

GAO

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Member, Committee on Commerce,
Science, and Transportation,
U.S. Senate

March 2004

CONTRACT MANAGEMENT

Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight





Highlights of [GAO-04-380](#), a report to the Ranking Minority Member, Committee on Commerce, Science, and Transportation, U.S. Senate

Why GAO Did This Study

The Coast Guard's Deepwater program, the largest acquisition program in its history, involves modernizing or replacing ships, aircraft, and communications equipment. The Coast Guard awarded the Deepwater contract to Integrated Coast Guard Systems (ICGS) in June 2002. The Coast Guard estimates the program will cost \$17 billion over a 30-year period. ICGS is a system integrator, with responsibility for identifying and delivering an integrated system of assets to meet the Coast Guard's missions.

GAO was asked to assess whether the Coast Guard is effectively managing the Deepwater program and overseeing the contractor and to assess the implications of using the Deepwater contracting model on opportunities for competition.

What GAO Recommends

GAO recommends that the Secretary of Homeland Security direct the Commandant of the Coast Guard to take a number of actions to improve Deepwater management and contractor oversight. The Department of Homeland Security forwarded GAO the Coast Guard's written comments on a draft of this report. The Coast Guard welcomed GAO's observations and concurred with GAO's recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-04-380.

To view the full product, including the scope and methodology, click on the link above. For more information, contact William T. Woods at (202) 512-4841 or woodsw@gao.gov.

CONTRACT MANAGEMENT

Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight

What GAO Found

Over a year and a half into the Deepwater contract, the key components needed to manage the program and oversee the system integrator's performance have not been effectively implemented. Integrated product teams, the Coast Guard's primary tool for overseeing the system integrator, have struggled to effectively collaborate and accomplish their missions. They have been hampered by changing membership, understaffing, insufficient training, and inadequate communication among members. In addition, the Coast Guard has not adequately addressed the frequent turnover of personnel in the program and the transition from existing to Deepwater assets.

The Coast Guard's assessment of the system integrator's performance in the first year of the contract lacked rigor. For example, comments from the technical specialist responsible for monitoring the design and delivery of ships were not included in the evaluation scores. Further, the factors that formed the basis for the award fee determination were unsupported by quantifiable metrics. Despite documented problems in schedule, performance, cost control, and contract administration, ICGS received a rating of 87 percent, resulting in an award fee of \$4.0 million of the maximum \$4.6 million annual award fee.

Further, the Coast Guard has not yet begun to measure the system integrator's performance on the three overarching goals of the Deepwater program—operational effectiveness, total ownership cost, and customer satisfaction. Its original plan of measuring progress on an annual basis has slipped, and Coast Guard officials have not projected a time frame for when they will be able to hold the contractor accountable for progress against these goals. This information will be essential to the Coast Guard's decision about whether to extend ICGS's contract after the first 5 years.

Competition is critical to controlling costs in the Deepwater program and a guiding principle of Department of Homeland Security acquisitions. Concerns about the Coast Guard's ability to rely on competition as a means to control future costs contributed to GAO's description of the Deepwater program in 2001 as "risky." Three years later, the Coast Guard has neither measured the extent of competition among suppliers of Deepwater assets nor held the system integrator accountable for taking steps to achieve competition. Deepwater's acquisition structure is such that the two first-tier subcontractors have sole responsibility for determining whether to hold competitions for assets or to provide these assets themselves. The Coast Guard has taken a hands-off approach to "make or buy" decisions made at the subcontractor level. As a result, questions remain about whether the government will be able to control costs.

Contents

Letter		1
	Results in Brief	3
	Background	5
	Key Components of Management and Oversight Have Not Been Effectively Implemented	8
	Process for Assessing System Integrator's Ongoing Performance Lacked Rigor	15
	Coast Guard Has Not Begun to Measure Contractor Performance against Deepwater Program Goals	18
	Control of Future Costs through Competition Remains a Risk because of Weak Oversight of Subcontractor Decisions	21
	Conclusion	26
	Recommendations for Executive Action	27
	Agency Comments	29
	Scope and Methodology	30
Appendix I	Comments from the Coast Guard	32
Appendix II	Status of Selected Deepwater Contract Management and Oversight Plans	35
Tables		
	Table 1: Deepwater Program Appropriations	7
	Table 2: Comments from Coast Guard Management Reports on IPT Performance	9
	Table 3: Breakdown of Coast Guard Obligations to ICGS (Includes Planned Subcontracts to First Tier Subcontractors as of September 30, 2003)	22
	Table 4: Breakdown of ICGS Obligations to Lockheed Martin (Planned Subcontracts and Second-Tier Obligations as of September 30, 2003)	23
	Table 5: Breakdown of ICGS Obligations to Northrop Grumman (Planned Subcontracts and Second-Tier Obligations as of September 30, 2003)	23

Figure

Figure 1: Contracting Relationship between Coast Guard, ICGS,
and Subcontractors

2

Abbreviations

COTR	contracting officer's technical representative
C4ISR	command, control, communications, computer, intelligence, surveillance, and reconnaissance
DHS	Department of Homeland Security
FAR	Federal Acquisition Regulation
GAO	General Accounting Office
ICGS	Integrated Coast Guard Systems, LLC
IPT	integrated product team
TOC	total ownership cost
VUAV	vertical take-off and landing unmanned aerial vehicle

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G A O

Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

March 9, 2004

The Honorable Ernest F. Hollings
Ranking Minority Member
Committee on Commerce, Science, and Transportation
United States Senate

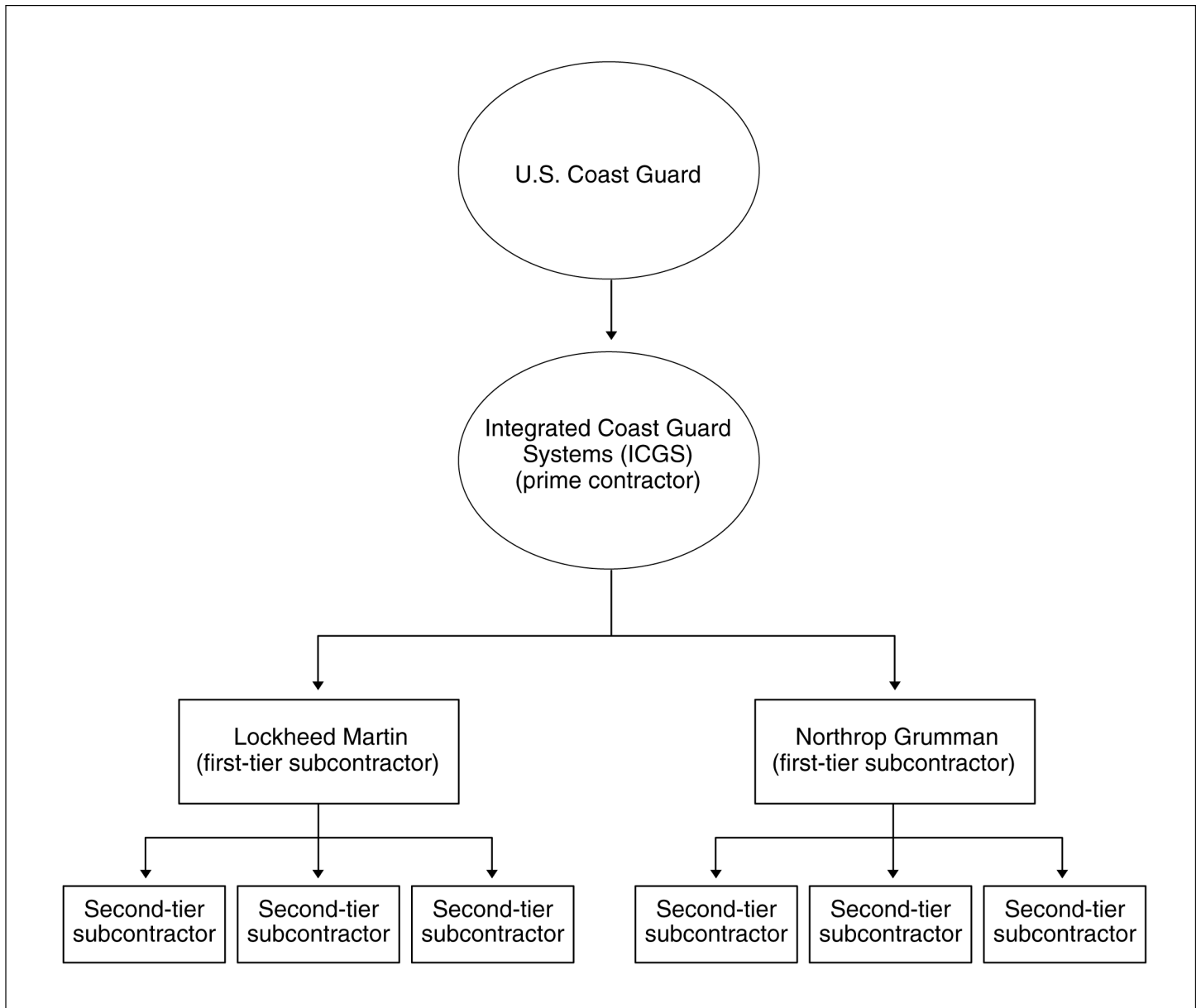
Dear Senator Hollings:

The Coast Guard is undergoing a major transformation through its Deepwater program, the largest acquisition project in its history. The program involves modernizing or replacing cutters, aircraft, and communications equipment used for missions that generally occur beyond 50 miles from shore. These missions include drug interdiction, alien migrant interdiction, search and rescue, overseas port security and defense, and offshore inspection of foreign vessels bound for U.S. ports. The three goals of the Deepwater program are to maximize operational effectiveness, minimize total ownership cost (TOC), and satisfy the customer. On March 1, 2003, the Coast Guard became part of the Department of Homeland Security (DHS), and the Deepwater program, estimated to cost \$17 billion over a 30-year period,¹ is one of the largest acquisitions in the department.

