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SPACE ACQUISITIONS

DOD Faces Substantial Challenges in Developing New Space Systems

Statement of Cristina T. Chaplain, Director
Acquisition and Sourcing Management

GAO

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May 20. 2009

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Highlights

Highlights of GAO-09-705T, a testimony before the Subcommittee on Strategic Forces, Committee on Armed Services, U.S. Senate

Why GAO Did This Study

Despite a growing investment in space, the majority of large-scale acquisition programs in the Department of Defense's (DOD) space portfolio have experienced problems during the past two decades that have driven up cost and schedules and increased technical risks. The cost resulting from acquisition problems along with the ambitious nature of space programs has resulted in cancellations of programs that were expected to require investments of tens of billions of dollars. Along with the cost increases, many programs are experiencing significant schedule delays—at least 7 years—resulting in potential capability gaps in areas such as positioning, navigation, and timing; missile warning; and weather monitoring.

This testimony focuses on

- the condition of space acquisitions,
- causal factors, and
- recommendations for better positioning programs and industry for success.

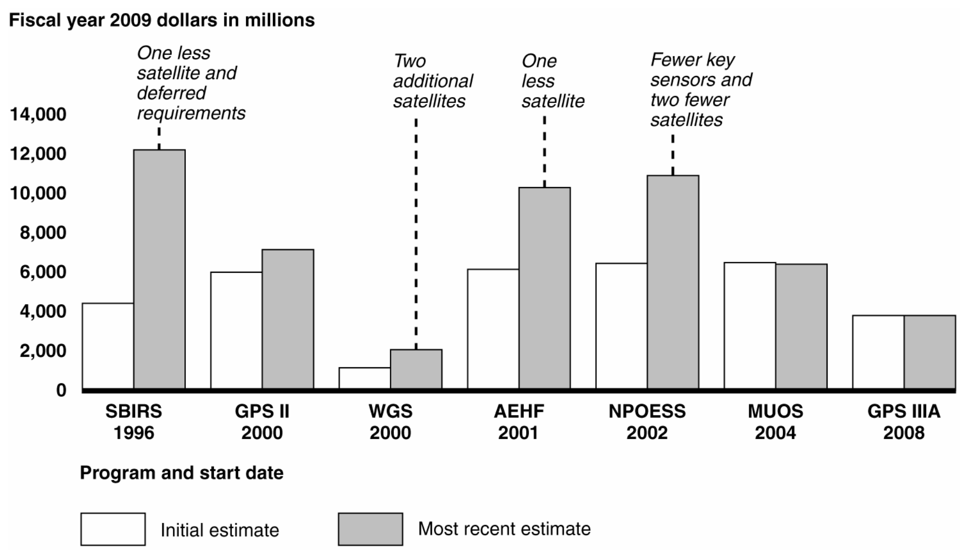
In preparing this testimony, GAO relied on its body of work in space and other programs, including previously issued GAO reports on assessments of individual space programs, common problems affecting space system acquisitions, and DOD's acquisition policies.

View GAO-09-705T or key components.
For more information, contact Cristina T. Chaplain, 202-512-4841, chaplainc@gao.gov.

What GAO Found

Estimated costs for major space acquisition programs have increased by about $10.9 billion from initial estimates for fiscal years 2008 through 2013. As seen in the figure below, in several cases, DOD has had to cut back on quantity and capability in the face of escalating costs.

Total Cost Differences from Program Start to Most Recent Estimates



Source: GAO analysis of DOD data.

Legend: SBIRS = Space Based Infrared System, GPS = Global Positioning System, WGS = Wideband Global SATCOM, AEHF = Advanced Extremely High Frequency, NPOESS = National Polar-orbiting Operational Environmental Satellite System, and MUOS = Mobile User Objective System.

Several causes behind the cost growth and related problems consistently stand out. First, DOD starts more weapon programs than it can afford, creating competition for funding that, in part, encourages low cost estimating and optimistic scheduling. Second, DOD has tended to start its space programs before it has the assurance that the capabilities it is pursuing can be achieved within available resources.

GAO and others have identified a number of pressures associated with the contractors that develop space systems for the government that have hampered the acquisition process, including ambitious requirements and shortages of technical expertise in the workforce. Although DOD has taken a number of actions to address the problems on which GAO has reported, additional leadership and support are still needed to ensure that reforms that DOD has begun will take hold.

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss the Department of Defense's (DOD) space acquisitions. The topic of today's hearing is critically important. Despite a growing investment in space, the majority of large-scale acquisition programs in DOD's space portfolio have experienced problems during the past two decades that have driven up cost and schedules and increased technical risks. The cost resulting from acquisition problems along with the ambitious nature of space programs has resulted in cancellations of programs that were expected to require investments of tens of billions of dollars, including the recently proposed cancellation of the Transformational Satellite Communications System (TSAT). Moreover, along with the cost increases, many programs are experiencing significant schedule delays—at least 7 years—resulting in potential capability gaps in areas such as positioning, navigation, and timing; missile warning; and weather monitoring.

