the Army was designated lead service for the European Interceptor Site in October 2006 and the Air Force was designated lead service for the European Midcourse Radar Site in August 2007, the specific responsibilities related to these roles remain undefined. MDA and the services have begun to establish these roles and responsibilities through Overarching Memorandums of Agreement, with the purpose to outline the general delineation of responsibilities for the ballistic missile defense development and ongoing operations and support, as each element transitions and transfers from MDA to the services. While the Army and MDA completed their Overarching Memorandum of Agreement in January 2009, negotiations between the Air Force and MDA on their Overarching Memorandum of Agreement are ongoing.

In addition, the Overarching Memorandums of Agreement are expected to include element-specific annexes for each of the ballistic missile defense elements, including the European Midcourse Radar Site and the Ground-Based Midcourse Defense, which will include details on the European Interceptor Site. The annexes are expected to specifically state the criteria that must be met by MDA before the elements transfer to the Army and the Air Force and detail specific roles and responsibilities for each organization. Further, the annexes will indicate the extent to which MDA will retain control of a missile defense element's materiel development and the services will assume control of the remaining supporting responsibilities, such as doctrine, organization, training, leader development, personnel, and facilities. However, MDA and the Army and Air Force are still negotiating the annexes for the Ground-Based Midcourse Defense and the European Midcourse Radar Site and it is unclear when these annexes will be complete. As a result, the roles and responsibilities specific to the European sites remain undefined because MDA and the services have not yet agreed to the terms of transfer that are to be established in these annexes. Table 2 shows the status of the Overarching Memorandums of Agreement and element-specific annexes being negotiated between MDA and the Army and Air Force.

Table 2: Status of Overarching Memorandums of Agreement and Annexes

Key agreement	MDA/Army	MDA/Air Force
Overarching Memorandum of Agreement	Signed by MDA and Secretary of the Army in January 2009	Negotiations ongoing
Element-specific annex	Negotiations ongoing for Ground-Based Midcourse Defense Annex, to include details on the European Interceptor Site	Negotiations ongoing for European Midcourse Radar Site Annex

Source: GAO analysis of DOD data.

Until specific roles and responsibilities for the sites are established and key criteria that will guide the transfer of the elements from MDA to the Army and Air Force are defined, uncertainty will persist in how the European Interceptor Site and the European Midcourse Radar Site will be sustained over the long term. The delay in ratification creates an opportunity for DOD and MDA to address some of the planning challenges DOD faces for the European sites.

DOD’s Military Construction and Operations and Support Cost Estimates for Ballistic Missile Defenses in Europe Have Limitations and Do Not Provide Congress Complete Information

DOD’s initial cost estimates for total military construction and operations and support costs for ballistic missile defenses in Europe had significant limitations. First, DOD’s fiscal year 2009 military construction estimates did not fully account for all costs at the European Interceptor Site and the European Midcourse Radar Site and consequently could increase significantly. Second, DOD’s operations and support cost estimates are not complete and it is unclear how these costs will be funded over the elements’ life cycles. Without full information on total military construction and operations and support costs for the European missile defense sites, DOD and congressional decision makers do not have a sound basis on which to evaluate the investment required to implement plans for ballistic missile defenses in Europe.

DOD's Fiscal Year 2009 Military Construction Cost Estimates Do Not Include All Costs

DOD's initial military construction cost estimates for ballistic missile defenses in Europe have significant limitations and restrict Congress's ability to evaluate the investment required to implement plans for ballistic missile defenses in Europe. Key principles for cost estimating state that complete cost estimates are important in preparing budget submissions and for assessing the long-term affordability of a program.¹⁰ However, DOD's fiscal year 2009 estimates, the first military construction estimates for ballistic missile defenses in Europe, did not fully account for all costs at the sites. MDA initially submitted military construction cost estimates for the European Interceptor Site and the European Midcourse Radar Site to Congress in February 2008 for inclusion in DOD's fiscal year 2009 budget. MDA projected that a total of \$837.5 million would be required to complete site preparation and construction activities at the sites—\$661.4 million for the interceptor site in Poland and \$176.1 million for the radar site in the Czech Republic. However, the initial estimates did not include all costs primarily because MDA developed and submitted the military construction estimate to Congress before key site design work had been completed and without an Army Corps of Engineers review of the estimate. MDA stated that its approach was based on initial congressional authorization to field ballistic missile defense capabilities with research, development, testing, and evaluation funds; however, the fiscal year 2008 National Defense Authorization Act required that MDA begin using military construction funds for ballistic missile defense site construction for the fiscal year 2009 budget.

