Report in Brief

August 2, 2018

Background

The Joint Polar Satellite System (JPSS) Common Ground System (hereafter, ground system) commands and controls National Oceanic and Atmospheric Administration (NOAA) polar satellites, ingests and processes data and imagery, and distributes products to users like NOAA's National Weather Service. The ground system also provides services for several domestic and international environmental satellite missions.

Ground system-related costs account for approximately 28 percent of the JPSS program's $11.3 billion total life-cycle cost estimate. The program has worked to complete a major upgrade of the ground system and launch the JPSS-1 satellite. Within the program, that effort was managed by a National Aeronautics and Space Administration ground project team (hereafter, the ground project). Raytheon Intelligence, Information, and Services is the prime contractor for the ground system and its sustainment.

Why We Did This Review

Our objective was to assess the cost, schedule, and technical performance of selected components of the JPSS program. Given its scale and complexity, we limited our scope for this audit to the ground system development effort and the program's management of the ground system contract.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The Joint Polar Satellite System: Program Must Use Realistic Schedules to Avoid Recurrence of Ground Project Delays and Additional Cost Increases

OIG-18-024-A

WHAT WE FOUND

We found that the ground system upgrade presented technical challenges and took longer to complete than planned. Specifically, we found that (a) the ground system upgrade was a large and complex effort, yet a key requirements review was abbreviated and a design review was omitted; (b) the schedule to complete the ground system upgrade was overly optimistic; (c) an optimistic schedule added risk to system development, integration, and test processes that were already challenged; (d) system integration, test, and verification efforts were further hindered by an unstable system as well as uncertain expectations between the government and the contractor; (e) capabilities were deferred to relieve pressure on the schedule; and (f) cost increases on the ground system contract risk exceeding the project's budget.

We also found that the JPSS program can improve its management of the ground system cost-plus-award-fee contract. Specifically, we found that (a) the contract performance evaluation plan (PEP) includes numerous performance evaluation criteria and inconsistencies in the process for award fee determinations, potentially reducing its effectiveness; (b) award period emphasis items did not effectively communicate what was important for contractor performance; (c) the government's scoring of contractor performance was not adequately documented or reviewed by senior management; and (d) the remaining available award fees are funds that could be put to better use through adherence to best practices and consistent implementation of management controls. Related to this finding, we identified $116,987,371 in questioned costs and $39,479,569 in funds to be put to better use.

WHAT WE RECOMMEND

In order to promote more efficient future development of the JPSS Common Ground System, we recommend that the NOAA Deputy Under Secretary for Operations do the following:

1. Institute program management council review of future development plans to ensure it is done in sufficiently small increments with achievable milestones.

Further, we recommend that the Assistant Administrator for Satellite and Information Services do the following:

2. Ensure that appropriate analyses are conducted to support decisions for omitting or tailoring project life-cycle reviews (e.g., requirements and design reviews).
3. Ensure that schedules are estimated using realistic, resource-loaded planning factors.
4. Ensure that the contractor conducts sufficient technical peer reviews to limit defects and rework.
5. Ensure that the government and contractor formally clarify roles, responsibilities, and expectations for future work to avoid issues that arose during the Block 2.0 integration and test phase.
6. Ensure that senior leadership maintains sufficient insight into cost risk on the ground system contract.

In order to improve the management of the JPSS Common Ground System cost-plus-award-fee contract and put remaining award fees to better use, we recommend the NOAA Deputy Under Secretary for Operations and the Assistant Administrator for Satellite and Information Services do the following:

7. Ensure that the ground system contract's PEP is revised to incorporate best practices for the use of performance factors and to clarify the award fee determination process.
8. Ensure that emphasis items (focus areas) provided to the contractor prior to each award period are clear, prioritized, and aligned with performance criteria.
9. Ensure that the award fee determination process is adequately documented in accordance with the PEP and best practices.
10. Ensure management controls are adequately integrated within the award fee determination process and that they are consistently implemented.