
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

REPORT
PURSUANT TO
GOOD ACCOUNTING OBLIGATION IN GOVERNMENT ACT OF 2019
(P.L. 115-414)

As of November 30, 2019

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NASA’S REQUIRED REPORTING UNDER THE GOOD ACCOUNTING OBLIGATION IN GOVERNMENT ACT (P.L. 115-414)

Background

In 2019, the President signed into law the “Good Accounting Obligation in Government Act” (the Act). The Act was envisioned to improve transparency into long-standing audit recommendations issued by the Government Accountability Office (GAO) and federal Office of Inspectors General (OIG). By requiring agency reporting on the lack of progress towards implementation, the Congress postulated that Federal agencies would be held more accountable and that the public can more readily assess agency funding requests in light of unfulfilled efficiency improvements that could potentially yield cost savings.

Section 2 of the Act imposes an affirmative requirement on Federal agencies to submit an annual report on publicly-issued GAO and OIG recommendations classified as “open” for more than one year from the date of the annual budget justification submission. Additionally, the Act also requires that agencies report on publicly-issued GAO recommendations which were determined to “closed but not implemented.” For both categories of recommendations -- open, and closed but not implemented – Federal agencies are required to provide an explanation as to why final management action¹ has not yet been completed. Finally, the Act also requires agencies perform a reconciliation of discrepancies between recommendations reported by GAO and OIGs, and Federal agencies.

For purposes of NASA’s 2020 reporting under the Act, the following definitions are provided in order to enhance the utility and readability of this report:

- **Open:** Final management action is pending/in-progress (includes recommendations for which final management action has been completed, but auditor verification/validation is pending/in-progress)
- **Closed:** Final management action and corresponding auditor verification/validation completed
- **Closed/Not Implemented:** Recommendation has been closed, however final management action has been partially completed, not completed, or action(s) not recommended have been taken. (Applicable only to GAO recommendations).

¹ Final Management Action: The completion of all actions that the management of an establishment has concluded, in its management decision, are necessary with respect to the findings and recommendations included in an audit report; or, in the event that the management of an establishment concludes no action is necessary, final action occurs when a management decision has been made. Source: *Inspector General Act of 1978 (as amended)*.

Summary

As of November 30, 2019, a combined total of 102 GAO and NASA OIG recommendations in 48 public reports were open for more than one year from the date of issuance. Of these 102 open recommendations, 40 were issued by GAO and 62 were issued by the NASA OIG. Additionally, four GAO recommendations were “closed but not implemented” since NASA’s prior year (2019) submission under the Act (see Table 1).

The 40 GAO recommendations open more than one year, as well as the four GAO recommendations which were “closed but not implemented,” were issued in 24 public reports during the period September 20, 2011 through August 2, 2018. While the 62 NASA OIG recommendations open more than one year were issued in 28 public reports during the period May 15, 2015 through November 28, 2018. Consequently, the effective reporting period covered by NASA’s 2020 GAO-IG Act submission is September 20, 2011 through November 28, 2018.

For contextual purposes, during the period September 20, 2011 through November 28, 2018, GAO issued a total of 50 public and non-public reports containing 200 recommendations addressed to NASA. While the NASA OIG issued a total of 65 public and non-public reports containing 547 total recommendations addressed to NASA during the period May 15, 2015 through November 28, 2018.

Table 1

Open and Closed/Not Implemented Reports and Recommendations								
As of November 30, 2019*								
	Reports			Recommendations				
	Issued/Open			Issued/Open			Closed/Not Implemented	
	Publicly Issued	Open > 1 Year	Pct.	Publicly Issued	Open > 1 Year	Pct.	Recs	Pct.
GAO	49	20	41%	123	40	33%	4	3%
OIG	57	28	49%	377	62	16%	n/a	n/a
Total	106	48	45%	500	102	20%	4	3%

* GAO Reports Issued: 9/20/2011 - 8/2/2018
OIG Reports Issued: 5/15/2015 - 11/28/2018

GAO Public Reports and Recommendations

Open for More than One Year: As of November 30, 2019, a total of 40 GAO recommendations were open for more than one year from the date of issuance of the 20 corresponding public GAO reports. These 20 public reports and 40 corresponding recommendations were issued by GAO during the period September 20, 2011 through August 2, 2018 (see Table 2).