In June 2002, the Coast Guard awarded a contract to Integrated Coast Guard Systems, LLC (ICGS) as the system integrator for Deepwater to develop and deliver an improved, integrated system of ships, aircraft, unmanned aerial vehicles, command, control, communications, computer, intelligence, surveillance and reconnaissance (C4ISR), and supporting logistics. The contract has a 5-year base period with five additional 5-year options. ICGS is a business entity jointly owned by Northrop Grumman Ship Systems (Northrop Grumman) and Lockheed Martin Corporation (Lockheed Martin). Northrop Grumman and Lockheed Martin are the two first-tier subcontractors for the Deepwater program. They, in turn, provide Deepwater assets or award second-tier subcontracts for the assets. Figure 1 depicts the relationship of the various parties involved in executing the Deepwater program.

¹ The Deepwater assets are expected to be delivered within 20 years, and the contractor is to be retained an additional 10 years to continue implementing the program.

Figure 1: Contracting Relationship between Coast Guard, ICGS, and Subcontractors



Source: GAO.

The Deepwater contract is performance-based, meaning that the Coast Guard has specified the outcomes it is seeking to achieve and has given the system integrator responsibility for identifying and delivering the assets needed to achieve these outcomes. In 2001, we described the

Deepwater project as “risky,” due to the unique, untried acquisition strategy for a project of this magnitude within the Coast Guard.² We highlighted concerns about the Coast Guard’s ability to ensure that procedures and personnel would be in place to manage and oversee the system integrator and raised concerns about the agency’s ability to keep costs under control in future program years by ensuring adequate competition for Deepwater assets. Now that the Deepwater program is underway, you asked us to assess whether the Coast Guard is effectively managing the acquisition program and overseeing the contractor and to assess the implications of using the Deepwater contracting model on opportunities for competition. Specifically, we assessed whether the Coast Guard (1) has a structure in place to effectively manage the program and oversee the system integrator, (2) has established adequate criteria by which to assess and reward the system integrator’s performance, (3) has the information needed to make a decision about extending the contract after the first 5 years, and (4) is addressing the role and extent of competition for Deepwater assets.

Results in Brief

More than a year and a half into the Deepwater contract, the key components needed to manage the program and oversee the system integrator’s performance have not been effectively implemented. Integrated product teams, comprised of Coast Guard, ICGS, and subcontractor employees, are the Coast Guard’s primary tool for managing the program and overseeing the contractor. However, the effectiveness of the teams has been weakened due to changing membership, understaffing, insufficient training, lack of authority for decision making, and inadequate communication among members. In addition, while the Coast Guard has a Deepwater human capital plan in place to address turnover, in practice the plan is not being followed and vacancies exist for key Deepwater personnel. Finally, although delivery of some of the first assets is imminent, the Coast Guard has not effectively communicated to its operational personnel decisions on how new and old assets will be integrated and how maintenance responsibilities will be divided between government and contractor personnel. Some of these initial assets have already experienced schedule delays.

² *Coast Guard: Progress Being Made on Deepwater Project, but Risks Remain*, GAO-01-564 (Washington, D.C.: May 2, 2001).

The Coast Guard has not developed quantifiable metrics or adhered to effective procedures for holding the system integrator accountable for its ongoing performance. The process by which the Coast Guard assessed performance after the first year of the contract lacked rigor. The factors on which ICGS was rated lacked objective measures on which to assess performance, and the first annual award fee determination was based largely on unsupported calculations because the Coast Guard did not fully adhere to its award fee process. For example, comments from the technical specialist responsible for monitoring the contractor's performance in designing and delivering ships were not included in the evaluation scores, and it was unclear how numerical scores were assigned to the comments made by another Coast Guard performance monitor. Despite documented problems in schedule, performance, cost control, and contract administration throughout the first year of the contract, the program executive officer awarded the system integrator an overall rating of 87 percent, which falls in the "very good" range. This rating resulted in an award fee of \$4.0 million of the maximum \$4.6 million annual award fee.

The Coast Guard has not begun to measure the system integrator's performance on the three overarching goals of the Deepwater program—maximizing operational effectiveness, minimizing total ownership cost, and satisfying the customers. This information is essential for determining whether to extend ICGS's contract. In 2001, the Coast Guard planned to develop appropriate metrics and to assess the system integrator's performance on an annual basis so that, in the fourth year of the contract, information would be available to determine whether to award the first 5-year option. Coast Guard officials stated that because it is early in the Deepwater program and the metrics have not yet been finalized, they cannot accurately assess the contractor's progress against the three goals. More troubling is that the Coast Guard has not projected a time frame for when it will be able to measure progress. In addition, the baseline for measuring total ownership cost has been fundamentally changed from the original plan. At present, the Coast Guard is using as a baseline ICGS's proposed cost for Deepwater plus an additional 10 percent, rather than using the originally planned baseline of what the total ownership cost would have been under a traditional procurement approach.³ The Coast Guard is now working with ICGS to develop a

³ Total ownership cost is the sum of all costs associated with the research, development, procurement, personnel, training, operation, logistical support, and disposal of the entire Deepwater system.

contingency strategy in the event that the system integrator needs to be replaced after 5 years. Coast Guard officials indicated, however, that since ICGS proposed the specific assets that comprise the Deepwater program, it is unrealistic to believe that the contract could be terminated without revising the entire Deepwater acquisition strategy.

Although competition among subcontractors is a key vehicle for controlling costs, the Coast Guard has neither measured the extent of competition among the suppliers of Deepwater assets nor held the system integrator accountable for taking steps to achieve competition. Although the competition that resulted in the initial award of this contract may be viewed as sufficient for the base period, Deepwater's acquisition structure provides little protection against cost growth during the option periods. The two first-tier subcontractors, Lockheed Martin and Northrop Grumman, have sole responsibility for determining whether to hold competitions for Deepwater assets or to provide these assets themselves. ICGS has stated that its use of sourcing guidance, termed the open business model, guides the subcontractors' decisions about whether to "make or buy" the Deepwater assets. However, this guidance is a philosophy—not a formal process with clear criteria and specific decision points—that encourages, but does not require, competition. In some cases, teaming agreements formed with second-tier subcontractors during the initial proposal phase of Deepwater have carried over as sole-source arrangements. The Coast Guard's hands-off approach to make or buy decisions and its failure to assess the extent of competition raise questions about whether the government will be able to control costs in the Deepwater program.

We are recommending that the Secretary of Homeland Security direct the Commandant of the Coast Guard to take actions to (1) improve program management, (2) improve contractor accountability, and (3) facilitate cost control through competition for Deepwater assets. We received written comments on a draft of this report from the Coast Guard, forwarded by DHS. The Coast Guard welcomed our observations and, in a subsequent e-mail, concurred with the recommendations. The Coast Guard's letter is reproduced in appendix I.

Background

Deepwater is the largest and most complex procurement project in the Coast Guard's history. The acquisition is scheduled to occur over a 30-year period at a projected cost of \$17 billion. It includes the modernization and replacement of an aging fleet of over 90 cutters and 200 aircraft used for missions that generally occur beyond 50 miles from shore. Deepwater

currently accounts for almost one-third of the Coast Guard's acquisition staff and one-third of support personnel funding.

Rather than using the traditional approach of replacing classes of ships or aircraft through a series of individual acquisitions, the Coast Guard chose to employ a "system-of-systems" acquisition strategy that would replace its aging deepwater assets with a single, integrated package of new or modernized assets. The primary objectives of the Deepwater program are to maximize operational effectiveness and to minimize TOC while satisfying the needs of the customer—the operational commanders, aircraft pilots, cutter crews, maintenance personnel, and others who will use the assets.

The Deepwater program has been in development for a number of years. Between 1998 and 2001, three industry teams competed to identify and provide the assets—aircraft, helicopters, cutters, logistics, and C4ISR—needed to transform the Coast Guard. In June 2002, the Coast Guard awarded a contract to ICGS as the system integrator for Deepwater. Under a 5-year base contract with five additional 5-year options, ICGS is responsible for designing, constructing, deploying, supporting, and integrating the Deepwater assets to meet Coast Guard requirements. ICGS, a business entity comprised of a nine-member Board of Directors, is jointly owned by Northrop Grumman and Lockheed Martin. Northrop Grumman and Lockheed Martin are the two first-tier subcontractors for the Deepwater program. They, in turn, provide Deepwater assets themselves or award second-tier subcontracts for the assets.

In our 2001 report, we identified several areas of risk for Deepwater. First, the Coast Guard faced potential risk in the overall management and day-to-day administration of the contract. We reported on the major challenges in developing and implementing plans for establishing effective human capital practices, having key management and oversight processes and procedures in place, and tracking data to measure system integrator performance. In addition, we, as well as the Office of Management and Budget, expressed concerns about the potential lack of competition during the program's later years and the reliance on a single system integrator for procuring the Deepwater equipment. We also reported there was little evidence that the Coast Guard had analyzed whether the approach carried any inherent risks for ensuring the best value to the government and, if so, what to do about them.

