



Highlights of [GAO-04-642](#), a report to the Committee on Science, House of Representatives

Why GAO Did This Study

For more than a decade, GAO has identified the National Aeronautics and Space Administration's (NASA) contract management as a high-risk area—in part because of NASA's inability to collect, maintain, and report the full cost of its programs and projects. Lacking this information, NASA has been challenged to manage its programs and control program costs. The scientific and technical expectations inherent in NASA's mission create even greater challenges—especially if meeting those expectations requires NASA to reallocate funding from existing programs to support proposed new efforts.

Because cost growth has been a persistent problem in a number of NASA programs, GAO was asked to examine NASA's cost estimating for selected programs, assess NASA's cost-estimating processes and methodologies, and describe any barriers to improving NASA's cost-estimating processes. To conduct GAO's work, GAO analyzed a total of 27 NASA programs—10 of which GAO reviewed in detail.

What GAO Recommends

GAO is recommending that NASA take a number of actions to better ensure that the agency's planned and recently implemented initiatives to improve its cost-estimating practices will result in sound cost estimates and thereby enable NASA to control its programs better.

www.gao.gov/cgi-bin/getrpt?GAO-04-642.

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

NASA

Lack of Disciplined Cost-Estimating Processes Hinders Effective Program Management

What GAO Found

Considerable change in NASA's program cost estimates—both increases and decreases—indicates that NASA lacks a clear understanding of how much its programs will cost and how long they will take to achieve their objectives. For example, the development cost estimates for more than half of the 27 programs that GAO reviewed have increased and for some programs this increase was significant—as much as 94 percent. Cost estimates changed for each of 10 programs that GAO reviewed in detail. For 8 of the 10 programs, the estimates increased. Although NASA cited specific reasons for the changes, such as technical problems and funding shortages, the variability in the cost estimates indicates that the programs lacked the sufficient knowledge needed to establish priorities, quantify risks, and make informed investment decisions, and thus predict costs.

Most notably, NASA's basic cost-estimating processes—an important tool for managing programs—lack the discipline needed to ensure that program estimates are reasonable. Specifically, GAO found that none of the 10 NASA programs that GAO reviewed in detail met all of GAO's cost-estimating criteria, which are based on criteria developed by Carnegie Mellon University's Software Engineering Institute. Moreover, none of the 10 programs fully met certain key criteria—including clearly defining the program's life cycle to establish program commitment and manage program costs, as required by NASA. In addition, only three programs provided a breakdown of the work to be performed. Without this knowledge, the programs' estimated costs could be understated and thereby subject to underfunding and cost overruns, putting programs at risk of being reduced in scope or requiring additional funding to meet their objectives. Finally, only two programs have a process in place for measuring cost and performance to identify risks.

NASA has limited ability to collect the program cost and schedule data needed to meet basic cost-estimating criteria. For example, as GAO has previously reported, NASA does not have a system to capture reliable financial and performance data—key to using effectively the cost-estimating tools that NASA officials state that programs employ. Further, without adequate financial and nonfinancial data, programs cannot easily track an acquisition's progress and assess whether the program can meet its cost and schedule goals before it incurs significant cost and schedule overruns. NASA identified other barriers, including limited cost-estimating staff. According to NASA officials, several initiatives are under way to remove such obstacles and improve the agency's cost-estimating practices.