

**GAO**

Report to the Subcommittee on  
Oversight and Investigations,  
Committee on Armed Services, House  
of Representatives

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May 2011

# DEFENSE ACQUISITION

## DOD Should Clarify Requirements for Assessing and Documenting Technical-Data Needs



**G A O**

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## Why GAO Did This Study

Some of the Department of Defense's (DOD) weapon systems remain in the inventory for decades. Therefore, decisions that program officials make during the acquisition process to acquire or not acquire rights to technical data, which may cost \$1 billion, can have far-reaching implications for DOD's ability to sustain and competitively procure parts and services for those systems. DOD needs access to technical data to control costs, maintain flexibility in acquisition and sustainment, and maintain and operate systems. In response to a congressional request, GAO reviewed the extent to which: (1) DOD has updated its acquisition and procurement policies to reflect a 2007 law and 2006 GAO recommendations; (2) selected acquisition programs adhered to requirements to document technical-data needs; and (3) DOD took actions to improve technical-data decisions by program managers. GAO interviewed DOD officials, reviewed acquisition strategies and acquisition plans from 12 programs, and compared those documents to relevant DOD policies.

## What GAO Recommends

GAO recommends that DOD (1) update policies to clarify its technical-data documentation requirements and (2) instruct program managers on the elements to include and the information to report for technical-data business-case analyses. DOD concurred with GAO's recommendations.

## DEFENSE ACQUISITION

### DOD Should Clarify Requirements for Assessing and Documenting Technical-Data Needs

## What GAO Found

DOD updated its acquisition and procurement policies to require that acquisition program managers document their long-term technical-data needs in a manner that reflects a 2007 law and GAO's 2006 recommendations. Together these policies require documentation of: (1) an assessment of technical-data requirements, (2) the merits of a "priced-contract option" that enables DOD to obtain additional technical data that it did not acquire in its initial contract, (3) the contractor's responsibility to verify its assertions of limits to DOD's ability to use the technical data, and (4) the potential for changes in the system's sustainment plan. According to DOD officials, these policy updates do not require changes to the way program managers assess technical-data needs.

Sampled acquisition programs partially addressed the four updated technical-data-documentation requirements. Ten of the 12 programs GAO reviewed addressed at least 1 of the 4 requirements in their acquisition strategies and acquisition plans; however, none of the programs addressed all 4 of the requirements. Specifically, 9 of the 12 strategies documented an assessment of their technical-data requirements. For example, the strategy for a Navy communications system stated that the program planned to obtain technical data and associated rights to sustain the system over its life cycle and allow for competitive procurement of future systems. In contrast, 3 of the 12 strategies documented the contractor's responsibility to verify its assertions of limits to DOD's ability to use the technical data. Each of the three strategies noted that the program planned to include a clause in its contracts that identifies the contractor's responsibilities.

DOD has issued guides—that are voluntary for the program managers to use—to improve technical-data decision-making. These guides may help program managers with decisions and documentation on technical data. However, DOD technical-data policies remain unclear. Effective internal controls help organizations implement their directives. GAO found that, because DOD has not issued clarifications to its policy, DOD policies that require documentation of long-term technical-data needs are unclear. As a result, acquisition strategies have not always documented required information on technical data—a point the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics recently emphasized. Because of the ambiguity in the policies, DOD's ability to implement effective internal control over those policies is limited. Moreover, DOD recently added a requirement that program managers conduct a business-case analysis for systems' long-term technical-data needs. However, DOD has not issued policy or other internal controls that describe how to conduct this analysis. GAO has previously reported that the military services inconsistently completed similar business-case analyses because DOD had not issued instructions on how to conduct them. Without instructions that describe how to conduct the business-case analysis, senior acquisition decision makers may not receive the information they need to decide whether to approve programs at major milestones in the acquisition process.

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## Abbreviations

ACAT	Acquisition Category
DFARS	Defense Federal Acquisition Regulation Supplement
DOD	Department of Defense
OSD	Office of the Secretary of Defense

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Accountability \* Integrity \* Reliability

United States Government Accountability Office  
Washington, DC 20548

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May 11, 2011

The Honorable Rob Wittman  
Chairman  
The Honorable Jim Cooper  
Ranking Member  
Subcommittee on Oversight and Investigations  
Committee on Armed Services  
House of Representatives

The Department of Defense (DOD) needs access to technical data related to its weapon systems in order to control costs and maintain flexibility in the acquisition and sustainment of those weapon systems. Technical data—recorded information used to produce, support, maintain, or operate a system<sup>1</sup>—can enable the government to complete maintenance work in house, as well as to competitively award contracts for the acquisition and sustainment of a weapon system. Because many systems remain in DOD’s inventory for decades, decisions that officials make during the acquisition process to acquire or not acquire rights to technical data can have far-reaching implications for DOD’s ability to sustain the systems and competitively procure parts and services. Weapon systems are costly to sustain in part because they often incorporate technologically complex subsystems and components and need expensive spare parts and logistics support to meet required readiness levels. According to DOD, at least 70 percent of a weapon system’s life-cycle costs are incurred to operate and support a weapon system after it has been acquired, with the percentage depending on how long a system remains in the inventory.

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<sup>1</sup>Defense Federal Acquisition Regulation Supplement (DFARS) section 252.227-7013 defines technical data as “recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation)... [but not including] computer software or data incidental to contract administration, such as financial and/or management information.” Technical data for weapon systems includes drawings, specifications, standards, and other details necessary to ensure the adequacy of item performance, as well as manuals that contain instructions for installation, operation, maintenance, and other actions needed to support weapon systems.

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Since 2002, we have issued several reports that address technical data.<sup>2</sup> For example, we reported in 2006 that a number of fielded Army and Air Force systems encountered limitations in sustainment options because the military services lacked needed technical-data rights. In the 2006 report, we recommended that DOD require program managers to assess long-term technical-data needs and establish corresponding acquisition strategies that provide for the technical-data rights needed to sustain weapon systems over their life cycles. More recently, we reported in 2010 that the government's lack of access to proprietary technical data, among other things, limits—or even precludes the possibility of—competition for DOD weapons programs.

Congress has also highlighted the importance of technical data in the defense acquisition process. For example, section 802 of the National Defense Authorization Act for Fiscal Year 2007 includes a requirement that the Secretary of Defense direct program managers for major weapon systems to assess their systems' long-term technical-data needs.<sup>3</sup> The act also requires that the Secretary direct program managers to develop corresponding acquisition strategies that provide for the technical-data needs to sustain their systems throughout their life cycle. Similarly, Congress passed the Weapon System Acquisition Reform Act of 2009, which required in part that the Secretary of Defense is to ensure the acquisition strategy for each major defense-acquisition program includes measures to ensure competition, or the option of competition, in contracts for the program throughout its life cycle.<sup>4</sup> The act cited the acquisition of

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<sup>2</sup>GAO, *Federal Contracting: Opportunities Exist to Increase Competition and Assess Reasons When Only One Offer Is Received*, [GAO-10-833](#) (Washington, D.C.: July 26, 2010); *Weapons Acquisition: DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems*, [GAO-06-839](#) (Washington, D.C.: July 14, 2006); *Defense Management: Opportunities to Enhance the Implementation of Performance-Based Logistics*, [GAO-04-715](#) (Washington, D.C.: Aug. 16, 2004); and *Defense Logistics: Opportunities to Improve the Army's and the Navy's Decision-making Process for Weapons Systems Support*, [GAO-02-306](#) (Washington, D.C.: Feb. 28, 2002).

<sup>3</sup>Hereinafter, we use the term “the 2007 National Defense Authorization Act” to describe section 802 of the John Warner National Defense Authorization Act for Fiscal Year 2007, Pub. L. No. 109-364 (2006).

<sup>4</sup>Pub. L. No. 111-23 § 202 (2009). In response to the technical data provisions of this law, DOD published an interim rule amending the DFARS in February 2010. The interim rule stated, among other things, that the acquisition of complete technical data packages is one measure to ensure competition (or the option of competition). This interim rule was finalized in September 2010 without change as DFARS 207.106 (S-72).

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complete technical-data packages as one option for promoting competition.

