Report in Brief

July 9, 2018

Background

In December 2016, the Department established cost and schedule baselines for the National Oceanic and Atmospheric Administration's (NOAA's) Polar Follow-On (PFO) program, which funds the Joint Polar Satellite System (JPSS)-3 and JPSS-4 missions. The baselined PFO missions would extend through fiscal year (FY) 2038 at a total life-cycle cost of nearly $7.6 billion. These baselines set forth a strategy to procure the JPSS-3 and JPSS-4 satellites using a block-buy acquisition approach and were intended to make NOAA's polar satellite architecture more resilient such that two on-orbit satellites would need to fail before an actual gap in JPSS data would occur.

However, NOAA's congressional budget submissions for FYs 2018 and 2019 have signaled some uncertainty as to whether the program can fully execute the plans established for the JPSS-3 and JPSS-4 missions.

Why We Did This Review

Our primary objective was to assess the PFO program baselines established in December 2016. More specifically, our objectives were to (1) assess the maturity of PFO missions' system design for indications of cost, schedule or performance issues that would threaten the ability of the JPSS program to execute to its baselines; (2) determine the extent to which NOAA has complied with requirements to report JPSS development costs; and (3) review NOAA efforts to plan for future satellite technologies.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Polar Follow-On: NOAA Must Maintain Cost Efficiencies and Refine Launch Strategy for JPSS-3 and JPSS-4 Missions

OIG-18-021-A

WHAT WE FOUND

We found that (1) PFO missions' system design depends on maturing the JPSS-2 technical baseline and completing plans for a flexible launch strategy; (2) NOAA has not provided detailed polar satellite system development costs to Congress; and (3) NOAA has identified potential future satellite systems and continues to plan its next-generation space architecture, but goals and timelines for technology insertion are uncertain.

WHAT WE RECOMMEND

In order to mitigate the effects of potential reduced annual program budgets and avoid significant cost increases due to prolonged acquisition schedules, we recommend that the NOAA Deputy Under Secretary for Operations ensures that the JPSS program:

1. Includes cost avoidance strategies in its risk management plans, including strategies for prioritizing parts buys, initiating long-lead item purchases, and avoiding parts obsolescence issues.

In order to retain flexibility in the launch strategies for JPSS-3 and JPSS-4, we recommend that the Assistant Administrator for Satellite and Information Services ensures that the JPSS program:

2. Completes storage plans and cost analyses for instruments and integrated satellites.

Further, we recommend that the Assistant Administrator for Satellite and Information Services ensures that the National Environmental Satellite Data and Information Service (NESDIS):

3. Completes policy and plans that will guide polar satellite launch decisions.

In addition, given schedule challenges with heel-to-toe development, we recommend that the Assistant Administrator for Satellite and Information Services ensures that NESDIS uses its polar satellite constellation availability analysis to:

4. Reanalyze scheduled launch dates for JPSS-2, -3, and -4.

To ensure cost and programmatic efficiencies are identified for the Polar Weather Satellites (PWS) program, and therefore put future funds to better use, we recommend that the Assistant Administrator for Satellite and Information Services ensures that NESDIS:

5. Revises and independently assesses the PWS life-cycle cost estimate.

We recommend that the Under Secretary of Commerce for Oceans and Atmosphere:

6. Ensures that NOAA provides Congress with satellite system estimated costs in accordance with requirements for its major satellite programs specified in annual appropriations laws.

We recommend that the NOAA Deputy Under Secretary for Operations ensures NESDIS:

7. Defines goals and timelines for the completion of satellite technology insertion efforts—including the Earth Observing Nanosatellite-Microwave—in order to reduce risk associated with future polar satellite system architectures.