My testimony today will focus on the condition of space acquisitions, causal factors, and recommendations for better positioning programs for success. Many of these have been echoed by the Allard Commission,[1] which studied space issues in response to a requirement in the John Warner National Defense Authorization Act for Fiscal Year 2007, and by a study by the House Permanent Select Committee on Intelligence (HPSCI),[2] among other groups. The two studies highlighted concerns about diffuse leadership for military and intelligence space efforts and declining numbers of space engineering and technical professionals. Members of the Allard Commission were unanimous in their conviction that without significant improvements in the leadership and management of national security space programs, U.S. space preeminence will erode "to the extent that space ceases to provide a competitive national security advantage."

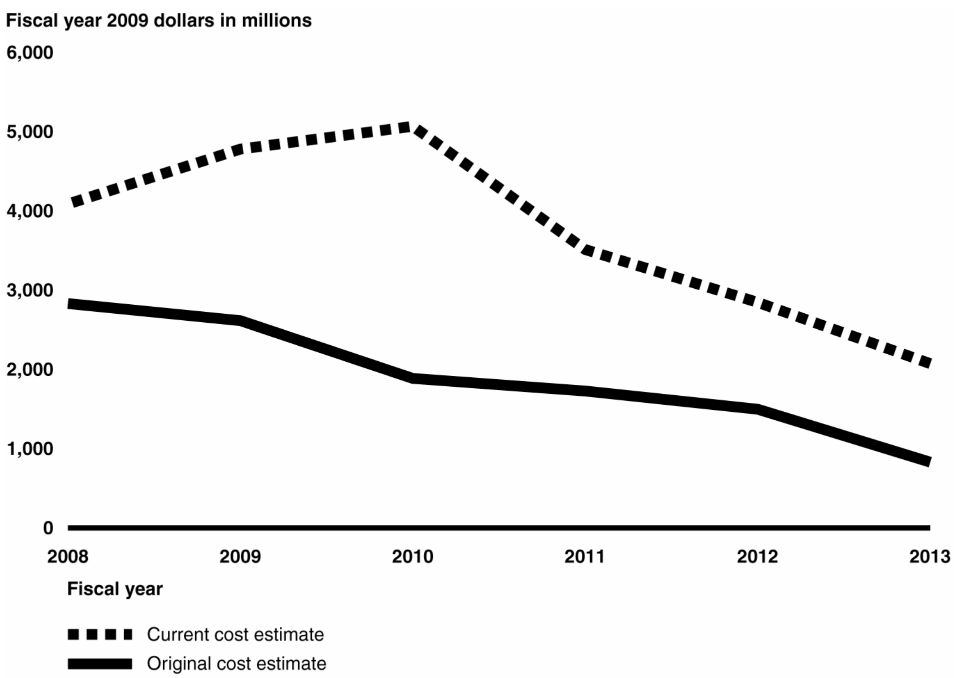
[1] Institute for Defense Analyses, *Leadership, Management, and Organization for National Security Space: Report to Congress of the Independent Assessment Panel on the Organization and Management of National Security Space* (Alexandria, Va.: July 2008).

[2] House Permanent Select Committee on Intelligence, *Report on Challenges and Recommendations for United States Overhead Architecture* (Washington, D.C.: October 2008).

Space Acquisition Problems Persist

Figure 1 compares original cost estimates and current cost estimates for the broader portfolio of major space acquisitions for fiscal years 2008 through 2013. The wider the gap between original and current estimates, the fewer dollars DOD has available to invest in new programs. As shown in the figure, estimated costs for the major space acquisition programs have increased by about $10.9 billion from initial estimates for fiscal years 2008 through 2013. The declining investment in the later years is the result of the Evolved Expendable Launch Vehicle (EELV) program's no longer being considered a major acquisition program and the cancellation and proposed cancellation of two development efforts that would have significantly increased DOD's major space acquisition investment.

