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SPACE ACQUISITIONS

Development and Oversight Challenges in Delivering Improved Space Situational Awareness Capabilities

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Highlights

Highlights of GAO-11-545, a report to the subcommittee on Strategic Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

The United States' growing dependence on space systems makes them vulnerable to a range of threats. DOD has undertaken a variety of initiatives to provide space situational awareness (SSA)—the knowledge and characterization of space objects and the environment on which space operations depend. GAO was asked to (1) review key systems being planned and acquired to provide SSA, and their progress meeting cost, schedule, and performance goals; and (2) determine how much an integrated approach is being used to manage and oversee efforts to develop SSA capabilities. To achieve this, GAO analyzed documentation and interviewed key officials on major SSA development efforts and oversight and management of SSA. This report is an unclassified version of a classified report issued in February 2011.

What GAO Recommends

GAO recommends that DOD assure—in approving the Space Fence and JMS acquisition efforts to initiate product development—that all critical technologies are identified and matured, and that other key risks have been fully assessed. If DOD determines that the programs should move forward with less mature technologies, DOD should assess available backup technologies and additional resources required to meet performance objectives. DOD agreed with the first recommendation and partially agreed with the second. GAO continues to believe DOD should assess required resources earlier than its stated intent.

View GAO-11-545 or key components. For more information, contact Cristina Chaplain at (202) 512-4841 or chaplainc@gao.gov.

What GAO Found

DOD has significantly increased its investment and planned investment in SSA acquisition efforts in recent years to address growing SSA capability shortfalls. Most efforts designed to meet these shortfalls have struggled with cost, schedule, and performance challenges and are rooted in systemic problems that most space acquisition programs have encountered over the past decade. Consequently, in the past 5 fiscal years, DOD has not delivered significant new SSA capabilities as originally expected. To its credit, the Air Force recently launched a space-based sensor that is expected to appreciably enhance SSA. However, two critical acquisition efforts that are scheduled to begin development within the next 2 years—Space Fence and the Joint Space Operations Center Mission System (JMS)—face development challenges and risks, such as the use of immature technologies and planning to deliver all capabilities in a single, large increment, versus smaller and more manageable increments. It is essential that these acquisitions are placed on a solid footing at the start of development to help ensure their capabilities are delivered to the warfighter as and when promised. GAO has consistently recommended that reliable acquisition business cases be established, such as maturing technologies prior to development start, utilizing evolutionary development, and stabilizing requirements in order to reduce program risks. For efforts that move forward with less mature technologies, assessments of the cost, schedule, and performance implications of utilizing backup technologies, if they exist, could provide the knowledge needed to determine whether the efforts are worth pursuing or the investment trade-offs that may need to be made. DOD plans to begin delivering other new capabilities in the coming 5 years, but it is too early to determine the extent to which these additions will address capability shortfalls.

There are significant inherent challenges to executing and overseeing the SSA mission, largely due to the sheer number of governmentwide organizations and assets involved in the mission. Additionally, while the recently issued National Space Policy assigns SSA responsibility to the Secretary of Defense, the Secretary does not necessarily have the corresponding *authority* to execute this responsibility. However, actions, such as development of a national SSA architecture, are being taken that could help facilitate management and oversight governmentwide. The National Space Policy, which recognizes the importance of SSA, directs other positive steps, such as the determination of roles, missions, and responsibilities to manage national security space capabilities and the development of options for new measures for improving SSA capabilities. Furthermore, the recently-issued National Security Space Strategy could help guide the implementation of the new space policy. GAO has recommended since 2003 that such a strategy be issued. Finally, though the commercial sector and the international community are to play a pivotal role in the SSA mission, it is too early to tell whether DOD's efforts to expand and make permanent its Commercial and Foreign Entities SSA data-sharing pilot program will be effective in integrating efforts to develop SSA capabilities.