
April 5, 2006



Acquisition

Capabilities Definition Process at the
Missile Defense Agency
(D-2006-071)

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Acronyms

ABL	Airborne Laser
BMD	Ballistic Missile Defense
BMDS	Ballistic Missile Defense System
IG	Inspector General
IPP	Integrated Program Policy
MDA	Missile Defense Agency
MOA	Memorandum of Agreement
ORD	Operational Requirements Documents
SE	System Engineering and Integration
THAAD	Terminal High-Altitude Area Defense
USSTRATCOM	United States Strategic Command
WIP	Warfighter Involvement Program



INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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April 5, 2006

MEMORANDUM FOR DIRECTOR, MISSILE DEFENSE AGENCY
COMMANDER, UNITED STATES STRATEGIC
COMMAND

SUBJECT: Report on Capabilities Definition Process at the Missile Defense Agency
(Report No. D-2006-071)

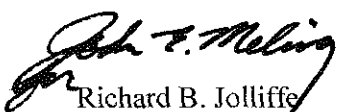
We are providing this report for review and comment. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. Therefore, in responding to the final report, we request that the Commander, United States Strategic Command provide additional comments on Recommendation 2. by May 5, 2006.

If possible, please send management comments in electronic format (Adobe Acrobat file only) to AudACM@dodig.mil. Copies of the management comments must contain the actual signature of the authorizing official. We cannot accept the / Signed / symbol in place of the actual signature. If you arrange to send classified comments electronically, they must be sent over the SECRET Internet Protocol Router Network (SIPRNET).

We appreciate the courtesies extended to the staff. Questions should be directed to Mr. Harold C. James at (703) 604-9088 (DSN 664-9088). See Appendix C for the report distribution. The team members are listed inside the back cover.

By direction of the Deputy Inspector General for Auditing:


Richard B. Jolliffe
Assistant Inspector General
Acquisition and Contract Management

Department of Defense Office of Inspector General

Report No. D-2006-071

(Project No. D2006-D000AE-0078.000)

April 5, 2006

Capabilities Definition Process at the Missile Defense Agency

Executive Summary

Who Should Read This Report and Why? Management staff at the Missile Defense Agency, the combatant commands, and the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the Director, Test and Evaluation; and the Joint Chiefs of Staff should read this report because it discusses the capabilities definition process for the Ballistic Missile Defense System.

Background. This is the second and final report issued in response to allegations made to the Defense Hotline in March 2003. The first report addressed 10 allegations about the effectiveness of the process that the Missile Defense Agency used to manage and acquire targets. This report addresses five allegations about the processes that the Missile Defense Agency used to define required capabilities for the Ballistic Missile Defense System. See Appendix B for the five allegations and audit results. The Missile Defense Agency budget for FY 2006 was \$7.7 billion in research, development, test, and evaluation funds.

The five allegations about defining required capabilities for the Ballistic Missile Defense System involved Missile Defense Agency management in two broad areas:

- disregard of missile defense requirements that the Services previously established in operational requirements documents, and
- flaws in the Missile Defense Agency's system capability-based requirements process.

Results. We did not substantiate the five allegations. The Missile Defense Agency did not disregard missile defense requirements that the Services previously established in operational requirements documents. Additionally, since the Defense Hotline received the allegations in March 2003, the Missile Defense Agency had made substantial progress in implementing a process for defining capability-based requirements. Although we did not substantiate the specific allegations, we did find that the Missile Defense Agency had not completed defining the processes for developing capability-based requirements and for coordinating with the combatant commanders to prioritize their capability-based requirements. Specifically, the Director, Missile Defense Agency needs to establish dates for Missile Defense Agency organizations to complete documenting the processes and procedures for defining capability-based requirements in support of key Director decisions. Additionally, the Director, Missile Defense Agency and the Commander, United States Strategic Command need to finalize and approve the draft memorandum of agreement outlining the responsibilities for their agencies to work together in developing capability-based requirements for missile defense. Further, the

Director and the Commander should establish completion dates for preparing and finalizing directives discussed in the memorandum of agreement that will define Missile Defense Agency and the United States Strategic Command responsibilities for coordinating and ensuring that the combatant commanders have a role in establishing capability-based requirements for the Ballistic Missile Defense System elements.