In response to your request, this report addresses the extent to which (1) DOD has updated its acquisition and procurement policies to reflect certain technical-data-related provisions of the 2007 National Defense Authorization Act and GAO's 2006 recommendations aimed at assessments of long-term technical-data needs;<sup>5</sup> (2) selected defense acquisition programs have adhered to the updated requirements in DOD policy to document their systems' long-term technical-data needs; and (3) DOD has taken actions to improve decision making by program managers on the long-term technical- data needs for systems in its acquisition process.<sup>6</sup>

To evaluate the extent to which DOD updated its acquisition and procurement policies to reflect certain technical-data-related provisions of the 2007 National Defense Authorization Act and GAO's 2006 recommendations, we analyzed the act and our prior recommendations. We identified and evaluated changes the department made to its acquisition and procurement policies since the 2007 act. We used information from our evaluation of these policies in the analyses we conducted for each of our objectives. We also reviewed follow-up records maintained by DOD and GAO that document actions the department had taken in response to audit recommendations. To evaluate the extent to which selected defense-acquisition programs have adhered to the requirements in DOD policy to document their system's long-term technical-data needs, we selected a non-generalizable sample of 12 programs out of about 50 programs subject to the requirements outlined in DOD acquisition and procurement policies. Our sample included Army, Navy,<sup>7</sup> and Air Force programs in the two highest-value acquisition

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<sup>5</sup>We also included information on the extent to which DOD has implemented additional legislative provisions and audit recommendations related to technical data in the acquisition process in appendix II.

<sup>6</sup>See related GAO products at the end of this report for additional publications on related topics.

<sup>7</sup>Because too few Marine Corps programs reached a major milestone in this period, we did not include any programs from this service in our sample.

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categories<sup>8</sup> that reached major milestones<sup>9</sup> in the defense acquisition process from September 2007 to August 2010. In addition, findings from our sample are not generalizable to all DOD acquisition programs, although the variety of circumstances that the programs in our sample face illustrates important aspects of documenting a system’s long-term technical-data needs. We obtained key acquisition documents—the acquisition strategy and acquisition plan—from the programs in our sample that reflect the technical-data needs of the system. Two team members concurrently conducted independent analyses of the same acquisition documents for each program comparing the documents against relevant criteria from DOD policy.<sup>10</sup> We then compared the two sets of observations and reconciled any differences with the assistance of a third analyst, when necessary. We provided our preliminary observations of the documents to officials in each program and considered additional information they provided when our observations indicated that the program documents had not addressed one or more of the requirements. To evaluate the extent to which DOD has taken actions to improve technical-data decision making, we reviewed documentation including the November 2010 Under Secretary of Defense for Acquisition, Technology and Logistics memorandum, Implementation Directive for Better Buying Power—Obtaining Greater Efficiency and Productivity in Defense Spending, as well as guidelines on technical data that the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, which is part of the Office of the Secretary of Defense (OSD), and each of

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<sup>8</sup>DOD classifies its acquisition programs into acquisition categories (ACAT) that depend on the value and type of acquisition. ACAT I programs are estimated to require an eventual total expenditure of more than \$365 million for research, development, test and evaluation, or more than \$2.19 billion for procurement, or are designated as special interest by the milestone decision authority. ACAT II programs do not meet the criteria for ACAT I, but are estimated to require more than \$140 million for research, development, test and evaluation, or more than \$660 million for procurement (all cost estimates are in fiscal year 2000 constant dollars). ACAT III programs do not meet the criteria for ACAT II or above.

<sup>9</sup>As outlined in DOD Instruction 5000.02, *Operation of the Defense Acquisition System* (Dec. 8, 2008), the defense acquisition system uses “milestones” to oversee and manage acquisition programs. Each milestone has specific statutory and regulatory requirements that a program must meet in order to proceed to the next phase of the acquisition process. We selected programs that reached the first three milestones: A - Materiel Solution Analysis; B - Technology Development; and C - Engineering and Manufacturing Development.

<sup>10</sup>Specifically, we incorporated requirements from the Under Secretary of Defense for Acquisition, Technology, and Logistics-issued memorandum, *Data Management and Technical Data Rights* (July 19, 2007); DOD Instruction 5000.02, enclosure 12(9) (Dec. 8, 2008); and DFARS 207.106 (S-70).

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the military departments recently issued. For each of our objectives, we also interviewed officials in a variety of relevant organizations including the OSD, the acquisition headquarters office in each of the military departments, and the 12 acquisition programs in our sample. During these interviews, we obtained perspectives from officials and documentation such as acquisition strategies and acquisition plans from each of the programs in our sample. We also assessed the reliability of all of the data that we discuss in this report by reviewing relevant documentation and interviewing knowledgeable officials. We found the data sufficiently reliable for the purposes of this report.

We conducted this performance audit from May 2010 to May 2011 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. We discuss our scope and methodology in more detail in appendix I.

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## Background

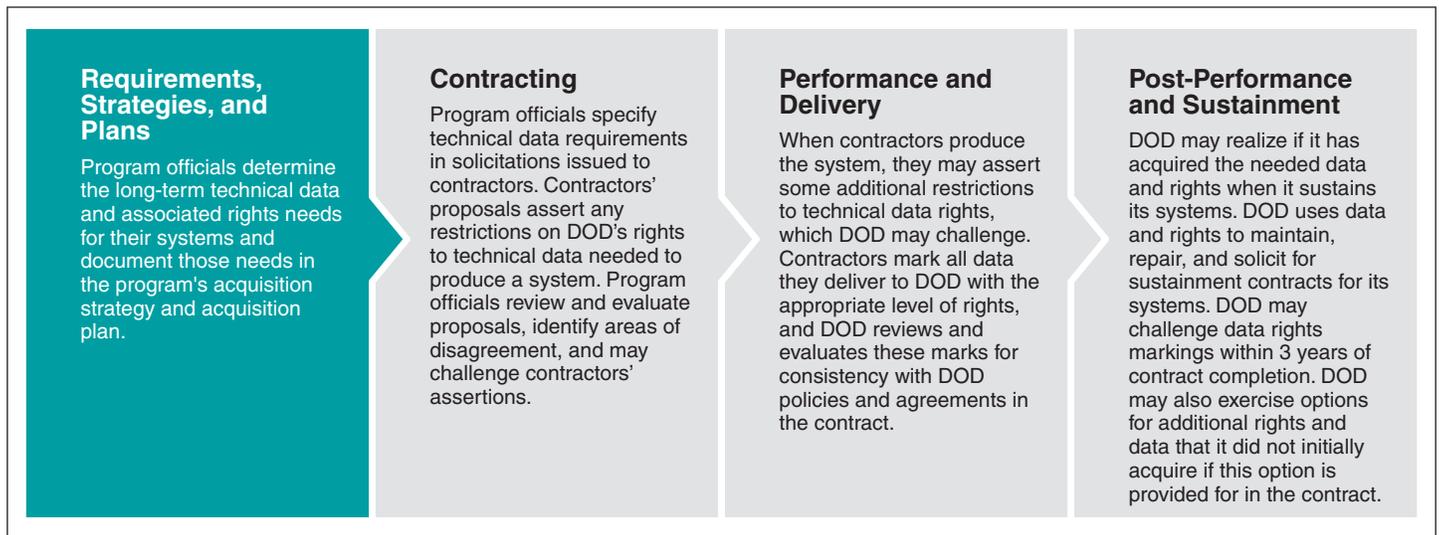
DOD program managers obtain technical data and technical-data rights to enable the department to acquire and sustain weapon systems at the lowest cost, to provide flexibility in future acquisition and sustainment of systems and subsystems, and to maintain those systems. DOD may obtain different levels of rights to technical data including unlimited rights, government-purpose rights, and limited rights. If DOD obtains unlimited rights to technical data, it may provide the data to anyone for any reason. However, if DOD obtains government-purpose rights, it may provide the data to third-party contractors only for activities in which the U.S. government is a party, including competitive procurement, but not including commercial purposes. Further, if DOD obtains limited rights, it may only use the data internally and may provide the data to third parties in a limited number of circumstances (e.g., emergency repair and overhaul.) Moreover, DOD and contractor maintenance personnel need technical data and technical-data rights in order to maintain, repair, and upgrade weapon systems throughout the life cycle of the systems.

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## The Process to Acquire Technical Data

The process that DOD program officials follow to acquire technical data and technical-data rights for systems includes four general phases with multiple steps in each phase. In this report, we evaluated aspects of the first phase of this process (see fig. 1).

**Figure 1: The Four Phases of the Technical-Data Acquisition Process**



Source: GAO analysis of DOD documentation.

Note: Although this process we illustrate in this figure focuses on technical data and technical-data rights, DOD officials stated that they also use most of the same process to acquire computer software and computer software documentation with some exceptions.

- **Requirements, strategies, and plans phase:** Program officials assess the long-term technical data and technical-data rights requirements for their system and then document those requirements in an acquisition strategy and an acquisition plan for their system. To assess a system's technical-data requirements, program officials determine which components DOD will need technical data for and the level of rights to seek for those data.<sup>11</sup> Program officials consider several factors in their assessment, such as the government's cost for the rights to the data, sustainment plans, re-procurement needs, and contractors' economic interest. Once program officials complete their assessment, they record the technical-data requirements in a data-management strategy that is included in the acquisition strategy, a document that is required by DOD Instruction 5000.02. They also include similar documentation in the acquisition plan, which is required by the DFARS. The acquisition strategy

<sup>11</sup>The government typically obtains rights in technical data through a license granted as part of the contract. The standard license rights that are granted to the government are unlimited rights, government purpose rights, or limited rights, but different rights may be negotiated in unusual circumstances. The contractor or licensor retains all rights in the data not granted to the government. DFARS 227.7103-4(a) and DFARS 227.7103-5.