The 40 GAO public recommendations open for more than one year represent one-third of publicly issued GAO recommendations addressed to NASA during the period September 20, 2011 through August 2, 2018. Total (public and non-public) GAO reports and corresponding recommendations issued to NASA during the period September 20, 2012 through August 2, 2018 timeframe were 50 and 200, respectively. The 40 public GAO recommendations open for more than one year as of November 30, 2019, constitute 20 percent of the 200 combined (public and non-public) recommendations issued to NASA during the September 20, 2011 through August 2, 2018 timeframe.

Of the 40 public GAO recommendations open for more than one year as of November 30, 2019:

- 53 percent were open for more than one year but less than two years;
- 2 percent were open for more than two years but less than three years;
- 15 percent were open for more than three years but less than four years;
- 8 percent were open for more than four years but less than five years;
- 13 percent were open for more than five years but less than six years;
- 2 percent were open for more than six years but less than seven years; and
- 7 percent were open for more than seven years but less than eight years

Table 2

GAO Reports and Recommendations Open More than One Year (As of 11/30/2019)							
Type	Reports			Recommendations			
	Issued	Open >1 Year	Pct.	Issued	Open >1 Year	Pct.	Open > 1 Year (Pct. All Recs.)
Public	49	20	41%	123	40	33%	20%
Non-Public	1	1	100%	77	1	1%	1%
Total	50	21	42%	200	41	21%	21%

Implementation Status: Detailed implementation status with regard to the 40 GAO recommendations open for more than one year as of November 30, 2019, is provided in Appendix A of this report. NASA corrective actions have been completed with respect to 38 percent of these recommendations, while NASA corrective actions are in-progress with respect to 55 percent of these recommendations, and no further NASA actions are planned due to non-concurrence with respect to 8 percent of these recommendations.

GAO Recommendation Closed but Not Implemented: Since the reporting date (February 28, 2019) of NASA’s prior year submission under the GAO-IG Act, GAO has closed four recommendations as “not implemented.” The four “closed but not implemented” GAO recommendations correspond to four reports issued during the period September 20, 2011 through July 16, 2015, with GAO closure occurring during the period May 7, 2018 through September 4, 2019. These four “closed but not implemented” recommendations constitute about three percent of the 123 total recommendations addressed to NASA in 49 public GAO reports issued during the period September 20, 2011 through August 2, 2018; and 2 percent of the 200 recommendations addressed to NASA in 50 public and non-public reports issued during that same time frame. Details with respect to the four GAO recommendations “closed but not implemented’ during this reporting period are provided in Appendix B.

Reconciliation with GAO’s Database of Open Recommendations: As of November 30, 2019, GAO’s online database of recommendations reflected a total of 40 recommendations in 20 GAO public reports which were open for more than one year. These 40 recommendations in 20 reports coincide with the 40 recommendations in 20 GAO reports reflected in our reporting on GAO recommendations open for more than one year as reported above. As a result, there are no discrepancies requiring explanation between GAO reports and recommendations open for more than one year, as of November 30, 2019.

OIG Public Reports and Recommendations

Open for More than One Year: As of November 30, 2019, a total of 62 NASA OIG recommendations were open for more than one year from the date of issuance of the corresponding 28 publicly issued audit reports. These reports and recommendations were issued during the period May 15, 2015 through November 28, 2018 (see Table 3).

The 62 public NASA OIG recommendations open for more than one year represent 19 percent of the 329 recommendations issued in 55 NASA OIG public reports during the period May 15, 2015 through November 28, 2018. Furthermore, these 62 recommendations open for more than one year constitute 11 percent of the 547 total recommendations issued to NASA in 65 public and non-public OIG reports issued during the May 15, 2015 through November 28, 2018.