Since fiscal year 2002, Congress has appropriated almost \$1.5 billion for the Deepwater program (see table 1), and as of September 2003, the Coast

Guard had obligated \$596 million to ICGS and \$120.4 million for government program management, legacy asset sustainment, and facilities design work.

Table 1: Deepwater Program Appropriations

Dollars in millions	
Fiscal year	Appropriation
2002	\$320
2003	478
2004	668
Total	\$1,466

Source: Coast Guard.

In response to congressional direction to assess the feasibility of accelerating the Deepwater program,⁴ the Coast Guard reported in March 2003 that it could accelerate the implementation schedule from 20 years to 10 years and that this acceleration would provide increased operational capability sooner to support maritime homeland security.

On March 1, 2003, the Coast Guard became part of DHS. A December 22, 2003, acquisition decision memorandum from the DHS Investment Review Board's (the Board) acting chairperson to the Coast Guard Commandant stated that the Deepwater program has been designated as a level 1 investment, meaning that it will be reviewed at the highest levels within the department.⁵ Further, because Deepwater interoperability within DHS and with the Department of Defense will be a major program challenge, the DHS Joint Requirements Council⁶ will be kept informed of Deepwater developments. While decisions as to specific assets or capabilities have been deferred to the Coast Guard acquisition executive, the Board will meet to discuss actual or projected changes to the program that affect

⁴ Homeland Security Act of 2002, Pub. L. No. 107-296, sec.888(i), 116 Stat. 2135, 2250 (2002).

⁵ The Investment Review Board was established to provide visibility, oversight, and accountability for significant, high-cost investments. It conducts systematic reviews of investment proposals and approves key decisions.

⁶ The DHS Joint Requirements Council will conduct program reviews annually and prior to key decision points to oversee the requirements generation process, validate mission needs statements, review cross-functional needs and requirements, and make programmatic recommendations to the Board.

cost, schedule, or performance. Noting that the Coast Guard has proposed accelerating the Deepwater program in fiscal year 2005, the Board directed the Coast Guard to ensure that risk management planning receives appropriate attention, that TOC is kept current, and that cost, schedule, and performance are monitored by measuring actual data against the baseline and projections to completion.

Key Components of Management and Oversight Have Not Been Effectively Implemented

Complex, performance-based contracts such as Deepwater require effective government oversight to ensure that the intended results are achieved and that taxpayer dollars are not wasted. Both Coast Guard and ICGS officials have acknowledged that an unusually large degree of collaboration and partnership between the government and the system integrator must be in place for the Deepwater acquisition to be successful. However, a year and a half into the program, the key management and oversight components needed to make the program effective have not been effectively implemented. Integrated product teams (IPT) are the Coast Guard's primary tool for managing the program and overseeing the contractor, but these teams have struggled to collaborate effectively and accomplish their missions. While the Coast Guard has a Deepwater human capital plan in place to guide strategic planning for turnover among Deepwater personnel, the plan is not being followed and vacancies exist in key positions. Further, while it is still early in the program, the transition from existing Coast Guard assets to the new Deepwater assets has not been effectively communicated, a particular concern in light of schedule delays for some of the first assets to be delivered. Finally, a number of plans integral to the organization and management of the Deepwater program were finalized much later than anticipated. Appendix II contains additional information on these plans.

IPTs Have Had Difficulty Fulfilling Their Critical Management Function

IPTs are the Coast Guard's primary tool for managing the Deepwater program and overseeing the system integrator. More than 30 of these teams, comprised of Coast Guard, ICGS, and subcontractor employees from Lockheed Martin and Northrop Grumman, are responsible for overall program planning and management, asset integration, and overseeing the delivery of specific Deepwater assets. However, the teams have struggled to effectively carry out their missions. Our prior work at the Department of Defense has shown that effective IPTs have (1) expertise to master different facets of product development, (2) responsibility for day-to-day decisions and product delivery, (3) key members who are either physically collocated or connected through virtual means to facilitate team cohesion and the ability to share information, and (4) control over their

membership, with membership changes driven by each team's need for different knowledge.⁷

The Deepwater program manager reported IPT performance shortcomings as an issue in 14 of the 16 monthly program assessment reports provided to us. The following comments, made in Deepwater management reports by Coast Guard officials involved on a number of different IPTs, convey the difficulties faced by the teams in the first year and a half of the program. Though the comments in table 2 are not exhaustive, they demonstrate that the Deepwater IPTs have not been effective.

Table 2: Comments from Coast Guard Management Reports on IPT Performance

June 2002 through Dec. 2002

- Teams are still forming but are hindered with unfamiliarity of Web-based data environment, integrated design and management processes immaturity, and geographic separation.
- Because of aggressiveness of schedule, team development and collaboration have been negatively affected.
- Team is making progress, but most other teams are not yet productive. Team leaders are challenged by intense pace of work needed to keep up with asset implementation plan.

Jan. 2003 through June 2003

- High demands and limited resources inhibit commitment to collaboration.
- Team progress is slowed by ineffective collaboration, resulting in missed milestones.
- Limited collaboration in addressing design and production issues. Team has been unable to resolve some comments in a timely fashion.

July 2003 through Dec. 2003

- Demands on limited personnel resources have restricted collaboration in addressing some items in contract data requirements list in a timely fashion for the 123-foot cutter.
- Team meetings for one asset have been canceled due to workload associated with another. Team lead has been vacant for several months, requiring the duties to be assumed by the Aviation Technical Director and/or Aviation Program Manger. Task order performance has suffered, and issues have not been resolved in a timely manner.
- Team has been unable to resolve some comments in a timely fashion. Human resources within the team are taxed due to multi-tasking.
- There has been a lack of participation by some of the team members. Meeting minutes, decisions, and such have not been documented as outlined in the IPT charters. Important action items and risk mitigation plans are not being consistently addressed, tracked, and resolved in a timely manner.
- Team disconnects have contributed to delay in delivery of Coast Guard cutter *Matagorda*.

Source: Coast Guard.

⁷ *Best Practices: DOD Teaming Practices Not Achieving Potential Results*, GAO-01-510 (Washington, D.C.: Apr. 10, 2001). The Department of Defense has used IPTs on major programs such as the Advanced Amphibious Assault Vehicle program, a high-speed amphibious armored personnel carrier.

Based on our review of program reports, we identified four major issues that have impeded the effective performance of the IPTs.

- **Lack of timely charters to vest IPTs with authority for decision making.** Authority for day-to-day decisions—required for program success in meeting cost, schedule, and performance objectives—is vested in IPTs through charters; yet charters for most of the Deepwater IPTs were not developed in a timely manner. In fact, 27 of the 31 IPT charters were not approved until after the first year of the contract. More than merely a paperwork exercise, sound IPT charters are critical because they detail each team’s purpose, membership, performance goals, authority, responsibility, accountability, and relationships with other groups, resources, and schedules. Between June 2002 and June 2003, 20 delivery task orders,⁸ authorized for issuance by the contracting officer, were executed by IPTs that did not have charters in place. Similarly, we found that some sub-IPTs, which address specific issues at a subasset or component level, were operating on an ad hoc basis without charters. For example, a November 2002 management report states that sub-IPTs addressed numerous issues concerning requirements for the national security cutter, even though their charters were not approved until a year later. In addition, two other sub-IPTs were not chartered.⁹
- **Inadequate communication among members.** The Coast Guard’s Deepwater program management plan has identified collocation of IPT members as a key program success factor, along with effective communications within and among teams. Face-to-face informal communication enhances information flow, cohesion, and understanding of other members’ roles—all of which help foster team unity and performance. Yet only 3 of the 31 operating IPTs are entirely collocated, meaning that every IPT member is in the same building. The IPTs responsible for assets frequently have members in multiple locations. For example, the logistics process and policy development IPT has members in 6 different locations. As noted in table 2, Coast Guard IPT members have raised geographic separation as an issue of concern. ICGS developed a Web-based system for government and contractor employees to regularly access and update technical

⁸ Delivery task orders are orders for supplies or services placed against an existing contract. In the context of the Deepwater contract, these would be orders placed by the Coast Guard with ICGS for the delivery of specific assets or for other work.

⁹ These were for Deepwater’s integrated logistics system and C4ISR.

information, training materials, and other program information, in part to mitigate the challenges of having team members in multiple locations. However, Coast Guard documents indicate that the system is not being updated or used effectively by IPTs. In fact, the Deepwater program executive officer reported that, while the system has great potential, it is a long way from becoming the virtual enterprise and collaborative environment required by the contractor's statement of work.

- **High turnover of IPT membership and understaffing.** Most of the Deepwater IPTs have experienced membership turnover and staffing difficulties, resulting in a loss of team knowledge, overbooked schedules, and crisis management. In a few instances, such as the national security cutter and maritime patrol aircraft, even the IPT leadership has changed. Also, key system integrator officials serving on the management IPTs have left the company. Both the Chief Financial Officer and the President of ICGS left their positions during the latter half of 2003, and an additional six of the nine ICGS Board members have changed. In addition, Coast Guard and system integrator representatives have also been staffed on multiple IPTs, and, in many cases meetings were attended by fewer than 50 percent of IPT members. A December 2002 Coast Guard document summarizing various programmatic recommendations cited a contractor study that recommended individuals be assigned to IPTs on a full-time basis and that they not serve on more than two teams. However, as of December 2003, 15 individuals were serving on three or more IPTs.
- **Insufficient training.** The system integrator has had difficulty training IPT members in time to ensure that they could effectively carry out their duties, and program officials have referred to IPT training as deficient. IPT charters state that members must complete initial training before beginning team deliberations regarding execution of new contracts for Deepwater assets. IPT training is to address, among other issues, developing team goals and objectives, key processes, use of the Web-based system, and team rules of behavior. According to a Coast Guard evaluation report, IPT training was implemented late, which has contributed to a lack of effective collaboration among team members.