Military construction regulations stipulate that a military construction program should reach the 35 percent design phase, a key construction design milestone, and that the Army Corps of Engineers should review the military construction estimates before they are submitted to Congress.¹¹

¹⁰ Key principles for developing accurate and reliable cost estimates are drawn from DOD guidance and our *Cost Estimating and Assessment Guide*. Department of Defense, Office of the Secretary of Defense, Cost Analysis Improvement Group, *Operating and Support Cost-Estimating Guide*, and [GAO-09-3SP](#).

¹¹ Under DOD military construction regulations, the Army Corps of Engineers serves as the Army's construction agent and is typically required to review military construction estimates after a military construction program reaches the 35 percent design phase and before the estimates are submitted to Congress. The Army is assigned as the construction agent for most of Europe, including Poland and Czech Republic. DOD Directive 4270.5, *Military Construction*, para. 3.2; 4.4.1, enc. 1 (Feb. 12, 2005). Further, the DOD Financial Management Regulation requires the design of all construction projects be at least 35 percent complete, or alternatively that a parametric cost estimate based on a 15 percent complete design be completed before submission to Congress. DOD 7000.14-R, *Military Construction/Family Housing Appropriations*, vol. 2B, ch. 6, para. 060301.B.2 (July 2008).

However, MDA, asserting that it had statutory authority enacted by Congress to field initial ballistic missile defense capabilities with research, development, testing, and evaluation funds, developed and submitted its fiscal year 2009 military construction estimates without following traditional military construction requirements. MDA officials told us that MDA, in an effort to meet budget and construction timelines, developed and submitted its initial military construction estimates to Congress without completing key site design work. Army Corps of Engineers officials—although not involved in the development of the initial fiscal year 2009 military construction estimates—reaffirmed that the initial estimates were done without completing key site design work and that MDA based its estimates on assumptions and previous design experience from Fort Greely and other overseas operations, such as Shariki, Japan, rather than design data from the European sites, and did not have complete and accurate information about the sites when it submitted its estimates to Congress for the 2009 budget. For example, the initial figures overestimated the availability of local resources at both sites, such as local power supply, water and wastewater treatment facilities, and emergency support services. Army Corps of Engineers officials said that the Corps did not have the opportunity to provide input to or independently review MDA’s initial military construction estimates before they were submitted, as would typically be required under DOD military construction regulations. MDA’s initial military construction estimates were submitted in February 2008, but the Corps did not begin providing input to the design for the European Midcourse Radar Site and the European Interceptor Site until after it was issued design directives for the sites in September and October 2008, respectively. An Army Corps of Engineers official told us that the Corps has since made significant input to MDA’s military construction estimates and has worked with MDA to refine the cost estimates based on updated data. However, an Army Corps of Engineers official stated that had the Corps been involved in the early planning and development of the military construction cost estimates for the sites, given its experience and prior work in Eastern Europe, the Corps may have been able to influence the initial military construction estimates. According to this official, the Corps would have likely recommended that more studies of the sites be performed, and subsequently, more actual data from the site studies would have been used to influence the estimates before they were submitted to Congress for the fiscal year 2009 budget.

Additionally, DOD’s initial military construction estimates for the interceptor and radar sites do not include Army and Air Force base operating support costs, such as military personnel housing. The Army, as the lead service designated to operate the European Interceptor Site, has

begun planning for base operating support facilities and estimates that it will need \$88 million in military construction funds to build the facilities that it requires for the Army personnel who are expected to be at the site. However, the Army's estimated facility and personnel requirements are based on assumptions that may change. For example, the estimate assumes that Poland, the host nation, will contribute military personnel for security at the interceptor site, even though the United States and Poland have not yet agreed on Poland's security personnel contribution. The implementing arrangements to be negotiated between the United States and Poland will determine the number of security personnel that Poland will contribute to the site, and this, in turn, will drive the Army's personnel and facility requirements at the site. Until these implementing arrangements are negotiated and Army personnel determinations are finalized, Army base support construction estimates for the interceptor site will be based on assumed host nation contributions for security and the total Army military construction requirements at the European Interceptor Site will not be confirmed.

Conversely, the Air Force, as the lead service for the European Midcourse Radar Site, has not yet developed any military construction estimates for base support facilities at the site. Air Force officials have acknowledged that the Air Force will require, at a minimum, dining facilities; some form of military housing; and morale, welfare, and recreation services at the radar site to support Air Force personnel, but the Air Force has not yet determined its total base support facility requirements because Air Force personnel requirements are not finalized. The Air Force is anticipating that the Czech Republic will contribute personnel to assist the United States in providing security at the site, but it is unclear how many personnel the Czech government will provide. The implementing arrangements that will be negotiated between the United States and the Czech Republic are expected to determine the number of security personnel that the Czech Republic will contribute to the site, which will drive the Air Force's personnel and facility requirements at the site. Accordingly, the total Air Force military construction requirements at the European Midcourse Radar Site will not be confirmed until the implementing arrangements are negotiated and the Air Force personnel concept is finalized. Until that point, a DOD official stated that any Air Force base support construction estimates for the radar site will be based on assumed host nation contributions for security. As a result, DOD's current military construction cost estimates for base support facilities at the European missile defense sites should be considered preliminary.