Table 3

Type	Reports			Recommendations			
	Issued	Open >1 Year	Pct.	Issued	Open >1 Year	Pct.	Open >1 Year (Pct. of All Recs.)
Public	55	28	51%	329	62	19%	11%
Non-Public	10	0	0%	218	0	0%	0%
Total	65	28	51%	547	62	11%	11%

Of the 62 NASA OIG recommendations open for more than one year as of November 30, 2019:

- 53 percent were open from between one and two years;
- 32 percent were open from between two and three years;
- 12 percent were open from between three and four years; and
- 3 percent were open from between four and five years

Implementation Status: Details on the implementation status of each of the 62 NASA OIG public recommendations open for more than one year as of November 30, 2019, are provided in Appendix C of this report. Of these 62 publicly issued NASA OIG recommendations, 84 percent are in the implementation phase with on-going NASA corrective actions still in-progress, while NASA corrective actions have been completed and are awaiting OIG closure decisions for 16 percent of these recommendations.

Reconciliation with NASA OIG Semi-Annual Report: In their September 30, 2019 Semi-Annual Report (SAR), the NASA OIG reported a total of 181 open recommendations in 46 public and non-public audit reports issued to NASA. Of the 46 reports reflected in the semi-annual report, six were not publicly released. Additionally, 11 reports and their corresponding 60 recommendations were open for less than one year as of the date of the OIG’s September Semi-Annual Report. As a result, the net number of NASA OIG public reports and recommendations open for more than one year as of September 30, 2019 totaled 29 and 59, respectively (see Table 4).

During the period October 1, 2019 through November 30, 2019, 19 recommendations in three public NASA OIG audit reports were added to the inventory of recommendations open more than one year. Additionally, during this same timeframe a separate population of 16 NASA OIG recommendations issued in four reports were closed, based on responsive management action. Consequently, a total of 62 NASA OIG recommendations in 28 reports were open more than one year as of November 30, 2019.

Table 4

Reconciliation with OIG's September 30, 2019 Semi-Annual Report (As of 11/30/2019)		
	Reports	Recommendations
Total Open Reports and Recommendations as of 9/30/19 [OIG Semi-Annual Report]	46	181
Minus: Non-Public Reports and Recommendations Included in OIG Semi- Annual Report	(6)	(62)
Minus: Public Reports and Recommendations Open Less than One Year	(11)	(60)
Net Public Reports and Recommendations Open More than One Year (as of 9/30/19)	29	59
Plus: Additional Public Reports and Recommendations Open More Than One Year (as of 10/1/19)	3	19
Minus: Public Reports and Recommendations Open More than One Year on 9/30/19 but Closed During 10/1/19 - 11/30/19	(4)	(16)
Total Public Reports and Recommendations Open More than One Year (as of 11/30/19)	28	62

Appendix A
GAO Recommendations Open More than One Year (Detail)

Actions Completed

(Sort: Report Numbers Sorted Oldest→ Newest; Recommendation Number→Ascending)

1. Report: Telecommunications - Agencies Need Better Controls to Achieve Significant Savings on Mobile Devices and Services (GAO-15-431; 5/21/2015)

Recommendation: (1) Ensure a complete inventory of mobile devices and associated services is established.

Status: NASA Action Completed. NASA implemented a third-party tool, IBM Maas360, to enable the Agency to centrally manage smartphones and tablets that connect to NASA networks. The current tool configuration provides mobile device management (MDM) services for all mobile devices accessing data via NASA networks. The Mobile Device Registration (MDR) website for ACES Government Furnished Equipment (GFE), non-ACES GFE, and Personally Furnished Equipment (PFE) devices is operational and enrollment of GFE/PFE devices is ongoing. MDM enrollment for non-ACES GFE/PFE devices was aligned with the Office 365 migration project schedule and is now complete. The NASA OCIO also released policies, guidance, and training related to the use of mobile devices that connect to NASA networks to all NASA Centers. The underlying service agreement with IBM for MaaS360 device management was renegotiated during the transition from ACES to the follow-on NASA End-User Services and Technology (NEST) contract and is still operable. The NEST contract still provides monthly deliverable documenting the carrier, device type, data/voice allocations, data/voice usage and other pertinent information. Once the guidance is issued and the remaining 15 percent of devices are brought under the existing contract, NASA will have a monthly deliverable depicting the services of all mobile devices. GAO review of corrective actions for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

2. Report: Telecommunications - Agencies Need Better Controls to Achieve Significant Savings on Mobile Devices and Services (GAO-15-431; 5/21/2015)

Recommendation: (2) A reliable inventory of mobile service contracts is developed and maintained.