Figure 1: Comparison between Original Cost Estimates and Current Cost Estimates for Selected Major Space Acquisition Programs for Fiscal Years 2008 through 2013

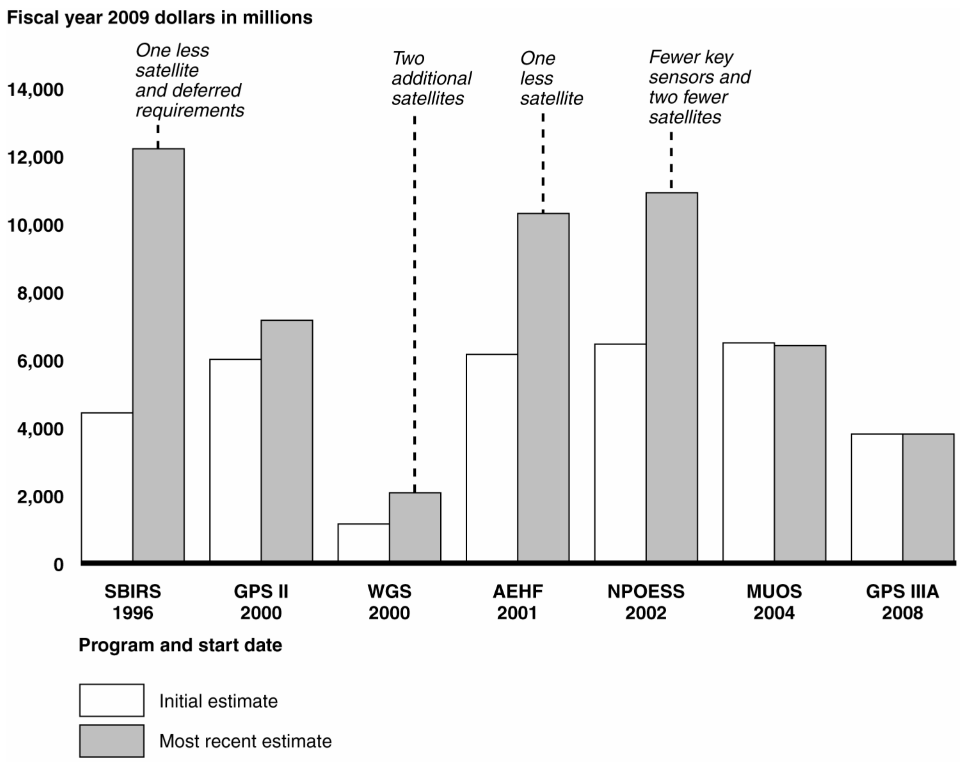


Source: GAO analysis of DOD data.

Note: The acquisition programs include Advanced Extremely High Frequency, Global Broadcast Service, Global Positioning System II, Global Positioning System IIIA, Mobile User Objective System, National Polar-orbiting Operational Environmental Satellite System, Space Based Infrared System, and Wideband Global SATCOM.

Figures 2 and 3 reflect differences in total life-cycle and unit costs for satellites from the time the programs officially began to their most recent cost estimate. As figure 2 notes, in several cases, DOD has had to cut back on quantity and capability in the face of escalating costs. For example, two satellites and four instruments were deleted from National Polar-orbiting Operational Environmental Satellite System (NPOESS) and four sensors are expected to have fewer capabilities. This will reduce some planned capabilities for NPOESS as well as planned coverage.

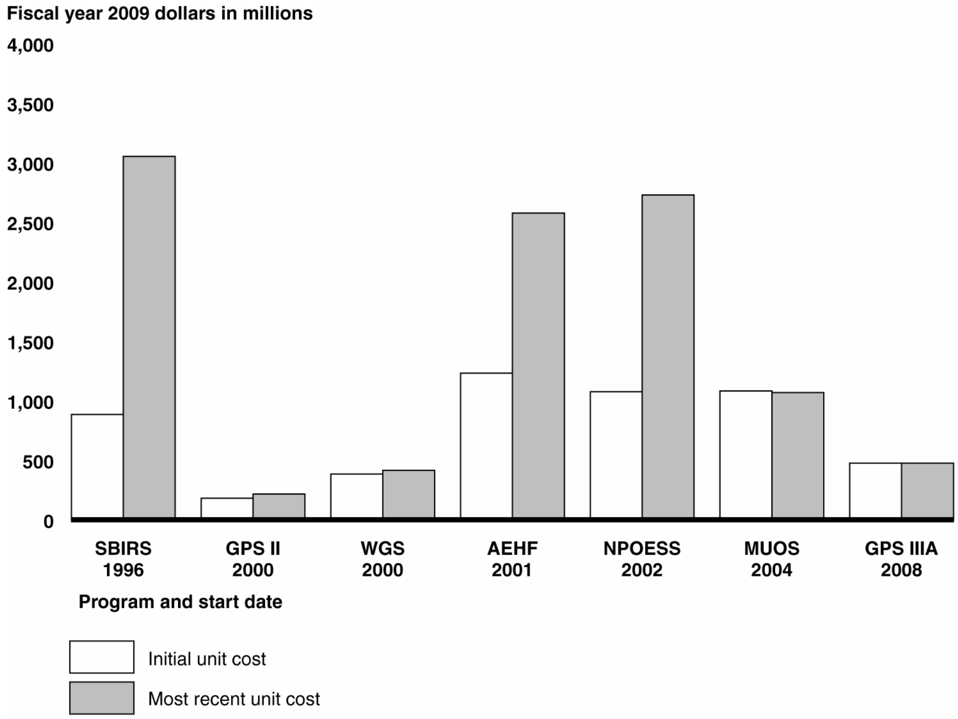
Figure 2: Differences in Total Life-Cycle Program Costs from Program Start and Most Recent Estimates



Source: GAO analysis of DOD data.