Another military construction cost that has not been included in the initial estimates is the cost to protect the European Midcourse Radar Site against a possible high-altitude electromagnetic pulse event. The Air Force believes that protection of the radar against a high-altitude electromagnetic pulse event is important to ensuring survivability of the site and has included it as part of its required criteria for transfer. However, Air Force officials told us that MDA is not planning to protect the site against this type of event and has not accounted for those costs in its military construction estimates for the site. MDA and the Air Force have not reached agreement on whether the site will include these protective measures and, if so, who will pay for them. Air Force officials told us that the costs to protect the site could increase the total military construction cost for the radar mission facilities by 10 to 20 percent if the protective steps are included in the design phase and construction of the radar. If the protective action is done after the radar site has been constructed, the cost could be much higher.

Further, MDA did not account for foreign currency fluctuations in its estimates. Unfavorable currency exchange rate fluctuations could increase the total cost of construction as military construction funds will be obligated in U.S. dollars and site preparation and construction contracts will be awarded in euros. Although it is possible that currency fluctuations could occur in DOD's favor, an Army Corps of Engineers official estimated that an additional 20 percent of the total military construction cost estimate should be set aside for possible currency fluctuations. Without accounting for possible changes in the exchange rate, DOD risks exceeding its budgeted military construction funds if currency rates fluctuate unfavorably.

As a result of the above limitations, DOD's projected military construction costs for the European Interceptor Site and the European Midcourse Radar Site are expected to increase significantly from DOD's original \$837.5 million estimate in the fiscal year 2009 budget. In May 2009, an Army Corps of Engineers official told us that after analyzing design data, the Corps recommended that MDA increase its military construction estimates for the European sites to almost \$1.2 billion—\$803 million for the European Interceptor Site and \$369 million for the European Midcourse Radar Site. Whether MDA will accept this recommendation and the extent to which total military construction cost estimates at the European sites will increase remains unclear. Despite the expected increase in projected military construction costs, MDA has not provided Congress updated military construction estimates since the initial estimates were submitted for the fiscal year 2009 budget in February 2008.

Without complete information on the total military construction costs for the European missile defense sites, DOD and congressional decision makers do not have a sound basis on which to evaluate the investment required to implement plans for ballistic missile defenses in Europe or the extent to which those plans could divert resources from other national security priorities.

MDA was appropriated \$151.1 million in military construction funds for fiscal year 2009—\$42.6 million for the European Interceptor Site and \$108.5 million for the European Midcourse Radar Site. However, MDA will likely be unable to obligate any of these appropriated funds in fiscal year 2009 for site activation or military construction activities at the interceptor and radar sites as key bilateral agreements have not been ratified by the Polish and Czech parliaments. Moreover, the future of the sites is pending the outcome of the ongoing DOD review of plans for ballistic missile defense. According to MDA officials, MDA plans to request DOD and congressional authority to reprogram \$50 million to \$80 million of the \$151 million to use for planning and design efforts at the European missile defense sites, but as of June 2009, no formal action had been taken.¹² However, MDA plans to retain the residual military construction funds—an estimated \$70 million to \$100 million—to preserve DOD’s options for potential construction at those sites as the schedule for construction is determined.

¹² According to officials in the Office of the Secretary of Defense, Comptroller, in order to reprogram appropriated military construction funds for planning and design efforts, the MDA Executive Director must first send a formal request letter to the Office of the Secretary of Defense to reprogram the military construction funds to planning and design funds. After the request letter is received, the Office of the Secretary of Defense notifies the Office of Management and Budget and the request is reviewed. If the request is approved by the Office of the Secretary of Defense and the Office of Management and Budget, appropriate congressional committees must also approve the request to reprogram the military construction funds to planning and design funds.