Status: NASA Action Completed. The NEST agreement went operational on September 1, 2019 and provides mobile devices services for all NASA mobile devices users. GAO review of corrective actions for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

3. Report: Telecommunications - Agencies Need Better Controls to Achieve Significant Savings on Mobile Devices and Services (GAO-15-431; 5/21/2015)

Recommendation: (3) Procedures to monitor and control spending are established agency-wide. Specifically, ensure that: procedures include assessing devices for zero, under, and over usage; personnel with authority and responsibility for performing the procedures are identified; and the specific steps to be taken to perform the process are documented.

Status: NASA Action Completed. As a part of the Enterprise Mobility Service Contract deliverables, NASA requires monthly reports to monitor and optimize usage (zero, under, and over). NASA also has established role-based privileges to monitor and report on this activity Agency-wide. To elaborate, Agency IT POCs review monthly reports that include individual usage and cost for mobile devices and requires them to certify and/or investigate deviations. GAO review of corrective actions for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

4. Report: Information Technology - Agencies Need to Improve Their Application Inventories to Achieve Additional Savings (GAO-16-511; 9/29/2016)

Recommendation: (1) To improve NASA's efforts to rationalize its portfolio of applications, GAO recommends the NASA Administrator direct the CIO to improve NASA's inventory of applications by taking steps to fully address the practices that GAO identified as being partially met or not met.

Status: NASA Action Completed. NASA completed final management actions in response to the recommendation in October 2019. Additional supporting documentation requested by, and provided to, GAO included an updated IT App Export report. GAO review of corrective actions for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

5. Report: Federal Research Grants - Opportunities Remain for Agencies to Streamline Administrative Requirements (GAO-16-573; 7/22/2016)

Recommendation: (2) To reduce pre-award administrative workload and costs, particularly for applications that do not result in awards, the NASA Administrator should conduct agency-wide reviews of possible actions, such as further use of preliminary proposals, to postpone pre-award requirements until making a preliminary decision about an applicants' likelihood of funding, and through OSTP's Research Business Models working group, coordinate and report the result.

Status: NASA Action Completed. The Grants Policy and Compliance Branch developed and issued policy regarding the adoption of preliminary proposals for program offices in its Grant and Cooperative Agreement Manual (GCAM). The NASA GCAM provides internal policy guidance to NASA Technical Officers, Grant Officers and Program Managers to implement government-wide and NASA-specific regulations for awarding and administering grants and cooperative agreements with educational and non-profit organizations; State, local, and Indian tribal governments; and for-profit entities when no cost-sharing is required. The GCAM instructs the programs to solicit in a manner that diminishes administrative burden using a two-step approach for proposal submission. This is found in GCAM 5.2.2 Funding Opportunity Announcements, including instructions as outlined below, including considerations and instructions. On 8/16/19 NASA requested closure of this recommendation which is currently under consideration by GAO.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: n/a

6. Report: NASA Contractor Whistleblowers - Steps Taken to Implement Program but Improvements to Timeliness and Guidance Needed (GAO-18-262; 4/9/2018)

Recommendation: (1) The Administrator should monitor, evaluate and make appropriate corrective actions, such as a documented process, to ensure it reviews reprisal complaints in a timely manner.

Status: NASA Action Completed. NASA created an internal process document in coordination with NASA OIG that will best enable the Administration to carry out its duties pursuant to 10 U.S.C. § 2409. The procedures ensure that all parties are provided the OIG Report of Findings and given an opportunity to timely submit a response to the Report that addresses any material fact in the Report that either the complainant or respondent disputes; any disputed conclusion of law; any proposed remedy pursuant to § 2409(c); and any additional information either party believes relevant to the decision. GAO has submitted a closure request to GAO based on the above actions. GAO's disposition of the recommendation is pending.