Management Comments and Audit Response. The Executive Director of the Missile Defense Agency responded for the Director. The Executive Director stated that the Missile Defense Agency would include processes and procedures for defining capability-based requirements in the Systems Engineering Plan. Instead of finalizing the draft memorandum of agreement for coordinating capability-based requirements for the Ballistic Missile Defense System elements with United States Strategic Command, the Executive Director proposed alternative actions to meet the intent of the recommendation. Specifically, she stated that the Missile Defense Agency would use its Integrated Program Policy and Systems Engineering Plan to document the combatant commanders' roles in developing capability-based requirements in Missile Defense Agency products and processes. Also, she stated that the United States Strategic Command would coordinate a Command Directive to implement combatant commander activities in the Combatant Command Warfighter Involvement Process. The Audit Program Coordinator at the United States Strategic Command, responding for the Commander, stated that the United States Strategic Command would, in coordination with the combatant commanders, work with the Missile Defense Agency to ensure that the combatant commanders have a role in establishing capability-based requirements for the Ballistic Missile Defense System elements.

In response to the final report, we request that the Commander, United States Strategic Command describe specific actions taken or planned in response to the agreed-upon recommendation, provide an estimated completion date for the actions, and sign the comments by May 5, 2006.

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Background

This is the second and final report issued in response to allegations made to the Defense Hotline. The first report addressed 10 allegations about the effectiveness of the process that the Missile Defense Agency (MDA) used to manage and acquire targets. This report addresses the five allegations that were made concerning the processes that MDA used to define required Ballistic Missile Defense System (BMDS) capabilities. See Appendix B for the five allegations and audit results.

We began this audit in November 2004. Because of work priorities within the DoD Office of Inspector General, we suspended this audit from February through October 2005. Accordingly, the finding discusses:

- the status of MDA implementation of a capability-based requirements process as of February 2005,
- progress in MDA implementation made from February 2005 through January 2006, and
- work MDA must still complete to fully implement the capability-based requirements process.

National Missile Defense Policy. On July 22, 1999, the President signed the National Missile Defense Act of 1999 (Public Law 106-38), which requires the United States to deploy an effective system capable of defending the United States against limited ballistic missile attacks. The President provided further direction in National Security Presidential Directive 23, “National Policy on Ballistic Missile Defense,” December 16, 2002, requiring the Secretary of Defense to deploy an initial set of missile defense capabilities in 2004. Presidential Directive 23 also states that the Secretary of Defense must develop and deploy a BMDS with the best technologies available.

Missile Defense Agency. On January 2, 2002, the Secretary of Defense expanded the MDA responsibility and authority by directing MDA (formerly the Ballistic Missile Defense Organization) to develop and field a single integrated BMDS to protect the United States, its deployed forces, friends, and allies against ballistic missiles of all ranges in all phases of flight. Additionally, the Secretary of Defense emphasized the need to field MDA elements* or key components of element capabilities as soon as practicable and to improve the BMDS with incremental block upgrades. The MDA elements were Aegis Ballistic Missile Defense; Terminal High-Altitude Area Defense; Airborne Laser; Command and

* When the MDA was created, the Secretary of Defense placed a number of individual Service acquisition programs that became components of the Ballistic Missile Defense System under MDA control. These formerly independent programs, which receive their funding (Research, Development, Test and Evaluation) directly from the Missile Defense Agency, became one major defense acquisition program known as Missile Defense Agency elements.

Control, Battle Management, and Communications; Ground-Based Midcourse Defense; Kinetic Energy Interceptor; Patriot Advanced Capability-3; BMDS Sensors; and Space Tracking and Surveillance System.

To accomplish the Secretary's directions, MDA implemented a capability-based acquisition strategy using a developmental test bed and a series of biennial developmental blocks. Each block permits MDA elements to insert newly developed component capabilities. The first biennial development block, Block 04, occurred during 2004 and 2005. MDA had defined developmental capabilities for biennial development out to Block 14, which will occur during 2014 and 2015. Each block will build on the capabilities developed during previous blocks, and each successive block will provide increasing levels of capability to counter ballistic missiles of all ranges and phases of flight. The MDA budget for FY 2006 was \$7.7 billion in research, development, test, and evaluation funds.

Deputy Secretary of Defense Direction. On October 9, 2004, the Deputy Secretary of Defense issued DoD Directive 5134.9, "Missile Defense Agency," formalizing the establishment of MDA and assigning its mission, responsibilities, functions, relationships, and authorities. The Directive requires the Director, MDA to manage and execute the development of the BMDS in accordance with National Security Presidential Directive 23, and the direction the Secretary of Defense provided in January 2002. In performing the assigned functions, the Director, MDA must report directly to the Under Secretary of Defense for Acquisition, Technology, and Logistics, and coordinate with the Military Departments; the Chairman of the Joint Chiefs of Staff; the Commander, U.S. Strategic Command (USSTRATCOM); the Under Secretary Defense for Policy; and the Under Secretary of Defense for Intelligence when addressing issues under their respective purview, to include the strategy, policy, and intelligence implications of missile defense capabilities. In addition, the Director, MDA is required to manage BMDS consistent with the principles of DoD Directive 5000.1 and DoD Instruction 5000.2.