DOD's Operations and Support Cost Estimates for Ballistic Missile Defenses in Europe Are Not Complete, and It Is Unclear How These Costs Will Be Funded over the Long Term

DOD's operations and support cost estimates for ballistic missile defenses in Europe are not complete because they do not include operations and support costs for base operations managed by the Army and Air Force. While MDA has estimated the operations and support costs it will need for the interceptors and radar—an estimated \$612 million in the 2008-2013 Future Years Defense Program—this estimate does not include funds that the services may require to provide basing and support of the sites, such as facilities support, housing costs, and administration. Additionally, MDA and the Army and Air Force have not yet determined the full extent of these operations and support costs. Although MDA and the Army and Air Force have initiated the development of total operations and support cost estimates for the interceptor and radar sites, these estimates are not yet complete as key cost factors that will affect those estimates remain undefined. For example, the total number and distribution of U.S. military personnel, civilian contractors, and host nation-contributed military personnel that will be required to operate, support, and secure the sites will drive total operations and support costs, but has not yet been determined. These determinations depend on the number of personnel that Poland and the Czech Republic will contribute for security at the sites, to be negotiated as part of the implementing arrangements. Without complete information on the true costs of operating and supporting the European sites, the usefulness of information regarding those sites in DOD's Future Years Defense Program for congressional decision makers will be limited.

Moreover, MDA and the Army and Air Force have not yet agreed on how the operations and support costs for the European Interceptor Site and the European Midcourse Radar Site will be funded over the elements' life cycles or who will pay for these costs. As we have previously reported, operations and support costs are typically over 70 percent of a system's total lifetime cost.¹³ Therefore, the future costs to operate and support the European sites over their lifetimes could reach billions of dollars. In September 2008, we reported that MDA and the services had not yet agreed on which organization(s) will be responsible for funding operations and support costs for the European Interceptor Site and the European Midcourse Radar Site after fiscal year 2013 and over the elements' life cycles.¹⁴ Although MDA and the Army have agreed on the overarching terms and conditions for the transition and transfer of elements from MDA

¹³ [GAO-08-1068](#).

¹⁴ [GAO-08-1068](#).

to the Army, this agreement does not provide specific details on how operations and support costs will be funded following transfer of the European Interceptor Site. For the European Midcourse Radar Site, the Air Force and MDA are drafting an agreement that will establish, among other things, which organization(s) will have funding responsibilities for the radar, but it is unclear when this agreement will be complete.

As part of DOD's ballistic missile defense life cycle management process established in September 2008, DOD intends to pay for ballistic missile defense costs, including operations and support costs, other than those already agreed to be paid by the services, through defensewide accounts. In theory, these defensewide accounts would allow all ballistic missile defense costs to be clearly identified and would alleviate the pressure on the services' budgets to fund operations and support for ballistic missile defense programs. However, MDA and the services have not yet determined the amount and duration of funding for the individual ballistic missile defense elements, such as the European Interceptor Site and the European Midcourse Radar Site, that will come from the defensewide accounts and there are disagreements about what costs should be covered by these accounts. For example, according to Air Force officials, the Air Force position is that the defensewide accounts should cover all costs for the radar over its life cycle, whereas MDA officials told us that all Army and Air Force base operating support requirements related to the missile defense sites in Europe should be paid for by the services. Until MDA and the Army and Air Force determine which organization(s) will be responsible for funding European missile defense operations over the life cycles of those elements, these costs will not be reflected in the Future Years Defense Program. As a result, DOD and congressional decision makers will have difficulty assessing the affordability of the plans for missile defenses in Europe over time and uncertainty will persist regarding how these elements will be supported over the long term.

Conclusions

DOD has made progress in planning for the implementation of the proposed ballistic missile defense sites in Europe. However, the future of the sites is currently unclear and largely depends on the outcome of DOD's ongoing review of the ballistic missile defense program. This has, in turn, limited the willingness of Poland and the Czech Republic to complete and ratify necessary agreements with the United States. The delays in ratification of key agreements with Poland and the Czech Republic, however, create an opportunity to consider how MDA and the Army and Air Force should collaborate in the implementation of ballistic missile defenses in Europe and the future operations of the European Interceptor

Site and the European Midcourse Radar Site. An opportunity now exists to more clearly define roles and responsibilities for the sites as well as establish key criteria that will guide the transition and transfer of the elements from MDA to the Army and Air Force. Planning for transition and transfer of the ballistic missile defense elements from MDA to the military services has been a persistent challenge that has hindered DOD's ability to plan for the long-term support of the system. Without agreement on how the elements will transfer and clear definitions of the roles that MDA and the services will be responsible for, DOD will continue to face difficulties in determining how the European Interceptor Site and the European Midcourse Radar Site will be sustained in the near and long term.

