Senator John McCain Presents

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SPLURGING ON DROPPED SIGNALS: $1.1 BILLION & GROWING COST-GROWTH ON AIR FORCE'S GROUND-BASED SATELLITE CONTROL SYSTEM (OCX) FOR THE NEXT GLOBAL POSITIONING SYSTEM (GPS)

Like the Internet, the Global Positioning System (GPS) is an essential component of our global information infrastructure. It's what provides the position, navigation, and timing information that powers our increasingly connected world. Beyond just being a national security asset, the U.S.-owned and Air Force-operated GPS is a global utility and an essential component of economic growth, national infrastructure, and transportation safety, that supports industries from construction, mining, and package delivery to banking, power utilities, and wireless communications. The Department of Defense (DOD) has been modernizing GPS to enhance its performance and security since 2000, through three efforts: new satellites (GPS III), ground-based operational control systems and stations (OCX), and receivers that preserve military-only channels of communication (M-code).

The Air Force has been developing OCX—which anchors the other two GPS modernization efforts—since 2007. In 2010, after two companies produced prototypes, the Air Force chose Raytheon to continue OCX development, estimated at the time to cost $886 million and be completed within 6 years.

But poor contractor performance and fundamental weaknesses in DOD acquisition and software development practices now threaten the delivery of OCX. The U.S. Government Accountability Office (GAO) issued a report in September 2015 that finds that the Air Force's OCX ground-based operational control system is expected to be delivered nearly four years late at more than double its original cost. The contract for OCX program will require an additional $1 billion—now estimated to cost taxpayers nearly $2 billion at completion—and will take four years more than planned to address preventable management and technical failures.[1] Moreover, it is likely the program will experience further delays and waste additional taxpayer dollars because the program continues to suffer from what GAO refers to as "systemic issues".[2]

Source: Raytheon Corporation

[1] The contract with Raytheon was originally awarded for $886 million. The OCX program overall (which includes this contract) is estimated to cost $3.5 billion.
[2] GAO, GPS: Actions Needed to Address Ground System Development Problems and User Equipment Production Readiness, GAO-15-657 (Washington, D.C.: September 9, 2015).

The Air Force proceeded with OCX development without knowing enough to make key program decisions—for example, when it picked a design and awarded a contract before formally launching the program. Also, both the Air Force and Raytheon had a poor understanding of cybersecurity requirements, despite the fact that OCX is critical to the cybersecurity of the entire GPS. OCX—like other DOD programs—must incorporate standard requirements related to cybersecurity, but Raytheon didn't take that requirement seriously in this case, hoping instead for a waiver.

And the Air Force and Raytheon accelerated development even as the program struggled. In 2012, despite knowing that Raytheon had serious problems developing software, the Air Force authorized systems engineering activities at the same time as software development occurred, leading to rework and further delays instead of efficiency. In 2013, the Air Force paused to research root causes and fix the program, and subsequently believed it had identified and solved them. Unfortunately, the root cause(s) for software problems remain unclear and present continued risk today.

All along the way, the Air Force overstated progress to the Office of the Secretary of Defense (OSD), presenting overly optimistic Air Force cost and schedule estimates that conflicted with independent DOD cost estimates—both of which the OSD accepted without sufficient scrutiny.

For the OCX program to succeed and deliver the capability that not just our nation, but the entire world depends on, the management and technical issues noted by GAO must be addressed. The Department should take immediate steps to identify all remaining developmental challenges, assess whether the existing program of record and contractor are capable of meeting program requirements in a reasonable timeframe and at an appropriate cost, and identify and hold accountable those responsible for program mismanagement.