Objectives

Our overall audit objective was to evaluate allegations from the Defense Hotline regarding the adequacy of the processes that MDA used to generate required system capabilities. Specifically, the audit determined whether MDA adequately defined system capabilities for effective development, production, and military deployment. See Appendix A for a discussion of the audit scope and methodology and prior audit coverage related to the audit objectives.

Managers' Internal Control Program

The scope was limited to the management control processes related to the specific allegations.

Implementing a Capability-Based Requirements Process

Although MDA had made significant progress, it had not fully implemented a capability-based requirements process for generating requirements for the BMDS. Specifically, MDA had not completed defining processes for developing capability-based requirements and for coordinating with the combatant commanders to prioritize their capability-based requirements. These conditions occurred because MDA had not fully implemented DoD policy requiring the Director, MDA to develop programmatic policy for managing the acquisition of BMDS and to coordinate with combatant commanders to prioritize their capability-based requirements. Additionally, MDA was tasked with quickly designing a single integrated system from a group of existing acquisition programs and fielding a missile defense capability in 2004. This urgent task delayed MDA development of programmatic policy and processes for managing the acquisition of BMDS and coordinating with combatant commanders to prioritize their capability-based requirements. Documented procedures are needed to ensure that MDA organizations adhere to an MDA-approved process for defining requirements for future BMDS blocks. Further, MDA needs fully defined procedures to facilitate the combatant commanders' roles in developing and prioritizing capability-based requirements for missile defense.

Capability-Based Requirements Policy

Establishing Policies and Procedures. Secretary of Defense memorandum, "Missile Defense Program Direction," January 2, 2002, exempted MDA from the traditional DoD requirements generation process of the Chairman of the Joint Chiefs of Staff Instruction 3170 and canceled the Service's Operational Requirements Documents for the BMDS elements. In addition, the Secretary of Defense memorandum tasked the Director, MDA with establishing a process that sets initial capability standards, engages the participation of future users early and throughout development, and permits capability trades across all BMDS elements. Further, DoD Directive 5134.9 states that the Director, MDA is responsible for programmatic policy and research and development of the BMDS.

Coordinating With Combatant Commanders. DoD Directive 5134.9 states that the Director, MDA must obtain combatant commander participation and advice on desired operational features of the BMDS throughout the development process as stipulated in the Secretary of Defense's memorandum dated January 2, 2002. The DoD Directive also tasks USSTRATCOM with collecting and prioritizing the combatant commanders' desired ballistic missile defense capabilities. The combatant commanders, in addition to USSTRATCOM, include the Reserve Affairs Worldwide Support, and the U.S. Central, European, Joint Forces, Northern, Pacific, Southern, Special Operations, and Transportation Commands. DoD Directive 5134.9 also amplified the provisions of "Unified

Command Plan, Change 2,” January 10, 2003, which established USSTRATCOM as the lead for advocating desired global missile defense characteristics for all combatant commanders.

Documenting Policies and Procedures

Initial Efforts to Establish Capability-Based Requirements Policy and Procedures. As of February 2005, MDA had not established formal policies and procedures to document and define the process it used to identify joint military capability-based requirements for missile defense.

Since the Secretary of Defense tasking in January 2002, MDA had been fully engaged in initiating a capability-based requirements process and providing the documentation needed to support developing Block 04, as well as meeting the requirements of National Security Presidential Directive 23, December 16, 2002, for the early fielding of an initial defensive capability. This urgent work delayed MDA development of programmatic policy and processes for developing capability-based requirements. As of February 2005, MDA Systems Engineering and Integration (SE) Directorate had provided an overview briefing on how MDA initiated a process to derive system capability requirements for Block 04.

To identify capability requirements, the MDA SE Directorate initiated and worked through a capability-based requirements process that:

- established possible adversary capabilities;
- set technical objectives and goals for missile defense based on political, operational, economic, and technical factors, as well as possible adversary capabilities; and
- developed and assessed alternatives for capability-based requirements.

The primary products of the above process included the Ballistic Missile Defense Program Baseline for BMDS Block 04, which explained technical, operational, and programmatic objectives, and the System Capabilities Specification for Block 04, which listed capability-based requirements. Using an incremental spiral development acquisition strategy, MDA repeated the process to baseline the system and element requirements for Block 06.

