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United States Government Accountability Office  
Washington, DC 20548

October 28, 2010

The Honorable Carl Levin  
Chairman  
The Honorable John McCain  
Ranking Member  
Committee on Armed Services  
United States Senate

The Honorable Ike Skelton  
Chairman  
The Honorable Howard P. McKeon  
Ranking Member  
Committee on Armed Services  
House of Representatives

Subject: DEFENSE ACQUISITIONS: *Additional Guidance Needed to Improve Visibility into the Structure and Management of Major Weapon System Subcontracts*

According to some Department of Defense (DOD) and industry experts, consolidation of the defense industry along with a shift in prime-contractor business models has resulted in prime contractors subcontracting more work on the production of weapon systems and concentrating instead on systems integration. Based on some estimates, 60 to 70 percent of work on defense contracts is now done by subcontractors, with certain industries aiming to outsource up to 80 percent of the work. At the same time, there is evidence that subcontractor performance may contribute to cost and schedule delays on weapon system programs.

Congress has raised questions about the extent to which primes are awarding subcontracts competitively and about the government's insight into the process prime contractors use for determining what work to make in-house and what work should be bought from subcontractors (make-or-buy decisions).<sup>1</sup> In the 2009 Weapon Systems Acquisition Reform Act (WSARA), Congress directed DOD, as part of efforts

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<sup>1</sup>Weapon Systems Acquisition Reform Act of 2009 (WSARA), Pub. L. No. 111-23 § 202 (2009). These provisions were incorporated in the Defense Federal Acquisition Regulation Supplement (DFARS) on Feb. 24, 2010. "Make or buy" refers to the prime contractor's written plan for a contract identifying those major items to be produced or work efforts to be performed in the prime contractor's facilities and those to be subcontracted. "Make" items include those produced or performed by the prime's affiliates, subsidiaries, or divisions. (FAR 2.1 and 15.407-2 [b]).

to improve competition throughout the life cycle of major defense programs, to ensure that contractors' make-or-buy decisions are fair and objective. Specifically, the Secretary of Defense was directed to require prime contractors to give full and fair consideration to qualified sources other than the prime contractor for the development or construction of major subsystems and components of major weapon systems. These actions were to be taken by November 22, 2009. Congress also directed DOD to revise its acquisition regulation regarding organizational conflicts of interest (OCI).<sup>2</sup> In response to both of these requirements, DOD has drafted revisions to its acquisition regulation that are pending final approval.<sup>3</sup>

The 2010 National Defense Authorization Act<sup>4</sup> required us to study the structure and management of major subcontracts under contracts for the acquisition of selected major weapon systems. In response to this mandate and given the reliance on subcontracts and the possible implications for government oversight, we (1) examined how government and prime contractors defined "major" subcontract, and the number and value of those considered major, (2) analyzed prime contractors' approach to selecting and managing major subcontractors, (3) examined the extent to which the government has visibility into major subcontracts and, finally, (4) examined how potential OCIs are addressed and the government's role in selecting the approach chosen. This letter summarizes our results, the details of which are in the enclosed briefing (enc. II).

To conduct our work, we selected six major defense acquisition programs as case studies (two programs each from the Army, Air Force, and Navy). Based on data from the December 2007 Selected Acquisition Reports (SAR)<sup>5</sup> we selected Acquisition Category ID<sup>6</sup> programs with total program costs above \$5 billion and with the start of development after 2000. We excluded programs that currently involved more than one prime contractor or that are currently part of a multinational joint venture, and limited our selections to programs that were under contract with a top-five defense contractor based on earnings in 2009. The six programs are

### Army

- (1) Stryker Family of Vehicles—General Dynamics (Land Systems)<sup>7</sup>
- (2) Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS)—Raytheon (Integrated Defense Systems)<sup>8</sup>

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<sup>2</sup>Pub. L. No. 111-23 § 207 (2009).

<sup>3</sup>Defense Federal Acquisition Regulation Supplement; Acquisition Strategies to Ensure Competition Through out the Life Cycle of Major Defense Acquisition Programs, 75 Fed. Reg. 8272 (Feb. 24, 2010); Defense Federal Acquisition Regulation Supplement; Organizational Conflicts of Interest in Major Defense Acquisition Programs, 75 Fed.Reg. 20954 (Apr. 22, 2010).

<sup>4</sup>National Defense Authorization Act for Fiscal Year 2010, Pub. L. No. 111-84, § 844 (2009).

<sup>5</sup>The most recent SARs available at the time we started our review.

<sup>6</sup>Acquisition Category ID denotes programs with special interest based on one or more factors, including: technological complexity; congressional interest; a large commitment of resources; and critical to achievement of a capability. DOD Instruction 5000.02, enclosure 2, Paragraph 9.a. (Dec. 8, 2008).

<sup>7</sup>At the time of program start, the prime contractor was GM GDLS Defense Group LLC; a joint venture of General Dynamics (Land Systems) and General Motors Corporation. In 2003, General Dynamics (Land Systems) bought General Motors Defense-Canada. The prime contract for Stryker is with GM GDLS Defense Group LLC. However, the program is managed by General Dynamics (Land Systems).

<sup>8</sup>Hereafter, for the purposes of this review, we refer to the prime contractors by their corporate names. We refer to the prime contractor by its division only when necessary for clarity.

## Navy

- (3) Gerald Ford–Class Aircraft Carrier Program (CVN 78–class)—Northrop Grumman (Newport News Shipbuilding)
- (4) P-8A Poseidon Aircraft—Boeing (Defense, Space, and Security)

## Air Force

- (5) C-5 Aircraft Reliability Enhancement and Reengining Program (RERP)—Lockheed Martin (Aeronautics)
- (6) F-35 Lightning II Aircraft (previously Joint Strike Fighter (JSF))<sup>9</sup>—Lockheed Martin (Aeronautics).

For each case study, we met with the prime contractor, government program office, and contracting officer, as well as cognizant Defense Contract Management Agency (DCMA) or Supervisor of Shipbuilding and Conversion (SUPSHIP) and Defense Contract Audit Agency (DCAA) officials. We also met with officials from the Office of the Under Secretary of Defense, Acquisition, Technology, and Logistics; Naval Air Systems Command; DCAA and DCMA headquarters; and experts in the field of defense acquisitions to gain insight into subcontract management and OCI issues across DOD. We analyzed pertinent contract documents, including the requests for proposals for the prime contracts,<sup>10</sup> acquisition plan or strategy, and contracting officer’s summary of negotiations. We also analyzed information from the prime contractors, including make-or-buy, source-selection, and OCI policies and procedures. In addition, we reviewed GAO and DOD inspector general reports concerning DOD supplier base and OCI issues.<sup>11</sup> The briefing slides provide additional detail on our methodology. We conducted this performance audit from March 2010 to October 2010 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.

### **“Major” Subcontract Defined Differently by Prime Contractors and Government Entities**

While the Federal Acquisition Regulation (FAR) provides dollar thresholds for reporting on subcontracts, there is no set definition for major subcontract. Prime contractors and various government entities (program and contracting offices, as

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<sup>9</sup>For the purposes of this briefing we refer to this program as the JSF. While the JSF program does include multinational partners as part of its acquisition approach, there is only one prime contractor for the air system—Lockheed Martin Aeronautics, which is based in Ft. Worth, Texas. Our analysis of the JSF program only covers the prime contracts for the air system and does not cover the propulsion systems.

<sup>10</sup>We analyzed contracts for system design and development as well as, where applicable, low-rate initial production.

<sup>11</sup>GAO, *Department of Defense: A Departmentwide Framework to Identify and Report Gaps in the Defense Supplier Base Is Needed*, GAO-09-5 (Washington, D.C.: Oct. 7, 2008). DOD Inspector General Report No. D-2010-024, *Contracted Advisory and Assistance Services for the U.S. Army Future Combat Systems*, Nov. 24, 2009.

well as DCMA and DCAA) define “major” subcontract differently, for example based on a certain dollar value or on the criticality of the item being purchased. These differing definitions could affect levels of government or prime contractor insight, particularly with regard to contractor subsidiaries or affiliates, which the primes did not always consider to be subcontractors. The number and value of major subcontracts also varied considerably among programs in our review—particularly when affiliates and subsidiaries were included. One program had as many as 364 major subcontracts, representing 58 percent of the total value of all subcontracts. Another program had 13 major subcontracts, but they made up over 90 percent of the total value of all subcontracts. Prime contractors did not always include subsidiaries or affiliates in their definitions of major subcontract, even when they were managed as such.

### **Prime Contractors Structure Subcontracts to Reduce Their Risk and Manage Performance through Various Mechanisms**

Prime contractors in our review told us they structure their subcontracts to provide the required items, while reducing their risk exposure and maximizing their profit potential. For example, prime contractors generally attempted to shift cost risk onto their subcontractors through the use of fixed-price subcontracts even when their own contract with the government was cost-reimbursement.<sup>12</sup> Primes also use make-or-buy processes to define what products and services must be retained internally to exploit their core competencies, and what should be outsourced to qualified suppliers to achieve cost efficiency. Several case-study programs rely on prime contractor affiliates and subsidiaries to perform significant amounts of work. While primes define work performed by affiliates as part of their company’s core competency—that is “make” activities—they often select and manage affiliates using similar methods to those used with external subcontractors.

