

GAO Highlights

Highlights of [GAO-13-651](#), a report to the Subcommittee on Tactical Air and Land Forces, Committee on Armed Services, House of Representatives

Why GAO Did This Study

For fiscal year 2014, DOD requested over \$11 billion to modify existing weapon systems—more than 10 percent of its total procurement budget. Traditionally, DOD has acquired proprietary systems, which are costly to upgrade and limit opportunities for competition. Through its Better Buying Power initiatives, DOD has re-emphasized the use of an open systems approach as a way to reduce costs through effective competition.

GAO was asked to examine DOD's progress in implementing an open systems approach for UAS acquisitions. This report addresses (1) the characteristics and benefits of an open systems approach, (2) DOD's efforts in implementing an open systems approach for its UAS portfolio, and (3) challenges, if any, DOD is encountering in implementing this approach. GAO analyzed relevant literature and DOD policies on open systems and interviewed agency and private industry officials to understand how open systems have been implemented and their benefits. In addition, GAO assessed acquisition documents and questionnaire responses from 10 current and planned UAS programs to determine their open system strategies.

What GAO Recommends

GAO recommends that the Air Force and Army implement their open systems policies, DOD develop metrics to track open systems implementation, and the services report on these metrics and address any gaps in expertise. DOD partially concurred and stated that its current policies and processes are sufficient. GAO maintains additional action is needed.

View [GAO-13-651](#). For more information, contact Michael J. Sullivan at (202) 512-4841 or sullivanm@gao.gov.

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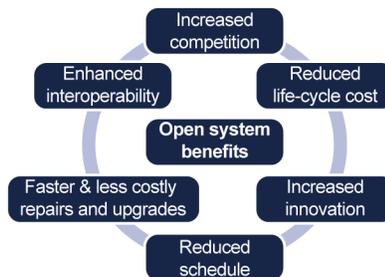
DEFENSE ACQUISITIONS

DOD Efforts to Adopt Open Systems for Its Unmanned Aircraft Systems Have Progressed Slowly

What GAO Found

An open systems approach, which includes a modular design and standard interfaces, allows components of a product (like a computer) to be replaced easily. This allows the product to be refreshed with new, improved components made by a variety of suppliers. Designing weapons as open systems offers significant repair, upgrade, and competition benefits that could translate to millions of dollars in savings as the weapons age. Other benefits are shown in the figure below.

Benefits of an Open Systems Approach



Source: GAO analysis of DOD and industry data.

The services vary in their use of open systems on the Department of Defense's (DOD) 10 largest unmanned aircraft systems (UAS). The Navy used an open systems approach at the start of development for the air vehicle, ground control station, and payloads (i.e., cameras and radar sensors) for three of its four current and planned UAS and anticipates significant efficiencies. For example, Navy and contractor officials expect the Small Tactical UAS to be able to integrate at least 32 payloads developed by 24 manufacturers, some in a matter of days or months rather than years as previous programs experienced. Conversely, none of the Army or Air Force UAS programs initially implemented an open systems approach, relying instead on prime contractors to upgrade and modernize the UAS. The Army is now developing an open ground control station for each of its three legacy UAS programs. Only one of the Air Force's three UAS programs plans to implement an open systems approach on fielded aircraft.

Policies and leadership can help drive DOD's acquisition community to use an open systems approach, but challenges exist. Although DOD and the services have policies that direct programs to use an open systems approach, the Navy is the only service that largely followed the policy when developing its UAS. In addition, while new open systems guidance, tools, and training are being developed, DOD is not tracking the extent to which programs are implementing this approach or if programs have the requisite expertise to implement the approach. Navy UAS program officials told us they relied on technical experts within Naval Air Systems Command to help develop an open systems approach for their programs. Until DOD ensures that the services are incorporating an open systems approach from the start of development and programs have the requisite open systems expertise, it will continue to miss opportunities to increase the affordability of its acquisition programs.