Staff of the SE Directorate acknowledged that they had not developed formalized policies and procedures for documenting the MDA process for deriving capability-based requirements.

Progress Made From February 2005 Through January 2006. During this timeframe, MDA made progress in establishing formalized policies and procedures for documenting the capability-based requirements process for the BMDS. Specifically, MDA used the briefing charts discussed above as a starting point for developing the “Integrated Program Policy (IPP),” July 18, 2005, and the “Ballistic Missile Defense Integration Program Policy Implementation

Guide,” (the Implementation Guide) June 2, 2005, which together document the MDA Director’s policies and procedures for acquiring the BMDS. The IPP defines key decisions that the Director, MDA will make during acquisition of each BMDS block. The IPP also discusses supporting products, including capability-based requirements, that are essential to ensure that the Director, MDA makes decisions based on the best available information. However, the IPP is a top-level policy document that does not attempt to define the processes and procedures needed to develop the products that will be used to support the key Director decisions.

Like the IPP, the Implementation Guide does not define the processes and procedures needed to develop the products supporting the key Director decisions. The Implementation Guide identifies the products that support the key Director decisions and assigns internal MDA organizations with responsibility for formulating and documenting the procedures for preparing the products. Additionally, the Implementation Guide requires the MDA organizations with responsibility for product production to execute the procedures for developing the products. Further, the Implementation Guide requires the MDA organizations to ensure that their processes, implementing documents, and terminologies are consistent with the IPP.

In another initiative, MDA established Directive 5000.02, “Target Planning Process for Ballistic Missile Defense System Block-Capabilities Testing,” November 8, 2005, which documents the process MDA will use for defining and certifying targets required for testing the BMDS capabilities.

Work Still Needed to Fully Implement Capability-Based Requirements Policy and Procedure. Although MDA made significant progress in establishing top-level MDA policy and guidance in the IPP and the Implementation Guide, it still needs to further define and document processes and procedures to develop capability-based requirements. Specifically, the MDA internal organizations, including the SE Directorate, had not completed documenting the processes and procedures used for developing MDA capability-based requirements products. MDA should complete its effort to formalize its policy and procedures for defining capability requirements for the following reasons.

- Under its incremental spiral development acquisition strategy, MDA must still develop capability-based requirements for future BMDS blocks. Formalized procedures for determining and validating capability-based requirements will ensure that the MDA staff adheres to an MDA-approved capability-based requirements process for defining requirements for future BMDS blocks.
- MDA must effectively work with many DoD organizations, including the combatant commanders, the Chairman of the Joint Chiefs of Staff, and the Military Departments in formulating capability-based requirements. Formalized policy and procedures will help those DoD organizations better understand the MDA capability-based requirements process and better execute their roles in contributing to that process.

Coordinating With the Combatant Commanders

Initial Efforts to Establish Coordination. As of February 2005, the MDA had not fully complied with the DoD Directive 5134.9, which requires MDA to engage weapon system users in defining, prioritizing, determining, and validating requirements for the BMDS through coordination with USSTRATCOM, advocate for the combatant commanders.

Staff in Missile Defense Operations at USSTRATCOM stated that MDA had not coordinated with USSTRATCOM to allow the combatant commanders to have formal input in defining and prioritizing BMDS capability-based requirements documented in the MDA System Capability Specification for the Block 04 Initial Defensive Capability, January 20, 2004. In support of the System Capability Specification for Block 04, the staff stated that MDA informally coordinated BMDS requirements for the Command and Control, Battle Management, and Communications Element, but not requirements for the other BMDS elements.

MDA did not initially coordinate and obtain prioritized BMDS capability-based requirements from the combatant commanders because of the need to expedite establishing capability-based requirements in System Capability Specification Block 04 to meet the President's direction to field an initial defensive capability in 2004.

The USSTRATCOM staff stated that MDA and USSTRATCOM still needed to establish a joint process for soliciting, consolidating, and prioritizing combatant commander inputs. To fulfill their responsibility as the lead advocate for combatant commanders, as directed in DoD Directive 5134.9 and in "Unified Command Plan, Change 2," USSTRATCOM was developing a process for soliciting and prioritizing inputs from combatant commanders for desired missile defense capabilities. USSTRATCOM outlined this process in the draft instruction "Missile Defense Warfighter Involvement Process." As drafted, the instruction will require warfighters at the combatant commands to be involved in the process of identifying desired missile defense capabilities. The process is designated the Warfighter Involvement Process (WIP). Through the WIP, USSTRATCOM will provide the MDA with a prioritized capabilities list derived from the inputs of combatant command focus groups. The MDA will then be able to use the prioritized capabilities list to develop capability-based requirements for future BMDS blocks. As of February 2005, USSTRATCOM planned to have the combatant command focus group initially address the capability-based requirements for the Command and Control, Battle Management, and Communications Element. Although USSTRATCOM had planned WIP-related activities such as the combatant command focus groups, it had not finalized the instruction defining the WIP process. Further, USSTRATCOM and MDA had not agreed on a procedure for using the prioritized capabilities list in the MDA capability-based requirements process.