Legend: SBIRS = Space Based Infrared System, GPS = Global Positioning System, WGS = Wideband Global SATCOM, AEHF = Advanced Extremely High Frequency, NPOESS = National Polar-orbiting Operational Environmental Satellite System, and MUOS = Mobile User Objective System.

Figure 3: Differences in Unit Costs from Program Start to Most Recent Estimates

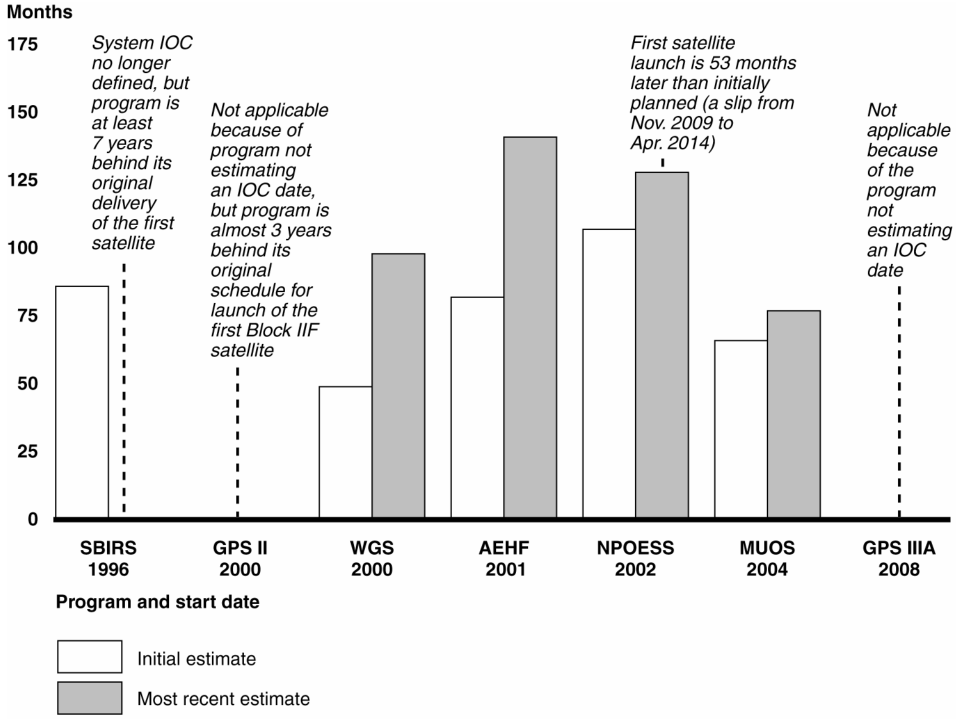


Source: GAO analysis of DOD data.

Legend: SBIRS = Space Based Infrared System, GPS = Global Positioning System, WGS = Wideband Global SATCOM, AEHF = Advanced Extremely High Frequency, NPOESS = National Polar-orbiting Operational Environmental Satellite System, and MUOS = Mobile User Objective System.

Figure 4 highlights the additional estimated months needed to complete programs. These additional months represent time not anticipated at the programs' start dates. Generally, the further schedules slip, the more DOD is at risk of not sustaining current capabilities. For this reason, DOD began a follow-on system effort, now known as Third Generation Infrared Surveillance, to run in parallel with the Space Based Infrared System (SBIRS) program.

Figure 4: Differences in Total Number of Months to Initial Operational Capability (IOC) from Program Start and Most Recent Estimates



Source: GAO analysis of DOD data.