Office of Primary Responsibility: Office of General Counsel

Target Completion Date: n/a

7. Report: NASA Contractor Whistleblowers - Steps Taken to Implement Program but Improvements to Timeliness and Guidance Needed (GAO-18-262; 4/9/2018)

Recommendation: (2) The Administrator should review NASA's guidance or develop other guidance, including defining major modification, to clarify when whistle-blower protections are protections are conveyed.

Status: NASA Action Completed. On 9/28/19, NASA issued a procurement information circular (PIC 18-02) which codified guidance on whistleblower protections for contractor and subcontractor employees. Based on the issuance of the PIC, NASA requested closure of the recommendation. On 10/9/19, GAO advised NASA that corrective actions are responsive to the recommendation and will close it (implemented) in due course.

Office of Primary Responsibility: Office of Procurement

Target Completion Date: n/a

8. Report: NASA Contractor Whistleblowers - Steps Taken to Implement Program but Improvements to Timeliness and Guidance Needed (GAO-18-262; 4/9/2018)

Recommendation: (3) The Administrator should communicate whistleblower protections to grantees and subgrantees and their employees.

Status: NASA Action Completed. The guide for NASA federal financial assistance stakeholders, the Grant and Cooperative Agreement Manual (GCAM), has been updated to include agreed upon language included in federal-wide as well as NASA's annual certifications and representations. Certifications and representations are requirements that entities preparing to

apply for NASA federal financial assistance must recognize and complete. Based on completion of the above actions, NASA submitted a closure request to GAO on 9/30/19. GAO's disposition of the recommendation is pending.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: n/a

9. Report: Federal Research: Additional Actions Needed to Improve Licensing of Patented Laboratory Inventions (GAO-18-327; 6/19/2018)

Recommendation: (1) The Administrator of NASA should ensure the agency or its labs document processes for establishing license financial terms, while maintaining flexibility to tailor the financial terms of each license.

Status: NASA Action Completed. NASA completed planned corrective actions in May 2019 including the roll-out of an information website for licensing managers NASA's quarterly Interagency Working Group on Technology Transfer. GAO review of corrective actions for closure is pending.

Office of Primary Responsibility: Space Technology Mission Directorate

Target Completion Date: n/a

10. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (5) The Administrator should direct the Chief Information Officer to update policies and procedures for selecting investments to provide a structured process, including thresholds and criteria needed for, among other things, evaluating investment risks as part of governance board decision making, and outline a process for reselecting investments.

Status: NASA Action Completed. Nominal completion of related corrective actions occurred in April 2019. However, in July 2019, GAO requested additional documentation in order to support their closure determination. NASA provided the supplemental supporting documentation in November 2019. GAO review for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

11. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (7) The Administrator should ensure that the Chief Information Officer fully defines policies and procedures for developing the portfolio criteria, creating the portfolio, and evaluating the portfolio.

Status: NASA Action Completed. Nominal completion of related corrective actions occurred in April 2019. However, in July 2019, GAO requested additional documentation in order to support their closure determination. NASA provided the supplemental supporting documentation in November 2019. GAO review for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

12. Report: Freedom of Information Act - Agencies Are Implementing Requirements but Additional Actions Are Needed (GAO-18-365; 6/25/2018)

Recommendation: (1) Update and publish comprehensive FOIA regulations that describe dispute resolutions services and notifies requesters of the 90 days for appeals.

Status: NASA Action Completed. NASA made revisions to its FOIA regulations pursuant to the requirements of the FOIA Improvement Act of 2016, and incorporated GAO's recommendations by providing an explanation of requesters' right to dispute resolution and requesters' right to file an appeal within 90 days from the agency's final response. The revisions were published on Oct. 11, 2019.