Progress From February 2005 Through January 2006. Since February 2005, MDA has made progress in establishing coordination procedures with the combatant commanders through USSTRATCOM. However, MDA was still

working with USSTRATCOM to finalize the procedures to allow the combatant commanders to have input into the process for establishing capability-based requirements for BMDS.

Specifically, MDA and USSTRATCOM developed a draft memorandum of agreement (MOA) to address coordination procedures. The draft MOA outlines the procedures MDA and USSTRATCOM will use for documenting, validating, and prioritizing the combatant commanders' capability-based requirements for the BMDS elements. The draft MOA assigns MDA responsibility for the following actions:

- providing a focal point to USSTRATCOM for desired future capability coordination;
- identifying key events, meetings, reviews, and products where the combatant commanders can most effectively influence development of capability-based requirements for the BMDS elements; and
- implementing a directive that defines specific MDA responsibilities, authorities, organizations, actions, and processes for the WIP and corresponds with WIP activities identified in the draft USSTRATCOM directive.

The draft MOA assigns USSTRATCOM responsibility for the following actions:

- constructing and maintaining a prioritized list of desired future missile defense capabilities (the prioritized capabilities list);
- actively participating in MDA technical reviews and other meetings to ensure the desired capabilities are correctly represented; and
- finalizing and implementing the draft directive that defines specific USSTRATCOM responsibilities, authorities, organizations, actions, and processes for the WIP and corresponds with WIP activities identified in an MDA directive.

The MDA Implementation Guide, discussed under “Documenting Policies and Procedures,” also indicates that MDA will use input from the combatant commanders in developing its budget submission. Specifically, the Implementation Guide states how MDA will use the USSTRATCOM prioritized capabilities list in developing the Gap Analysis Report that MDA uses in preparing the Director’s Program Objective Memorandum and Budget Estimate Submission Guidance. The Implementation Guide further indicates that MDA will use the WIP Assessment, which provides the warfighter’s views on new capabilities needed in the block being planned, as input to the Concept Descriptions, which provide technical substance to the Director’s Proposed Missile Defense Plan. MDA will also use the WIP Assessment as input to the decision making process for “Decision Memorandum 1, Initiate Program Planning,” which will be the approval to initiate formal planning for a specific BMDS block.

Additionally, MDA has increased combatant commander involvement in focus groups, meetings, and reviews related to developing capability-based requirements for the BMDS elements. The Operational Integration and Support Directorate in MDA has primary responsibility for involving USSTRATCOM in those activities.

Lastly, MDA is making plans for an organizational realignment that will provide the combatant commanders with a direct interface with the Director, MDA. Specifically, the organizational realignment will give the Warfighter Integration and Deployment advisor in MDA a direct interface with the Director, MDA. This high-level interface should make MDA more responsive to the warfighter in defining missile defense capability needs.

Work Still Needed to Fully Implement Coordination With the Combatant Commanders. Although MDA made progress toward improving coordination procedures with the combatant commanders through USSTRATCOM, MDA and USSTRATCOM need to finalize the MOA as well as finalize their internal directives to implement the provisions of the MOA. Only then can the combatant commanders have a meaningful role in determining the capability-based requirements for the BMDS elements.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Director, Missile Defense Agency establish dates for Missile Defense Agency organizations to complete documenting the processes and procedures for defining capability-based requirements in support of key Director decisions as specified in “Ballistic Missile Defense Integrated Program Policy Implementation Guide,” June 2, 2005.

Management Comments. The Executive Director of the Missile Defense Agency, responding for the Director, concurred, stating that MDA would approve the Systems Engineering Plan in the third quarter of FY 2006.

Audit Response. The Executive Director’s comments were responsive to the intent of the recommendation because MDA intends to include the processes and procedures for defining capability-based requirements in the Systems Engineering Plan. In the audit followup process, we will review the approved Systems Engineering Plan to verify that it fully documents the processes and procedures for defining capability-based requirements in support of key Director decisions as specified in the “Ballistic Missile Defense Integrated Program Policy Implementation Guide,” June 2, 2005.

