



Report In Brief

JUNE 11, 2015

Background

To reduce costs and accelerate deployment of capabilities, NOAA is transitioning to an Enterprise Architecture (EA) approach for developing ground system capabilities supporting its environmental satellites.

NOAA's environmental satellite programs are managed by the National Environmental Satellite, Data, and Information Service (NESDIS). In collaboration with the National Aeronautics and Space Administration (NASA), NESDIS is responsible for seven major satellite programs with satellites that operate in geostationary, low-Earth (e.g., polar), and other orbits.

Why We Did This Review

As approved in December 2014, language in House Report 113-448, "Commerce, Justice, Science, and Related Agencies Appropriations Bill, 2015," directed OIG to report to Congress on NOAA's existing satellite ground infrastructure, as well as the agency's plans for implementing a common ground system architecture. It also specified that our report should review the adequacy of NOAA's planning efforts and milestones for achieving a common ground system and the adequacy of its planning with respect to system redundancy, security, and scalability.

Our objectives for this review were to determine (1) the progress of NOAA's planning efforts and milestones for implementing a common satellite ground system architecture (i.e., an EA), and (2) whether NOAA's plans and efforts provide adequate consideration for system redundancy, security, and scalability. Our review covered NOAA's efforts from June 2013 to April 2015 and its plans to implement the architecture in the future.

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Cost Estimates, Long-Term Savings, Milestones, and Enterprise Architecture Policy Are Needed for Common Satellite Ground System Program

OIG-15-032-I

WHAT WE FOUND

We found that

EA planning is underway, but cost estimates are needed to determine appropriate investment reviews and reporting. NESDIS began efforts to develop a ground system EA in FYs 2013 and 2014, but it did not progress as far as intended due to lack of resources and support from its satellite programs. In January 2015, NESDIS established its EA program and a program office. Resource and program coordination issues have been resolved and the program appears to be on track to finalize EA plans by July 2016. However, the degree of investment oversight required is uncertain due to the lack of program cost estimates.

Planning is following best practices, but return on investment and plans and milestones beyond 2016 are yet to be determined. NESDIS is following best practices and incorporating lessons learned from similar programs at other agencies. It expects that taking an enterprise approach for its ground systems will reduce costs and accelerate deployment of capabilities. However, it has not identified goals for cost reduction or accelerated deployment and the plans to reach these goals are also undetermined. As Ground Enterprise Architecture Services (GEARS) goals and plans are developed, NOAA should clearly and regularly report to Congress and other key stakeholders the progress made against these and other milestones.

NESDIS is mostly compliant with EA guidance, but improvements are needed to enhance institutional commitment, quality assurance, information sharing, and IT security planning. NESDIS has fulfilled 22 (or 71 percent) of the 31 EA management and development criteria we assessed for our review. However, NESDIS needs to further involve leadership with GEARS by establishing formal policy, planning, and training. NESDIS also needs to improve quality assurance through establishing an independent review team for GEARS. Additionally, information sharing should be improved through implementing EA tools. Finally, NESDIS needs to improve IT security planning by identifying how and when experts in IT security architecture will be involved.

WHAT WE RECOMMEND

We recommend that the NOAA Administrator

1. Develop a GEARS program cost estimate based on a defined time frame.
2. Identify OMB, Department, and NOAA review and reporting requirements applicable to the program cost estimate.
3. Identify and regularly communicate anticipated GEARS return on investment, milestones, and performance measures to NOAA, the Department, and Congressional stakeholders.
4. Direct NESDIS to establish an EA policy.
5. Direct NESDIS to establish an executive committee with adequate experience and training to review GEARS technical implementation, and ensure its members are included in the development and approval of plans.
6. Establish an independent review team with adequate EA expertise to review GEARS.
7. Direct NESDIS to implement an EA repository during planning.
8. Direct NESDIS to identify methods and milestones for including IT security architects in GEARS development and determine milestones for management review of plans.
9. Direct NESDIS to identify IT security weaknesses in legacy systems to be integrated or replaced by GEARS and ensure mitigations are included in GEARS transition plans.