Once the prime contract has been awarded, “major” subcontractors typically remain the same over the life cycle of the program—from development to production—even if the subcontracts were originally competed. We found only a few examples of a change in a major subcontractor in any of our case studies. Most notable was the prime’s decision to replace the subcontractor responsible for designing a highly complex sensor system on the P-8A Poseidon aircraft due to performance issues. During program execution, prime contractors evaluate subcontractor performance and financial health by tracking metrics that identify underperformance, spur corrective actions and guide investments in subcontractor development. This information is routinely offered to the government upon request, even if not contractually required. While primes have significant visibility into and control of their first-tier subcontractors, they acknowledge the challenges of managing subtier suppliers across highly complex supply chains.

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<sup>12</sup>Under a fixed-price contract, the buyer pays a fixed price and is guaranteed an end item or service whether the actual total cost falls short of or exceeds the contract price. The seller assumes the risk of a cost overrun. Under a cost-reimbursement contract, the buyer pays the seller’s allowable costs, plus a fee, and the seller makes a good faith effort to meet the buyer’s needs within the estimated cost. However, the risk of a cost overrun is on the buyer.

## **Government Visibility into Major Subcontracts Is Generally Limited**

The FAR emphasizes the prime contractor's responsibility in managing its subcontractors.<sup>13</sup> Officials in our case studies underscored the limited role of the government in selecting and managing subcontracts. Prior to contract award, the government's visibility into subcontracts is restricted to the minimum amount of information necessary to determine that subcontract costs are fair and reasonable. To a great extent, the prime contract approach has implications on the degree of government's visibility into subcontract costs. For prime contracts awarded competitively, programs generally rely on the prime contractor to evaluate subcontractor proposals (even when subcontracts are not awarded competitively). For prime contracts awarded noncompetitively, the government has greater visibility into subcontract costs by validating noncompetitively awarded subcontractors' cost and pricing data over certain thresholds. Four of the six prime contracts we reviewed were competed in the development phase, and all six low-rate production contracts are planned to be awarded on a sole-source basis. In addition, when the prime contractor designates a subcontract as a commercial item, the government's visibility is significantly limited,<sup>14</sup> including DCMA's postaward monitoring. For example, DCMA does not have access to the plant of two commercial subcontractors, even though those subcontractors are responsible for critical components of the weapon systems in our review.

To help ensure that subcontract prices are fair and reasonable, the government reviews prime contractors' business systems. Prime contractors rely on business systems, such as those for estimating and purchasing, as a means to select and manage their subcontracts. However, we found a number of issues with contractor estimating and purchasing systems that may present challenges in the government's ability to ensure subcontract price reasonableness. For example, DCAA determined that one contractor's estimating system was inadequate because the company failed to perform appropriate cost analysis for subcontracts necessary to certify the prime contract's price. Moreover, we found one example in which more than 10 years had passed since the administrative contracting officer had issued an evaluation of a contractor's purchasing system.

While WSARA directed DOD to ensure that prime contractors' make-or-buy decisions are fair and reasonable, government program and contracting officials in our review, for the most part, did not see the benefits of requesting the contractor's make-or-buy plan to provide perspective on the degree of competition at the subsystem level or on the prime's rationale for its make-or-buy decisions. In fact, only one of the selected case-study programs—CVN 78-class aircraft carrier—had requested the contractor's make-or-buy plan. Citing the doctrine "privity of contract,"<sup>15</sup> some contracting officers stated that even asking for the make-or-buy plan would embroil them in the

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<sup>13</sup>FAR 42.202 (e) 2.

<sup>14</sup>FAR 12.208 provides that contracts for commercial items shall rely on contractors' existing quality assurance as a substitute for government inspection and testing unless customary market practices include in-process inspections.

<sup>15</sup>The legal relationship and responsibilities between parties to the same contract. It is commonly understood to mean that the government's contractual relationship is with the prime contractor; therefore the government is generally without authority to direct the subcontractor to perform tasks under the contract.

contractor's decision-making process and could possibly make the government financially liable for decisions resulting from directing the prime contractor methods for completing the work. Proposed changes to DOD's acquisition regulation incorporate the provisions on make-or-buy outlined in WSARA, but do not provide additional guidance on implementation.

None of our case-study programs exercised another FAR provision, the consent-to-subcontract clause, to provide visibility into subcontracts prior to prime-contract award. This clause would provide the government with an opportunity to examine the reasonableness of subcontract costs before costs are incurred. Further, only one included a contract deliverable that required submission of a subcontract management plan to provide additional insight into the prime's organization, process, and management of subcontracts.<sup>16</sup> A number of contracting officials told us that their programs' contracts were awarded during the acquisition reform era of the 1990s, when the goal was to limit contractual requirements.

Programs in our case studies relied primarily on the prime to manage their subcontracts during program execution. Again, concerns about privity of contract were a factor. Officials told us they do not want to be in the position of directly instructing subcontractors, which may have implications for government liability. While all program offices require the primes to provide periodic updates on program execution, the primes generally determine what information will be included—including information on subcontractor status. Instead of contractual requirements, program offices rely heavily on informal communication, such as weekly telephone calls, with the prime contractor for regular visibility into subcontractor performance. The degree of insight into subcontracts tends to increase when the program reaches critical phases of its life cycle, such as transition to production or when issues with a subcontractor threaten overall program performance. While case-study programs used a variety of methods to gain insight into subcontractor performance, most programs relied heavily on updates from the DCMA office located at the prime contractor's facility.

### **Government Officials Generally Expect Organizational Conflicts of Interest to Be Identified by the Prime Contractor**

Most programs we reviewed displayed limited concern about the potential for organizational conflicts of interest (OCI) in their contracts.<sup>17</sup> Although the FAR requires contracting officers to identify and evaluate potential OCIs, government officials told us that it was the prime contractors' responsibility to identify an OCI at both the prime and subcontract level. Some contracting officers also stated that they assume the OCI clauses are included in any support contracts, such as for testing and evaluation, and that they saw no need to include the clause in the weapon system contract itself. Consequently, most programs did not use contract clauses as a means to prevent an OCI.

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<sup>16</sup>However, prime contractors did submit small-business subcontracting program plans.

<sup>17</sup>The term "OCI" refers to a person that is unable to or potentially unable to render impartial assistance or advice to the government, or its objectivity in performing work may be impaired, or it has an unfair competitive advantage because of other activities or relationships. FAR 2.101. "Person" is used in the customary legal sense, which includes a company or organization. Companies and organizations are the conflicted party when reviewing OCIs.

One case study (the Stryker program) identified a potential OCI in its upcoming modernization contract if the current prime or its affiliates chose to compete as suppliers of a major subsystem, since the prime contractor performed system engineering for the program. To mitigate this potential OCI, the government plans to conduct the competition for subsystem modernization (rather than allowing the prime to do so) if the prime contractor or its affiliates choose to compete. Prime contractors told us that they have well-developed systems and procedures for identifying OCIs among their subsidiaries and affiliates. While prime contractors will initiate OCI review procedures when they suspect a conflict, the process is mandatory on all solicitations that contain an OCI clause. We found that OCI clauses are not consistently flowed down to subcontractors by the prime contractors in the case studies we reviewed. Impending DFARS changes are aimed at tightening regulations regarding OCIs, including the use of standard clauses as a means to identify and resolve potential conflicts for primes and their affiliates. However, the effect of this regulation is not yet known.

## **Conclusions**

Consolidation of the defense industry, as well as earlier defense acquisition reform, has had a profound effect on how weapon system programs are awarded and managed today. Programs in our case studies rely on the prime contractor to design, develop, and manage the work effort. Prime contractors, in turn, rely on major subcontractors to varying degrees for a large share of the work effort. While lack of privity of contract means that the government does not have a direct contractual relationship with the subcontractor, it also means that the prime contractor is responsible for its subcontracts. Privity of contract issues notwithstanding, the government ultimately plays a role in ensuring a program's success. Programs we reviewed used a number of informal methods for gaining insight into subcontract performance. However, program officials seemed reluctant to use available acquisition provisions, such as the make-or-buy plan, that enable the government to gain visibility into the prime contractor's subcontracting effort, largely because of fears regarding government liability. Further, government officials often questioned the overall purpose of these provisions. Nevertheless, Congress directed DOD in WSARA to ensure that prime contractors' make-or-buy decisions are fair and reasonable. Provisions such as the make-or-buy plan represent important tools that the government can use to gain insight into the prime contractor's methods for awarding subcontracts. Moreover, these provisions can help programs to understand the degree of competition at the subcontract level—a first step in meeting requirements for WSARA. While there is awareness of the importance of supplier issues, programs showed little concern about the potential for an OCI. The government relies exclusively on prime contractors to identify OCIs at the prime and subcontract level. However, proposed DFARS changes will likely put more onus on contracting officers to identify and resolve potential OCIs.

## **Recommendation for Executive Action**

We recommend that the Secretary of Defense direct the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics to develop additional guidance for contracting officers on implementing make-or-buy provisions in weapon system

programs as outlined in the 2009 Weapon Systems Acquisition Reform Act, including factors to consider in conducting the required make-or-buy analyses.

### **Agency Comments and Our Evaluation**

We provided draft copies of this letter and briefing to DOD for review and comment. DOD concurred with our recommendation to develop additional guidance for contracting officers on implementing make-or-buy provisions, noting that this is a task assigned to the Panel on Contracting Integrity. DOD expects to have additional guidance available by June 30, 2011. DOD's written comments are reprinted in enclosure I.