2. We recommend that the Director, Missile Defense Agency, and the Commander, United States Strategic Command:

a. Finalize and approve the draft memorandum of agreement outlining the responsibilities for the Missile Defense Agency and the United

States Strategic Command to work together in developing capability-based requirements for missile defense in compliance with DoD Directive 5134.9, “Missile Defense Agency,” October 9, 2004.

b. Establish completion dates for preparing and finalizing directives discussed in the memorandum of agreement that will define Missile Defense Agency and the United States Strategic Command responsibilities for coordinating and ensuring that the combatant commanders have a role in establishing capability-based requirements for the Ballistic Missile Defense System elements.

Director, Missile Defense Agency Comments. The Executive Director of the Missile Defense Agency concurred with comment, stating that USSTRATCOM decided that the memorandum of agreement between MDA and USSTRATCOM was not necessary. Instead, the Executive Director stated that the MDA and USSTRATCOM were taking alternative actions that met the intent of the recommendation. Specifically, the Executive Director stated that the MDA Integrated Program Policy and Systems Engineering Plan would document the combatant commanders’ roles in developing capability-based requirements in MDA products and processes. Similarly, she stated that USSTRATCOM was coordinating a Command Directive to implement combatant command activities in the Combatant Command Warfighter Involvement Process.

Audit Response. The Executive Director’s comments were responsive to the intent of the recommendation. In the audit followup process, we will review and verify that the MDA Integrated Program Policy and Systems Engineering Plan fully documents the processes and procedures for working with USSTRATCOM, to include input from the combatant commanders, in developing capability-based requirements for the Ballistic Missile Defense System elements.

Commander, United States Strategic Command Comments. The Audit Program Coordinator at the United States Strategic Command responding for the Commander, concurred, stating in an e-mail that USSTRATCOM agreed with the recommendation.

Audit Response. In response to the final report, we request that the Commander, United States Strategic Command describe actions taken or planned in response to the agreed-upon recommendation, provide an estimated completion date for the actions, and sign the comments.

Appendix A. Scope and Methodology

We evaluated the adequacy of the processes that MDA uses to generate system capability-based requirements. We reviewed documents dated from April 1998 through November 2005. Specifically, we reviewed the MDA threat assessments, test plans, capabilities documents, and adversary capability descriptions prepared through Block 04. We also reviewed USSTRATCOM briefing charts and the draft “Missile Defense Warfighter Involvement Process.” We interviewed personnel from the MDA Directorates for Systems Engineering and Integration; Command, Control, Battle Management and Communications; Concepts and Experimentations; and Test and Assessment; as well as USSTRATCOM personnel to determine the extent of coordination between MDA and USSTRATCOM in identifying capability-based requirements and planned BMDS testing through Block 04.

We performed this audit from May 2004 through February 2005 and from October 2005 through January 2006 in accordance with generally accepted government auditing standards.

Use of Computer-Processed Data. We did not use computer-processed data to perform this audit.

Use of Technical Assistance. Two electrical engineers from the Electronics Engineering Branch, Technical Assessment Division, of the Audit Policy and Oversight, DoD Office of Inspector General, assisted in the audit. The two electronics engineers assisted the audit team by analyzing the systems engineering efforts used in support of the capability-based requirements development process.

Government Accountability Office High-Risk Area. The Government Accountability Office has identified several high-risk areas in DoD. This report provides coverage of the DoD weapon acquisition process high-risk area.

Prior Coverage

No prior coverage has been conducted on the capability-based requirement development process at MDA during the last 5 years. In response to allegations made to the Defense Hotline, DoD Inspector General (IG) issued a report on managing the acquisition of the targets. Unrestricted DoD IG reports can be accessed at <http://www.dodig.mil/Audit/reports>.

DoD IG

DoD IG Report No. D-2005-048, “Acquisition of Targets at the Missile Defense Agency,” April 6, 2005

Appendix B. Results of Review of Five Allegations

We did not substantiate the five allegations that were made regarding the process MDA used to define capability-based requirements for the BMDS. The allegations fell into two broad areas:

- MDA disregard of the missile defense requirements that the Services previously established in Operational Requirement Documents (ORD), and
- flaws in the MDA system capability-based requirements process.

System Requirement Documents

Allegation 1. MDA disregarded requirements that the Military Departments previously established in system ORDs.