The Coast Guard hired a consultant to survey IPT members concerning teams' performance from July 2002 to September 2003. Three surveys consisted of questions about mission, team member cooperation,

performance, communication, and integrated product and process development.¹⁰ The final report on the survey results highlighted the need for improved communications both within and among teams. Respondents were also concerned that workloads were too high.¹¹

Human Capital Issues Pose a Challenge

In our 2001 report,¹² we noted that as the Deepwater program got off the ground, tough human capital challenges would need to be addressed. A critical challenge we raised was the need to recruit and train enough staff to manage and oversee the contract. To date, the Coast Guard has not funded the number of staff requested by the Deepwater program and has not adhered to the processes outlined in its human capital plan for addressing turnover of Deepwater officials. These staffing shortfalls have contributed to the problems IPT members have identified—such as the struggle to keep pace with the workload and the difficulties in making decisions due to inconsistent attendance at IPT meetings.

Although the Deepwater program has identified the need for a total of 264 staff in fiscal year 2004, only 224 positions have been funded, and only 209 have been assigned to the program. The Coast Guard's fiscal year 2004 funding for personnel was increased to \$70 million; however, the Coast Guard did not request sufficient funds to fill the 40 positions that the Deepwater program identified as necessary. According to Coast Guard officials, \$70 million is insufficient to fund their fiscal year 2004 personnel plan because they need \$67 million of this amount just to fund current personnel levels. The assistant commandant has imposed a temporary hiring freeze and plans to monitor expenditures throughout the year to identify any available funding for additional positions. Although we asked, Coast Guard officials did not explain why they did not request sufficient funds to adequately staff the program.

¹⁰ Integrated product and process development is a management technique that integrates all essential acquisition activities through the use of multidisciplinary teams to optimize the design, manufacturing, and supportability processes. One of the key integrated product and process development tenets is that IPTs facilitate meeting cost and performance objectives.

¹¹ Due to concerns about low response rates, an analysis was done only on those IPTs with response rates greater than 30 percent. Only 14 of the 27 teams contacted as part of the latest survey, conducted in September 2003, had a response rate that allowed their results to be analyzed.

¹² [GAO-01-564](#).

In addition, the Coast Guard has not adequately addressed the imminent departure of Coast Guard officials from the Deepwater program. Coast Guard officials will leave each year due to the normal rotational cycle of military members (every 3 to 4 years) and retirements. The Deepwater human capital plan sets a goal of a 95 percent or higher “fill rate” annually for both military and civilian positions and proposes using a “floating” training position that can be filled by replacement personnel reporting for duty a year before the departure of the military incumbents. This position is meant to ensure that incoming personnel receive acquisition training and on-the-job training with experienced Deepwater personnel. However, the 2004 request for this training position was not funded, nor was funding provided for additional new positions identified as critical. In December 2003, the Director of Resources and Metrics and the Chief Contracting Officer left the Deepwater program, and the program manager is slated to leave in March 2004. In addition, by July 1, 2004, five key Coast Guard officials who oversee the work of the asset IPTs are scheduled to leave. Coast Guard officials told us that they have identified the military replacements that will join the program in the summer of 2004.

Transition Planning for New Assets Needs Attention

Although Deepwater is still in the early stages, assets will start to be delivered incrementally to operating units soon. The first Deepwater assets—the 123-foot cutter and short range prosecutor¹³—are scheduled to be delivered to operating divisions in 2004. Operating units will receive additional ships, aircraft, or C4ISR every year thereafter until the Deepwater program ends. However, the Coast Guard has not communicated decisions on how the new and old assets are to be integrated during the transition and whether Coast Guard or contractor personnel—or both—will be responsible for maintenance. Coast Guard field personnel, including senior-level operators and naval engineering support command officials, told us that they have not received information about how they will be able to continue meeting their missions using current assets while being trained on the new assets. They are also unclear as to whether the system integrator or Coast Guard personnel will be responsible for maintenance of the new assets. For example, although Deepwater officials have stated that maintenance on the new assets will

¹³ The short range prosecutor is a new rigid-hull inflatable small-boat being introduced for the Deepwater cutters. This boat is 7.7 meters long, may carry up to 10 personnel and 150 pounds of cargo, and may travel at speeds up to 33 knots. Each modernized 123-foot cutter and the fast response cutter will carry one short range prosecutor. The national security cutter and the offshore patrol cutter will also be able to carry the short range prosecutor.

be a joint responsibility, naval engineering support command staff had received no instruction on how this joint responsibility is to be carried out. Coast Guard officials told us that guidance on joint maintenance responsibility has not been completely disseminated throughout the Coast Guard, but said that ICGS has recently added representatives at the key maintenance and logistics sites to coordinate maintenance issues.

One of the first Deepwater assets to be delivered is the 123-foot cutter. The Coast Guard is modifying its 110-foot cutter by adding 13 feet of deck and hull, a stern ramp, a superstructure, and communication equipment. The 123-foot cutter is an example of the transition challenges facing the Coast Guard. First, there is confusion over which of the cutters will be modified and when. The contract with ICGS calls for all 49 cutters to be modified; however, Deepwater officials are considering curtailing the modification efforts and accelerating the development of the fast response cutter instead. (The fast response cutter was originally planned to be delivered in 2018 as a replacement for the 123-foot cutter). In addition, the Coast Guard identified 22 of the 110-foot cutters that, due to unexpectedly severe hull corrosion, required additional inspection and repair separate from the Deepwater modification plans. To date, \$14.7 million in non-Deepwater funds has been made available to repair 8 of these cutters. Further, Coast Guard officials note that there are 4 cutters in operation in the Persian Gulf, which makes them unavailable for modification at this time. System integrator and Coast Guard officials expressed confusion about the status of the cutter modifications, hull repair program, and fast response cutter schedule. For example, ICGS officials indicated that they did not know what the Coast Guard plans for the 123-foot cutter modification. The Coast Guard is considering several options and has not made a final decision on the cutter modification effort.

Transitioning the staffing and operations of current Coast Guard assets to Deepwater assets may be further complicated by schedule delays. Reliable information on the delivery of Deepwater assets is important to the planning and budgeting efforts of Coast Guard operators and maintenance personnel to ensure that current missions are met and existing assets are maintained. Delivery of the first 123-foot cutter and short range prosecutor is scheduled for March 2004, slipping from the original delivery date of November 2003, and the rescheduled date of December 2003. This delay is affecting the schedules for the remaining cutters under contract, according to the most recent program manager assessment. Program management reports also indicate that schedule milestones have slipped for the maritime patrol aircraft. The first two aircraft are currently scheduled to be delivered to operating divisions in late 2006 or early 2007, compared

with the original plan of 2005. The IPT is working toward design of the aircraft, even though Coast Guard approval to proceed has not been set forth in the form of a definitized contract for this asset.¹⁴ The target date for definitizing the contract is now April 2004.

Process for Assessing System Integrator's Ongoing Performance Lacked Rigor

According to Office of Federal Procurement Policy guidance, a performance-based contract such as Deepwater should have measurable performance standards and incentives to motivate contractor performance. Contractors should be rewarded for good performance based on measurement against predetermined performance standards. In general, the contractor is to meet the government's performance objectives, at appropriate performance quality levels, and be rewarded for outstanding work. Further, sound internal controls are important to ensure that plans, methods, and procedures are in place to support performance-based management. Relevant information should be recorded and communicated to management and others in a form and a time frame that enables them to carry out their responsibilities.¹⁵

The Coast Guard's process and procedures for evaluating the system integrator's performance during the first year of the contract lacked rigor in terms of applying quantifiable metrics to assess performance, gathering input from government performance monitors, and communicating with and documenting information for the decision makers. The process used to hold the system integrator accountable for results was not transparent and, in fact, contained several inconsistencies that raise questions as to whether the Coast Guard's decision to give the contractor 87 percent of the award fee¹⁶ was based on accurate information.

¹⁴ The Federal Acquisition Regulation (FAR) states that a contract is to be definitized within 180 days after the date of the letter contract or before completion of 40 percent of the work to be performed, whichever occurs first. FAR 16.603-2(c).

¹⁵ *A Guide to Best Practices for Performance-Based Service Contracting*, Office of Federal Procurement Policy, Office of Management and Budget, Executive Office of the President, Final Edition, October 1998, and *Internal Control: Standards for Internal Control in the Federal Government* (GAO/AIMD-00-21.3.1), U.S. General Accounting Office, November 1999.

¹⁶ An award fee is an amount a contractor may earn, either in whole or in part, based on the contracting agency's judgmental evaluation of the contractor's performance against established criteria (FAR 16.404, 16.405-2).

Quantifiable Award Fee Metrics Are Still Being Developed

The Coast Guard measures the system integrator's ongoing performance based on periodic assessments using weighted evaluation factors. The award fee for the first year of performance of the overall integration and management of the Deepwater program was based on an evaluation of the following five factors:¹⁷

- overall program management,
- cost monitoring and control,
- quality,
- innovation, and
- flexibility.