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describes the overall approach for managing and planning for the program, while the acquisition plan describes the program's contracting approach.<sup>12</sup>

The program manager then submits these documents to senior department officials to review and approve at certain major milestones in the defense acquisition process.

- **Contracting phase:** Program officials specify the approved technical-data requirements in solicitations they issue to contractors. These solicitations describe the capability requirements for a system that the government intends to acquire. Contractors then submit proposals to DOD in which they describe the system that they would build to provide the required capability. In the proposals, contractors also discuss technical-data issues. For example, if a contractor desires to assert restrictions on DOD's ability to use any of the technical data needed to manufacture or sustain the system, the contractor asserts those restrictions in its proposal. Program officials then review and evaluate the contractors' proposals using criteria included in the solicitation. Officials evaluate any asserted restrictions on DOD's use of technical data to identify areas of disagreement that the department should resolve through negotiations or other procedures in accordance with applicable law.<sup>13</sup> DOD officials then award a contract.
- **Performance and delivery phase:** During this phase, the selected contractor begins producing the system and may assert additional restrictions to technical-data rights in certain circumstances. For example, the contractor may assert new restrictions if the department modifies its system requirements or if the contractor inadvertently omitted a restriction during the contracting phase. DOD officials may also challenge these additional asserted restrictions. Contractors mark all technical data they deliver to the government with a level of rights (e.g., government purpose or limited rights). In addition, program officials review these markings to ensure that the contractor has identified them in a manner that is consistent with DOD policies and the agreement in the contract.
- **Post-performance and sustainment phase:** In this phase, the contractor has delivered a system to DOD. DOD officials may realize during post-performance and sustainment whether they have acquired the necessary technical data and technical-data rights during the sustainment

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<sup>12</sup>DOD officials told us that in practice many program offices use one document to satisfy the requirement for both the acquisition strategy and acquisition plan.

<sup>13</sup>Pursuant to section 2321 of Title 10, U.S. Code, DOD has the right to challenge asserted restrictions on technical data under certain circumstances. DFARS 227.7103-13 (b) states that "[t]he challenge procedures required by 10 U.S.C. 2321 could significantly delay awards under competitive procurements. Therefore, avoid challenging asserted restrictions prior to a competitive contract award unless resolution of the assertion is essential for successful completion of the procurement."

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phase. When sustaining systems, DOD personnel may use technical data for critical functions including maintaining and repairing systems. Any new technical data and technical-data rights that would be needed for any support contracts during sustainment phase would need to be acquired. Program officials also may challenge the level of rights that the contractor asserted for any delivered technical data that is used to produce the system for up to 3 years after final payment under the contract or three years after delivery of the data, whichever is later.<sup>14</sup> Program officials may also exercise options to obtain additional rights and data that the department did not acquire during the performance and delivery phase if DOD and the contractor had included a provision in the contract called a “priced-contract option.”

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## Prior GAO and Defense Audit Agencies’ Work on Technical Data

For nearly a decade, we and the military-service audit agencies have conducted reviews that included information on DOD’s acquisition of technical data and technical-data rights for systems in the acquisition process. In February 2002, we reported that DOD officials expressed concern that they did not have affordable technical data to develop additional or new sources of repair and maintenance to ensure a competitive market.<sup>15</sup> Subsequently, we reported in August 2004 that DOD program managers often opt to spend limited acquisition dollars on increased weapon system capability rather than on acquiring the rights to the technical data—thus limiting their flexibility to perform maintenance work in house or to support alternate source development should contractual arrangements fail.<sup>16</sup> We subsequently reported in July 2006 that the Army and the Air Force encountered limitations in their sustainment options for some fielded-weapon systems because they lacked technical-data rights.<sup>17</sup> More recently, we reported in 2010 that the government’s lack of access to proprietary technical data, among other things, limits—or even precludes the possibility of—competition for DOD weapons programs.<sup>18</sup>

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<sup>14</sup> However, in some limited circumstances, restrictive markings may be challenged at any time. DFARS 227.7103-13(c)(1).

<sup>15</sup> [GAO-02-306](#).

<sup>16</sup> [GAO-04-715](#).

<sup>17</sup> [GAO-06-839](#).

<sup>18</sup> [GAO-10-833](#).

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Additionally, the Air Force and Army audit agencies have reported on issues related to the acquisition of technical data and technical-data rights. For example, in May 2009, the Air Force Audit Agency reported that Air Force program officials had not effectively implemented OSD and Air Force initiatives to improve the management and acquisition of technical - data rights and had not satisfied technical-data assessment requirements.<sup>19</sup> Similarly, the Army Audit Agency reported in July 2009 that (1) Army policies on technical-data assessments and documentation were not incorporated into Army regulations and (2) the Army acquisition workforce had not received training on assessing and managing technical data and technical-data rights requirements and as a result did not consistently address technical data and technical-data rights requirements.<sup>20</sup> We provide more detail in appendix II about the recommendations in these audit agency reports and the services' responses.

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## DOD Created Requirements to Document Long-Term Technical-Data Needs

DOD updated its acquisition and procurement policies, in a manner that reflects a 2007 legislative provision and our 2006 recommendations, to require that acquisition program managers document their long-term technical-data needs. According to DOD officials, these policy updates do not change the requirements program managers must follow that to decide what technical data or technical-data rights to acquire for their systems.

Section 802 of the 2007 National Defense Authorization Act required the Secretary of Defense to direct program managers for major weapon systems—and subsystems of major weapon systems—to assess the long-term technical-data needs of their systems and establish strategies providing for the technical-data rights needed to sustain the systems over their life cycles. The 2007 act required, among other things, that the strategies developed in accordance with the section address:

- the merits of a priced contract option for the future delivery of technical data that were not acquired upon initial contract award, and
- the potential for changes in the sustainment plan over the life cycle of the system.

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<sup>19</sup>Air Force Audit Agency, *Technical Data Management*, F2009-0006-FC3000 (Washington, D.C.: May 8, 2009).

<sup>20</sup>Army Audit Agency, *Acquisition of Technical Data and Rights for Major Army Systems*, A-2009-0143-ALC (Alexandria, Va: July 6, 2009).

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We had previously recommended that DOD establish these requirements for program managers in our July 2006 report.<sup>21</sup> We recommended these actions after finding that a lack of technical-data rights limited the flexibilities of the Army and Air Force to make changes to sustainment plans for some fielded weapon systems. We also found that delaying action in acquiring technical-data rights can make these data cost-prohibitive or difficult to obtain later in a weapon system's life cycle.

DOD took a series of actions to change its acquisition and procurement policies in a manner that reflects the language of the 2007 act and our 2006 recommendations. As a result of these actions, program managers are now required to record their long-term technical-data needs in two key acquisition program documents: the acquisition strategy and acquisition plan. Initially, OSD issued a memorandum in July 2007 requiring program managers for systems in the two highest-value acquisition categories (ACAT I and II) to assess the long-term technical-data needs for their systems and document a corresponding strategy for technical data in each program's acquisition strategy.<sup>22</sup> DOD later included this policy change in the December 2008 update of its acquisition policy, DOD Instruction 5000.02. In a separate action, DOD issued an interim rule in September 2007 amending the DFARS. This rule also requires program managers to assess the long-term technical-data needs for their systems and document a corresponding strategy in each program's acquisition plan. DOD finalized the interim rule in December 2009.<sup>23</sup> Together these policy changes required that strategies and plans for major acquisition programs.<sup>24</sup>

1. assess the data required to design, manufacture, and sustain the system as well as to support re-competition for production, sustainment, or upgrade;
2. address the merits of including a priced contract option for future delivery of data not initially acquired;

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<sup>21</sup>[GAO-06-839](#).

<sup>22</sup>DOD policy requires that all acquisition programs develop or update an acquisition strategy document at major milestones in the acquisition process.

<sup>23</sup>The final policy changes are included in DFARS 207.106 (S-70).

<sup>24</sup>The acquisition policy changes apply to ACAT I and II programs, and the procurement policy changes apply to weapon systems and subsystems of major weapon systems. Throughout this report when we refer to programs and program managers, we are referring to those programs and program managers specifically affected by these policies.

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3. consider the contractor's responsibility to verify any assertion of restricted use and release of data; and
  4. address the potential for changes in the sustainment plan over the life cycle of the weapon system or subsystem.

OSD officials told us that these policy updates do not change the requirements program managers must follow to decide what technical data or technical-data rights to acquire for their systems. They also told us that the only new requirement was that program managers include documentation of their system's long-term technical-data needs in acquisition strategies and acquisition plans. Moreover, OSD and each military department have issued guides for program managers that elaborate on the requirements in DOD policy assessing long-term technical-data needs and the updated requirement to document those needs in acquisition strategies and acquisition plans. We discuss these guides in more detail later in this report.

