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NEXTGEN AIR TRANSPORTATION SYSTEM

FAA's Metrics Can Be Used to Report on Status of Individual Programs, but Not of Overall NextGen Implementation or Outcomes

GAO Accountability · Integrity · Reliability

Highlights

Highlights of GAO-10-629, a report to congressional committees

Why GAO Did This Study

To prepare for forecasted air traffic growth, the Federal Aviation Administration (FAA), in partnership with other federal agencies and the aviation industry, is planning and implementing the Next Generation Air Transportation System (NextGen), a new satellite-based air traffic management system that will replace the current radar-based system and is expected to enhance the safety and capacity of the air transport system.

GAO was asked to review FAA's metrics for (1) tracking the status of NextGen programs and the implementation of NextGen capabilities, the reliability of those metrics, and any limitations or gaps and (2) measuring the performance and outcomes of NextGen capabilities that are implemented and any limitations. GAO analyzed FAA program progress reports and associated metrics for monitoring. GAO also reviewed agency performance and accountability reports and discussed internal performance reporting methods with FAA officials.

What GAO Recommends

The FAA Administrator should clarify dispute resolution processes within FAA's portfolio management structure, and develop a timeline and action plan to agree with stakeholders on a list of specific goals and outcome-based performance metrics for NextGen. DOT agreed to consider GAO's recommendations and provided technical comments that GAO incorporated as appropriate.

View GAO-10-629 or key components.
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What GAO Found

FAA has metrics that allow it to monitor the progress of its programs for acquiring software and hardware. These metrics include Earned Value Management (EVM) measurements that show how well a program is meeting its planned cost and schedule targets for system development. Previous GAO reports have identified issues with FAA's implementation of EVM, which continue to affect the accuracy and reliability of some of FAA's program status reports. For example, for one acquisition program, FAA implemented EVM metrics only for the contractor's performance and not for the government's. As a result, the EVM data did not pick up delays that occurred after the contractor delivered the system and the EVM system did not provide early warnings of delays and potential cost overruns. In addition, GAO's previous work has shown that FAA is not able to report on how slippage in one program's schedule or budget will ultimately affect the implementation of other NextGen acquisition programs or operational capabilities whose progress depends on the completion of the first program. GAO has made recommendations to address these issues, which FAA and the Department of Transportation have begun to implement. FAA has also designated specific positions within the NextGen Integration and Implementation Office–known as solution set coordinators–to monitor and track progress toward implementing a portfolio of operational improvements into the national airspace system. However, the role of the coordinators and the process for resolving any disputes across FAA lines of business have not been clearly defined or delineated and it is uncertain whether the processes in place in this portfolio management structure will strengthen oversight and create a greater likelihood that required activities are completed on time.

FAA has broad goals for NextGen as a whole, such as increasing capacity and reducing noise and emissions, but has not yet developed specific goals and outcome-based performance metrics to track the impact of and benefits realized from the entire NextGen endeavor. The agency has multiple efforts underway to develop such metrics: FAA's Air Traffic Organization (ATO), which manages the air traffic control system, has started to compile and review a set of metrics for measuring outcomes and performance associated with NextGen improvements. These metrics are likely to measure such things as the extent to which improvements increase throughput at airports, reduce emissions, and reduce flight times, but they are in the early stages of development. Recently, FAA also committed to developing performance metrics with industry, but it has no timeline or action plan for completing this effort. Separately, the Joint Planning and Development Office (JPDO), which is responsible for the long-term planning for NextGen and partnering with other federal agencies, has been working to develop a list of potential metrics, which range from fuel consumed per distance flown to curb-to-curb travel time. Without specific goals and metrics for the performance of NextGen as a whole, together with a timeline and action plan for implementation, it is not clear whether NextGen technologies, systems, and capabilities will achieve desired outcomes and be completed within the planned time frames.