Audit Results. We did not substantiate the allegation. Although the Secretary of Defense cancelled the system ORDs approved by the Services, the MDA did carry over many of the ORD requirements in the new elements capability specification documents. The Secretary of Defense memorandum, “Missile Defense Program Direction,” January 2, 2002, cancelled the Service missile defense ORDs because they were inconsistent with the proposed BMDS development program objectives. In place of the element ORDs, MDA defined capability-based requirements for Block 04 of the overall BMDS in the System Capabilities Specification. MDA used the System Capability Specification to define the capability-based requirements for the individual MDA elements in the element capability specification documents. To determine whether MDA disregarded the systems requirements that the Military Departments had established in the ORDs, we compared the cancelled ORDs for the Terminal High-Altitude Area Defense (THAAD) (previous Army), Aegis Ballistic Missile Defense (BMD) (previous Navy), and Airborne Laser (ABL) (previous Air Force) elements. In all cases, MDA carried over significant portions of the cancelled ORD requirements into the element Capability Specification for Block 04. Examples of requirements that MDA carried over for THAAD included targets characteristic, target launch regions, and target range. Examples of requirements that MDA carried over for Aegis BMD included the probability of single shot engagement kill, other mission retention and resource allocation, and cueing mode. Examples of requirements that MDA carried over for ABL included battle management, mean time between critical failure, and turn time.

MDA Capability-Based Requirements Process

Allegation 2. MDA established a capability-based requirements process that primarily tried to predict what the threat will be, with little regard for the existing

threat. As a result, MDA designed test programs to evaluate element performance against what the existing threat may evolve to, rather than against actual threat characteristics.

Audit Results. We did not substantiate the allegation. MDA was in the process of fully implementing a capability-based requirements process that predicts what the threat will be for the elements. MDA test plans, however, included plans to evaluate element performance against existing threats, as well as element performance against what the existing threat may evolve to. The MDA test plans included tests against both existing and technically feasible threat capabilities for the purpose of helping MDA avoid BMDS obsolescence.

To document threat capabilities, MDA prepared the Adversary Capabilities Document to define the threats the BMDS will, or could, encounter. In the Adversary Capabilities Document, MDA considered both actual and technically feasible threats, assuming that if a threat capability is technically feasible, adversaries could deploy it against the BMDS. To support element test plans for Block 04, MDA developed the Adversary Data Package from the Adversary Capabilities Document to define threat scenarios.

Although we did not substantiate the allegation that element test plans did not address existing threat characteristics, we did determine that MDA did not fully implement the capability-based requirements process for determining BMDS element requirements. The finding discusses this issue.

Allegation 3. MDA established a capability-based requirements process that did not address specific measurable parameters for fieldability.

Audit Results. We did not substantiate the allegation. The System Capability Specification for Block 04 identified measurable parameters for fieldability. Specifically, MDA planned to partially field the Command and Control, Battle Management, and Communications; the Ground-Based Midcourse Defense; the Aegis BMD; and the Space-Based Infrared System Mission Control Station Capabilities during Block 04. The System Capability Specification for Block 04 contained specific, measurable fieldability parameters for element reliability, availability, and environment situations.

Allegation 4. MDA established a capability-based requirements process that disregarded established system designs for THAAD and Aegis BMD that were based on realistic threat parameters.

Audit Results. We did not substantiate the allegation. Engineers from our Audit Followup and Technical Support Directorate determined that MDA was enhancing, rather than disregarding, established THAAD and Aegis BMD element system designs as part of implementing the January 2002 Secretary of Defense direction to establish a development program for a single BMDS. Our engineering staff stated that MDA could not have met the requirements of the National Security Presidential Directive 23 for fielding an initial set of missile defense capabilities in 2004 without carryover of the established systems designs for the Aegis BMD and THAAD elements.

For THAAD, the engineering staff reviewed the following design-related documents:

- “Systems Capability Specification for BMDS,” January 20, 2004;
- “THAAD Development Master Test Plan,” October 24, 2003;
- “THAAD Performance Specification,” April 25, 2003;
- “BMDS Technical Objectives and Goals,” May 7, 2002; and
- “THAAD System Specification Tree,” June 2, 2000.

These documents show that established designs for major components, including the launcher, the missile, the command control ballistic missile communication, and the radar carried over into the design for Block 04. Additionally, the engineers determined that the 54 engineering change proposals the MDA approved for THAAD were necessary to provide interfaces with the other BMDS elements or to add capabilities. They also concluded that MDA did not disregard previous design work.

For Aegis BMD, the engineering staff reviewed the following design-related documents:

- “Element Capability Specification for Aegis Element,” October 1, 2004;
- “Systems Capability Specification for BMDS,” January 20, 2004;
- “Aegis Development Master Test Plan,” October 31, 2003;
- “BMDS Technical Objectives and Goals,” May 7, 2002; and
- “Aegis Operation Requirements Document,” April 6, 1998.