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## Selected Programs Partially Addressed the Updated Requirements to Document Long-Term Technical-Data Needs

The documentation we reviewed for 12 acquisition programs partially addressed the revised DOD policies on long-term technical-data needs. We evaluated these programs' acquisition strategies and acquisition plans against four criteria identified in the revised technical-data policies (described earlier in more detail). These policies require programs to document (1) an assessment of technical-data requirements, (2) the merits of a priced-contract option, (3) the contractor's responsibility to verify assertions of limited data rights, and (4) the potential for changes in the system's sustainment plan. We examined program acquisition strategies for the first three requirements. We reviewed program acquisition plans for the fourth requirement because the requirement was not included in the revised acquisition policy that governs acquisition strategies but was included in the procurement-policy update, which governs acquisition plans.

As a part of our review, we did not consider the amount or level of quality of the information that the acquisition strategies and acquisition plans included in response to each requirement because DOD's policies did not specify the minimum levels or types of information that program officials are required to include to satisfy each of the four requirements. Programs in our sample included varying amounts of information in response to each requirement they addressed. For example, one acquisition strategy contained a 95-page appendix on technical-data management while another contained three paragraphs focusing on technical data. If a strategy or plan included any discussion of a requirement, we determined

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that the strategy or plan addressed that requirement, regardless of the level of detail.

Figure 2 summarizes the results of our analysis and shows that 10 of the 12 programs that we evaluated addressed at least one of the 4 requirements in their documentation, and 4 addressed as many as 3 requirements. However, none of the programs addressed all four of the requirements in its documentation, and two did not address any of the requirements.

**Figure 2: Results of GAO’s Evaluations of Selected Acquisition Programs’ Documentation of Technical-Data Assessments**

Program (acquisition category, milestone)	Assessment of technical data requirements	Merits of a priced contract option	Contractor’s responsibility to verify data assertions <sup>a</sup>	Sustainment potential for changes
<b>Air Force</b>				
<b>Small Diameter Bomb II (I, B)</b> • A bomb that enables multiple fighter aircraft, such as the F-35, to attack mobile targets in adverse weather.	●	●	○	●
<b>C-130 Avionics Modernization Program (I, C)</b> • An upgrade that replaces and enhances multiple aviation electronics systems, including communication, navigation, and surveillance, for the intra-theater airlift aircraft.	●	○	●	○
<b>F-16 Operational Flight Program M6/M6+ (II, B)</b> • An upgrade that replaces and enhances multiple aviation electronics systems — including communication, navigation, and surveillance — for the intra-theater airlift aircraft.	○	○	○	○
<b>B-1 Bomber Radar Reliability and Maintainability Improvement Program (II, C)</b> • A replacement of the transmitter and signal processor within the long-range bomber’s radar system and supporting software conversion.	●	○	○	○
<b>Army</b>				
<b>Guided Multiple Launch Rocket System Alternative Warhead (I, A)</b> • A replacement warhead used on multiple Army rockets that is designed to reduce the risk of unexploded ordnance.	○	●	○	○
<b>Integrated Air and Missile Defense (I, B)</b> • An air- and missile-defense system with a central network and modular components.	●	○	●	●
<b>Extended Range Multi-Purpose Unmanned Aircraft System (I, C)</b> • An armed, unmanned aircraft with associated ground-based equipment for missions including reconnaissance, surveillance, and target acquisition.	●	○	●	●
<b>Joint Battle Command-Platform (II, B)</b> • An upgrade to a combat command and control system consisting of software and some associated hardware components.	○	○	○	N/A <sup>b</sup>
<b>Navy</b>				
<b>Joint High Speed Vessel (I, B)</b> • A high-speed, shallow-draft vessel for rapid intra-theater transport of personnel and cargo.	●	●	○	●
<b>Navy Multiband Terminal (I, C)</b> • A maritime military satellite terminal designed to enhance secure communications.	●	○	○	N/A <sup>b</sup>
<b>Surface Electronic Warfare Improvement Program Block II (II, B)</b> • An upgrade to the surface electronic warfare capability for ships’ combat systems to provide improved anti-ship missile defense and situational awareness.	●	●	○	○
<b>E-6B Take Charge and Move Out Block I Modification (II, C)</b> • An upgrade that replaces communications, avionics, and command and control systems in the airborne strategic command aircraft.	●	○	○	○

- Addressed
- Not addressed

Source: GAO analysis of DOD policy and program documentation.

<sup>a</sup>Although three programs documented their consideration of the contractor’s responsibility to verify assertions of restricted use and release of technical data, a number of programs included information addressing the program office’s efforts or responsibility to verify contractor’s assertions of restricted use and release of technical data.

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<sup>1</sup>These two programs were not yet subject to the requirement because they had not updated their acquisition plans subsequent to the policy change.

**Assessments of technical-data requirements:** Nine of the 12 acquisition strategies documented an assessment of the data required to design, manufacture, and sustain the system as well as support re-competition for production, sustainment, or upgrade of the system, for example:

- The Integrated Air and Missile Defense strategy included an appendix that, among other things, stated that the program office would require delivery of sufficient data to completely describe and define the functional and physical characteristics of the system for manufacturing, and it also provided a list of required types of data.
- The strategy for the Navy Multiband Terminal stated that the program manager had “assessed the long-term technical-data needs” of the system and “established acquisition strategies that provide for technical data” and “associated license rights needed to sustain [the systems] over their life cycle and allow for competitive procurement of future terminals.”
- The three strategies that did not address the requirement did not identify any required data.

**Merits of a priced-contract option:** Four of the 12 acquisition strategies discussed the merits of a priced contract option—an option to obtain additional data and rights that the program did not acquire during the contracting phase, for example:

- The Small Diameter Bomb II strategy stated that the contract “will contain a priced contract option...for a one-time delivery of a technical-data package” that would consist of data “that describes the design, support, test, and maintenance” of the system, and the models, simulation and analysis used to predict its performance.
- The strategy for the Joint High Speed Vessel stated that due to “the non-developmental nature of the program, a priced [contract] option...was not considered a cost-effective use of government funds.”
- The eight other strategies did not discuss the merits of a priced contract option for technical data.

**Contractor’s responsibility to verify data assertions:** Three of the 12 acquisition strategies referred to the contractor’s responsibility to verify any assertion that the contractor made to restrict the government’s use and release of any technical data. Each of the three strategies noted that the program planned to include a clause in its contracts that identifies the contractor’s responsibility to provide sufficient information to the

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government's contracting officers to enable them to evaluate the contractor's assertions. While nine strategies did not discuss the contractor's responsibility to verify assertions of restricted use and release of technical data or mention the contract clause, a number of these strategies discussed the program office's efforts or responsibility to verify contractor assertions of restricted use and release of data. For example, the B-1 Bomber Radar Reliability and Maintainability strategy discussed the program office's efforts to verify the contractor's assertion of restricted use and release of data.

**Potential for sustainment changes:** Four acquisition plans addressed the potential for changes in the system's sustainment plan over its life cycle, and the acquisition plans for two other programs were not subject to this requirement, for example:

- The Joint High Speed Vessel acquisition plan stated that the “potential for changes in the sustainment plan is small.”
- Two of the 12 programs in our sample were not subject to this requirement. The requirement did not apply to the Joint Battle Command-Platform and Navy Multiband Terminal because both programs developed acquisition plans prior to the September 2007 procurement policy change on technical data and neither was required to update its plan. Addressing the potential for changes in the system's sustainment plan over its life cycle is required for acquisition plans developed or updated after DOD's 2007 revision to its procurement policy.<sup>25</sup>
- The six acquisition plans that did not address this requirement did not discuss the potential for future changes in the sustainment plan as they relate to technical-data needs.

Later in the report, we note that (1) a cause for the partially addressed documentation is ambiguity in DOD's revised policies and (2) this ambiguity results in limits to department decision makers' ability to exercise effective internal control in their reviews of acquisition documentation, which may result in delays in the acquisition process. Because these issues are related to a similar ambiguity in another technical-data policy, we provide a more detailed discussion of the causes and effects for both types of problematic outcomes later in this report. In

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<sup>25</sup>DOD issued an interim rule amending the DFARS effective September 6, 2007. The rule was adopted as final (with a minor change) on December 29, 2009 as DFARS 207.106 (S-70).

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the next section of our report, we describe OSD and military department guides that discuss additional voluntary steps the program managers may take for conducting and documenting assessments of long-term technical-data needs. These guides may result in acquisition documentation that is more responsive to DOD's revised policies. However, most of the guides we describe were issued after most of the acquisition documentation we reviewed was approved.