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We are sending copies of this letter and briefing to DOD and other interested congressional committees. In addition, these documents will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions, please contact me at (202) 512-4841 or [chaplainc@gao.gov](mailto:chaplainc@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this letter. Key contributors to this report were Michele Mackin, Assistant Director; Jacob Beier; Robert Bullock; Avius Carroll; Morgan Delaney Ramaker; John Krump; Diana Moldafsky; Leigh Ann Nally; and Roxanna Sun.



Cristina T. Chaplain  
Director  
Acquisition and Sourcing Management

Enclosures



## Enclosure I: Comments From the Department of Defense



ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

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

Ms. Cristina Chaplain  
Director, Acquisition and Sourcing Management  
U.S. Government Accountability Office  
441 G Street, N.W.  
Washington, DC 20548

OCT 22 2010

Dear Ms. Chaplain:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-11-61R, "DEFENSE ACQUISITIONS: Additional Guidance Needed to Improve Visibility into the Structure and Management of Major Weapon System Subcontracts," dated October 1, 2010 (GAO Code 120894). Detailed comments on the report recommendations are enclosed.

We appreciate the opportunity to comment on the draft report.

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 October 1, 2010  
GAO-11-61R (GAO CODE 120894)**

**“DEFENSE ACQUISITIONS: ADDITIONAL GUIDANCE NEEDED TO  
IMPROVE VISIBILITY INTO THE STRUCTURE AND MANAGEMENT OF  
MAJOR WEAPON SYSTEM SUBCONTRACTS”**

**DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATIONS**

**RECOMMENDATION:** The GAO recommends that the Secretary of Defense direct the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics to develop additional guidance for contracting officers on implementing make or buy provisions in weapon system programs as outlined in the 2009 Weapon Systems Acquisition Reform Act, including factors to consider in conducting the required make or buy analyses.

**DoD RESPONSE:** Concur. The task of providing the recommended guidance will be assigned to the Panel on Contracting Integrity for 2011 action. We expect to have additional guidance for contracting officers by June 30, 2011.



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# **Structure and Management of Subcontracts under Major Weapon System Contracts**

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**Briefing for Senate and House Armed Services  
Committees  
October 28, 2010**

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## Introduction

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- According to some Department of Defense (DOD) and industry experts, prime contractors are subcontracting more work on the production of weapon systems and concentrating instead on systems integration.
  - Based on some estimates, 60 to 70 percent of work on defense contracts is now done by subcontractors, with some industries aiming to outsource up to 80 percent of their work.
  - At the same time, there is evidence that subcontract performance is contributing to cost and schedule delays on weapon system programs.
  - 2010 National Defense Authorization Act required GAO to study the structure and management of major subcontracts under prime contracts for the acquisition of selected major weapon systems.
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## Objectives, Scope, and Methodology

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- Section 844 of the 2010 National Defense Authorization Act directed GAO to conduct a study on the structure and management of major subcontracts under contracts for the acquisition of selected major weapon systems (see slide 50).
- On the basis of the mandate and in consultation with staff from the Senate and House Armed Services Committees, we used the following reporting objectives for the purposes of this review:
  - How do government and prime contractors define “major” subcontracts and what is the number and value of those considered major?
  - What is the prime contractor’s approach to selecting and managing major subcontractors?
  - To what extent does the government have visibility into major subcontracts?
  - How are potential OCIs addressed and what role, if any, does the government play in selecting the approach chosen?

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## Objectives, Scope, and Methodology

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- To address the mandate, we used a case-study approach and selected two programs from each of the military services:

Navy

- CVN 78 Gerald Ford–Class Aircraft Carrier Program (CVN 78)
- P-8A Poseidon Aircraft

Army

- Stryker Family of Vehicles
- Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS)

Air Force

- C-5 Reliability Enhancement and Re-Engining Program (RERP)
  - F-35 Lightning II Joint Strike Fighter (JSF)<sup>1</sup>
- See slides 7-8 for more details on our case studies.
  - For a complete discussion of our scope and methodology, including case-study selection, see slides 52-55.

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<sup>1</sup>JSF is a joint Air Force and Navy program, but was under Air Force leadership at the time of selection. We consider it an Air Force program for the purposes of this audit. Our analysis of the JSF program only covers the prime contracts for the air system and does not cover the propulsion systems. Page 5

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## Summary




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- Prime contractors and government officials define “major” subcontract differently, which could affect levels of government or prime contractor insight, particularly with regard to contractor subsidiaries or affiliates. The number and value of major subcontracts also varied considerably among programs in our review.
  - Prime contractors’ approach to subcontracts aims to maximize profit, while reducing their risk exposure as they make decisions related to subcontract award and manage first-tier subcontract performance through a variety of mechanisms.
  - Government visibility into major subcontracts is generally limited:
    - Prior to prime-contract award, government visibility is largely dependent upon the prime contractor’s approach to the subcontract and the adequacy of the contractor’s systems.
    - Contracting officers are generally not making use of Federal Acquisition Regulation (FAR) provisions that could provide additional insight. For example, contracting officers did not see the benefit of requesting make-or-buy plans, citing concerns about possible government liability if they were to become embroiled in the contractors’ subcontracting decisions.
    - Government officials also cite concerns about possible government liability as a reason for taking a limited role in overseeing subcontracts; however, all program offices require primes to provide periodic updates on program execution, which may include information on subcontractor status, and generally rely on the Defense Contract Management Agency (DCMA) to provide surveillance of the prime contract—and subcontracts—when deemed necessary.
  - Government officials generally expect OCIs to be identified by the prime contractor and displayed limited concern about potential OCIs for weapon system programs.
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# Background: Case-Study Programs<sup>1</sup>

Table 1: Case-Study Program Descriptions

 <p>Source: Lockheed Martin.</p>	<p><b>C-5 Reliability Enhancement and Re-Engining Program (C-5 RERP)</b>  <b>Lockheed Martin (Aeronautics)</b></p> <p>The Air Force's C-5 RERP is one of two major upgrades for the C-5. The RERP is designed to enhance the reliability, maintainability, and availability of the C-5 by replacing the propulsion system; modifying the mechanical, hydraulic, avionics, fuel, and landing gear systems; and making other structural modifications. Together with the C-5 avionics modernization program, these upgrades are intended to improve C-5 mission-capability rates and reduce total ownership costs. The RERP is currently in production.</p>
 <p>Source: U.S. Navy.</p>	<p><b>CVN 78 Gerald Ford-Class Aircraft Carrier Program (CVN 78)</b>  <b>Northrop Grumman (Newport News Shipbuilding)</b></p> <p>The Gerald Ford-class nuclear-powered aircraft carrier (CVN 78) is the planned successor to the Nimitz-class (CVN 68). The new carriers are expected to include advanced technologies in propulsion, aircraft launch and recovery, and survivability designed to improve operational efficiency and enable higher sortie rates while reducing required manpower. The Navy awarded a construction-preparation contract for the lead ship in May 2004. Construction began in September 2008 and the Navy expects delivery of this ship by September 2015. The Navy is currently preparing for construction of the first follow-on ship, CVN 79.</p>
 <p>Source: U.S. Army.</p>	<p><b>Joint Land Attack Cruise Missile Defense Elevated Netted Sensor Systems (JLENS)</b>  <b>Raytheon (Integrated Defense Systems)</b></p> <p>The Army's JLENS is designed to provide over-the-horizon detection and tracking of land-attack cruise missiles and other targets. The system consists of two tethered aerostats with advanced sensors for surveillance and tracking, as well as mobile mooring stations, communication payloads, and processing stations. JLENS also provides surveillance and engagement support to other systems. The Army awarded the initial development contract in 1998 and plans to begin low-rate production in May 2012.</p>

<sup>1</sup>Hereafter, for the purposes of this review we refer to the prime contractors by their corporate names. We refer to the prime contractors by their division only when necessary for clarity. Page 7

# Background: Case-Study Programs (cont.)

Table 1 (cont.): Case-Study Program Descriptions



Source: Lockheed Martin.

## Joint Strike Fighter (JSF) Lockheed Martin (Aeronautics)

The JSF program plans to develop and field a family of stealthy strike fighter aircraft for the Air Force, Marine Corps, Navy, and U.S. allies, with the goal of maximizing commonality to minimize costs. The carrier-suitable variant will complement the Navy's F/A-18E/F aircraft. The conventional-takeoff-and-landing variant will primarily be an air-to-ground replacement for the Air Force's F-16 and A-10 aircraft, and will complement the F-22A. The short-takeoff-and-vertical landing variant will replace the Marine Corps' F/A-18 and AV-8B aircraft. The program expects to deliver an initial capability to the Marine Corps in March 2012.



Source: U.S. Navy.

## P-8A Boeing (Defense, Space, and Security)

The Navy's P-8A Poseidon is a Boeing 737 commercial derivative that includes an open-architecture mission system and next-generation sensors that will replace the P-3C Orion turboprop aircraft. The P-8A system is designed to sustain and improve the Navy's maritime and littoral intelligence, surveillance, and reconnaissance capabilities. Its primary roles are antisubmarine warfare and antisurface warfare. The program expects to deliver its first increment of capability in June 2013.



Source: PM-Stryker Brigade Combat Team.  
Source: Prime contractors and DOD.