These documents show that the Aegis BMD system design for Block 04 included design requirements from the original Aegis BMD design. MDA modified original Aegis BMD system design to enhance surveillance, tracking, and intercept functions to meet the BMDS mission. Future Aegis BMD block enhancements will include Aegis BMD improvements to increase remote sensor and radar discrimination capabilities.

Allegation 5. MDA established a capability-based requirements process that did not consider test planning efforts already underway. Therefore, MDA had to completely rework all test planning documentation, which took years to develop and implement.

Audit Results. We did not substantiate the allegation. MDA did consider test planning efforts underway at the element level. For example, MDA carried over portions of test plans from the previous test and evaluation master plans for the ABL and THAAD to the MDA Developmental Master Test Plans for Block 04.

Test plans that MDA carried over for the THAAD included plans for safety, environmental, and separation effects tests. For ABL, MDA carried over plans for testing beam control, fire control, and laser safety and performance. Although MDA did perform significant rework of test plans, this rework was necessary because the January 2, 2002, Secretary of Defense memorandum directed MDA to combine individual missile defense systems into an integrated BMDS. As a result, MDA prepared the “Integrated Master Test Plan,” November 9, 2004, which included testing of the integrated BMDS.

Appendix C. Report Distribution

Office of the Secretary of Defense

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Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Homeland Security and Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Reform

Missile Defense Agency Comments



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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

MAR 22 2006

MEMORANDUM FOR DEPUTY INSPECTOR GENERAL FOR AUDITING
(ATTN: PROGRAM DIRECTOR, ACQUISITION
AND CONTRACT MANAGEMENT)

SUBJECT: Response to Draft Report on Capabilities Definition Process at the Missile
Defense Agency (Project No. D2006 – D000AE-0078)

We appreciate the efforts made by your staff to work with the Missile Defense Agency (MDA) in ensuring that the report is factually accurate. The MDA's responses to the recommendations are:

- Recommendation 1 - We recommend that the Director, Missile Defense Agency establish dates for Missile Defense Agency organizations to complete documenting the processes and procedures for defining capability-based requirements in support of key Director decisions as specified in "Ballistic Missile Defense Integrated Program Policy Implementation Guide," June 2, 2005.

MDA Response - Concur. The System Engineering Plan (SEP) will be signed 3rd Quarter FY06.

- Recommendation 2 - We recommend that the Director, Missile Defense Agency and the Commander, United States Strategic Command:
 - a. Finalize and approve the draft memorandum of agreement outlining the responsibilities for the Missile Defense Agency and the United States Strategic Command to work together in developing capability-based requirements for missile defense in compliance with DoD Directive 5134.9, "Missile Defense Agency," October 9, 2004.
 - b. Establish completion dates for preparing and finalizing directives discussed in the memorandum of agreement that will define Missile Defense Agency and the United States Strategic Command responsibilities for coordinating and ensuring that the combatant commanders have a role in establishing capability-based requirements for the Ballistic Missile Defense System elements.

MDA Response - Concur with comment. The Joint Functional Component Command, Integrated Missile Defense, decided the memorandum of agreement is not necessary. Therefore, the United States Strategic Command (STRATCOM) is not going forward with the MOA. However, STRATCOM is coordinating a Command Directive to implement Combatant Command Warfighter Involvement Process activities. In addition, the Integrated Program Policy and SEP document warfighter roles in MDA products and processes. We believe these actions meet the intent of the Department of Defense, Office of the Inspector General recommendation.

My point of contact for this submission is Mr. Robert Weyant, Director, Internal Review, at (703) 553-5634.


PATRICIA SANDERS
Executive Director

United States Strategic Command Comments

Greene, Andrew D., OIG DoD

From: Meyer Russell R GS12 USSTRATCOM/J833 [MEYERR@stratcom.mil]
Sent: Thursday, March 23, 2006 10:03 AM
To: Greene, Andrew D., OIG DoD
Subject: Audit of the Capabilities Definition Process at the Missile Defense Agency

Andrew,
The subject draft audit was reviewed by the Primary Action Office (PAO) for this review. The following comment was received from the PAO LtCol Furcini Chief, Missile Defense Branch /J851 through Mr. Mike Turnipseed the Command Action Officer for this audit.
- We have no comment on the content of the report and agree with the recommendations as presented.
V/R
Russell Meyer
Audit Program Coordinator
Resource Management Division/J83
USSTRATCOM

Team Members

The Department of Defense Office of the Deputy Inspector General for Auditing, Acquisition and Contract Management prepared this report. Personnel of the Department of Defense Office of Inspector General who contributed to the report are listed below.

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