These evaluation factors are further defined in the contract's award fee plan. For example, innovation is the "extent to which innovation, designs, processes, and concepts have been introduced that result in operational performance improvements and/or total ownership cost reductions." While there will inevitably be a degree of subjectivity in award fee decisions, the Coast Guard lacks quantifiable metrics to make an assessment of the contractor's performance. Given the lack of specificity of the metrics, it is not clear how they could be used to make such an assessment, particularly on a program as complex as Deepwater. Coast Guard officials acknowledged that the factors need to be better-defined, with supporting metrics that would provide a more objective basis for future award fee assessments.

In the meantime, a May 31, 2003, Coast Guard memorandum to ICGS indicates that the contractor will be rated based on three factors for the second year of performance rather than five. However, the factors are vague and undefined: quality, program management, and system engineering. Further, supporting metrics to measure these performance factors have not been developed.

¹⁷ In a document provided to a congressional committee entitled "DHS Procurement Policy Impacts on Deepwater," the Coast Guard stated that "the annual award fee is based on the accomplishments of the small business subcontracting plan." However, Coast Guard officials subsequently confirmed that small business subcontracting is not an award fee evaluation factor.

Information Was Not
Gathered and
Communicated Accurately

Under the Deepwater contract's award fee plan¹⁸ and the program management plan, technical specialists, known as contracting officers' technical representatives (COTR), are to provide their observations to a program evaluation board comprised of the contracting officer, the program manager, and two COTRs. The Deepwater program executive officer then makes the final award fee determination based on the board's recommendations. The Coast Guard's award fee evaluation of the first year of ICGS's performance was based on unsupported calculations and relied heavily on subjective considerations. As a result, the basis for the final decision to provide the contractor an award fee rating of 87 percent, which falls in the "very good" range, was not well-supported.¹⁹

For example, while all COTRs submitted comments, the assessment did not include numerical and adjectival ratings from all COTRs. Input from the COTR responsible for gauging the system integrator's performance for all efforts related to the design and delivery of ships was not included in the calculation at all. Prior to speaking with us, the COTR did not know his input was absent from final performance monitor calculations, which resulted in a recommended rating of 82.5 percent. Input from two other COTRs was provided for some but not all of the five evaluation factors. A fourth COTR provided only adjectival ratings, whereas others provided numerical scores. Subsequently, and unbeknownst to the COTR, a program evaluation board member calculated a numerical score for this COTR's observations. While an adjectival rating of "good," for example, could range from a score of 71 to 80, the board member scored each of the factors in the midrange. Scoring this COTR's adjectival ratings in the low or high end of the range would have produced a different outcome. Program evaluation board officials were not aware of the inconsistencies in the calculations until we informed them.

One program evaluation board member raised concerns that the board's subsequent award fee recommendation of 90 percent was too high and that the assessment focused disproportionately on the system integrator's performance in the last part of the year rather than its performance over the entire year. In addition, the program manager's assessment stated that "overall program management...needs substantial improvement." Further,

¹⁸ Coast Guard contract number DTG23-02-C-2DW001, section J, attachment J-14, Award fee plan, awarded June 25, 2002, amended November 8, 2002. The plan indicates that changes to the award fee plan will be made through a bilateral contract modification.

¹⁹ An adjectival rating of "very good" ranged from a score of 81 to 90.

Coast Guard management reports throughout the first year of the contract cited various schedule, performance, cost control, and contract administration problems that required attention. Among the assets cited as needing attention were the maritime patrol aircraft, the short range prosecutor, the 123-foot cutter, and the logistics integration management system. Ultimately, the program executive officer awarded the system integrator a rating of 87 percent, resulting in an award fee of \$4.0 million of the maximum \$4.6 million annual award fee.

Coast Guard officials told us that they will now assess ICGS's performance every 6 months, rather than annually. However, the contract has not been modified to reflect either the changes to the evaluation factors, discussed previously, or the new assessment period. The first 6-month assessment was scheduled for completion in December 2003, but as of March 2004, Coast Guard officials told us it is currently ongoing.

The contractor was eligible for a second award fee of up to \$1.5 million in August 2003 for performance related to the continuous improvement of elements common to C4ISR and life cycle and logistics engineering for all assets. Coast Guard officials said that they awarded the system integrator 79 percent of the maximum award fee; however, they did not provide us with supporting documentation of the award fee determination process.

Coast Guard Has Not Begun to Measure Contractor Performance against Deepwater Program Goals

The Coast Guard is scheduled to decide on extending ICGS's contract by June 2006, 1 year prior to the end of the first 5-year contract term. In 2001, the Coast Guard set a goal of developing measures, within a year after contract award, to conduct annual assessments of the system integrator's progress toward achieving the three overarching goals of the Deepwater program: increased operational effectiveness, lower TOC, and customer satisfaction. However, the Coast Guard's time frame for implementing metrics to gauge progress against these goals has slipped. Further, the baseline the Coast Guard is using to assess TOC will not provide the government with critical information it needs about the efficiencies of using the Deepwater approach. Therefore, the Coast Guard is not in a position to begin the decision-making process about whether or not to extend the contract past the 5-year base period.

The time frame for the first review of the contractor's performance against the Deepwater goals has slipped. It was originally rescheduled for 18 months after contract award (December 2003), 6 months later than planned. Deepwater officials told us that the performance review is currently ongoing and is expected to be completed in March 2004. While

the Coast Guard has begun to develop models to measure the extent to which Deepwater is achieving increased operational effectiveness and reduced TOC, a decision has not yet been made as to which specific suite of models will be used. The former Deepwater chief contracting officer told us he anticipates that the metrics will be in place in year 4 of the contract, the same year the decision needs to be made to extend the contract. Other officials acknowledged that it is difficult to hold the contractor accountable for progress toward the goals this early in the program, but could not offer a projection as to when the operational effectiveness and TOC results would be forthcoming.

Coast Guard officials noted the large degree of complexity involved in attempting to measure the system integrator's progress toward the Deepwater goals. In previous work, we found that assessing improvements in operational effectiveness and TOC may be difficult because performance data may reflect factors that did not result from the contractor's actions. Because the Deepwater program includes legacy assets, modified assets, and new assets, the line of accountability between the government and the system integrator is blurred. It is not always clear who is responsible between Coast Guard and ICGS for the change in performance or costs of Deepwater assets. Measuring the 123-foot cutter's performance, for example, is complicated by the fact that ICGS is responsible for the new 13 feet of deck and hull and other modifications, while the engine and the other 110 feet of the deck and hull are the Coast Guard's responsibility.

Coast Guard officials said that they are measuring "operational performance," such as the number of search and rescue, drug interdiction, and migrant interdiction missions carried out by the current assets. However, they could not explain how these measures will be used to assess ICGS's progress toward improving operational effectiveness with Deepwater assets. The officials stated that the models they are using to measure operational performance for the various Coast Guard missions lack the fidelity to capture whether improvements may be due to Coast Guard or contractor actions, the capability of specific Deepwater assets, or even outside factors such as improved intelligence on drug smugglers. Program officials noted that it is difficult to hold the contractor accountable for operational effectiveness at this point, before Deepwater assets are delivered.

Establishing a solid baseline against which to measure progress in lowering TOC is critical to holding the contractor accountable. However, the Coast Guard is using as the baseline ICGS's own projected cost of

\$70.97 billion plus 10 percent (in fiscal year 2002 dollars). Therefore, the government will not have the TOC information it needs to make a contract extension decision. Measurement of ICGS's cost as compared to its own cost proposal will tell the Coast Guard nothing about the efficiencies it may be getting using the Deepwater performance-based approach. Further, the baseline the Coast Guard is using has been significantly changed from that originally envisioned. The Deepwater program management plan, approved in December 2003, states that the estimated cost to replace individual Coast Guard assets under a traditional approach, (i.e., without the ICGS Deepwater "system of systems" solution), is to be the "upper limit for TOC" that the contractor should not exceed. The officials could not explain why the program management plan, which sets forth the overall framework for managing Deepwater, contains a different TOC baseline than the one they are using.

Further, changes in such variables as fuel costs or cutters' operating tempo could result in additional changes being made to the TOC baseline. Coast Guard officials explained that proposed changes to the baseline would be approved by the program executive officer on a case-by-case basis. However, the Coast Guard has not developed criteria for potential upward or downward adjustments to the baseline.

The Coast Guard has only recently begun to address the contractor's progress in meeting the third overall goal of Deepwater, customer satisfaction. A January 9, 2004, report indicates that the Coast Guard had not yet identified the metrics needed to measure this goal. As a start, on January 12, 2004, a survey was sent to 25 senior leaders and program managers.

The Coast Guard decided to use the system integrator approach 6 years ago. In our previous work,²⁰ we found that given the Coast Guard's reliance on a single system integrator for the Deepwater program, the agency would be at serious risk if it decides not to extend the contract. Because ICGS proposed the specific assets that became the Deepwater solution, a decision not to extend the current contract would require a new Deepwater acquisition strategy to be developed. Exit strategies and other means to deal with potential poor performance by the system integrator are important to mitigate these program risks. However, the Coast Guard is just beginning an internal review of the system integrator's plan to

²⁰ [GAO-01-564](#).

transition out of the program in the event such action would be necessary. Further, Deepwater program officials indicated that it is not realistic to believe the Coast Guard would switch system integrators at this point in the program. They stated that they viewed their relationship with the contractor as a partnership and are committed to making it work.