These sites will require a significant investment, but DOD has not yet provided Congress with an updated estimate of the costs for European ballistic missile defenses, restricting its ability to prepare for and weigh the trade-offs of a proposal that will likely cost billions of dollars over the long term. To date, MDA has not assessed the full costs of the sites, to include not only mission-related costs incurred by MDA over the long term, but also some base operating support costs that may be borne by the services. Given the program's limited information on costs to date, potential increases in military construction costs, and other uncertainty surrounding future costs, such as the extent of host nation contributions to security, as the new administration considers its position on missile defenses full information on the true cost of the European missile defense sites is increasingly important for decision makers as they evaluate policy options. It is therefore critical that congressional decision makers are regularly provided complete cost information with which to evaluate budget requests in the near term and future to determine whether fielding plans are affordable over the long term. Until DOD develops accurate, realistic, and complete cost estimates for military construction and operations and support for ballistic missile defenses in Europe, the credibility of its budget submissions will continue to be a concern. Moreover, until MDA and the Army and Air Force reach agreement on how missile defense operations and support costs for the European Interceptor Site and the European Midcourse Radar Site will be funded over the long term, DOD risks that the services may not be financially prepared to operate and support these elements.

Recommendations for Executive Action

We recommend that the Secretary of Defense take the following five actions:

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- To improve planning for the long-term support of the ballistic missile defense sites in Europe, direct MDA, the Army, and the Air Force to finalize the Overarching Memorandums of Agreement and element-specific annexes that detail the specific roles and responsibilities for the European sites and define the criteria that must be met before the transfer of those sites from MDA to the Army and Air Force.
 - To provide for military construction cost estimates for ballistic missile defenses in Europe that are based on the best available data, direct MDA, in coordination with the Army and Air Force, to provide Congress annually, in alignment with the budget, updated military construction cost estimates for the European Interceptor Site and the European Midcourse Radar Site that reflect the data gathered from all site design efforts since project initiation; have been independently reviewed and verified by the Army Corps of Engineers; account for all military construction costs for the sites, including Army and Air Force base support facility requirements, recognizing that certain assumptions about host nation contributions will have to be made; and include costs for possible currency fluctuations.
 - To provide for more complete military construction estimates for future ballistic missile defense sites, such as the still-to-be-determined European site for the mobile radar system, direct MDA to follow military construction regulations by utilizing the Army Corps of Engineers to complete required site design and analysis and verify military construction cost estimates before submitting cost estimates to Congress.
 - To improve fiscal stewardship of DOD resources for ballistic missile defense, direct MDA and the Army and Air Force, in time for the fiscal year 2011 budget submission, to
 - complete life cycle operations and support cost estimates for the European Interceptor Site and the European Midcourse Radar Site and
 - clearly define who is responsible for funding these operations and support costs over the elements' life cycles.

Agency Comments and Our Evaluation

In written comments on a draft of this report, DOD concurred with three and partially concurred with two of our recommended actions. The department's comments are reprinted in appendix II. DOD also provided technical comments, which we have incorporated as appropriate.

DOD concurred with our recommendation that MDA, the Army, and the Air Force finalize the Overarching Memorandums of Agreement and

element-specific annexes that detail the specific roles and responsibilities for the European sites and define the criteria that must be met before the transfer of those sites from MDA to the Army and Air Force. In its comments, DOD stated that the element-specific Army annexes are in coordination for estimated completion in calendar year 2009 and the Air Force Overarching Memorandum of Agreement is expected to be signed by the end of calendar year 2009. We believe these are positive steps. As noted in our report, we believe that an opportunity exists for DOD to clearly define roles and responsibilities for the sites as well as establish key criteria that will guide the transition and transfer of the elements from MDA to the Army and Air Force. Since the element-specific annexes are expected to specifically state the criteria that must be met by MDA before the elements transfer to the Army and the Air Force and detail specific roles and responsibilities for each organization, it is important for DOD to meet its estimated dates to finalize the Army annexes and complete the MDA-Air Force Overarching Memorandum of Agreement, and further, to negotiate Air Force element-specific annexes to ensure that the crucial details that will guide the long-term support of the European sites are clearly defined. Until MDA and the Army and Air Force reach agreement on how these elements will transfer, DOD will continue to face difficulties in determining how the European Interceptor Site and the European Midcourse Radar Site will be sustained in the near and long term.

DOD concurred with both of our recommendations to improve military construction cost estimates for ballistic missile defense sites. DOD concurred with our recommendation that MDA provide Congress annually updated military construction cost estimates for the European Interceptor Site and the European Midcourse Radar Site. DOD stated that the BMDS Life Cycle Management Process and the associated BMDS Portfolio provide an opportunity for MDA, the Army, and the Air Force to integrate military construction cost estimates. DOD noted that the BMDS military construction projects and associated estimates will continue to be coordinated with the Army Corps of Engineers for certification, independent cost estimating, and reviews for scope completeness and technical sufficiency. Furthermore, DOD stated that Army and Air Force base support facility requirements will be planned, programmed, budgeted, and executed by the services and will not be included in MDA's BMDS Portfolio. Rather, DOD stated that the budgets for these sites will be collated and provided by the Office of the Secretary of Defense from the coordinated requirements submitted by MDA, the Army, and the Air Force. However, until the BMDS Life Cycle Management Process and the BMDS Portfolio are fully implemented, it is unclear whether they will facilitate improved military construction estimates for the European sites.