## Stryker General Dynamics (Land Systems)<sup>1</sup>

The Army's Stryker is a family of vehicles built on a common chassis and is largely derived from existing military components. The Stryker is the primary ground combat platform for the Stryker Brigade Combat Team and is air-transportable in a C-130 aircraft. The Stryker Family of Vehicles comprises 10 configurations that have a range of functions, such as infantry transport, fire support, and medical evacuation. Eight of the 10 Stryker configurations are in full-rate production and the remaining two variants are in extended low-rate production. The Army is currently making plans to modernize the fleet.

<sup>1</sup>The prime contract for Stryker is with GM GDLS Defense Group LLC, however, the program is managed by General Dynamics Land Systems.

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## Background: Regulations Governing Subcontracts in Defense Acquisitions

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- The FAR defines “subcontracts” as contracts that are entered into by a prime contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.<sup>1</sup>
- For the purposes of contract pricing, the FAR also defines “subcontract” as the transfer of commercial items between divisions, subsidiaries, or affiliates of a contractor or a subcontractor.
- A number of FAR and Defense Federal Acquisition Regulation Supplement (DFARS) provisions govern the use of subcontracts (see next slide).

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<sup>1</sup>Subcontracts also may include purchase orders.

# Background: Selected Regulations Governing Subcontracts in Defense Acquisitions

Table 2: Selected Regulations Governing Subcontracts in Defense Acquisitions

Topic	Description	Applicability	FAR/DFARS section
<b>Make-or-buy programs</b>	Contractor proposals shall contain information such as items and work included, categorization as "must make," "must buy," or "can either make or buy," and identification of proposed subcontractors if known. Can help government ensure negotiation of reasonable contract prices, and satisfactory performance.	Plan submission may be required for acquisitions of \$11.5 million or more (apart from limited cases such as certain research and development contracts) or under \$11.5 million if deemed necessary by the contracting officer. Minimum amount for "items and work included" section of contractor proposal is \$1 million.	Section: FAR 15.407-2, DFARS 215.407-2 Provision/clause: FAR 52.215-9
<b>Small-business subcontracting plans</b>	Plan shall include separate percentage goals for using the different types of small-business concerns as subcontractors, description of principal supplies/services to be subcontracted and methods used to identify sources. Can enhance subcontracting opportunities for small-business concerns.	Any contractor receiving a contract for more than the simplified acquisition threshold (generally \$100,000) must agree that small business concerns will have maximum practicable opportunity to participate in contract performance. Except under certain circumstances, contracts expected to exceed \$550,000 and with subcontracting possibilities shall require submission of an acceptable subcontracting plan.	Section: FAR 19.7, DFARS 219.7 Provision/clause: FAR 52.219-9, DFARS 252.219-7003
<b>Consent-to-subcontracts</b>	For subcontracts identified in the clause, a prime with an approved purchasing system has to secure consent from the contracting officer. Evaluation of consent can include consideration of whether the prime has adequately substantiated the selection as offering greatest value to government.	If prime has an approved purchasing system, consent required for subcontracts specifically identified by contracting officer. If prime does not have an approved system, consent required for a range of subcontracts including most cost-type, and fixed-price over certain thresholds.	Section: FAR 44.2, DFARS 244.2 Provision/clause FAR 52.244-2

Source: GAO analysis of FAR and DFARS.

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## Background: Defense Industry Consolidation

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- Mid-1990s defense industry consolidation: through mergers and acquisition, over 50 major defense suppliers consolidated into 5 major prime contractors
- Since the 1990s the prime-contractor business model has shifted from “vertical integration” to serving as overall system integrators. Prime contractors moved towards outsourcing a substantial amount of development, fabrication and subassembly work
  - Based on some estimates, 60 to 70 percent of work is now done by subcontractors.
  - According to some industry experts, prime contractors may aim to outsource up to 80 percent of work.

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## Background: Acquisition Reform

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- In the mid-1990s, DOD sought to streamline the acquisition process to reduce the costs of new weapons.
- DOD sought “to reduce management layers, eliminate certain reporting requirements, use commercial off-the-shelf systems and subsystems, reduce oversight from within as well as from outside DOD, and eliminate perceived duplication of testing.”<sup>1</sup>
- DOD structured programs using Lead System Integrators (LSI) and Total System Performance Responsibility (TSPR) models that limited government management and gave prime contractors considerable authority over system engineering, subsystem make-or-buy decisions, and allocation of research and development resources to the supplier base.

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<sup>1</sup>Thomas Christie, “What Has 35 Years of Acquisition Reform Accomplished?” *United States Naval Institute Proceedings*, vol. 132, no. 2 (2006).

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## Background: 2009 Weapon System Acquisition Reform Act (WSARA)

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- To improve competition throughout the life cycle of weapon system acquisitions, including at the subsystem level, Congress required DOD in Section 202(c) to take actions to ensure fair and objective make-or-buy decisions by prime contractors.
- In particular, Section 202(c) requires DOD to
  - ensure that prime contractors give full and fair consideration to qualified sources other than themselves for the development or construction of major subsystems and components of major weapon systems;
  - provide government surveillance of the process by which prime contractors consider and determine whether to develop or construct work in-house or through a subcontract; and
  - assess the extent to which a prime contractor has given full and fair consideration to qualified sources other than itself in sourcing decisions as a part of past-performance evaluations.
- Provisions in Section 202(c) took effect on November 22, 2009, for all major defense acquisition programs.
- These provisions were incorporated in DFARS on February 24, 2010.
- Section 207 requires DOD to revise DFARS in order to tighten existing regulations regarding OCIs.

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## Background: Organizational Conflicts of Interest (OCI)

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- The term “OCI” refers to a firm that is potentially unable to render impartial assistance or advice to the government, or its objectivity in performing work may be impaired, or it has an unfair competitive advantage because of other activities or relationships.
- Experts have noted an increase in the number of OCIs due in part to defense industry consolidation that creates situations in which different business units of the same firm can end up with the service and production side of a program.
- GAO has developed a body of bid-protest case law interpreting OCI regulations and analyzing mitigation strategies. GAO bid protest case law divides OCIs into three types:
  1. **Impaired Objectivity:** a company is asked to perform tasks that require objectivity, but another role the company plays casts doubt on the company’s ability to be truly objective (for example, when a company is to give the government an assessment of the performance of firms, where one of those firms is an affiliate of the company giving the assessment).
  2. **Unequal Access to Information:** a company has access to nonpublic information (typically through performance of a contract) that gives it an unfair advantage in the competition for a later contract.
  3. **Biased Ground Rules:** situations in which a company sets the ground rules for a future competition by, for example, writing the specifications that competitors for a contract must meet.



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## Background: FAR, DFARS, and Service-Level OCI Regulations

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- FAR Subpart 9.5 provides the legal framework governing OCIs in federal procurement.
  - The FAR requires agencies' contracting officers to
    - identify and evaluate potential OCIs as early in the acquisition process as possible; and
    - avoid, neutralize, or mitigate significant potential conflicts before contract award.
  - In situations in which avoiding, neutralizing, or mitigating an OCI would not be in the government's interest, the FAR also allows for the head of an agency (or a designee) to waive any of the OCI general rules or procedures.
- DFARS and service-level regulations supplement the FAR, in certain areas, by providing specific information on waiver authority, prohibitions against the use of LSIs, and language that should be included as contract clauses in situations in which a potential OCI is suspected.

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  - **Definitions of “Major” Subcontract Vary between and within Programs**
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**Objective 1: Definition of Major Subcontract**

# Definitions of “Major” Subcontract Vary between and within Programs

- FAR/DFARS present different thresholds for reporting on subcontracts that could be interpreted as definitions for “major” subcontract:

**Table 3: Acquisition Regulations That Provide Definitions of Major Subcontract**

Covered Information	FAR/DFARS Provision
<b>General Submission of Cost or Pricing Data (&gt;\$650,000)</b>	FAR 15.403-4 (a) (1) requires the contracting officer to obtain certified cost and pricing data for acquisitions exceeding \$650,000 where no other exceptions to cost or pricing data requirements exist. Exceptions include the contracting officer’s determination that prices are based on adequate price competition or when a commercial item is being acquired.
<b>Subcontract Submission of Cost or Pricing Data (≥\$11.5 million)</b>	FAR 15.404-3 (c) (1) (i)(ii) requires contractors to submit cost or pricing data to the government for subcontracts that are the lower of either \$11.5 million or more; or exceed 10 percent of the prime contractor’s proposed price.
<b>Earned Value Management (EVM) System Data Submissions (≥\$20 million or ≥\$50 million)</b>	DFARS 234.201 requires a contractor’s EVM system to comply with specific industry guidelines <sup>1</sup> if it is a cost or incentive contract/subcontract valued at \$20 million or more. For cost or incentive contracts/subcontracts valued at \$50 million or more, the cognizant federal agency must approve the contractor’s EVM system.

Source: GAO analysis of FARs and DFARS.

- Defense Contract Audit Agency (DCAA) officials responsible for five of six programs in our case studies told us that they rely on the FAR’s \$650,000 cost and pricing threshold to determine the major subcontracts that require cost analyses.
- Prime contractors and government agencies in our case studies had varying definitions of major subcontract (see next slide).

<sup>1</sup>American National Standards Institute / Electronic Industries Alliance Standard 748, Earned Value Management Systems (ANSI/EIA-748).