Office of Primary Responsibility: Office of Communications

Target Completion Date: n/a

13. Report: Information Technology: Agencies Need to Involve Chief Information Officers in Reviewing Billions of Dollars in Acquisitions (GAO-18-42; 1/10/2018)

Recommendation: (3) The Administrator of NASA should ensure that IT acquisition plans or strategies are reviewed and approved according to OMB guidance.

Status: NASA Action Completed. NASA actions were completed in September 2019. A request for closure was submitted in September. GAO review of corrective actions for closure is pending.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

14. Report: NASA Commercial Crew Program - Plan Needed to Ensure Uninterrupted Access to the International Space Station (GAO-18-476; 7/11/2018)

Recommendation: (2) The NASA Administrator should develop and maintain a contingency plan for ensuring a presence on the ISS until a Commercial Crew Program contractor is certified.

Status: NASA Action Completed. On 10/24/19, the NASA Administrator submitted a letter to his counterpart at Roscosmos requesting one seat on the fall 2020 Soyuz and one seat on the spring 2021 Soyuz. In addition, NASA is providing Extra-Vehicular Activity and robotics training for a subset of cosmonauts to support U.S. Operating Segment operations. NASA is also looking at a possible extension of the duration of the SpaceX Demonstration 2 crewed test flight.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: n/a

15. Report: NASA Commercial Crew Program: Plan Needed to Ensure Uninterrupted Access to the International Space Station (GAO-18-476; 7/11/2018)

Recommendation: (3) The NASA Administrator should direct the Chief Safety and Mission Assurance, the NASA Associate Administrator for Human Exploration and Operations, the Commercial Crew Program Manager and the Commercial Crew Program Contracting Officer to collectively determine and document before the agency certification review, how the agency will determine its risk tolerance level with respect to loss of crew.

Status: NASA Action Completed. NASA believes it has met the intent of this recommendation and indicated such in its 9/27/18 Statement of Actions in response to GAO's final report. The requirement to limit risk to loss of crew was documented in HEOMD CCTS Certification Requirements for NASA LEO Missions (HEOMD-CSD-10001), and the Agency's risk tolerance level was documented in the Decision Memorandum for the Administrator, "Agency's Safety Goals and Thresholds for the Crew Transportation Missions to the International Space Station (ISS)," dated May 17, 2011. The CCP will document the commercial system's ability to meet requirements through design and operational mitigations in its Human Rating Certification Package which will be finalized at the Agency certification reviews. If a commercial system cannot meet the requirement (or any other requirements), the program will request a waiver from NASA Headquarters as part of the Human Rating Certification process to ensure transparency and to continue emphasis of safety performance under its contracts.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: n/a

Actions In-Progress

(Reports Sorted Oldest → Newest)

16. Report: Enterprise Architecture Value Needs to be Measured and Reported (GAO-12-791; 9/26/2012)

Recommendation: (1) Fully establish an approach for measuring enterprise architecture outcomes, including a documented methodology and metrics that are measurable, meaningful, repeatable, consistent, actionable, and aligned with the agency's enterprise architecture's strategic goals and intended purpose.

Status: In-Progress. NASA has delayed updating procedural requirements for Enterprise Architecture (NPR 2830.1) that would address this recommendation as a result of the Mission Support Future Architecture Program (MAP) that is implementing a phased approach to transform all mission support services from their current state to an enterprise operating model while maintaining mission focus, improving efficiency, ensuring local authority and valuing the workforce. The OCIO expects the results of MAP activities to alter the approach and outcomes associated with Enterprise Architecture (EA). As envisioned, the NPR would establish EA as a key element of Agency IT governance. The revised version of the NPR would also better align enterprise architecture metrics and methods to measure outcomes (vs. output as cited in the GAO report) and benefits. While some EA work continues, the implementation of the EA program and policy will occur at the conclusion of the Agency-wide vetting and decisions expected after 9/30/2020.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 9/30/2020

17. Report: Enterprise Architecture Value Needs to be Measured and Reported (GAO-12-791; 9/26/2012)

Recommendation: (2) Periodically measure and report enterprise architecture outcomes and benefits to top agency officials (i.e., executives with authority to commit resources or make changes to the program) and to OMB.

