

# GAO Highlights

Highlights of [GAO-15-657](#), a report to congressional committees

## Why GAO Did This Study

The satellite-based GPS provides positioning, navigation, and timing data to users worldwide. The Air Force is modernizing the satellite, ground control, and user equipment segments to enhance GPS performance.

The Senate and House Armed Services Committee reports accompanying bills for the National Defense Authorization Act for Fiscal Year 2015 included provisions for GAO to review the status of OCX development and DOD's efforts to field M-code signal capability. This report addresses (1) the extent to which DOD is meeting cost, schedule, and performance requirements for OCX; (2) the progress DOD is making in delivering M-code capable MGUE by the end of fiscal year 2017; and (3) the challenges DOD faces in synchronizing the development of GPS III, OCX, and MGUE to deploy M-code.

To conduct this work, GAO analyzed program documents such as acquisition strategies; reviewed oversight reporting; assessed constellation reliability metrics; and interviewed officials from DOD programs and contractors.

## What GAO Recommends

GAO recommends that DOD obtain a more robust independent assessment of OCX to identify and resolve root causes, and ensure MGUE design is stable to inform testing and procurement decisions. DOD concurred on OCX but stated that actions taken to date are sufficient. DOD partially concurred on MGUE. GAO believes all recommended actions are necessary to address systemic problems.

View [GAO-15-657](#). For more information, contact Cristina Chaplain at (202) 512-4841 or [chaplainc@gao.gov](mailto:chaplainc@gao.gov).

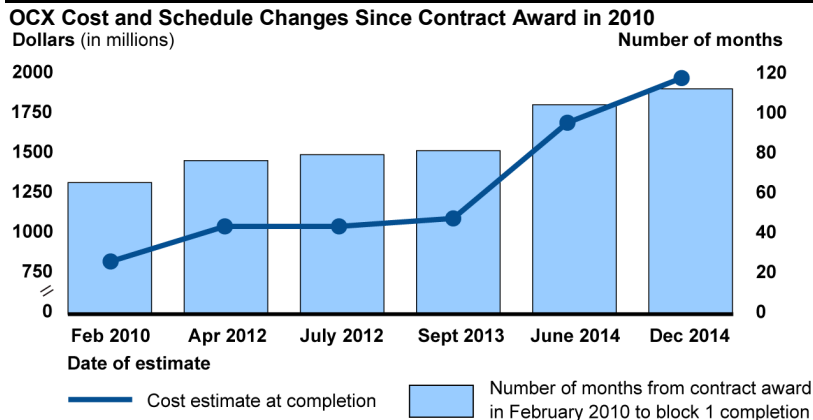
September 2015

## GPS

# Actions Needed to Address Ground System Development Problems and User Equipment Production Readiness

## What GAO Found

The Air Force has experienced significant difficulties developing the Global Positioning System (GPS) next generation operational control system (OCX) and consistently overstated progress to the Office of the Secretary of Defense (OSD) compared to advisory independent assessments it received. It needs \$1.1 billion and 4 years more than planned to deliver OCX due to poor acquisition decisions and a slow recognition of development problems. The Air Force began OCX development in 2010 prior to completing preliminary development reviews in contrast with best acquisition practices. It accelerated OCX development in 2012 to meet optimistic GPS III satellite launch timeframes even as OCX development problems and costs grew, and then paused development in 2013 to address problems and resolve what it believed were root causes. However, as the figure below shows, OCX cost and schedule growth have persisted due in part to a high defect rate, which may result from systemic issues. Further, unrealistic cost and schedule estimates limit OSD visibility into and oversight over OCX progress.



Source: GAO analysis of DOD data. | GAO-15-657

The Air Force is implementing the military GPS user equipment (MGUE) program to develop for the military services GPS receiver cards capable of receiving the military-code (M-code) signal—which can help users operate in jamming environments. The Air Force has revised MGUE's acquisition strategy several times in its quest to develop the cards. Even so, the military services are unlikely to have sufficient knowledge to make informed procurement decisions starting in fiscal year 2018 because operational testing that provides valuable information about MGUE performance will not be complete until fiscal year 2019.

The current GPS constellation has proven to be much more reliable than the Air Force predicted when GAO last reported on it in 2010. Given delays to OCX, the Air Force has prepared contingency plans for sustaining the GPS constellation, but these plans may not deliver the full range of GPS capability. Initial M-code capability will not be available until OCX delivery in mid-2019 at the earliest and full M-code capability is likely at least a decade away—once the services are able to deploy MGUE receivers in sufficient numbers. Until the OCX program trajectory is corrected, additional delays to it may likely pose significant risks to sustaining the GPS constellation and delivering GPS capability.