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## DOD Issued Guides to Improve Technical-Data Decision Making, but Technical-Data Policy Requirements Remain Unclear

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### DOD and Military Departments Issued Guides to Improve Program Managers' Technical-Data-Related Decisions

OSD and each military department have issued several guides for program managers that elaborate on the requirements in DOD policy for conducting and documenting assessments of long-term technical-data needs. From December 2009 through December 2010, DOD and the military departments issued guides covering voluntary actions that program managers might take to improve their decisions related to technical data. While officials in DOD and the military departments told us that program officials have found the various DOD-wide and military department-specific guides useful, program managers are not required to follow any of the recommendations contained in the guides.

In December 2009, OSD updated the Web-based *Defense Acquisition Guidebook* to elaborate on the new requirements for program managers to document the long-term technical-data needs for their systems. The DOD-wide guidebook now includes topics that OSD recommends that program managers discuss in their acquisition strategy documenting the system's long-term technical-data needs. For example, the guidebook recommends that for data acquired to support competition, the program manager document the (1) logic applied to select the technical data and technical-data rights, (2) alternative solutions considered, and (3) criteria used to decide what, if any, data to procure.

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Subsequent to the changes in the DOD-wide guidebook, the military departments provided their own additional guides. The Air Force Program Management and Acquisition Excellence Office in December 2010 issued an update to a guide for program managers that includes recommended steps to follow when determining a system's long-term technical-data needs and documenting those needs in a data-management strategy.<sup>26</sup> For example, the guide suggests that program managers consider whether Air Force depot officials agree that the technical data and technical-data rights that the program intends to acquire for the system are sufficient to enable depot-level maintenance. Later, in October 2010, the Air Force's Product Data Acquisition Team launched a technical-data-focused Web site that includes some of the same information contained in the earlier Air Force guide and additional information. For example, the Web site asks program managers if the technical-data rights that program managers intend to acquire enable the Air Force to support competition for contracts for spare parts, equipment to upgrade to a system, and logistics support.<sup>27</sup>

The Army's Product Data and Engineering Working Group in August 2010 published a 68-page guide that describes steps it recommends program officials take to assess a system's long-term technical-data needs and document those needs in a data-management strategy.<sup>28</sup> The Army's guide contains a work sheet that provides program managers with a systematic approach to assess their technical-data needs. For example, for each component of a system, the worksheet prompts program managers to consider the (1) level of rights required, (2) expected levels of rights the Army will acquire in negotiations with a manufacturer, (3) any gaps between the requirements and expected negotiated outcomes, (4) plans to close any gaps, and (5) risks associated with those plans.

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<sup>26</sup>The Air Force Acquisition Excellence and Change Management Office issued this guide as a slide presentation distributed to program officials. The presentation outlined Air Force guidelines for developing an acquisition strategy.

<sup>27</sup>The Product Data Acquisition Integrated Product Team has also taken additional actions to improve technical-data-related decisions, including recommending changes to Air Force-level policy.

<sup>28</sup>The Army established the Product Data and Engineering Working Group in March 2005 to serve as a forum for determining requirements for and resolving issues associated with the management and use of technical data. The group consists of representatives from Army offices such as headquarters, major commands (e.g., Army Materiel Command), and program executive officers.

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The Navy in June 2010 published a set of guidelines that it recommends program managers follow when they determine their systems' technical-data rights. The Naval Open Architecture Enterprise Team included these guidelines in an appendix to a contracting guidebook.<sup>29</sup> Like the Air Force and Army resources, the appendix lists questions that the team recommends program managers consider when conducting a technical-data rights assessment. For example, the appendix asks whether the government will obtain government-purpose rights at a minimum for a system and asks for a justification for agreeing to more restrictive rights than government purpose rights.

In addition to these department-level guides, some subordinate commands within military departments have issued guidance on technical-data assessments. For example, Air Force Materiel Command issued a handbook on technical-data rights in May 2010, while the Air Force's Space and Missile Systems Center issued the third edition of a similar guide in January 2011. By issuing their own guidance, these subordinate commands are able to focus on issues of technical data particular to the command in question.

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## Required Policies on Technical-Data Assessments Remain Unclear

While OSD and each of the military departments took actions to help program managers prepare technical-data assessments, DOD has not clarified ambiguities in the required technical-data policies to ensure their full implementation. Specifically, DOD has not clarified how program offices should address the requirement for documenting technical-data assessments, and has not clarified a recent requirement to conduct a business-case analysis on technical-data needs. Without internal controls such as clear instructions on how to respond to these policies, DOD and the military departments risk incomplete and inconsistent actions and documentation in response to the technical-data requirements. According to standards for internal control,<sup>30</sup> implementing effective internal controls is a key factor that helps organizations ensure that management's directives are carried out. Examples of internal control actions that

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<sup>29</sup>U.S. Navy, *Naval Open Architecture Contract Guidebook for Program Managers*, (Washington, D.C.: June 30, 2010). Open architecture is a group of business and technical practices that, when implemented in the acquisition process, result in systems that are modular and interoperable.

<sup>30</sup>GAO, *Internal Control: Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: November 1999).

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## Revised Technical-Data Policy Requirements Are Unclear

management can take include issuing policies or instructions that enforce management's directives.

We found that the revisions to DOD's acquisition and procurement policies, which require acquisition program managers to document their long-term technical-data needs, are unclear. For example, the revised DOD Instruction 5000.02 requires program managers to document an assessment of long-term technical-data requirements for their systems. However, the policy does not clearly state the level of detail program managers are required to document, or the extent to which they should document their reasoning for acquiring or not acquiring technical data and technical-data rights. Likewise, the DFARS requires programs to address in program documentation the potential for changes in the sustainment plan over the system's life.<sup>31</sup> However, the policy does not make clear what information DOD expects to be provided in documentation of possible future changes to a system's sustainment plan (for example, underlying assumptions), and how this information should relate to the technical-data discussion. Our previously discussed evaluation of 12 acquisition strategies and plans—most of which were approved before OSD and the military departments issued their voluntary guides—showed that program managers may not fully understand how to respond to these revised policies. As we noted, we found that eight of the 12 acquisition strategies and plans we reviewed addressed no more than two of the four requirements (see fig. 2).

OSD had not issued an update to the DOD Instruction 5000.02 or the DFARS as of April 2011 to clarify what programs specifically need to do to address the assessments of technical data. OSD officials acknowledged to us that the policies could be rewritten for greater clarity, and they pointed out ambiguities in some of the requirements. For example, they told us that the assessment of technical-data requirement is unclear. The officials told us that if they had the opportunity, they would clarify the requirement to state that program managers (1) assess the data that are needed to re-compete for production, sustainment, or upgrade, and (2) determine what, if any, of that technical data the program requires.

Ambiguity in the revised policies results in limits to department decision makers' ability to exercise effective internal control in their reviews of acquisition documentation. Without clear policies on documenting long-

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<sup>31</sup>DFARS 207.106 (S-70).

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OSD Requires a Business-Case Analysis for Technical-Data Decisions, but Has Not Issued Instructions on How to Conduct the Analysis

term technical-data needs, program managers may not understand how to respond and, as a result, may continue to submit incomplete acquisition documentation. Without complete documentation, senior level department decision makers are limited in their ability to carry out their internal control responsibilities to ensure that programs are aligned with department policies and priorities. An August 2010 memorandum from the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics called attention to this limitation stating that recent acquisition strategies often did not include sufficient detail on topics including technical-data requirements. The memorandum stated that future acquisition strategies submitted that did not provide all of the required information would be delayed. Delays in the acquisition process can, in turn, hinder DOD's ability to provide needed materiel to the warfighter.

OSD recently added a requirement that program managers conduct a business-case analysis as part of their assessment to determine the long-term technical-data needs for their systems; however, DOD has not issued policy or other internal controls that describe how to conduct this analysis. In November 2010, the Under Secretary of Defense for Acquisition, Technology and Logistics issued a memorandum that requires program officials to take a number of actions to improve efficiency and productivity in defense spending.<sup>32</sup> Among other things, the memorandum requires program managers for all acquisition programs to (1) conduct a business-case analysis<sup>33</sup> that outlines the technical-data rights the government will pursue to ensure competition and (2) include the results of this analysis in acquisition strategies at Milestone B.<sup>34</sup>

According to OSD officials, a business-case analysis would require program managers to determine whether the benefits of acquiring technical data are worth the costs of acquiring them. Prior to this memorandum, a formal cost benefit analysis was not required for technical-data decisions. As of January 2011, DOD officials told us that no

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<sup>32</sup>Under Secretary of Defense for Acquisition, Technology and Logistics memorandum: *Implementation Directive for Better Buying Power-Obtaining Greater Efficiency and Productivity in Defense Spending* (Nov. 3, 2010).