Control of Future Costs through Competition Remains a Risk because of Weak Oversight of Subcontractor Decisions

Competition is a key component for controlling costs in the Deepwater program and a guiding principle for DHS's major acquisitions. The benefits of competition may be viewed as sufficient in the contract's early years because, for the initial 5-year contract period, prices proposed by ICGS for equipment and software were based on competitions held among various subcontractors. However, beyond the first 5-year term, the Coast Guard has no way to ensure competition is occurring because it does not have mechanisms in place to measure the extent of competition or to hold the system integrator accountable for steps taken to achieve competition.

The acquisition structure of the Deepwater program is such that the two first-tier subcontractors, Lockheed Martin and Northrop Grumman—the companies that formed ICGS and that developed the Deepwater solution—have sole responsibility for determining whether to hold competitions for Deepwater assets or to provide these assets themselves. Over 40 percent of the funds obligated to Lockheed Martin and Northrop Grumman have either remained with those companies or been awarded to their subsidiaries. Further, the system integrator uses a Lockheed Martin sourcing document, termed the open business model, to guide competition decisions made by the subcontractors. However, this guidance is a philosophy—not a formal process involving specific actions—that encourages competition but does not require it. The lack of transparency into competition and the government's lack of a mechanism to hold the contractor accountable raise questions about whether the Coast Guard will be able to control costs.

Coast Guard Lacks Visibility into Subcontractors' Make or Buy Decisions

Neither the Coast Guard nor the system integrator determines how suppliers for Deepwater assets are chosen. A Coast Guard official told us that the system integrator was hired to make these decisions because the agency lacked the expertise to do so. However, Lockheed Martin and Northrop Grumman, as the subcontractors, are solely responsible for deciding whether to hold competitions for Deepwater assets or provide them to the Coast Guard themselves (often referred to as "make or buy" decisions).

Moreover, the Coast Guard has no contractual requirements with ICGS that provide transparency into significant make or buy decisions. Although the Coast Guard has decided to include achieving competition as one of the factors to be considered in decisions about extending the contract for future option terms, this review will occur after such subcontracting decisions are made. The subcontractors are not required to notify the Coast Guard prior to making a decision to provide Deepwater assets themselves rather than holding a competition. The Coast Guard's review of competition included in its award term plan²¹ will not address Lockheed Martin or Northrop Grumman decisions—increasingly important in subsequent years—of whether significant equipment should be procured from outside sources or built in-house.

As of September 30, 2003, the Coast Guard had awarded \$596 million in orders to the system integrator, ICGS. Table 3 shows that over 98 percent of this amount was then passed through to the two first-tier subcontractors.

Table 3: Breakdown of Coast Guard Obligations to ICGS (Includes Planned Subcontracts to First Tier Subcontractors as of September 30, 2003)

Dollars in millions		
	Dollar value	Percentage
ICGS ^a	\$9	1.5
Subcontracts to Lockheed Martin	393	65.9
Subcontracts to Northrop Grumman	194	32.6
Total	\$596	100

Source: Coast Guard.

^aObligations to ICGS consist of general and administrative charges exclusively.

To date, the subcontractors managing the acquisition have frequently performed the work themselves. Based on their respective work scopes, the two companies either issue orders to second-tier subcontractors or

²¹ The Deepwater award term plan establishes the criteria for awarding contract options and the evaluation process and periods.

retain the work for themselves.²² Table 4 shows that, as of September 30, 2003, Lockheed Martin planned to retain 42 percent of its obligated dollars and to award 58 percent to second-tier subcontractors. Most of these second-tier dollars will go to major subcontractors, i.e., those with obligations greater than \$5 million.

Table 4: Breakdown of ICGS Obligations to Lockheed Martin (Planned Subcontracts and Second-Tier Obligations as of September 30, 2003)

Dollars in millions		
Subcontractor	Dollar value	Percentage
Lockheed Martin in-house work	\$121	31
Subcontracts to Lockheed Martin subsidiaries	42	11
Other second-tier subcontractors		
Major second-tier subcontractors ^a	206	52
Other suppliers	24	6
Total	\$393	100

Source: Coast Guard.

^aLockheed Martin defines major subcontractors as those with obligations of more than \$5 million.

As shown in table 5, Northrop Grumman planned to retain 51 percent of its obligated dollars.

Table 5: Breakdown of ICGS Obligations to Northrop Grumman (Planned Subcontracts and Second-Tier Obligations as of September 30, 2003)

Dollars in millions		
Subcontractor	Dollar value	Percentage
Northrop Grumman in-house work	\$96	49
Subcontracts to Northrop Grumman subsidiaries	3	2
Other second-tier subcontractors	95	49
Total	\$194	100

Source: Coast Guard.

²² ICGS's limited liability company agreement articulates each member's work scope. Lockheed Martin "shall be responsible for program management; systems design; C4ISR assets and capabilities; aviation assets; and logistics assets and capabilities..." Northrop Grumman (Ingalls) shall be responsible for program management and logistics for surface assets..."

The System Integrator's Open Business Model Does Not Ensure Competition Is Considered

The open business model, meant to guide the supplier sourcing process in the Deepwater program, has been characterized by the system integrator as a means of ensuring competition for Deepwater assets throughout the life of the program, thereby keeping costs under control. In October 2003, ICGS issued a policy statement on the open business model. The stated business approach of the guidance is to encourage second-tier suppliers to remain innovative and competitive by directing Lockheed Martin and Northrop Grumman, as the first-tier subcontractors, to (1) generally avoid the use of teaming agreements with suppliers and prohibit teaming agreements based on guaranteed work share,²³ (2) defer second-tier supplier decisions as long as practicable so that changes in the marketplace can be considered, and (3) actively solicit market information and new suppliers. However, this guidance is a philosophy—not a formal process involving specific decision points—that does not ensure that competition will be considered. The December 2003 Deepwater performance measurement plan requests that the contractor prepare self-assessments of its efforts to promote competition. However, the Coast Guard has no means of obtaining insight into the basis for the contractor's self-assessments. Moreover, the government still lacks a mechanism to hold the contractor accountable for ensuring that competition occurs.

To date, there have been varying degrees of competition for the second-tier subcontracting relationships Lockheed Martin and Northrop Grumman have in place for the design, development, or production of Deepwater assets. Lockheed Martin and Northrop Grumman follow their own procurement procedures and guidance for determining whether competition will occur and selecting the suppliers who will be invited to compete for Deepwater assets. The competitions are not “full and open”²⁴ in the way a typical government procurement would be, nor are they required to be. The federal procurement system requires “full and open” competition except in cases where certain statutory exceptions are met. “Full and open” competition means that all responsible sources are permitted to compete.

²³ Teaming agreements are defined in FAR 9.601 as an arrangement between two or more companies to form a partnership or joint venture to act as a potential prime contractor or a potential prime contractor agrees with one or more companies to have them act as its subcontractor. Under guaranteed work shares, a subcontractor is guaranteed a certain percentage of the work.

²⁴ 10 U.S.C. sec. 2302(3)(D); 41 U.S.C. sec. 403(b).

ICGS officials identified four specific assets for which they believe the open business model philosophy was effective: the conversion of 110-foot to 123-foot cutters, the national security cutter, the maritime patrol aircraft, and the vertical take-off and landing unmanned aerial vehicle (VUAV). We found that, in some cases, teaming agreements were implemented in the proposal phase of Deepwater and were carried over when ICGS won the contract. In other cases, some degree of competition had occurred.

- In December 1998, Lockheed Martin Corporation, Ingalls Shipbuilding, Inc.,²⁵ and Halter-Bollinger Joint Venture, L.L.C entered into a teaming agreement that included the 123-foot cutter modification. The agreement was established to make the capabilities of both Halter and Bollinger available to Lockheed Martin for all phases of the Deepwater program. Despite the open business model's prohibition of work share agreements, such an agreement is in place between Lockheed Martin and Halter-Bollinger. Halter-Bollinger will be responsible for the design and construction of all vessels equal to or less than 200 feet in overall length, with the exception of the national security cutter. For those ships greater than 200 feet and less than 241 feet, the company's work share is 25 percent of the total effort.
- The national security cutters are being designed and constructed by Northrop Grumman. Northrop Grumman awarded a contract to M. Rosenblatt & Son, Inc. for the cutters' preliminary design, but Northrop Grumman is responsible for the detailed design and construction. Lockheed Martin is responsible for the electronics. However, Northrop Grumman plans to hold competitions for the long-lead materials—such as the gas turbine, bulkhead seals, stern tubes,²⁶ and rudder—for the cutters and has solicited pricing proposals from a number of subcontractors.
- Prior to the contract award to ICGS, Lockheed Martin solicited information from a number of companies for the maritime patrol aircraft, evaluating 16 aircraft proposals. In October 2000, Lockheed Martin signed a memorandum of understanding with CASA Aircraft USA, Inc. to provide an airframe for Deepwater and to help develop and market ICGS's Deepwater proposal. After some Coast Guard

²⁵ Ingalls Shipbuilding, Inc. was subsequently acquired by Northrop Grumman.

²⁶ A stern tube is a tube through which the tail shaft passes to the propeller.

officials expressed concern about the aircraft model that had been selected for Deepwater, ICGS was awarded a task order to pay for an evaluation of alternative aircraft. As a result of the evaluation, Lockheed Martin identified an alternative CASA aircraft to meet the Coast Guard's maritime patrol aircraft mission.