**Objective 1: Definition of Major Subcontract**

# Definitions of “Major” Subcontract Vary between and within Programs (cont.)

**Table 4: Prime Contractor, Program Office, and DCMA/Supervisor of Shipbuilding, Conversion, and Repair (SUPSHIP) Definitions Of Major Subcontract in Case-Study Programs**

System	Prime contractor	Program office	DCMA/SUPSHIP
<b>C-5 RERP</b>	<ul style="list-style-type: none"> <li>(1) involves acquisition of material, software, services, or subsystems that are large, complex, or unique</li> <li>(2) considered critical to fulfilling contractual and program obligations</li> <li>(3) designated as major or critical in the prime contract</li> </ul>	uses prime's list of 13 major subcontracts that represent the highest dollar values and 90 percent of the bill of materials	<ul style="list-style-type: none"> <li>(1) dollar threshold in which key suppliers have contract values in excess of \$650,000; and</li> <li>(2) risk and historical performance</li> </ul>
<b>CVN 78</b>	<ul style="list-style-type: none"> <li>(1) components that are not currently in use by the Navy and are not raw materials</li> <li>(2) components that require engineering using a new design or a significant modification to an existing design</li> </ul>	over \$11.5 million (FAR definition), but program officials stated that they do not manage the program according to major subcontracts	items requiring government inspection at the subcontractors' facility, which tend to be naval nuclear materials
<b>JLENS</b>	<ul style="list-style-type: none"> <li>(1) an item over a significant dollar value that cannot be produced by Raytheon or would require significant resources to develop an item over a significant dollar value, that Raytheon can produce, but chooses not to</li> <li>(2)</li> </ul>	over \$25 million	over \$1 million threshold
<b>JSF</b>	<ul style="list-style-type: none"> <li>(1) a major teammate or supplier with a significant percentage of total program value</li> <li>(2) a major technology supplier that is vital to the program</li> </ul>	varies within program office depending on function (e.g., contracting versus production/manufacturing)	any subcontract with EVM requirements or representing more than 20 percent of program acquisition cost.
<b>P-8A</b>	has significant leverage on Boeing's ability to successfully complete the program within cost, schedule, and technical performance requirements	at least 10 percent of the proposed total contract price	considers factors related to quality, risk/criticality, and requirements
<b>Stryker</b>	exceeds a \$10 million threshold; criticality and availability also factors if subcontract does not meet dollar threshold	subcontracts reviewed by DCAA	<ul style="list-style-type: none"> <li>(1) purchase orders of \$1 million or more</li> <li>(2) provides a critical part, or</li> <li>(3) has a history of problems</li> </ul>

Source: GAO analysis of DOD and prime-contractor data.

*Objective 1: Definition of Major Subcontract*

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## **Varying Definitions of “Major” Subcontract Could Affect Government Insight into Subcontractor Performance and Identification of Risk**

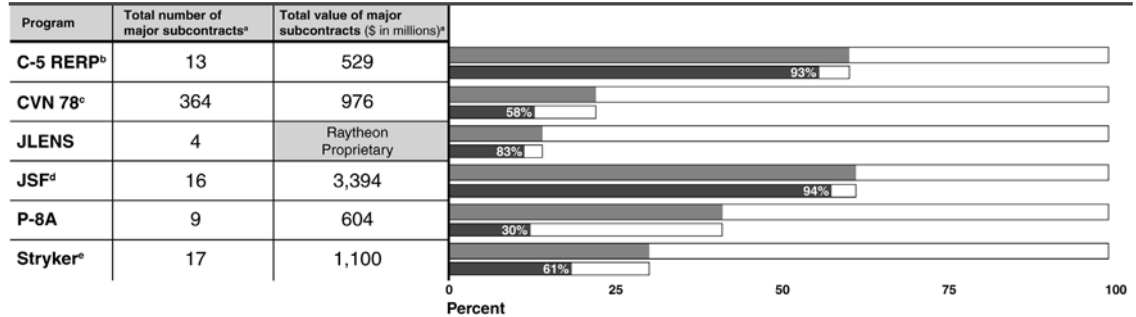
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- Government and prime contractors often define subcontracts as “major” to identify the need for additional insight or management attention.
- Some case studies do not include subsidiaries or affiliates in definitions of major subcontracts.
- SUPSHIP Newport News only defines “major” subcontract from a quality-assurance perspective; in particular, materials that require government inspection at the subcontractor’s facility.
- According to DCAA officials, the FAR does not specifically state whether or not primes are required to aggregate the total value of purchase orders from a single supplier.
  - Two of the primes in our case studies only provided the government with cost and pricing data supporting subcontractor proposals if an individual purchase order was above the cost and pricing data threshold.
  - Consequently, primes in these instances did not provide pricing data if a single supplier had multiple purchase orders that totaled \$650,000 or above.

**Objective 1: Number of Major Subcontracts**

## Number and Value of Subcontracts Vary by Program

Table 5: Number and Value of Major Subcontracts Based on Prime-Contractor Data



Legend:  Subcontracts as a percentage of total estimated contract value     Major subcontracts as a percentage of all subcontracts

Source: GAO analysis of DOD and prime contractor data.

Note: Percentage of all subcontracts includes the value of corporate affiliates even if not considered a subcontract by the prime contractor. For example, Boeing's agreement with its affiliate, Boeing Commercial Airplanes (BCA).

<sup>a</sup> As defined by case-study prime contractors. In the case of Stryker, this includes one affiliate with a subcontract valued at \$101.2 million, and in the case of JSF this includes three affiliates with contracts valued at \$550 million (low-rate initial production [LRIP] Lots 1-3).

<sup>b</sup> Refers to C-5 RERP contracts for LRIP Lots 1-4.

<sup>c</sup> Refers to the total current target price for the Detail Design and Construction contract and the construction preparation contract for CVN 78.

<sup>d</sup> Refers to JSF LRIP contract for Lots 1-3. The prime contractor estimates that subcontracts will constitute 74 percent of the total contract value of the upcoming LRIP 4 contract.

<sup>e</sup> Refers to the Stryker contract for follow-on requirements.

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## Primes' Contracting Approach Aims to Reduce Their Exposure to Cost Risk

- Prime contractors frequently shift cost risk onto subcontractors by means of fixed-price subcontracts, even when their own contract with the government is cost-reimbursement (with developmental items typically bought on cost-reimbursement contracts, and increased fixed-price contracting for production items).
- Fixed-price contracts do not pay based on resources or time expended by the supplier, placing the risk of absorbing cost overruns on the supplier. Cost-reimbursement contracts, in contrast, reimburse the supplier for expenses incurred, and place more risk of absorbing cost overruns on the buyer.
- Examples from case studies include the following:
  - **C-5 RERP:** development contract was cost plus award fee, yet all of approximately 220 subcontracts were fixed price (including all major subcontracts).
  - **P-8A:** While the development contract is a cost-type contract, over 70 percent of subcontract value is on fixed-price subcontracts, including five of the eight subcontracts identified as major.
  - **Stryker:** all production-related subcontracts are fixed price (including all 17 "majors"):
    - Prime contract can be cost-reimbursement or fixed price, depending on scope of work.
    - Representatives from General Dynamics stated that the company "believes that fixed-price subcontracts are appropriate and that passing the risk quotient on to the subcontractors is fair in a production environment."
  - **CVN 78:** While the construction contract is a cost-type contract, all but three subcontracts are fixed price, including critical technologies such as the Advanced Weapons Elevator and Air Conditioning Plant.



## Primes Use Make-or-Buy Processes to Further Minimize Risk and Maximize Profit

- Make-or-buy processes determine what work should be done in-house, and what should be bought from external suppliers.
- Primes use make-or-buy processes to manage risk and deliver shareholder value when working on major defense programs.
- These processes define what products and services must be retained internally, and what can be outsourced to qualified sources.
- Make-or-buy processes typically include evaluation of the ability of the supplier base to support program requirements (see fig.1). Primes might test the marketplace as part of this assessment and then decide to do work in-house based on what is best for the business.

Figure 1: Main Elements of Prime Contractor Make-or-Buy Processes

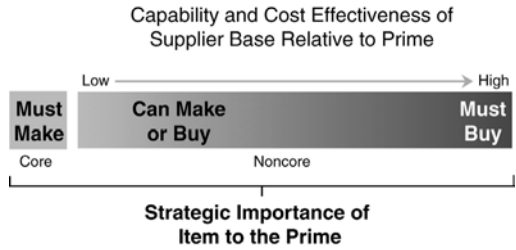


Source: GAO analysis of prime contractor data.

## Primes Consider Core Competencies and Supplier Capabilities to Achieve Best Value

- Primes' make-or-buy analyses aim to exploit their core competencies, get the best value from the marketplace, and reduce supply-chain uncertainty (see fig 2).
- For example:
  - For a JLENS component, Raytheon's make-or-buy analysis guided both initial outsourcing and; as the supplier's ability to execute the original design came into question, Raytheon's decision to make the revised design of the component in-house.
  - Northrop Grumman Shipbuilding Newport News considers all work requiring welding to certain Navy specifications as "core," but also emergent work and work for which there are no qualified vendors.

Figure 2: Illustrative Prime Contractor Make-or-Buy Analysis

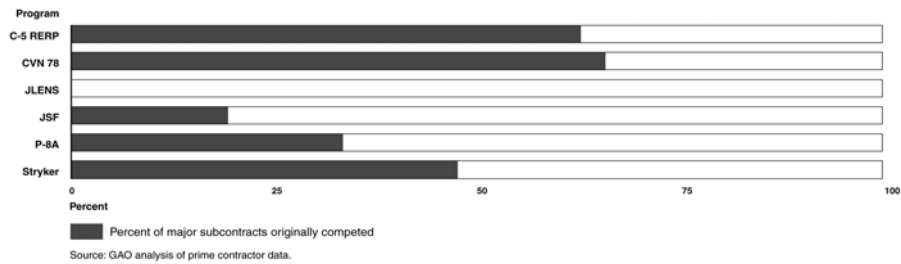


Source: GAO analysis of prime contractor data.