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This fiscal year, DOD launched the second Wideband Global SATCOM (WGS) satellite. WGS had previously been experiencing technical and other problems, including improperly installed fasteners and data transmission errors. When DOD finally resolved these issues, it significantly advanced capability available to warfighters. Additionally, the EELV program had its 23rd consecutive successful operational launch in April. However, other major space programs have had setbacks. For example:

- In September 2008, the Air Force reported a Nunn-McCurdy unit cost breach of the critical cost growth threshold[3] for the Advanced Extremely High Frequency (AEHF) communications satellite because of cost growth brought on by technical issues, schedule delays, and increased costs for the procurement of a fourth AEHF satellite. The launch of the first satellite has slipped further by almost 2 years from November 2008 to as late as September 2010. Further, the program office estimates that the fourth AEHF satellite could cost more than twice the third satellite because some components that are no longer manufactured will have to be replaced and production will have to be restarted after a 4-year gap. Because of these delays, initial operational capability has slipped 3 years—from 2010 to 2013.
- The Mobile User Objective System (MUOS) communications satellite estimates an 11-month delay—from March 2010 to February 2011—in the delivery of on-orbit capability from the first satellite. Further, contractor costs for the space segment have increased about 48 percent because of the additional labor required to address issues related to satellite design complexity, satellite weight, and satellite component test anomalies and associated rework. Despite the contractor's cost increases, the program has been able to remain within its baseline program cost estimate.
- The first Global Positioning System (GPS) IIF satellite is now expected to be delayed almost 3 years from its original launch date to November 2009. Also, the cost of GPS IIF is now expected to be about $1.6 billion—about $870 million over the original cost estimate of $729 million. (This approximately 119 percent cost increase is not that noticeable in figures 2 and 3 because the GPS II modernization program includes the development and procurement of 33 satellites, only 12 of which are IIF satellites.) The Air Force has had difficulty in the past building GPS satellites within cost and schedule goals because of significant technical problems—which still threaten its delivery schedule—and challenges it faced with a different contractor for the IIF program, which did not possess the same expertise as the previous GPS contractor. Further, while the Air Force is structuring the new GPS IIIA program to prevent mistakes made on the IIF program, the Air Force is aiming to deploy the GPS IIIA satellites 3 years faster than the IIF satellites. We believe the IIIA schedule is optimistic given the program's late start, past trends in space acquisitions, and challenges facing the new contractor.

[3] 10 U.S.C. § 2433 establishes the requirement for unit cost reports. If certain unit cost thresholds are exceeded (known as Nunn-McCurdy breaches), DOD is required to report to Congress and, in certain circumstances, if DOD determines that specific criteria are met, certify the program to Congress.

- Total program cost for the SBIRS program is estimated around $12.2 billion, an increase of $7.5 billion over the original program's cost, which included 5 geosynchronous earth orbit (GEO) satellites. The first GEO satellite has been delayed at least 7 years in part because of poor oversight, technical complexities, and rework. Although the program office set December 2009 as the new launch goal for the satellite, it is currently assessing the satellite launch schedule and expects to have a new plan in place by June 2009. Subsequent GEO satellites have also slipped as a result of flight software design issues.
- The NPOESS program has experienced problems with replenishing the current constellation of aging weather satellites and was restructured in July 2007 in response to a Nunn-McCurdy unit cost breach of the critical cost-growth threshold. The program was originally estimated to cost about $6.5 billion for six satellites from 1995 through 2018. The restructured program called for reducing the number of satellites from six to four and included an overall increase in program costs, delays in satellite launches, and deletions or replacements of satellite sensors. Although the number of satellites has been reduced, total costs have increased by almost 108 percent since program start. Specifically, the current estimated life-cycle cost of the restructured program is now about $13.5 billion for four satellites through 2026. This amount is higher than what is reflected in figure 2 as it represents the most recent GAO estimate as opposed to the DOD estimates used in the figure. We reported last year that poor workmanship and testing delays caused an 8-month slip in the delivery of a complex imaging sensor. This late delivery caused a delay in the expected launch date of a demonstration satellite, moving it from late September 2009 to early January 2011.

This year it is also becoming more apparent that space acquisition problems are leading to potential gaps in the delivery of critical capabilities. For example, DOD faces a potential gap in protected military communications caused by delays in the AEHF program and the proposed cancellation of the TSAT program, which itself posed risks in schedule delays because of TSAT's complexity and funding cuts designed to ensure technology objectives were achievable. DOD faces a potential gap in ultra high frequency (UHF) communications capability caused by the unexpected failures of two satellites already in orbit and the delays resulting from the MUOS program. DOD also faces potential gaps or decreases in positioning, navigation and timing capabilities because of late delivery of the GPS IIF satellites and the late start of the GPS IIIA program. There are also concerns about potential gaps in missile warning and weather monitoring capabilities because of delays in SBIRS and NPOESS.

Addressing gaps in any one of these areas is not a simple matter. While there may be opportunities to build less complex "gap filler" satellites, for example, these still require time and money that may not be readily available because of commitments to the longer-term programs. There may also be opportunities to continue production of "older" generation satellites, but such efforts also require time and money that may not be readily available and may face other challenges such as restarting production lines and addressing issues related to obsolete parts and materials. Further, satellites on orbit can be made to last longer by turning power off at certain points in time, but this may also present unacceptable trade-offs in capability.