Further, DOD did not set a date by which it would annually provide Congress updated military construction estimates for the sites. Our report explains the importance of providing complete BMDS military construction cost information to congressional and DOD decision makers on a regular basis, which is the impetus for this recommendation. Also, DOD concurred with our recommendation that for future ballistic missile defense sites, MDA follow military construction regulations by utilizing the Army Corps of Engineers to complete required site design and analysis and verify military construction estimates before submitting cost estimates to Congress. In its comments, DOD stated that it is MDA's policy to follow appropriate regulations in execution of design and construction of BMDS sites and that MDA recognizes the Army Corps of Engineers as the DOD military construction agent for these projects, will follow military construction policy, and will remain responsive to DOD direction in deploying BMDS assets.

DOD partially concurred with our two recommendations to improve fiscal stewardship of DOD's operations and support resources. DOD partially concurred with our recommendation that MDA and the Army and Air Force complete life cycle operations and support cost estimates for the European Interceptor Site and the European Midcourse Radar Site in time for the fiscal year 2011 budget submission. In its comments, DOD stated that MDA will not be able to complete these cost estimates before the fiscal year 2011 budget submission, but that MDA will include available information on life cycle operations and support cost estimates in the fiscal year 2012 submission. DOD noted that information needed to complete a life cycle cost analysis will not be available until host nation ratifications are signed, site design is complete, and administration policy is set. While we understand the limitations that DOD faces in developing complete operations and support cost estimates before all of the details of the sites have been finalized, we continue to believe that it is crucially important for congressional decision makers to have the most up-to-date information on the long-term costs of the sites in order to assess the affordability of the proposed ballistic missile defenses in Europe. We continue to believe the recommendation is valid for MDA, the Army, and the Air Force to provide estimates of all known operations and support costs for the sites in the 2011 budget. DOD also partially concurred with our recommendation that MDA and the Army and Air Force clearly define who is responsible for funding operations and support costs over the elements' life cycles in time for the fiscal year 2011 budget submission. DOD noted that MDA will continue to work with the Army and Air Force to define responsibility for future operations and support cost funding, and reiterated that the Overarching Memorandums of Agreement between the

lead services and MDA, which define responsibility for life cycle costs, have not yet been finalized. Determining responsibility for the long-term operations and support costs of the BMDS elements has been a persistent challenge for DOD and until MDA and the Army and Air Force determine which organization(s) will be responsible for funding European missile defense operations over the life cycles of those elements, these costs will not be fully reflected in DOD's Future Years Defense Program and DOD risks that the services may not be financially prepared to operate and support these elements.

We are sending copies of this report to the Secretary of Defense; the Director, Missile Defense Agency; the Under Secretary of Defense for Acquisition, Technology and Logistics; and other interested parties. The report also is available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact me at (404) 679-1816 or pendletonj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix III.



John H. Pendleton
Director, Defense Capabilities and Management

Appendix I: Scope and Methodology

To determine the extent to which the Department of Defense (DOD) has planned for the initial implementation of ballistic missile defenses in Europe, including coordination with key international partners and U.S. stakeholders, we conducted site visits, reviewed key documentation, and interviewed relevant DOD, State Department, and host nation officials. During this review, we focused on the European Interceptor Site in Poland, the European Midcourse Radar Site in the Czech Republic, and the planned mobile forward-based radar to be fielded in a still-to-be-determined location. We conducted site visits and toured the base located outside of Slupsk, Poland, that is the proposed European Interceptor Site and the Brdy military training area, which is the proposed location of the European Radar Site. We met with DOD, State Department, and host nation officials to discuss the efforts under way to plan for the sites and examined key documents, including ballistic missile defense agreements with the host nations, memorandums of agreement between key U.S. stakeholders, and Missile Defense Agency (MDA), Army, Air Force, and Army Corps of Engineers documents for planning and site preparation. Using GAO key principles for management, we evaluated the collaboration efforts among the agencies to determine whether DOD, Army, Air Force, and State Department officials followed key practices that can help agencies enhance and sustain their collaborative efforts to determine what aspects of planning may be missing that would hinder the implementation of ballistic missile defenses in Europe.¹ For both objectives, we reviewed key legislation related to ballistic missile defenses in Europe² and DOD's overall approach for preparing to support ballistic missile defense.