## Government Generally Does Not Influence Subcontract Competition Decisions

- Prime contractors and government officials stated that the government does not play a role in determining whether to award subcontracts competitively or sole source.
- Contracting officials in our case studies stated that the government wants to avoid influencing major decisions such as subcontract competition to prevent government assumption of the prime's responsibilities.
- We found only one example from our case studies where there was some government direction. On the Stryker program the government directed General Dynamics to use an antitank system developed by Raytheon.
- Only two programs competed more than 50 percent of their subcontracts (see fig. 3).

Figure 3: Competition for Major Subcontracts



## Major Subcontracts Rarely Re competed over Program Lifecycle

- WSARA requires the Secretary of Defense to ensure that acquisition strategies for new or revised programs include measures to ensure competition or the option of competition throughout the life cycle at both the prime and the subcontract level.
- Major subcontractors for case-study programs rarely changed across the life cycle of each program.
- We found only a few exceptions:
  - Only one C-5 RERP major subcontractor (for wiring harnesses) changed between development and production contracts. This had been a core competency made in-house by Lockheed Martin, which decided to “buy” for the production contract due to advances in the wiring-harnesses industry and increased affordability.
  - During development of P-8A, Boeing determined that its original supplier of a highly complex sensor system would be unable to provide the required solution, and ultimately selected a replacement for this major subcontractor.
- Primes’ reasons cited for lack of competition for follow-on major subcontracts include the following:
  - cost to qualify new suppliers (however, some government officials told us that these costs are generally paid for by the government);
  - capital investment required of suppliers during development; and
  - lack of other suppliers able to fulfill the production contract.

## Some Primes Select Affiliates and Manage Their Work Like Other Subcontracts

- Prime contractors rely heavily on affiliates within their own companies to perform work.
  - A contract awarded to an affiliate is larger than any other subcontract on the Stryker program, representing over 20 percent of the total major subcontract value.
  - On the P-8A program, an agreement with Boeing Commercial Airplanes (BCA) division is larger than any subcontract under the prime contract.
- The FAR defines a “make item” as “an item or work effort to be produced or performed by the prime contractor or its affiliates, subsidiaries, or divisions.”
- Some prime contractors in our review select and manage affiliates that may work on their programs using some of the same methods as with external subcontractors. Examples of how these methods are applied include the following:
  - **Selection:** If Raytheon issues Requests for Proposals (RFP) and a Raytheon affiliate is on the competitive sources list and receives a copy, the affiliate’s proposal must receive fair evaluation alongside all other competitors.
  - **Management:** Lockheed Martin requires work awarded to affiliated divisions to undergo the same rigorous management as similar subcontracts, including clear definition of cost, schedule, and technical requirements, as well as adequate staffing.

## **Primes Monitor All First-Tier Subcontractors to Identify When Intervention Is Necessary**

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- For major subcontractors and other first-tier suppliers, primes have processes for gathering and analyzing large amounts of information that allow them to
  - evaluate subcontractor performance by tracking metrics on quality and rejections, delivery and schedule, responsiveness, and technical performance; and
  - assess financial health using commercial tools for predicting supplier solvency problems as well as internal databases and investigative capabilities.
- Primes also have a range of procedures for resolving subcontractor issues raised through analysis of this information, including
  - corrective action programs with assigned owners and closure dates;
  - engagement with prime executives and government customers;
  - prime verification and validation of steps taken towards problem resolution; and
  - when necessary, subcontract exit strategies for chronic nonperformance
- Primes often support subcontractor development by investing their own resources in improving subcontractor capabilities: for example, mentor-protégé relationships and upgrading of quality and manufacturing processes.

## **Subcontractor Information Is Shared with Government— Regardless of Contract Requirements**

- While some subcontractor data is contractually required by the government, prime contractors noted that large amounts of additional data they gather are shared with the government. Examples include the following:
  - Raytheon, General Dynamics, and Boeing routinely share information about supplier issues (beyond that which is contractually required) with program office representatives. Only periodic data reporting is contractually required.
  - For JSF, Lockheed Martin has created a supplier management “war room” to track key metrics and monitor the performance of major subcontractors. Although not contractually required, there is an almost identical room at the program office so the prime and the government have a similar level of insight into major subcontractors.
- For prime facilities where they are colocated, DCMA officials also have access to subcontractor information tracked by the prime. DCMA is also typically invited to recurring customer meetings, such as program reviews and site-level executive advisory groups.

## **Prime Insight into and Control over First-Tier Subcontractors Is Not Matched at Lower Tiers**

- Prime contractors have developed mechanisms for managing their direct subcontractors.
- Primes have less control over lower-tier suppliers because they only have contractual relationships with their first tier.
- However, delivery and quality problems that affect program performance may stem from subtier suppliers.
- The size and complexity of their supply chains further reduces primes' visibility into individual subtier suppliers.
- Risk due to diminishing manufacturing sources is a particular concern if a subtier provider decides to stop production of a critical item, leaving the prime with limited (and costly) mitigation options. Counterfeit materials can also enter the defense supply chain at lower tiers, complicating identification and prevention efforts.
- Prime contractors are attempting to address this issue, but acknowledge the challenges presented by their complex supply chains. For example, Lockheed Martin provides its personnel with guidance on how to identify critical subtier suppliers and assess risk but also notes the difficulty posed by the complexity of the company's supply chains and customer concerns about the lack of visibility and control at lower tiers.



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*Objective 3: Government Visibility (Preward)*

## Contracting Approach at Prime and Subcontract Level Affects Government's Visibility into Subcontract Costs

- Competitiveness of the prime contract determines, in part, the level of government visibility into subcontract costs:
  - Four of six prime contracts we reviewed were competed in the development phase, and all six programs awarded or plan to award the production contract as sole source.
  - For prime contracts awarded competitively, the government relies on market forces to produce the best subcontracting solution. There is no requirement to obtain cost and pricing data on competitively awarded contracts, though the government must assess whether the price is reasonable.
  - For sole source awards, the government can ask DCAA to validate subcontractors' cost and pricing data and evaluate the subcontractors' proposals.
- Subcontracts for commercial items are exempt from cost and pricing data requirements. The government relies on market forces to ensure reasonable costs. Examples from our case studies include the following:
  - **P-8A:** Prime concluded in its upcoming production contract that the modified Boeing 737 aircraft produced by BCA met the FAR's definition of a commercial item. According to the contracting officer, the government recognizes that by agreeing with the commercial-item determination, it does not have full access to the contractor's cost and pricing data, but weighed this against the assumed cost benefits of a commercial item. However, DCAA has had concerns with the prime's determination because of the extent of modification to the aircraft, which it estimated to cost over \$460 million.
  - **Stryker:** Contractor determined that a number of key components were commercial items including the engine, transmission, fire extinguishing system, and winch.

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## Government Reviews of Prime-Contractor Business Systems Can Help Ensure Subcontract Prices Are Reasonable

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- Prime contractors generally rely on their estimating, purchasing, and billing systems as a means to manage their subcontracts.
- Prime contractors must have estimating systems that consistently produce well-supported proposals acceptable as a basis for negotiation of fair and reasonable prices, including proposed subcontract prices.
- DCAA conducts audits of business systems at all major contractors on a periodic basis. We found examples in which DCAA deemed prime contractor systems inadequate
  - JSF: In 2007 DCAA reported that inadequacies with Lockheed Martin's (Aeronautics) estimating system could adversely affect the company's ability to formulate, process, summarize, and report cost estimates in a manner that is consistent with applicable contract laws and regulations. Moreover, DCAA recently reported weaknesses in the prime's purchasing system.
  - CVN 78: In 2009 DCAA reported estimating system deficiencies, including failures by Northrop Grumman (Newport News Shipbuilding) to perform appropriate cost analysis for applicable subcontracts prior to certification of the prime contract price. According to DCAA's draft purchasing system review, deficiencies at Northrop Grumman (Newport News Shipbuilding) could adversely affect the contractor's ability to report material costs (including subcontracts) of \$1.2 billion per year.
- While the FAR requires that the administrative contracting officer (ACO) determine if a review of the contractor's purchasing system is necessary at least every 3 years, we found issues with the timeliness of these reviews in the case of the CVN program.
  - The ACO (usually DCMA, but SUPSHIP in the case of shipbuilding programs) reviews the contractor's purchasing system (known as a CPSR) to evaluate the efficiency and effectiveness with which the contractor spends government funds and complies with government policy when subcontracting, in particular as they relate to ensuring competition at the subcontract level.
  - The last CPSR for CVN 78 was in 2000. Since then the Navy has awarded contracts for the CVN 78-class worth over \$8.3 billion. SUPSHIP is currently drafting an updated CPSR.

**Objective 3: Government Visibility (Preaward)**

**Programs Do Not Consistently Use Available FAR Provisions or Potential Contract Deliverables to Provide Visibility into Subcontract Awards**

- Case-study programs generally did not include FAR provisions available for insight into subcontracting, such as the consent-to-subcontract clause or make-or-buy plan, as well as potential contract deliverables, such as a subcontract management plan.
- A number of officials noted that their program contracts were awarded during the acquisition reform era when the goal was to limit contractual requirements.