Underlying Reasons for Cost and Schedule Growth

Our past work has identified a number of causes behind the cost growth and related problems, but several consistently stand out. First, on a broad scale, DOD starts more weapon programs than it can afford, creating a competition for funding that encourages low cost estimating, optimistic scheduling, overpromising, suppressing bad news, and, for space programs, forsaking the opportunity to identify and assess potentially more executable alternatives. Programs focus on advocacy at the expense of realism and sound management. Invariably, with too many programs in its portfolio, DOD is forced to continually shift funds to and from programs—particularly as programs experience problems that require additional time and money to address. Such shifts, in turn, have had costly, reverberating effects.

Second, DOD has tended to start its space programs too early, that is, before it has the assurance that the capabilities it is pursuing can be achieved within available resources and time constraints. This tendency is caused largely by the funding process, since acquisition programs attract more dollars than efforts concentrating solely on proving technologies. Nevertheless, when DOD chooses to extend technology invention into acquisition, programs experience technical problems that require large amounts of time and money to fix. Moreover, when this approach is followed, cost estimators are not well positioned to develop accurate cost estimates because there are too many unknowns. Put more simply, there is no way to accurately estimate how long it would take to design, develop, and build a satellite system when critical technologies planned for that system are still in relatively early stages of discovery and invention.

While our work has consistently found that maturing technologies before a program's start is a critical enabler of success, it is important to keep in mind that this is not the only solution. Both the TSAT and the Space Radar development efforts, for example, were seeking to mature critical technologies before program start, but they faced other risks related to the systems' complexity, affordability, and other development challenges. Ultimately, Space Radar was cancelled, and DOD has proposed the cancellation of TSAT. Last year, we cited the MUOS program's attempts to mature critical technologies before the program's start as a best practice, but the program has since encountered technical problems related to design issues and test anomalies.

Third, programs have historically attempted to satisfy all requirements in a single step, regardless of the design challenge or the maturity of the technologies necessary to achieve the full capability. DOD has preferred to make fewer but heavier, larger, and more complex satellites that perform a multitude of missions rather than larger constellations of smaller, less complex satellites that gradually increase in sophistication. This has stretched technology challenges beyond current capabilities in some cases and vastly increased the complexities related to software. Programs also seek to maximize capability because it is expensive to launch satellites. A launch using a medium- or intermediate-lift EELV, for example, would cost roughly $65 million.

Fourth, several of today's high-risk space programs began in the late 1990s, when DOD structured contracts in a way that reduced government oversight and shifted key decision-making responsibility onto contractors. This approach—known as Total System Performance Responsibility, or TSPR—was intended to facilitate acquisition reform and enable DOD to streamline its acquisition process and leverage innovation and management expertise from the private sector. Specifically, TSPR gave a contractor total responsibility for the integration of an entire weapon system and for meeting DOD's requirements. However, because this reform made the contractor responsible for day-to-day program management, DOD did not require formal deliverable documents—such as earned value management reports—to assess the status and performance of the contractor. The resulting erosion of DOD's capability to lead and manage the space acquisition process magnified problems related to requirements creep and poor contractor performance. Further, the reduction in government oversight and involvement led to major reductions in various government capabilities, including cost-estimating and systems-engineering staff. The loss of cost-estimating and systems-engineering staff in turn led to a lack of technical data needed to develop sound cost estimates.

Actions Needed to Address Space and Weapon Acquisition Problems

Over the past decade, we have identified best practices that DOD space programs can benefit from. DOD has taken a number of actions to address the problems on which we have reported. These include initiatives at the department level that will affect its major weapons programs, as well as changes in course within specific Air Force programs. Although these actions are a step in the right direction, additional leadership and support are still needed to ensure that reforms that DOD has begun will take hold.

Our work—which is largely based on best practices in the commercial sector—has recommended numerous actions that can be taken to address the problems we identified. Generally, we have recommended that DOD separate technology discovery from acquisition, follow an incremental path toward meeting user needs, match resources and requirements at program's start, and use quantifiable data and demonstrable knowledge to make decisions to move to next phases. We have also identified practices related to cost estimating, program manager tenure, quality assurance, technology transition, and an array of other aspects of acquisition-program management that could benefit space programs. Table 1 highlights these practices.