<sup>33</sup>The memorandum requires that the analysis be conducted in concert with the engineering trade-off analysis. It requires that the analysis outline the open-systems-architecture approach and technical-data rights needed to ensure a life-cycle consideration of competition in the acquisition of weapon systems.

<sup>34</sup>Milestone B marks the entry into the Engineering and Manufacturing Development phase of the acquisition process.

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acquisition program had yet completed this analysis because no program had reached Milestone B since the Under Secretary issued the memorandum. Therefore, we could not evaluate an analysis conducted in response to this new requirement.

Since establishing the requirement in its November 2010 memorandum, OSD had not issued policy or other internal controls, as of April 2011, that describe how to conduct the business-case analysis or what information to report in the acquisition strategy.<sup>35</sup> The Under Secretary of Defense for Acquisition, Technology and Logistics stated in the memorandum that the department would take additional actions in support of the memorandum. However, OSD officials told us that they have not decided whether to issue additional clarifying policy to instruct program managers on how to conduct the analysis or what information about the results of the analysis they should include in acquisition strategies.

Previous GAO Review Found Business-Case Analyses Were Inconsistently Completed

We have previously reported that the military services inconsistently completed similar business-case analyses when DOD had not issued instructions on how to conduct them.<sup>36</sup> In 2008, we found that DOD had not issued a policy instructing program managers on the elements to include in the documentation of the analyses that program managers conducted for decisions on performance based logistics arrangements—a DOD approach to providing support to weapon systems.<sup>37</sup> As a result, program staff conducted business-case analyses that were inconsistent and missing one or more elements recommended by a DOD instruction on economic analyses. We found that DOD officials implemented the

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<sup>35</sup>Although, OSD had not issued policy or other internal controls, in April 2011, OSD issued a guidebook that program manager may choose to follow to develop business-case analyses for their technical-data rights decisions. The Principal Deputy Assistant Secretary of Defense for Logistics and Materiel Readiness issued the *Product Support Business-Case Analysis Guidebook*. The guidebook provides a standardized process and methodology for writing, aiding decision making, and providing analytical decision support for a business-case analysis of product support decisions.

<sup>36</sup>GAO, *Defense Logistics: Improved Analysis and Cost Data Needed to Evaluate the Cost-effectiveness of Performance Based Logistics*, GAO-09-41 (Washington, D.C.: Dec. 19, 2008).

<sup>37</sup>Performance based logistics is the purchase of performance outcomes, such as system availability, rather than the purchase of individual elements of logistics support—such as parts, repairs, and engineering support. Performance based logistics is DOD's preferred approach to weapon system product support. Product support is the package of support functions required to maintain the readiness of weapon systems. Technical data is one of the 11 elements of product support.

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performance based logistics arrangements for the sample of programs we reviewed without the benefit of sound and consistent analyses. Among other things, we recommended that DOD clearly define specific criteria for these analyses in DOD policy. DOD partially agreed with our recommendation. To address our recommendation, in April 2011, the Principal Deputy Assistant Secretary of Defense for Logistics and Materiel Readiness issued the *Product Support Business-Case Analysis Guidebook*.<sup>38</sup>

Because OSD has not issued policy instructing program managers on how to conduct and document the analyses, program managers may conduct incomplete or inconsistent analyses and report inconsistently on important elements of the analyses and findings. Similar to the situations we described in our 2008 report, program managers may not include key required elements of business-case analyses, such as assumptions, feasible alternatives, and costs and benefits that support their technical-data decisions. In addition, because OSD has not issued policy instructing program managers on how to report on the results of these analyses, program managers may not provide the information that senior leaders in DOD and the military departments need in order to decide whether to approve the acquisition programs at major milestones in the acquisition process. Technical-data decisions can be costly, with some prime contractors quoting a price in excess of \$1 billion for technical-data packages. Thus, decision makers need sufficient details to conduct their reviews and make fully informed decisions. The November 2010 memorandum demonstrates that this negative effect already exists for technical-data-related requirements.

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## Conclusions

DOD has taken meaningful actions that could lead to an increased focus on technical data in defense acquisition—actions that may help DOD improve effectiveness and cost efficiency when acquiring and sustaining its weapon systems. DOD has reflected congressionally mandated and GAO-recommended changes in updated policies to emphasize the importance of discussing and documenting assessments of technical data and data rights in acquisition documentation, but program officials could benefit from additional clarifications to these policies. If DOD does not clarify the level and type of detail required in these updated policies,

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<sup>38</sup>At the time of this report, we had not evaluated whether this guidebook met the intent of our 2008 recommendation.

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program managers may continue to inconsistently include the needed information. Furthermore, senior department officials may delay approving these acquisition strategies at major milestone reviews. Delays at major acquisition milestones could postpone the department's effort to provide needed materiel to the warfighter.

Moreover, DOD has required that program managers conduct a business-case analysis to weigh the costs of access to technical data for DOD's systems against the benefits of acquiring these data. This recently required step may add rigor to decisions to acquire technical data that program managers make early in the process. However, in the absence of DOD-wide instructions to program managers on how to conduct these analyses, program officials may conduct analyses that exclude key elements and therefore do not support optimal decision making for rights to technical data that can cost \$1 billion or more. Delaying issuing implementing instructions to program managers for the business-case analysis could slow DOD's and the military departments' efforts to answer the Under Secretary of Defense's call to take a more aggressive approach to finding efficiencies and reducing DOD's spending where possible in order to better afford its future weapon systems.

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## Recommendations for Executive Action

To establish effective internal controls over technical-data policies that improve DOD's ability to efficiently and cost-effectively acquire and sustain weapon systems over their life cycles, we recommend that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology and Logistics to take the following two actions:

- Issue updates to the acquisition and procurement policies that clarify requirements for documenting long-term technical-data requirements in program acquisition strategies and acquisition plans. Among other things, DOD should clarify the level and type of detail required for acquiring technical data and technical-data rights that should be included in acquisition strategies and acquisition plans
- Issue instructions for program managers to use when conducting business-case analyses that are part of the process for determining the levels and types of technical data and technical-data rights needed to sustain DOD's systems. The instructions should identify the elements to be included in the analyses and the types of information to be documented in reports on the analyses.

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## Agency Comments

In written comments on a draft of this report, DOD concurred with our two recommendations. The department's written comments are reprinted

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in their entirety in appendix III. DOD also provided technical comments that we have incorporated into this report where applicable.

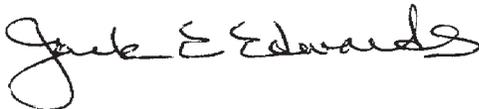
In response to our recommendation that DOD issue updates to the acquisition and procurement policies that clarify requirements for documenting long-term technical-data needs in program acquisition strategies and acquisition plans, DOD stated that it planned to issue a clarification this calendar year.

In response to our recommendation that DOD issue instructions for program managers to use when conducting business-case analyses for technical-data decisions, the department stated that it planned to issue guidance this year related to this recommendation.

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As we agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of the report until 30 days from the report's date. At that time, we will send copies of this report to the Secretary of Defense; the Secretaries of the Army, the Navy, and the Air Force; and the Under Secretary of Defense for Acquisition, Technology and Logistics. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions concerning this report, please call me at (202) 512-8246 or [edwardsj@gao.gov](mailto:edwardsj@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 IV.



Jack E. Edwards  
Director  
Defense Capabilities and Management

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# Appendix I: Scope and Methodology

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To evaluate the extent to which the Department of Defense (DOD) updated its acquisition and procurement policies to reflect certain technical-data-related provisions of the National Defense Authorization Act for Fiscal Year 2007 and GAO's 2006 recommendations, we reviewed the law, our recommendations, and a variety of documents related to the context of the act and recommendations. We reviewed DOD and military department regulations governing technical-data acquisition and technical-data-related reports issued by GAO and DOD. We compared changes that the department made to its acquisition and procurement policies to respond to the law and our recommendations. Specifically, we analyzed the following policies: (1) a memorandum issued by the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics (OSD), Data Management and Technical Data Rights (July 19, 2007); (2) DOD Instruction 5000.02, *Operation of the Defense Acquisition System* enclosure 12(9) (Dec. 8, 2008); and (3) the Defense Federal Acquisition Regulation Supplement (DFARS) 207.106 (S-70). We also used information from this evaluation of the policies and their requirements in the analyses we conducted for our other objectives. To obtain DOD's perspective on changes to these policies as well as information for all three of our objectives, we interviewed officials in a variety of organizations including OSD, acquisition headquarters for each military department, selected program executive offices, and the acquisition programs in our sample. Table 1 lists the organizations we contacted to conduct interviews and obtain documents related to the acquisition of technical data. We also reviewed information in databases in the DOD Office of the Inspector General and GAO that record actions DOD took to implement our recommendations. To evaluate actions DOD and the military departments took to implement additional legislative provisions and audit recommendations related to technical data (that we describe in app. II), we evaluated the requirements in the relevant legislation or the actions called for in the relevant recommendations. We then obtained and analyzed key documentation, such as updates DOD made to the DFARS to implement section 202 of the Weapon Systems Acquisition Reform Act of 2009.