**Consent-to-Subcontract Clause**

- None of our case-study programs have exercised a consent-to-subcontract clause in the prime contract, but the contracting officer for the JSF program told us that it plans to use the clause in the upcoming JSF production contract.
- The FAR requires the contractor to obtain the contracting officer's consent to subcontract prior to awarding certain subcontracts for contractors who don't have an approved purchasing system.
- However, contracting officers may also require a consent-to-subcontract clause if a subcontract is high value, complex, or critical.
- According to DCAA, a consent clause provides the government with an opportunity to examine the reasonableness of subcontract costs before costs are incurred.

**Subcontract Management Plan**

- Only the C-5 RERP program required submission of a subcontract management plan (beyond the required small-business subcontracting plan).
- Subcontract management plans define the strategies, plans, processes, and procedures the prime will use to manage its subcontracts.
- The CVN 78, JSF, and P-8A programs did not require a plan but required information on how the prime planned to manage its subcontractors as part of the proposal or contract.

**Objective 3: Government Visibility (Preaward)**

**Programs Do Not Consistently Use Available FAR Provisions or Potential Contract Deliverables to Provide Visibility into Subcontract Awards (cont.)**

**Make-or-Buy Program Plans**

- In an effort to ensure competition at the subcontract level, DOD implements WSARA by requiring that prime contractors make fair and objective “make-buy” decisions by fully considering contractors other than themselves for the development or construction of major subsystems and components of major weapon systems.
- FAR 15.407-2(a) states that, when required, the government may reserve the right to review and agree on the contractor’s make-or-buy program when necessary to ensure negotiation of reasonable contract prices.
- Only one of the selected case-study programs (CVN 78) required a make-or-buy plan to gain perspective on prime contractor’s decision to make in-house or subcontract out.
- Contracting officers and program officials we spoke with generally did not see a benefit in requiring such a plan, stating that they rely on the prime contractor to evaluate the supply chain to achieve cost efficiency.
- Contracting officers and program officials also stated that requiring a make-or-buy plan would embroil them in the prime’s decision-making process and could possibly make the government financially liable for decisions resulting from directing the prime contractor.
- DCAA officials for the JSF program stated that requiring a make-or-buy plan provides the government with an important tool to evaluate the degree of subcontract competition and ultimately price reasonableness. Without a make-or-buy plan clause, the prime contractor is not required to provide the government with this information.

**Objective 3: Government Visibility (Postaward)**

## **Programs Rely on Prime Contractors to Monitor and Manage Subcontractors**

- Program offices cite “privity of contract” as a reason for taking a limited role in overseeing subcontracts.
  - Government only has a contractual relationship with the prime, not with subcontractors.
  - Officials in our review told us they do not want to be in the position of directly instructing subcontractors, which may have implications for government liability.
  - Program offices in our review emphasized that they only interact with subcontractors with the consent or presence of the prime.
- All program offices require primes to provide periodic updates on program execution, which may include information on subcontractor status.
  - On the C-5 RERP program, the prime conducts semiannual, 3-day program-management reviews; and quarterly, 1-day, technical-interchange meetings with the government, where it reports on the C-5 production progress (including any issues with subcontractors).
  - The JLENS statement of work requires that the contractor conduct quarterly program reviews and present subcontractor award schedules and status.
- Instead of contractual requirements, program offices rely heavily on informal communication (for example, weekly check-in calls) from the prime contractor for regular visibility into subcontractor performance.
  - Stryker program officials stated that someone at various levels of the program office is in contact with the prime regarding subcontracting activity on a daily basis and that the prime holds weekly meetings with the program office, which includes issues with subcontractors.
  - The P-8A program office holds weekly meetings with Boeing, where the program office would be informed of potential issues with the subcontractors.
- Level of government insight tends to increase when an issue with a subcontractor threatens overall program performance, or when the program reaches critical phases of its life cycle (e.g., transition to production), or both.

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## Case-Study Programs Use Different Methods to Oversee Subcontracts

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- A number of methods are available to programs to gain insight into subcontract performance during program execution. Programs used these methods to varying degrees:
  - **Earned Value Management (EVM):**
    - DFARS requires that cost-type subcontracts over \$20 million must submit EVM data.
    - Since almost all major subcontracts in our study are fixed price, EVM data are not required.
    - Only three programs required EVM submissions for any of their major subcontracts during the development phase (10 subcontracts on JSF; 3 on P-8A; and 3 on JLENS).
  - **Subcontractor facility visits:** All of the programs in our review noted that they have visited suppliers but all stated that they involve or inform the prime contractor before doing so.
  - **Government participation in subcontractor negotiations:** No program stated that it participated in subcontract negotiations.

## Case-Study Programs Use Different Methods to Oversee Subcontracts (cont.)

- **Subcontractor focus in DCMA/SUPSHIP surveillance:**
  - Since DCMA/SUPSHIP are colocated at the prime contractor's facility, officials noted that they are well positioned to oversee the prime contractor's performance, including its supplier management. If additional information on a particular subcontract is needed, DCMA and SUPSHIP will issue letters of delegation to the DCMA office responsible for the subcontractor's facility.
  - All DCMA offices provide periodic reports to the program office on program performance. These reports may include data on supplier performance.
  - DCMA officials for the JLENS program provide a monthly report to the program office, which contains a separate section on supply-chain performance.
  - DCMA officials for the C-5 program hired supply-chain management experts to increase oversight in the lower levels of the supply chain.
  - P-8A and JSF programs have DCMA surveillance plans that specifically highlight supplier issues as a reporting requirement.



## Commercial-Item Designation Limits Government Visibility into Subcontractor Performance

Government lacks insight into the performance of commercial subcontractors, presenting considerable challenges for government quality assurance, as illustrated by two examples from our case studies:

Since Boeing designated the airframe on the **P-8A** program a commercial item, government surveillance is extremely limited.

- BCA produces the airframe, including installation of the engines, fuel tanks, fuselage, and airwings, in its commercial production facility.
- While DCMA believes that the aircraft contains “significant” structural modifications as compared to a commercial 737, neither DCMA nor the prime has access to BCA’s production facilities. As such, there remains no government surveillance of aircraft parts or BCA processes.
- According to government officials, while the government lacks oversight, using a commercial aircraft is believed to be the most cost-effective approach for production.

Caterpillar manufactures a commercial engine for **Stryker** and has elected not to allow DCMA quality-assurance personnel into its plant or to allow the prime to inspect the engines while they are in production.

- According to DCMA officials, this lack of access meant that the prime and government were not allowed to inspect the engines even after Caterpillar dropped its original engine and replaced it with another model.
- The switch occurred after production of about 3,000 Stryker vehicles and resulted in software integration issues with the new model.

- FAR 12.208 provides that the government shall rely on contractors’ existing quality assurance instead of government inspection and testing unless customary commercial practice include in-process inspection.

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- Objective 1: Definition of Major Subcontract
  - Objective 2: Prime Contractors' Approach to Selecting and Managing Subcontracts
  - Objective 3: Government Visibility into Subcontracts Pre–and Post–Prime Contract Award
  - **Objective 4: Organizational Conflicts of Interest (OCI)**
    - **Government Does Not Generally Consider Potential OCIs in Weapon System Contracts**
    - **Most Programs Only Had Limited Guidance and Instruction Regarding Government OCI Procedures**
    - **Stryker Program: Potential OCI Identified and Mitigation Strategy Developed**
    - **Prime Contractors Have OCI Procedures That Are Most Effectively Triggered by Contract Clauses**
    - **OCI Clause Not Consistently Flowed Down to Subcontractors**
    - **While Effect of Proposed DFARS Rule Is Unknown, Primes Are Responding to Changing OCI Requirements**
  - Detailed Scope and Methodology
-

## **Government Does Not Generally Consider Potential OCIs in Weapon System Contracts**

- Contracting officers generally believed that primes are responsible for identifying and informing the government of any potential OCIs at both the prime and subcontract level—regardless of whether a clause is included in the RFP or contract.
- GAO bid protests have often been sustained because an agency failed to initially identify an OCI, or, having recognized a potential OCI, failed to properly mitigate or resolve OCIs.
- Most programs displayed limited concern about potential OCIs.
  - Contracting officers in our case studies generally did not believe that OCIs could occur in weapon system contracts.
  - Some officials assumed that the contracting officers responsible for support contracts (such as for testing or requirements definition) would notify them in the event there was an OCI with their program. However, no programs' contracting officers that we spoke with specifically contacted any other contracting officer to ensure that a potential OCI did not exist.

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## **Government Does Not Generally Consider Potential OCIs in Weapon System Contracts (cont.)**

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- Most case-study programs did not include an OCI clause in contracts or RFPs that would specifically outline the contractor's responsibility to ensure that neither the prime nor its subcontractors had a potential OCI.
  - Only the JLENS program featured an OCI clause in its initial RFP from 1997:
    - Clause specifically stated that the prime contractor was responsible for ensuring that both it and its subcontractors did not have any conflicts.
    - Subsequent contract and contract modifications did not include an OCI clause.
  - Stryker program plans to include contract language aimed at minimizing a potential OCI (see slide 44).