During our review of the ballistic missile defenses in Europe, GAO contacted agency officials at the Office of the Secretary of Defense; the State Department; the Joint Staff; U.S. Strategic Command; U.S. Northern Command; U.S. European Command; U.S. Army Europe; U.S. Air Force Europe; MDA; the Department of the Army; Army Space and Missile Defense Command; the Department of the Air Force; Air Force Space Command; U.S. Embassy Warsaw; U.S. Embassy Prague; the U.S. Mission

¹ GAO, *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005).

² National Defense Authorization Act for Fiscal Year 2008, Pub. L. No. 110-181, § 226 (2008); Duncan Hunter National Defense Authorization Act for Fiscal Year 2009, Pub. L. No. 110-417, § 233 (2008); and Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009, Pub. L. No. 110-329, Div. E, Title I (2008).

to the North Atlantic Treaty Organization; the European Interceptor Site in Poland; and the European Midcourse Radar Site in the Czech Republic.

To assess whether DOD has estimated the total costs, including military construction and long-term support costs for the ballistic missile defenses in Europe, we examined budget documents, including DOD's fiscal year 2009 Future Years Defense Program (including budget data for fiscal years 2008-2013), MDA's fiscal year 2009 military construction cost estimates, and the Army's military construction cost estimates. We reviewed DOD policies related to estimating military construction costs and key principles for cost estimating as well as our best practices for developing and managing capital program costs.³ We interviewed DOD officials to determine how the cost estimates were developed. We discussed the status of military construction cost estimates with officials from MDA, the Army, and the Army Corps of Engineers-Europe District. We also interviewed Air Force officials to determine whether military construction cost estimates had been developed for the radar site. In addition, to determine whether DOD has estimated long-term operations and support costs for ballistic missile defenses in Europe, we assessed key documents, such as the Ballistic Missile Defense Life Cycle Management Process memo and the Army's Ballistic Missile Defense System Overarching Memorandum of Agreement with MDA, to determine the extent to which MDA and the Army have agreed to fund operations and support costs for ballistic missile defenses in Europe and confirmed our understanding with MDA and the Army. We interviewed Air Force officials to determine whether long-term operations and support cost estimates had been developed and the extent to which MDA and the Air Force have agreed to fund operations and support costs for ballistic missile defenses in Europe. We discussed our findings with officials from the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics; MDA; the Army; and the Air Force.

We conducted this performance audit from October 2008 to August 2009 in accordance with generally accepted government auditing standards. Those

³ DOD Directive 4270.5, *Military Construction* (Washington, D.C., Feb. 12, 2005); Army Regulation 420-1, *Facilities Engineering: Army Facilities Management* (Washington, D.C., Feb. 12, 2008); Unified Facilities Criteria 3-700-01A, *Programming Cost Estimates for Military Construction* (Washington, D.C., Mar. 1, 2005); Unified Facilities Criteria 3-700-02A, *Construction Cost Estimates* (Washington, D.C., Mar. 1, 2005); Unified Facilities Criteria 3-701-07, *DOD Facilities Pricing Guide* (Washington, D.C., July 2, 2007); and GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Comments from the Department of Defense



OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

JUL 27 2009

Mr. John H. Pendleton
Director, Defense Capabilities and Management
U. S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Pendleton:

This is the Department of Defense (DoD) response to the GAO draft report GAO-09-771, "BALLISTIC MISSILE DEFENSE: Actions Needed to Improve Planning and Information on Construction and Support Costs for Proposed European Sites," dated June 23, 2009 (GAO Code 351279).

The DoD concurs with three of the draft report's recommendations and partially concurs with one. The rationale for the DoD's position is enclosed.

We appreciate the opportunity to comment on the draft report. Technical comments were provided separately for your consideration. Should you have any questions, please contact Mr. David Crim, Strategic Warfare Office, (703) 697-5385, david.crim@osd.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "David G. Ahern".

David G. Ahern
Director
Portfolio Systems Acquisition

Enclosure:
As stated

GAO DRAFT REPORT DATED JUNE 23, 2009
GAO-09-771 (GAO CODE 351279)

"BALLISTIC MISSILE DEFENSE: ACTIONS NEEDED TO
IMPROVE PLANNING AND INFORMATION ON
CONSTRUCTION AND SUPPORT COSTS FOR PROPOSED
EUROPEAN SITES"

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommends that to improve planning for the long-term support of the ballistic missile defense sites in Europe, the Secretary of Defense direct the Missile Defense Agency (MDA), the Army, and Air Force to finalize the Overarching Memorandums of Agreement and element specific annexes that detail the specific roles and responsibilities for the European sites and define the criteria that must be met before the transfer of those sites from MDA to the Army and Air Force.