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**Table 1: Organizations Interviewed to Obtain Information Related to Technical Data for this Report**

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**Office of the Secretary of Defense**

- Office of the Under Secretary of Defense for Acquisition, Technology and Logistics
- Office of the Assistant Deputy Under Secretary of Defense for Materiel Readiness
- Office of Defense Procurement and Acquisition Policy
- Office of the Director, Acquisition Resources and Analysis
- Defense Acquisition University
- Office of the General Counsel
- Office of the Inspector General

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**Air Force**

- Directorate for Acquisition Integration, Assistant Secretary of the Air Force for Acquisition
  - Acquisition Excellence & Change Management Office, Deputy Assistant Secretary for Acquisition Integration
  - Division of Acquisition Law, Assistant Secretary of the Air Force for General Counsel
  - Directorate for Transformation, Office of the Deputy Chief of Staff for Logistics, Installations, and Mission Support
  - Directorate for Maintenance, Office of the Deputy Chief of Staff for Logistics, Installations, and Mission Support
  - Aeronautical Systems Center, Wright-Patterson Air Force Base, Ohio
  - Program Management and Acquisition Excellence, Aeronautical Systems Command, Wright-Patterson Air Force Base, Ohio
  - Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio
  - Small Diameter Bomb II Program Office, Panama City, Florida
  - C-130 Avionics Modernization Program Office, Wright-Patterson Air Force Base, Ohio
  - F-16 Operational Flight Program M6/M6+ Program Office, Wright-Patterson Air Force Base, Ohio
  - B-1 Bomber Radar Reliability and Maintainability Improvement Program Office, Wright-Patterson Air Force Base, Ohio
  - Air Force Audit Agency, Wright-Patterson Air Force Base, Ohio
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**Army**

- Office of the Assistant Secretary of the Army for Acquisitions, Logistics and Technology
- Army Materiel Command
- Product Data and Engineering Working Group
- Program Executive Office, Enterprise Information Systems
- Program Executive Office, Missiles and Space, Redstone Arsenal, Alabama
- Integrated Air and Missile Defense Program Office, Redstone Arsenal, Alabama
- Extended Range/Multiple Purpose Unmanned Aircraft System, Redstone Arsenal, Alabama
- Guided Multiple Launch Rocket System Alternative Warhead, Redstone Arsenal, Alabama
- Joint Battle Command Platform Program Office, Ft. Monmouth, New Jersey, and Aberdeen Proving Ground, Maryland
- Army Audit Agency

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**Navy**

- Office of the Deputy Assistant Secretary of the Navy for Acquisition and Logistics Management
- Office of the Deputy Assistant Secretary of the Navy for Management and Budget
- Program Executive Office for Integrated Warfare Systems
- Program Executive Office, Command, Control, Communications, Computers and Intelligence, San Diego, California
- Naval Open Architecture Enterprise Team
- Surface Electronics Warfare Improvement Program Office
- E-6B Mercury Take Charge and Move Out Block I Modification Program Office, Patuxent River Naval Air Station, Maryland
- Joint High Speed Vessel Program Office
- Navy Multiband Terminal Program Office, San Diego, California

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**DOD other**

- Defense Data Management Team

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**Industry**

- Aerospace Industries Association
- National Defense Industrial Association
- Northrop Grumman Corporation, Baltimore, Maryland
- Boeing Corporation

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**Federally Funded Research and Development Corporation**

- Software Engineering Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania
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Source: GAO.

Note: Unless otherwise specified, these organizations are located in or near Washington, D.C.

To evaluate the extent to which selected defense acquisition programs adhered to the updated requirements in DOD policy to document their

systems' long-term technical-data needs, we selected a non-generalizable sample of 12 acquisition programs from a population of about 50 programs. To draw the sample, we asked the three military departments to identify all acquisition programs at the two highest-value acquisition categories (ACAT I or II) that had reached the first three acquisition milestones—A - Material Solution Analysis, B - Technology Development, and C - Engineering and Manufacturing Development—between September 2007 and August 2010. We chose September 2007 because this was the first point at which both sets of requirements for documenting long-term technical-data needs were in effect, and we chose August 2010 because we selected our sample at that time. Because too few Marine Corps programs reached one of these milestones during this period, we excluded this service from our evaluation. To draw the sample, we selected four programs from each department, balancing the ACAT levels and milestones. We then selected those programs that had most recently, at the time we drew our sample, reached their respective milestones. We used this approach because DOD updated its policies in 2007, and we wanted to allow as much time as possible for the military departments to develop methods to respond to the requirements in DOD's updated policies. Although findings from this sample are not generalizable to all DOD acquisition programs, the variety of circumstances that programs in our sample face can illustrate important aspects of documenting a system's long-term technical-data needs. Our sample includes a variety of acquisition programs, including new systems (e.g., Joint High Speed Vessel), modifications to existing systems (e.g., C-130 Avionics Modernization Program), and systems that were primarily software (e.g., Joint Battle Command-Platform). After completing our sample selection, we analyzed the content of each program's acquisition strategy and acquisition plan, which are required to document the program's long-term technical-data needs. To conduct these analyses, we compared each program's acquisition strategy and acquisition plan against certain criteria from the July 2007 memorandum from the Under Secretary of Defense for Acquisition, Technology and Logistics, DOD Instruction 5000.02, and the DFARS.<sup>1</sup> We could not compare the acquisition strategies and plans in our sample to the voluntary guides that OSD and the military departments issued in 2009 and 2010 because the guides were issued after the majority of programs in our sample had completed their acquisition milestone

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<sup>1</sup>Specifically, we incorporated requirements from DOD Instruction 5000.02 enclosure 12(9) December 8, 2008; and the *Defense Federal Acquisition Regulation Supplement* 227.207.106 (S-70).

documentation. Two team members concurrently conducted independent analyses of the same documentation. We then compared the two sets of observations and reconciled any differences with the assistance of a third analyst, when necessary. We also provided our preliminary observations of each strategy to officials in each program and considered additional information they provided when our observations indicated that the program had not addressed one or more of the requirements.

To evaluate the extent to which DOD has taken actions to improve decision making by program managers on the long-term technical-data needs for systems in the acquisition process, we identified recent steps the department has taken. We interviewed officials in a variety of offices including OSD and the acquisition headquarters offices for each military department. We interviewed the officials responsible for implementing any steps DOD took, and we obtained and evaluated supporting documentation (e.g., the Defense Acquisition Guidebook and guides issued by each military department). The officials we interviewed represent organizations such as the Army's Product Data and Engineering Working Group and the Air Force's Product Data Acquisition Team.

For each objective, we assessed the reliability of the data we analyzed by reviewing existing documentation related to the data sources and interviewing knowledgeable agency officials about the data that we used. We found the data sufficiently reliable for the purposes of this report.

We conducted this performance audit from May 2010 to May 2011 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.

# Appendix II: DOD's Implementation of Technical-Data Requirements Cited in Recent Legislation and DOD Audit Agencies' Report Recommendations

The information in this appendix supplements the information we provided elsewhere in this report. The legal requirements, audit recommendations, and the Department of Defense (DOD) and military department implementation actions in this appendix are more narrowly focused than those reviewed earlier in this report. Together, the two sets of mandated actions, recommendations, and response actions provide additional information about technical-data-related requirements.

To evaluate the actions DOD has taken to implement the technical-data requirements of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 and report recommendations by the Army and Air Force Audit Agencies, we identified and evaluated the requirements and recommendations. We then interviewed relevant DOD and Air Force and Army officials and obtained key documentation such as updates DOD made to the Defense Federal Acquisition Regulation Supplement to implement section 202 of the Weapon Systems Acquisition Reform Act of 2009.

## Technical-Data Requirements in the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 and DOD's Response

Section 822 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009<sup>1</sup> requires DOD to take two technical-data-related actions in the acquisition process. Table 2 lists these two legislative requirements and DOD's response to each.

**Table 2: Technical-Data-Related Requirements from the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 and DOD's Responses as of March 2011**

Legislative requirements	DOD's Response
Requires the Secretary of Defense no later than 270 days after the enactment of the act to:	<b>Not Implemented.</b> DOD officials said that (a) DOD has not issued any policy in response to the law; (b) prior to the issuance of the law, multiple policies existed that address some aspects of the law for some non-Federal Acquisition Regulation agreements, and (c) DOD is evaluating whether to modify these policies or issue a comprehensive policy in response to the law.
Issue policy guidance on technical data for non-Federal Acquisition Regulation agreements. <sup>a</sup> The act further requires that such non-FAR agreements contain appropriate provisions relating to rights in technical data consistent with this policy guidance.	