Status: In-Progress. Implementation of recommendation 2 is predicated on implementation of recommendation 1 and is not expected prior to 9/30/2020.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 9/30/2020

18. Report: Earned Value Management Implementation Across Major Spaceflight Projects Is Uneven (GAO-13-22; 11/19/2012)

Recommendation: (4) To improve the reliability of project EVM data, NPR 7120.5 should be modified to require projects to implement a formal surveillance program that: a) Ensures anomalies in contractor-delivered monthly earned value management reports are identified and explained, and report periodically to the mission directorate's leadership on relevant trends in the number of unexplained anomalies; b) Ensures consistent use of WBSs for both the EVM report and the schedule; c) Ensures that lower level EVM data reconcile to project level EVM data using the same WBS structure; and d) Improves underlying schedules so that they are properly sequenced using predecessor and successor dependencies and are free of constraints to the extent practicable so that the EVM baseline is reliable.

Status: In-Progress. In December 2018, the Agency Program Management Council (APMC) approved a Corrective Action Plan (CAP) to Enhance EVM Implementation, which includes steps to put into operation formal EVMS surveillance. In February 2019, the EVM Steering Committee approved additional funding to execute the CAP initiative and begin implementation of formal EVMS surveillance. Near term steps include: 1) Develop an annual EVMS Surveillance Plan to include both in-house work scope and contracts; 2) Improve EVM Assessments at the project level to include in-house work scope; 3) Improve EVM surveillance "flow down" to DCMA for contracts; 4) Require projects to perform monthly EVM data anomaly assessments for all Category 1 projects; 5) Require projects to report EVM data anomalies to Mission Directorates and OCFO/SID and require corrective action plans for resolution of any material issues; and 6) Conduct EVM surveillance using NASA resources on major contractors where DCMA does not have an existing presence. For additional details on the NASA CAP Enhanced EVM initiative, go to NASA.gov at https://www.nasa.gov/sites/default/files/atoms/files/nasa_high_risk_corrective_action_plan_2018.pdf for more information.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 9/30/2021

19. Report: NASA Actions Need to Improve Transparency and Assess Long-Term Affordability of Human Exploration Programs (GAO-14-385; 5/8/2014)

Recommendation: (1) Establish a separate cost and schedule baseline for work required to support the SLS Block I EM-2 and report this information to the Congress through NASA's annual budget submission. If NASA decides to fly the SLS Block I beyond EM-2, establish separate life cycle cost and schedule baseline estimates for those efforts, to include funding for operations and sustainment, and report this information annually to Congress via the agency's budget submission.

Status: In-Progress. ESD will expedite efforts to meet GAO best practices on contract management and reporting. Now that the manifest is better defined and contracts are in place, ESD will be in a better position to respond to GAO's recommendation and provide additional transparency on estimated contract cost and performance. ESD will implement NASA policy guidance as required to establish commitments for capabilities implemented above the \$250M lifecycle cost threshold by establishing contract performance commitments for EUS and ML-2. ESD is also standardizing criteria for evaluation of contract performance, enhancing the use of EVM, and incorporating other management practices highlighted in the GAO reports. ESD will continue to provide detailed information to the GAO during the annual audit process reflecting on these changes.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

20. Report: NASA Actions Need to Improve Transparency and Assess Long-Term Affordability of Human Exploration Programs (GAO-14-385; 5/8/2014)

Recommendation: (3) Because NASA intends to use increased capabilities of the SLS, Orion and GSDO efforts well into the future and has chosen to estimate costs associated with achieving capabilities, establish separate cost and schedule baselines for each additional capability that encompass all life cycle costs, to include operations and sustainment. When NASA cannot fully specify costs due to lack of well-defined missions or flight manifests, forecast a cost estimate range – including life cycle costs – having minimum and maximum boundaries. These baselines or ranges should be reported to Congress annually via the agency's budget submission.