- For the VUAV, Lockheed Martin conducted a competition between six models. Bell Helicopter, Inc. was initially identified as the solution. After ICGS submitted its Deepwater proposal to the Coast Guard, Lockheed Martin identified a potential Northrop Grumman product based on market research. However, after evaluation of this alternative, Lockheed Martin selected one of the Bell products.

Conclusion

The Coast Guard has embarked on a major transformational effort using an acquisition strategy that allows a system integrator to identify the Deepwater assets and to manage the acquisition process, with subcontractors retaining authority for all make or buy decisions. Such a strategy carries inherent risks that must be mitigated by effective government oversight of the contractor. The Coast Guard faces a tough challenge in holding ICGS accountable for results, while facing the daunting prospect of starting over with a new approach should the contractor fail. Nevertheless, the integrity of the contractor oversight process must be enforced through such mechanisms as effective IPTs and a rigorous and transparent award fee determination process.

Further, the Coast Guard must determine how to hold the contractor accountable for achieving the basic goals of the Deepwater program in order to position itself to make a contract extension decision. While there is no question that the success of Deepwater depends on an effective partnership between the government and the contractor, the Coast Guard must preserve its ability to change course if necessary. Solid baselines need to be developed so actual costs and operational effectiveness of the Deepwater assets can be accurately measured and reported. The current use of the contractor's proposed costs, plus 10 percent, as the TOC baseline—rather than the estimated cost to replace the assets via a traditional procurement approach—is troublesome. Further, because the program management plan does not reflect the change to the TOC baseline, we question whether this decision was well thought-out and in the government's best interest.

In addition to contractor oversight, the Coast Guard has not invested the resources needed to ensure that its own personnel are trained and staffed

in sufficient numbers to carry out their duties. The disconnect between the process outlined in the human capital plan for ensuring a smooth transition as military personnel rotate out of Deepwater and the current situation—where key Deepwater officials are leaving the program without a chance to adequately train their replacements—is cause for concern as the Deepwater program moves forward. It is unclear why the Coast Guard has not devoted adequate attention to human capital needs. In addition, although the first Deepwater assets are just starting to be delivered, the lack of a solid and well-developed transition plan from legacy to Deepwater assets is already causing problems, as evidenced by the 123-foot cutter modification difficulties. The schedule delays for several of the assets further highlight the need for more focus on the transition to Deepwater assets.

The concerns we raised in 2001 about the Coast Guard's ability to control costs in future years remain valid today. Without a mechanism to hold the system integrator accountable for ensuring adequate competition, the Coast Guard cannot be sure that competition will be used to guard against cost increases that could jeopardize the program. This situation is especially risky given the acquisition structure of Deepwater, whereby the subcontractors, not the system integrator or the Coast Guard, are responsible for determining whether competition will occur for Deepwater assets.

Recommendations for Executive Action

We recommend that the Secretary of Homeland Security direct the Commandant of the Coast Guard to take the following three actions to address Deepwater program management:

- In collaboration with the system integrator, take the necessary steps to make IPTs effective, including
 - training IPT members in a timely manner,
 - chartering the sub-IPTs, and
 - making improvements to the electronic information system that would result in better information sharing among IPT members who are geographically dispersed.
- Follow the procedures outlined in the human capital plan to ensure that adequate staffing is in place and turnover among Deepwater personnel is proactively addressed.
- As Deepwater assets begin to be delivered to operational units, ensure that field operators and maintenance personnel are provided with

timely information and training on how the transition will occur and how maintenance responsibilities are to be divided between system integrator and Coast Guard personnel.

Further, we recommend that the Secretary direct the Commandant to take the following six actions to improve contractor accountability:

- Develop and adhere to measurable award fee criteria consistent with the Office of Federal Procurement Policy's guidance.
- In all future award fee assessments, ensure that the input of COTRs is considered and set forth in a more rigorous manner.
- Hold the system integrator accountable in future award fee determinations for improving the effectiveness of IPTs.
- Based on the current schedule for delivery of Deepwater assets, establish a time frame for when the models and metrics will be in place with the appropriate degree of fidelity to be able to measure the contractor's progress toward improving operational effectiveness.
- Establish a TOC baseline that can be used to measure whether the Deepwater acquisition approach is providing the government with increased efficiencies compared to what it would have cost without this approach.
- Establish criteria to determine when the TOC baseline should be adjusted and ensure that the reasons for any changes are documented.

To facilitate controlling future costs through competition, we also recommend that the Secretary direct the Commandant to take the following two actions:

- Develop a comprehensive plan for holding the system integrator accountable for ensuring an adequate degree of competition among second-tier suppliers in future program years. This plan should include metrics to measure outcomes and consideration of how these outcomes will be taken into account in future award fee decisions.
- For subcontracts over \$5 million awarded by ICGS to Lockheed Martin and Northrop Grumman, require Lockheed Martin and Northrop Grumman to notify the Coast Guard of a decision to perform the work themselves rather than contracting it out. The documentation should include an evaluation of the alternatives considered.

Agency Comments

DHS forwarded us the Coast Guard's written comments on a draft of this report, which are reproduced in appendix I. The Coast Guard provided us with additional technical comments, which we incorporated as appropriate. In an e-mail sent subsequent to the written comments, the Coast Guard stated that it agreed with our recommendations.

The Coast Guard noted that the agency is learning and evolving as the Deepwater program matures and pointed out that many aspects of the Deepwater program—working with a system integrator, employing IPTs across multiple acquisition domains, and using a performance-based strategy for such a long-term undertaking—are new to the Coast Guard. The agency agreed that, because the IPT structure is new to the Coast Guard, many adjustments must be made to improve the teams' effectiveness. The Coast Guard clarified that the IPTs are, for the most part, contractor-led and that Coast Guard IPT members provide support and oversight. The focus of this report, however, is on the government's ability to oversee and manage the contractor. Deepwater management documents assert, as we point out in our report, that IPTs are the Coast Guard's primary tool for managing and overseeing the contractor.

Regarding the award fee process, the Coast Guard stated that it has taken action to assimilate objective factors into future evaluations but expressed concern that our draft report may not have completely reflected the rigor that was applied in the first award fee decision. The Coast Guard states that "no input from any of the monitors was left out of the evaluation process." While we revised our report to state that all COTRs submitted comments, the input from the COTR responsible for ships was not included in the numerical scores, which were then passed on to the fee determining official. Further, the Coast Guard said that the score of 87 percent is "much lower than industry averages." In our view, however, the relevant consideration in determining the award fee amount is not industry averages, but rather the purpose an award fee is intended to serve. The rationale for offering award fees is to motivate superior effort on specific task and delivery orders, assets, or system performance attributes. Of importance here, the narrative description in the Deepwater award fee plan associated with a score of 87 percent ("very good") is "very effective performance, fully responsive to contract requirements . . . only minor deficiencies." As we state in our report, program management reports throughout the first year of the contract cited various schedule, performance, cost control, and contract administration problems that required attention.

The Coast Guard agreed that competition is critical to controlling costs and indicated that it is planning efforts that will result in greater visibility and increased accountability to ensure competitive practices are being used to manage costs.

Scope and Methodology

To determine the steps taken by the Coast Guard to manage the Deepwater program and oversee system integrator performance, we examined the Deepwater contract, the program management plan, the human capital plan, briefings, budget justifications, and monthly and quarterly management reports. We analyzed IPT charters, membership lists, survey data, and staffing data, and we observed IPT and working group meetings. We interviewed various Deepwater program officials representing the Coast Guard, the system integrator, and the subcontractors, including program and asset-level program managers, contracting officers, and ICGS representatives in Arlington, Virginia, and Washington, D.C.. We visited the First and Seventh Coast Guard Districts in Boston, Massachusetts, and Miami, Florida, and interviewed operators and systems specialists for Coast Guard cutters, aircraft, and helicopters at those locations. We also met with Lockheed Martin and Northrop Grumman employees in Avondale, Louisiana, and Moorestown, New Jersey. We reviewed our prior reports and testimonies on the Deepwater project and integrated product teams.

To assess Coast Guard efforts to establish effective criteria to assess and reward the system integrator's performance after the first year of the contract, we reviewed the award fee plan, the performance incentives plan, the interim and final award fee reports for the first year of contract performance, and other management documents. We interviewed Coast Guard and ICGS officials. Our analysis of this issue was hindered by the Coast Guard's failure to provide us with two additional award fee determinations, despite our repeated requests.

To assess whether the Coast Guard has put in place measures to assess the contractor's progress in meeting the three overarching goals of Deepwater, we reviewed the performance measurement plan, the award term plan, and other performance measurement documents. Additionally, we interviewed the Deepwater program's Resources and Metrics staff, Coast Guard operations personnel, and program managers. We also reviewed our prior report on performance-based contracting attributes.

To determine whether the Coast Guard is addressing the role and extent of competition for Deepwater assets, we examined ICGS's open business

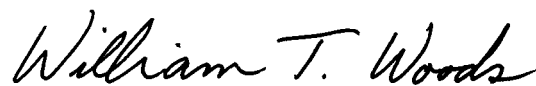
model policy statement and excerpts from Lockheed Martin's procurement manual and Northrop Grumman's acquisition policy manual. We discussed the open business model with officials from the Coast Guard, ICGS, Lockheed Martin, and Northrop Grumman. In addition, we reviewed financial data, including contract orders and ICGS spreadsheets. The Coast Guard provided us with the obligations to ICGS, Lockheed Martin, and Northrop Grumman. We did not independently verify the financial data.