<sup>1</sup>Pub. L. No. 110-417 § 822 (Oct. 14, 2008).

**Appendix II: DOD's Implementation of  
Technical-Data Requirements Cited in Recent  
Legislation and DOD Audit Agencies' Report  
Recommendations**

<b>Legislative requirements</b>	<b>DOD's Response</b>
Submit a report to the congressional armed services committees on the implementation of section 2320(e) of Title 10, U.S. Code, for the assessment of long-term technical-data needs to sustain major weapon systems, among other matters.	<b>Not Implemented.</b> DOD has not issued the required report to the congressional armed-services committees. In September 2010, the Office of the Assistant Secretary of Defense for Logistics and Materiel Readiness sent a letter to the Chairmen and Ranking Members of the congressional defense committees notifying them that the report would be issued within 90 days of the letter. The department had not issued it as of March 2011.

Source: GAO analysis of the law and DOD documentation.

<sup>a</sup>With respect to this requirement, a non-Federal Acquisition Regulation agreement means an agreement that is not subject to laws pursuant to which the Federal Acquisition Regulation is prescribed, including a transaction authorized under section 2371 of Title 10 and a cooperative research and development agreement.

**Recommendations on  
Technical Data by Army  
and Air Force Audit  
Agencies' Reports, and the  
Services' Responses**

The Army Audit Agency and the Air Force Audit Agency recently issued reports that address the acquisition of technical data. Table 3 lists these reports, their recommendations, and the military departments' responses to the recommendations.

**Table 3: Army and Air Force Audit Agencies' Recommendations in Technical-Data-Related Reports and the Military Departments' Responses as of March 2011**

**Army Audit Agency, Acquisition of Technical Data and Rights for Major Army Systems, A-2009-0143-ALC (Alexandria, Va: July 6, 2009)**

<b>Recommendations</b>	<b>Army's Response</b>
The report recommends that the Army take four actions:	The report stated that the Army had taken or would take actions in response to each of the four recommendations.
Update Army Regulation 70-1 to reflect two memorandums dated July 2007 (Under Secretary of Defense for Acquisition, Technology and Logistics) and April 2008 (Acting Assistant Secretary of the Army for Acquisition, Logistics and Technology). Both memorandums require program managers to assess their system's long-term technical-data needs and document that assessment in a data-management strategy.	<b>Not Implemented.</b> The Army has not updated Army Regulation 70-1. However, Army officials told us that an update to Army Regulation 70-1 has been drafted. They told us that the update will require program managers to assess the long-term technical-data needs of their systems and to reflect that assessment in a data-management strategy. These officials also told us that the Army plans to issue the update to the regulation by June 2011.
Make sure that principal assistants responsible for contracting advise program executive officers and program managers <sup>a</sup> of their technical-data rights and responsibilities—detailed in Title 10 of U.S. Code and an April 2008 memorandum issued by the Acting Assistant Secretary of the Army for Acquisition, Logistics and Technology.	<b>Implemented.</b> In January 2009, the Army's Director, Procurement Policy and Support, issued a memorandum about these responsibilities for principal assistants responsible for contracting.
Establish a standardized decision matrix or checklist that identifies and documents steps necessary to determine and secure the level of data rights for each major Army system.	<b>Implemented.</b> In August 2010, the Army's Product Data and Engineering Working Group issued a guidebook that includes a worksheet to assist program managers as they assess their technical-data needs.

**Appendix II: DOD's Implementation of  
Technical-Data Requirements Cited in Recent  
Legislation and DOD Audit Agencies' Report  
Recommendations**

Establish required training for personnel in the acquisition of major Army systems to improve knowledge of technical data and rights.

**Not Implemented.** The Army has not established the recommended training courses, according to an Army headquarters' official. However, the official told us that the Defense Acquisition University has courses and provides training for the Army acquisition workforce. Defense Acquisition University personnel told us that prior to the Army report they taught courses on technical-data rights in the acquisition process and that they adjusted their courses to be consistent with DOD policy.

**Air Force Audit Agency, Technical Data Management, F2009-0006-FC3000 (Washington, D.C.: May 8, 2009)**

**Recommendations**

**Air Force's Response**

The report recommends that the Air Force take two actions:

The report indicates that both recommendations are closed. However, we found that the Air Force had not taken action to implement one of the recommendations.

Issue an interim guidance memorandum on the technical-data provisions included in the 2007 National Defense Authorization Act, pending release of an update to Air Force Instruction 63-101, Acquisition and Sustainment Life Cycle Management.

**Implemented.** The Air Force included the recommended guidance in an update of Air Force Instruction 63-101 rather than issue guidance in an interim memorandum.

Develop a technical-data checklist to incorporate in the Air Force's acquisition sustainment tool kit, which is a resource for acquisition personnel.

**Not Implemented.** Air Force officials told us that the Air Force has not developed a technical-data checklist to incorporate into the acquisition sustainment tool kit. However, according to these officials, they plan to revise the tool kit by August 2011 to incorporate the recommended checklist.

Source: GAO analysis of Army and Air Force documentation.

<sup>a</sup>Principal assistants responsible for contracting are senior officials who are responsible for contracting and also support program executive officers and program managers. Program executive officers and program managers are responsible for (1) acquiring and sustaining weapon systems, (2) assessing the long-term technical-data-rights needs of those systems, and (3) documenting technical-data assessments in a data-management strategy, among other things.

# Appendix III: Comments from the Department of Defense



ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

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

Mr. Jack E. Edwards,  
Director, Defense Capabilities and Management  
U.S. Government Accountability  
Office, 441 G Street, NW  
Washington, DC 20548

MAY -3 2011

Dear Mr. Edwards:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-11-469, "DEFENSE ACQUISITION: DoD Should Clarify Requirements for Assessing and Documenting Technical Data Needs," dated April 5, 2011 (GAO Code 351497). Detailed comments on the report recommendations are enclosed.

Sincerely,

A handwritten signature in black ink, appearing to read "Shay D. Assad".

Shay D. Assad  
Director, Defense Procurement  
and Acquisition Policy

Enclosure:  
As stated

GAO DRAFT REPORT DATED APRIL 5, 2011  
GAO-11-469 (GAO CODE 351497)

“DEFENSE ACQUISITION: DOD SHOULD CLARIFY REQUIREMENTS FOR  
ASSESSING AND DOCUMENTING TECHNICAL DATA NEEDS”

DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology and Logistics to issue updates to the acquisition and procurement policies that clarify requirements for documenting long-term technical data requirements in program acquisition strategies and acquisition plans. Among other things, DoD should clarify the level and type of detail required for acquiring technical data and technical data rights that should be included in acquisition strategies and acquisition plans. (See page 24/GAO Draft Report.)

**DoD RESPONSE: Concur.** The Department expects to issue the recommended clarification this calendar year.

**RECOMMENDATION 2:** The GAO recommends that the Secretary of Defense direct the Under Secretary of Defense for Acquisition, Technology and Logistics to issue instructions for program managers to use when conducting business case analyses that are part of the process for determining the levels and types of technical data and technical data rights needed to sustain their systems. The instruction should identify the elements to be included in the analyses and the types of information to be documented in reports on the analyses. In addition, OSD should consider consolidating the requirement for business case analyses with updates to clarify requirements for documenting long-term technical data requirements. (See page 24/GAO Draft Report.)

**DoD RESPONSE: Concur.** The Department expects to issue guidance related to this recommendation this calendar year.

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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Jack E. Edwards, (202) 512-8246 or [edwardsj@gao.gov](mailto:edwardsj@gao.gov)

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## Staff Acknowledgments

Key contributors to this report were Carleen Bennett, Assistant Director; Larry Bridges; Simon Hirschfeld; Amber Keyser; James P. Klein; Katherine Lenane; Richard Powelson; Michael Silver; and Ryan Starks.

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# Related GAO Products

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*Federal Contracting: Opportunities Exist to Increase Competition and Assess Reasons When Only One Offer Is Received.* [GAO-10-833](#). Washington, D.C.: July 26, 2010.

*Defense Management: DOD Needs Better Information and Guidance to More Effectively Manage and Reduce Operating and Support Costs of Major Weapon Systems.* [GAO-10-717](#). Washington, D.C.: July 20, 2010.

*Defense Logistics: Improved Analysis and Cost Data Needed to Evaluate the Cost-effectiveness of Performance Based Logistics.* [GAO-09-41](#). Washington, D.C.: December 19, 2008.

*Weapons Acquisition: DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems.* [GAO-06-839](#). Washington, D.C.: July 14, 2006.

*Defense Management: Opportunities to Enhance the Implementation of Performance-Based Logistics.* [GAO-04-715](#). Washington, D.C.: August 16, 2004.

*Defense Logistics: Opportunities to Improve the Army's and the Navy's Decision-making Process for Weapons Systems Support.* [GAO-02-306](#). Washington, D.C.: February 28, 2002.

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