Table 1: Actions Needed to Address Space and Weapon Acquisition Problems

Before undertaking new programs
• Prioritize investments so that projects can be fully funded and it is clear where projects stand in relation to the overall portfolio.
• Follow an evolutionary path toward meeting mission needs rather than attempting to satisfy all needs in a single step.
• Match requirements to resources—that is, time, money, technology, and people—before undertaking a new development effort.
• Research and define requirements before programs are started and limit changes after they are started.
• Ensure that cost estimates are complete, accurate, and updated regularly.
• Commit to fully fund projects before they begin.
• Ensure that critical technologies are proven to work as intended before programs are started.
• Assign more ambitious technology development efforts to research departments until they are ready to be added to future generations (increments) of a product.
• Use systems engineering to close gaps between resources and requirements before launching the development process.
During program development
• Use quantifiable data and demonstrable knowledge to make go/no-go decisions, covering critical facets of the program such as cost, schedule, technology readiness, design readiness, production readiness, and relationships with suppliers.
• Do not allow development to proceed until certain thresholds are met—for example, a high proportion of engineering drawings completed or production processes under statistical control.
• Empower program managers to make decisions on the direction of the program and to resolve problems and implement solutions.
• Hold program managers accountable for their choices.
• Require program managers to stay with a project to its end.
• Hold suppliers accountable to deliver high-quality parts for their products through such activities as regular supplier audits and performance evaluations of quality and delivery, among other things.
• Encourage program managers to share bad news, and encourage collaboration and communication.

Source: GAO.

DOD is attempting to implement some of these practices for its major weapon programs. For example, as part of its strategy for enhancing the roles of program managers in major weapon system acquisitions, the department has established a policy that requires formal agreements among program managers, their acquisition executives, and the user community that set forth common program goals. These agreements are intended to be binding and to detail the progress a program is expected to make during the year and the resources the program will be provided to reach these goals. DOD is also requiring program managers to sign tenure agreements so that their tenure will correspond to the next major milestone review closest to 4 years. Over the past few years, DOD has also been testing portfolio management approaches in selected capability areas—command and control, net-centric operations, battlespace awareness, and logistics—to facilitate more strategic choices for resource allocation across programs.

Within the space community, cost estimators from industry and agencies involved in space have been working together to improve the accuracy and quality of their estimates. In addition, on specific programs, actions have been taken to prevent mistakes made in the past. For example, on the GPS IIIA program, the Air Force is using an incremental development approach, where it will gradually meet the needs of its users, use military standards for satellite quality, conduct multiple design reviews, exercise more government oversight and interaction with the contractor and spend more time at the contractor's site, and use an improved risk management process. On the SBIRS program, the Air Force acted to strengthen relationships between the government and the SBIRS contractor team, and to implement more effective software development practices as it sought to address problems related to its flight software system. Correspondingly, DOD's Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics is asking space programs to take specific measures to better hold contractors accountable through linking award and incentive fees to program milestones. DOD interim space guidance also asks space programs to make independent technology readiness assessments at particular points in the acquisition process and to hold requirements stable.

Furthermore, the Air Force, U.S. Strategic Command, and other key organizations have made progress in implementing the Operationally Responsive Space (ORS) initiative. This initiative encompasses several separate endeavors with a goal to provide short-term tactical capabilities as well as identifying and implementing long-term technology and design solutions to reduce the cost and time of developing and delivering simpler satellites in greater numbers. ORS provides DOD with an opportunity to work outside the typical acquisition channels to more quickly and less expensively deliver these capabilities. In 2008, we found that DOD has made progress in putting a program management structure in place for ORS as well as executing ORS-related research and development efforts, which include development of low cost small satellites, common design techniques, and common interfaces.

Legislation introduced in recent years has also focused on improving space and weapon acquisitions. In March, the Senate Committee on Armed Services introduced an acquisition reform bill which contains provisions that could significantly improve DOD's management of space programs. For instance, the bill focuses on various measures, including increasing emphasis on systems engineering and developmental testing, instituting earlier preliminary design reviews and strengthening independent cost estimates and technology readiness assessments. Taken together, these measures could instill more discipline in the front end of the acquisition process when it is critical for programs to gain knowledge. The bill also requires greater involvement by the combatant commands in determining requirements and requiring greater consultation among the requirements, budget, and acquisition processes. In addition, several of the bill's sections, as currently drafted, would require in law what DOD policy already encourages, but it is not being implemented consistently in weapon programs. In April, the House Committee on Armed Services introduced a bill to similarly reform DOD's system for acquiring weapons by providing for, among other things, oversight early in product development and for appointment of independent officials to review acquisition programs. Both bills are moving forward in the Senate and House.