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## **Most Programs Only Had Limited Guidance and Instruction Available Regarding OCI Procedures**

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- Contracting officers we spoke with were not aware of any service-level guidance or instructions that outlined the procedures for identifying and mitigating potential OCIs.
- While all services had OCI clauses that could be included in contracts, there was limited guidance regarding specific OCI procedures available for programs included in our review:
  - Air Force guidance only notes that contracting officers should notify offerors of the potential use of an OCI clause and provides that OCIs should be a mandatory topic of discussion at acquisition planning meetings.
  - Specific OCI procedures are not included in the contract-specialist handbooks at either of the Navy's two buying commands responsible for case studies included in our review.
  - The Army command responsible for JLENS provided the most detailed instruction, including procedures to staff OCI actions, methods to preclude OCIs, and directions to contracting officers to include a standard OCI provision in all RFPs.
- Contracting officers we spoke with were also not aware of any specific OCI points of contact at their command, but assumed they could contact their legal department if necessary.

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## Stryker Program: Potential OCI Identified and Mitigation Strategy Developed

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- Stryker program officials stated that as a result of WSARA the government needs to be more proactive in identifying OCI issues, especially at the subsystem level.
- Program officials recognized the potential OCI in the follow-on contract for Stryker modernization if the current prime or its affiliates chose to compete as suppliers of a major subsystem since General Dynamics performed system engineering and software integration / software system-architecture development for the Stryker program
- According to program officials, without mitigation, there is a potential OCI because of
  - **unequal access to information** for affiliates or subsidiaries of General Dynamics,
  - **biased ground rules** if the prime conducted the competition and determined the statement of work, and
  - **impaired objectivity** if the prime was in a situation of evaluating its affiliates or subsidiaries.

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## **Stryker Program: Potential OCI Identified and Mitigation Strategy Developed (cont.)**

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- To mitigate a potential OCI, the government plans to conduct the competition for Stryker subsystem modernization, rather than the prime contractor, if other business units or affiliates of General Dynamics choose to compete.
- The program office plans to use the following mitigation strategies:
  - the prime will not competitively evaluate any General Dynamics business units or affiliates,
  - the government will determine subsystem specifications by developing the statement of work, and
  - General Dynamics will use Proprietary Data Agreements in order to protect competing companies' proprietary information.
- The Stryker program plans to include contract language that will require General Dynamics to submit a competition plan that specifies its role in preparing scopes of work and specifications, providing systems engineering and technical support, as well as its access to proprietary information and disclosure of affiliates that plan to compete.

## **Prime Contractors Have OCI Procedures That Are Most Effectively Triggered by Contract Clauses**

- All prime contractors we reviewed had established corporate OCI policies and procedures.
- Select primes have OCI reporting systems that distribute notices of new business opportunities throughout the company to identify and assess potential OCIs.
- All prime contractors we reviewed had personnel including members of the legal departments, OCI focal points/coordinators, or OCI reviewers to assist in evaluating OCI language, determining whether an actual or potential OCI exists, and selecting firewalls or mitigation plans.
  - For example, General Dynamics stood up a department to handle corporate- and division-level OCI issues, and every business unit has an OCI coordinator to help address potential issues.
- While prime contractors will initiate OCI review procedures when a conflict is suspected (for example, when the work effort includes preparation of work statements or specifications or technical direction), the process is mandatory on all solicitations that contain an OCI clause.
- Prime contractors told us that the inclusion of an OCI in a RFP or contract ensures that the business opportunity will be investigated by the company.



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## OCI Clause Not Consistently Flowed Down to Subcontractors

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- Prime contractor OCI procedures are designed to identify risks to the company and its affiliates, but primes have different policies regarding whether OCI clauses are flowed down to their subcontracts.
  - Officials from General Dynamics stated that while there is no requirement to flow down OCI clauses included in the prime contract to the subcontract level, the company is now doing so for new programs.
  - Raytheon policy states that OCI clauses are only flowed down to suppliers when the government specifically denotes this requirement in the contract or solicitation.
  - Lockheed Martin flows OCI requirements in the prime contract to its subcontracts when deemed necessary.
- If an OCI clause is not included, prime contractors believe that it is the subcontractor's responsibility to notify them of any potential OCI.

*Objective 4: OCI*

## **While Effect of Proposed DFARS Rule Is Unknown, Primes Are Responding to Changing OCI Requirements**

- Changes to DFARS are in progress as a result of WSARA.<sup>1</sup>
  - The proposed rule seeks to implement section 207 of WSARA by providing uniform guidance and tightening existing requirements for OCIs in major defense acquisition programs.
  - While it is not yet known how these changes may ultimately affect government management of OCIs, the proposed rule does include additional requirements for the contracting officer in identifying and resolving OCIs for both the prime contractor and its affiliates.
  - The proposed rule includes standard OCI provisions and clauses that contracting officers can include as appropriate
- Despite uncertainty, primes have responded to the imminent OCI requirements changes.
  - Northrop Grumman and Lockheed Martin have recently sold or plan to sell subsidiaries in order to avoid potential future OCIs.
  - Some of the prime contractors we spoke to are in the process of updating corporate OCI policy to reflect the additional requirements that DFARS is likely to impose.

<sup>1</sup>DOD is currently reviewing comments submitted by the public and is drafting the final rule.

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- Objective 1: Definition of Major Subcontract
- Objective 2: Prime Contractors' Approach to Selecting and Managing Subcontracts
- Objective 3: Government Visibility into Subcontracts Pre– and Post–Prime Contract Award
- Objective 4: Organizational Conflicts of Interest (OCI)
- **Detailed Scope and Methodology**

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## Objectives

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- Section 844 of the 2010 National Defense Authorization Act directed GAO to conduct a study on the structure and management of major subcontracts under contracts for the acquisition of selected major weapon systems, addressing the following:
  1. The number of major subcontracts under each prime contract reviewed.
  2. The manner in which the prime contractor addressed decisions to conduct work in-house or through subcontracts.
  3. The manner in which any potential organizational conflicts of interest were addressed and the government's role (if any) in selecting the approach chosen.
  4. The manner in which such subcontracts were awarded (including the degree of competition) and the government's role (if any) in such award decisions.
  5. Any recommendations that the Comptroller General may have for improving government oversight, reducing the oversight burden on the acquisition workforce, or otherwise improving the management of subcontractors under contracts for the acquisition of major weapon systems.

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## Objectives

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- In consultation with staff from the Senate and House Armed Services Committees, we used the following reporting objectives for the purposes of this review:
  1. How do government and prime contractors define “major” subcontract and what is the number and value of those considered major?
  2. What is the prime contractor’s approach to selecting and managing major subcontractors?
  3. To what extent does the government have visibility into major subcontracts?
  4. How are potential OCIs addressed and what role, if any, does the government play in selecting the approach chosen?

## Scope and Methodology

- To address the mandate, we used a case-study approach and selected two programs from each of the military services, using the following criteria:
  - Major Defense Acquisition Program (MDAP) in Acquisition Category ID<sup>1</sup>
  - Total program cost greater than \$5 billion.
  - Development start dates of 2000 or later.
  - DOD-only programs—no partnerships with other agencies.
  - Major prime contractor. We selected the top five defense contractors in 2009 (according to revenue).
  - Major prime contractor not currently working on program as part of multinational joint venture or in partnership with another prime.
- We selected case studies that represented a variety of platforms (aircraft, ship, land, and surveillance systems)
- Using our criteria, we selected the following programs:
  - Navy
    - CVN 78 Gerald Ford–Class Aircraft Carrier Program (CVN 78)
    - P-8A Poseidon Aircraft
  - Army
    - Stryker Family of Vehicles
    - Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS)
  - Air Force
    - C-5 Reliability Enhancement and Re-Engining Program (RERP)
    - F-35 Lightning II Joint Strike Fighter (JSF)

<sup>1</sup>Acquisition Category ID denotes programs with special interest based on one or more factors including: technological complexity; congressional interest; a large commitment of resources; and critical to achievement of a capability.

## Scope and Methodology (cont.)

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- For each of the case studies, we met with
    - prime contractor,
    - government program office and contracting officer, and
    - cognizant Defense Contract Management Agency (DCMA), Supervisor of Shipbuilding and Conversion (SUPSHIP) and Defense Contract Audit Agency (DCAA) officials.
  - To gain insight into subcontract management and OCI issues across DOD and the individual services, we met with
    - Office of the Under Secretary of Defense, Acquisition, Technology, and Logistics;
    - Naval Air Systems Command, Cost Department;
    - DCAA headquarters;
    - DCMA headquarters; and
    - experts in the field of defense acquisitions.
  - To understand issues pertaining to subcontract award, we analyzed pertinent contract documents for each of the case studies, including the request for proposals for the prime contract, acquisition plan and strategy, and contracting officer's summary of negotiations.
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## Scope and Methodology (cont.)

- We compared primes' and government's definitions of major subcontract and examined the number and total value of major subcontracts using data reported by the prime contractors.
- We analyzed corporate policies and procedures for each of our case studies (when available), including
  - make-or-buy procedures,
  - purchasing of goods and services,
  - subcontract management plans, and
  - supplier performance metrics.
- We analyzed the government's visibility into subcontractor performance after the prime contract was awarded by examining relevant DCAA and DCMA reports for each of our case studies.
- We reviewed relevant parts of the Federal Acquisition Regulation (FAR), Defense Federal Acquisition Regulation Supplement (DFARS), and service-level acquisition regulations.
- We also reviewed GAO and DOD Inspector General reports on supplier base and OCI issues.



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## **Scope and Methodology (cont.)**

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We conducted this performance audit from March 2010 through October 2010 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.

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