We performed our work from May 2003 through February 2004 in accordance with generally accepted government auditing standards.

We are sending copies of this report to other interested congressional committees, the Secretary of Homeland Security, and the Commandant of the Coast Guard. We will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions regarding this report, please contact me at (202) 512-4841 or Michele Mackin, Assistant Director, at (202) 512-4309. Other major contributors to this report were Penny Berrier, Ramona L. Burton, Christopher Galvin, Lucia DeMaio, Gary Middleton, and Ralph O. White Jr.

Sincerely yours,



William T. Woods
Director, Acquisition
and Sourcing Management

Appendix I: Comments from the Coast Guard

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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FEB 13 2004

Mr. William T. Woods
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Woods,

Over the course of the last nine months we have engaged with your staff to foster an informed understanding of the complexities of the Deepwater Program and to respond to their in-depth analysis and inquiries. I have been actively engaged with the effort throughout the entire period and am impressed with the scale of your undertaking.

I appreciate the opportunity to respond to the draft report. It is in the best interest of the public to work together to provide the best possible product, with accurate, relevant information. As you know, the Deepwater Program is the largest, and, arguably, the most complex performance-based contract in the federal government. Given the challenges of a dynamic environment, new responsibilities within the Department of Homeland Security, and the flexibilities intentionally inherent in this program, we welcome your observations and recommendations as an independent review of the program's management practices. My staff has already provided your staff with several detailed observations, and I wish to review several additional key points in the draft report at this time.

The performance of the program's Integrated Product Teams (IPT's) has been recognized as an area of challenge by program management and our industry team. The IPT structure is new to the Coast Guard, and there are many adjustments we need to make to improve their effectiveness. We are endeavoring to improve the processes needed for them to attain full competency. The first 20 months of the program have provided many lessons learned, and we are diligently working to incorporate these as well as other best practices identified in other studies and GAO reports into our operating procedures. While there has been high personnel turnover on the IPT's, each IPT is chartered, each member completes a required training syllabus, and each IPT clearly specifies performance measures, roles, and responsibilities. I would like to clarify the draft report's contention that IPT's do not provide oversight of the contractor. The contractor, with a few exceptions, leads them. Some IPT Members, namely our domain leads, the KO, and USCG lead representative on the IPT's - which is usually the COTR - are in place to provide support to the IPT and also serve in an oversight role. Considering the scope, magnitude, and innovation involved with the Deepwater program's acquisition strategy, it is a credit to the diligence, perseverance, and dedication to all involved that the IPT structure has matured as much as it has.

The Deepwater program is faced with a large turnover of senior personnel this year, due primarily to unplanned retirements of several key members. I remain committed to managing the acquisition with the right number and mix of qualified personnel. Our Human Capital Plan (HCP) serves to guide the management of our personnel system. Although the personnel

7501

FEB 13 2004

funding account did not allow for additional hires in fiscal year 2004, efforts have been made to fill some of the turnover gaps by assigning civilian personnel to some military billets and bringing on board military personnel out of cycle from other assignments in the Coast Guard. The process to establish new positions operates on the same cycle as the budget process, two years in advance. Due to the relatively short advance notice of the retirements, there was insufficient time to incorporate these billet needs required by the HCP into the budget process prior to fiscal year 2006. The HCP will be updated and the necessary training billets budgeted as part of the FY-06 budget cycle. I think it safe to say that Mr. Walker is correct... the crisis of human capital management is a fundamental challenge. We do not underestimate that.

One portion of your analysis that warrants additional clarification is the evaluation of the program's ability to assess the contractor's performance. This is an area where I have focused considerable attention and effort. I firmly believe that we are addressing this aspect of program management with assiduous rigor, and am concerned that the draft report may not completely reflect the rigor that has been applied. Five specific areas of performance were evaluated during the first award term. The factors were weighted and scored to provide a numerical score that formed the basis for the award fee. Both adjectival ratings and the numerical score were included in the Performance Evaluation Board input. No input from any of the monitors was left out of the evaluation process. Strict adherence to Federal Acquisition Regulations (FAR) is an overriding principal in all accounts.

In particular, I am concerned that the draft report mischaracterizes the Award Fee scoring process that has been utilized. The report notes that the contractor was awarded an Award Fee score that is defined as "very good," and that the Award Fee totaled \$4.02 million or 87 percent of the maximum available despite documented problems with cost, schedule, and performance. This is true, however it must be taken in context. I believe that this score is much lower than industry averages. I am confident that the Award Fee level was fair and represented an accurate assessment of contractor performance. The reaction by the industry team to ensure the right people are in place focusing on the right issues would appear to validate the nature and implications of the score. We have taken the insights of your assessment to heart...objective factors are being assimilated into future evaluations.

Particular emphasis has been placed on the ability to measure performance within the scope of the program. The Performance Measurement Plan, and in particular the Deepwater Balanced Scorecard (BSC) Strategy Map, clearly articulate how the perspectives and objectives of the program's BSC identify input, process, and output measures that provide leading indicators of Operational Effectiveness, Total Ownership Cost, and customer satisfaction. This effort has been underway since contract award and continues to evolve as the program identifies measures and data sources and as the system components mature from design to production, fielding, and disposal. The Deepwater Program, by adopting the BSC framework, has taken a proactive approach to contractor assessment in order to ensure that course corrections and adjustments can be made before the Award Term assessment in year four, prior to the end of the first term.

I firmly agree with the report's conclusion that competition is critical to controlling costs. We strive to maintain alignment with the President's Management Agenda, the Department of Homeland Security's acquisition principles, and the Coast Guard's business plan. The Department's Joint Requirements Council has been briefed on the program, and we anticipate close interactions in the future. The Open Business Model, initially a Lockheed Martin

7501

FEB 13 2004

philosophy, is now official ICGS policy. It has been approved by the ICGS Board of Directors and is applicable to all Deepwater transactions. To enforce these regulations, ICGS has appointed a Competition Advocate and Ombudsman tasked to draft implementation procedures for regular reporting to ICGS. Also, we are planning visits by the ICGS Competition Advocate to our industry partners to examine Make/Buy decisions and competition practices. The report should reflect that the Open Business Model has ensured competition as a cost control tool. ICGS selected the CASA airframe over its Lockheed Martin competition as the solution for the Maritime Patrol Aircraft, and the Bell VUAV over its Northrop Grumman competitor. Since contract award, ICGS has held three Industry Days—resulting in 479 interviews with potential contractors and 90 follow-ups.

In the near future, the program will put additional processes in place to ensure competitive practices are being used to manage costs more aggressively. An annual independent third-party review of ICGS transactions will be conducted. The Vice Commandant of the Coast Guard (the Agency Acquisition Executive) will review any major subcontract awarded to Lockheed Martin or Northrop Grumman. Additionally, a review of competition will be included in the Award Term Evaluation. These efforts will result in added vigilance, greater visibility, and increased accountability. Together, these measures will improve our ability to control costs in the future.

The Integrated Deepwater System program entails not only organizational change and a new approach to acquisition, but technological change that forces both public and private sectors to be more adept at executing a program of incredible scope, duration, and complexity. The Coast Guard has never worked with a systems integrator on this scale before. We have not employed IPT's across multiple acquisition domains, nor have we employed a performance-based strategy for such a long-term undertaking. But we are learning and evolving as the program matures. We have incorporated recommendations made by previous reviews of the program by both GAO and the Department of Transportation's Inspector General. We appreciate the opportunity to share our lessons learned, successes, and growing pains in an open environment as we continue to embrace the tenets of a successful learning organization.

Thank you for your detailed analysis and observations. I look forward to continued positive dialog with you and your staff as we work to improve the management of the Deepwater program during the coming years. You have our commitment to engage in continuous improvement.

Sincerely,



P. M. STILLMAN
Rear Admiral, U. S. Coast Guard

Appendix II: Status of Selected Deepwater Contract Management and Oversight Plans

Plan	Purpose	Planned completion date	Approved	Scheduled life of plan
Award fee plan	Establishes criteria and procedures used to evaluate Integrated Coast Guard Systems' (ICGS) management performance, and to determine the amount of award fee earned	Contract award, June 2002	June 2002	Updated annually ^a
Program management plan	Provides the management framework, organizational structure, schedule, activities/events, tasking, and process guidelines required to implement phase 2 of the program; includes additional plans as noted below	December 2002	December 2003	Dynamic document, periodically updated
Contract management support plan	Details responsibilities and processes to implement the contract	December 2002	December 2003	
Financial management plan	Describes activities and processes to ensure funding is available to execute the program	December 2002	December 2003	
Risk management plan	Establishes structure and method for identifying and managing risks, and developing and selecting options to mitigate risks	"Soon after contract award"	December 2003	
Performance measurement plan	Links the program budget to performance and provides strategic focus linking performance measures to program mission, vision, and guiding principles	December 2002	December 2003	Updated on a semiannual basis
Quality assurance plan	Outlines the processes and procedures used to implement the program's quality assurance process	90 days after contract award (September 2002)	September 2002	
Performance incentives plan	Establishes a team to evaluate ICGS's efforts to exceed performance standards set by the contract and performance measurement plan	Not applicable	March 2003	Remains in effect until terminated, changed, or amended
Award term plan	Establishes criteria for contract term incentives, and evaluation process and periods	June 2002	December 2003	Duration of contract, with procedures for changes

Source: GAO analysis of Deepwater documents.

^aAn updated award fee plan was not available as of December 31, 2003.

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