DoD RESPONSE: Concur. The Army Overarching Memorandum of Agreement (OMOA) was signed on January 23, 2009, by the Secretary of the Army and January 28, 2009, by the Director, MDA. Specific Army annexes are in coordination for estimated completion in CY 2009. The Foreign Military Sales annex to the OMOA is complete. We anticipate the Air Force OMOA to be signed by end of CY 2009.

RECOMMENDATION 2: The GAO recommends that to provide military construction cost estimates for ballistic missile defenses in Europe that are based on the best available data, the Secretary of Defense direct the Missile Defense Agency (MDA), in coordination with the Army and Air Force, to provide Congress annually, in alignment with the budget, updated military construction cost estimates for the European Interceptor Site and the European Midcourse Radar Site that reflect the data gathered from all site design efforts since project initiation; have been independently reviewed and verified by the Army Corps of Engineers; account for all military construction costs for the sites, including Army and Air Force base support facility requirements, recognizing that certain assumptions about host nation contributions will have to be made; and include costs for possible currency fluctuations.

DoD RESPONSE: Concur. The Ballistic Missile Defense System (BMDS) Life Cycle Management Process and the associated BMDS Portfolio provide an opportunity for the MDA, the Army and the Air Force to integrate military construction cost estimates (including assumptions about host nation contributions and currency fluctuation). The estimates for Military Construction (MILCON) efforts that are/will be planned, programmed, budgeted and executed by MDA incorporate all construction requirements

with consideration of all aspects of the GAO recommendation. These MILCON projects and associated estimates will continue to be coordinated with the Army Corps of Engineers for certification, independent costs estimating and reviews for scope completeness/technical sufficiency, with intended discussion at an upcoming Missile Defense Executive Board (MDEB). MDA also continues to involve the Army and Air Force in planning for these efforts. That military construction to be planned, programmed, budgeted and executed by the Services (base support facility requirements) will not be included in the MDA BMDS Portfolio. Rather, the comprehensive, integrated, and aligned budgets for these sites will be collated and provided by OSD from the coordinated requirements submitted by the MDA, Army, and Air Force.

RECOMMENDATION 3: The GAO recommends that to provide for more complete military construction estimates for future ballistic missile defense sites, such as the still-to-be-determined European site for the mobile radar system, the Secretary of Defense direct the Missile Defense Agency (MDA) to follow military construction regulations by utilizing the Army Corps of Engineers to complete required site design and analysis and verify military construction cost estimates before submitting cost estimates to Congress.

DoD RESPONSE: Concur. It is the MDA policy to rigorously follow appropriate regulations in execution of design and construction of Ballistic Missile Defense System (BMDS) sites. The MDA recognizes the Army Corps of Engineers as the DoD Military Construction (MILCON) agent for these projects and is executing accordingly. MDA will follow MILCON policy and remain responsive to Departmental direction in deploying BMDS assets.

RECOMMENDATION 4: The GAO recommends that to improve fiscal stewardship of DoD resources for ballistic missile defense, the Secretary of Defense direct the Missile Defense Agency (MDA), the Army, and Air Force, in time for the FY 2011 budget submission, to:

- complete life cycle operations and support cost estimates for the European Interceptor Site and the European Midcourse Radar Site, and
- clearly define who is responsible for funding these operations and support cost over the elements' life cycles.

DoD RESPONSE:

Part A. Partially Concur. MDA will include available information on life cycle operations and support cost estimates in the FY 2012 budget submission. The information needed to complete a life cycle cost analysis will not be available until Host Nation Ratifications are signed, site design is complete and Administration policy has been set. MDA will not be able to complete these cost estimates prior to the FY 2011 budget submission.

Part B. Partially Concur. MDA will submit a budget request for FY 2011 that includes available information on current operations and support costs. MDA will continue to work with the Army and Air Force to define responsibility for future operations and support cost funding. Currently, the relationship between the lead service and MDA is being defined. The memoranda of agreement between the lead services and MDA, which define responsibility for life cycle costs, have not yet been finalized. Furthermore, implementing arrangements between the U.S. and the host nation will further define life cycle costs and those agreements will not be defined until after ratification.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

John H. Pendleton, (404) 679-1816 or pendletonj@gao.gov

Acknowledgments

In addition to the contact named above, Marie A. Mak, Assistant Director; Pat L Bohan; Tara Copp Connolly; Susan C. Ditto; and Kasea L. Hamar made key contributions to this report.

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