The actions that the Air Force and Office of the Secretary of Defense have been taking to address acquisition problems are good steps. However, there are still more significant changes to processes, policies, and support needed to ensure reforms can take hold. With requirements, resource allocation, and acquisition processes led by different organizations, it is difficult to hold any one person or organization accountable for saying no to a proposed program or for ensuring that the department's portfolio of programs is balanced. This makes it difficult for DOD to achieve a balanced mix of weapon systems that are affordable and feasible. For example, diffused leadership has been problematic with the GPS program in terms of DOD's ability to synchronize delivery of space, ground, and user assets. GPS has a separate budget, management, oversight, and leadership structures for the space, ground, and user equipment segments. Several recent studies have also concluded that there is a need to strengthen leadership for military and intelligence space efforts. The Allard Commission reported that responsibilities for military space and intelligence programs are scattered across the staffs of the DOD and the Intelligence Community and that it appears that "no one is in charge" of national-security space. The HPSCI expressed similar concerns in its report, focusing specifically on difficulties in bringing together decisions that would involve both the Director of National Intelligence and the

Secretary of Defense. Prior studies, including those conducted by the Defense Science Board and the Commission to Assess United States National Security Space Management and Organization (Space Commission)[4] have identified similar problems, both for space as a whole and for specific programs. While these studies have made recommendations for strengthening leadership for space acquisitions, no major changes to the leadership structure have been made in recent years. In fact, an "executive agent" position within the Air Force that was designated in 2001 in response to a Space Commission recommendation to provide leadership has not been filled since the last executive resigned in 2007.

In addition, more actions may be needed to address shortages of personnel in program offices for major space programs. We recently reported that personnel shortages at the EELV program office have occurred, particularly in highly specialized areas, such as avionics and launch vehicle groups. Program officials stated that 7 of 12 positions in the engineering branch for the Atlas group were vacant. These engineers work on issues such as reviewing components responsible for navigation and control of the rocket. Moreover, only half of the government jobs in some key areas were projected to be filled. These and other shortages in the EELV program office heightened concerns about DOD's ability to use a cost-reimbursement contract acquisition strategy for EELV since that strategy requires greater government attention to the contractor's technical, cost, and schedule performance information. In previous reviews, we cited personnel shortages at program offices for TSAT as well as for cost estimators across space. While increased reliance on contractor employees has helped to address workforce shortages, it could ultimately create gaps in areas of expertise that could limit the government's ability to conduct oversight.

Further, while actions are being undertaken to make more realistic cost estimates, programs are still producing schedule estimates that are optimistic while promising that they will not miss their schedule goals. The GPS IIIA program, for example, is asking the contractor to develop a larger satellite bus to accommodate the future GPS increments and to increase the power of a new military signal by a factor of ten, but the schedule is 3 years shorter than the one achieved so far on GPS IIF. We recognize that

[4] Department of Defense. *Report of the Commission to Assess United States National Security Space Management and Organization* (Washington, D.C.: Jan. 11, 2001).

the GPS IIIA program has built a more solid foundation for success than the IIF program. This foundation offers the best course to deliver on time, but meeting an ambitious schedule goal should not be the Air Force's only measure for mitigating potential capability gaps. Last year, we also reported that the SBIRS program's revised schedule estimates for addressing software problems appeared too optimistic. For example, software experts, independent reviewers, as well as the government officials we interviewed agreed that the schedule was aggressive, and the Defense Contract Management Agency has repeatedly highlighted the schedule as high risk.

Concluding Remarks

In conclusion, senior leaders managing DOD's space portfolio are working in a challenging environment. There are pressures to deliver new, transformational capabilities, but problematic older satellite programs continue to cost more than expected, constrain investment dollars, pose risks of capability caps, and thus require more time and attention from senior leaders than well-performing efforts. Moreover, military space is at a critical juncture. There are critical capabilities that are at risk of falling behind their current level of service. To best mitigate these circumstances and put future programs on a better path, DOD needs to focus foremost on sustaining current capabilities and preparing for potential gaps. In addition, there is still a looming question of how military and intelligence space activities should be organized and led. From an acquisition perspective, what is important is that the right decisions are made on individual programs, the right capability is in place to manage them, and there is someone to hold accountable when programs go off track.

Mr. Chairman, this concludes my prepared statement. I would be happy to answer any questions you or members of the subcommittee may have at this time.

Contacts and Acknowledgements

For further information about this statement, please contact Cristina Chaplain at (202) 512-4841 or chaplainc@gao.gov. Contact points for our Offices of Congressional Relations and Pubic Affairs may be found on the last page of this statement. Individuals who made key contributions to this statement include Art Gallegos, Assistant Director; Maria Durant; Arturo Holguin; Laura Holliday; Rich Horiuchi; Karen Sloan; Alyssa Weir; and Peter Zwanzig.

Appendix I: Scope and Methodology

In preparing this testimony, we relied on our body of work in space programs, including previously issued GAO reports on assessments of individual space programs, common problems affecting space system acquisitions, and the Department of Defense's (DOD) acquisition policies. We relied on our best practices studies, which comment on the persistent problems affecting space acquisitions, the actions DOD has been taking to address these problems, and what remains to be done. We also relied on work performed in support of our 2009 annual weapons system assessment. The individual reviews were conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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