Status: In-Progress. ESD will expedite efforts to meet GAO best practices on contract management and reporting. Now that the manifest is better defined and contracts are in place, ESD will be in a better position to respond to GAO's recommendation and provide additional transparency on estimated contract cost and performance. ESD will implement NASA policy guidance as required to establish commitments for capabilities implemented above the \$250M lifecycle cost threshold by establishing contract performance commitments for EUS and ML-2. ESD is also standardizing criteria for evaluation of contract performance, enhancing the use of EVM, and incorporating other management practices highlighted in the GAO reports. ESD will continue to provide detailed information to the GAO during the annual audit process reflecting on these changes.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

21. Report: Space Launch System - Resources Need to be Matched to Requirements to Decrease Risk and Support Long Term Affordability (GAO-14-631; 7/23/2014)

Recommendation: (2) To provide decisionmakers with an informed basis for making investment decisions regarding the SLS program, NASA should identify a range of possible missions for each future SLS variant that includes cost and schedule estimates and plans for how those possible missions would fit within NASA's funding profile.

Status: In-Progress. ESD will expedite efforts to meet GAO best practices on contract management and reporting. Now that the manifest is better defined and contracts are in place, ESD will be in a better position to respond to GAO's recommendation and provide additional transparency on estimated contract cost and performance. ESD will implement NASA policy guidance as required to establish commitments for capabilities implemented above the \$250M lifecycle cost threshold by establishing contract performance commitments for EUS and ML-2. ESD is also standardizing criteria for evaluation of contract performance, enhancing the use of EVM, and incorporating other management practices highlighted in the GAO reports. ESD will continue to provide detailed information to the GAO during the annual audit process reflecting on these changes.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

22. Report: Space Launch System - Resources Need to be Matched to Requirements to Decrease Risk and Support Long Term Affordability (GAO-14-631; 7/23/2014)

Recommendation: (3) To allow for a continued assessment of progress and affordability, NASA should structure each future increment of SLS capability with a total cost exceeding the \$250 million threshold for designation as a major project as a separate development project within the SLS program.

Status: In-Progress. ESD will expedite efforts to meet GAO best practices on contract management and reporting. Now that the manifest is better defined and contracts are in place, ESD will be in a better position to respond to GAO's recommendation and provide additional transparency on estimated contract cost and performance. ESD will implement NASA policy guidance as required to establish commitments for capabilities implemented above the \$250M lifecycle cost threshold by establishing contract performance commitments for EUS and ML-2. ESD is also standardizing criteria for evaluation of contract performance, enhancing the use of EVM, and incorporating other management practices highlighted in the GAO reports. ESD will continue to provide detailed information to the GAO during the annual audit process reflecting on these changes.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

23. Report: Space Launch System - Resources Need to be Matched to Requirements to Decrease Risk and Support Long Term Affordability (GAO-14-631; 7/23/2014)

Recommendation: (4) To promote affordability, before finalizing acquisition plans for future capability variants, NASA should assess the full range of competition opportunities and provide to the Congress the agency's assessment of the extent to which development and production of future elements of the SLS could be competitively procured.

Status: In-Progress. ESD will expedite efforts to meet GAO best practices on contract management and reporting. Now that the manifest is better defined and contracts are in place, ESD will be in a better position to respond to GAO's recommendation and provide additional transparency on estimated contract cost and performance. ESD will implement NASA policy guidance as required to establish commitments for capabilities implemented above the \$250M lifecycle cost threshold by establishing contract performance commitments for EUS and ML-2. ESD is also standardizing criteria for evaluation of contract performance, enhancing the use of EVM, and incorporating other management practices highlighted in the GAO reports. ESD will continue to provide detailed information to the GAO during the annual audit process reflecting on these changes.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

24. Report: Information Technology - Additional OMB and Agency Actions Are Needed to Achieve Portfolio Savings (GAO-14-65; 11/6/2013)

Recommendation: (1) Reflect 100 percent of information technology investments in the agency's enterprise architecture.

Status: In-Progress. NASA has delayed implementation of this recommendation as a result of the Mission Support Architecture Program (MAP) that is implementing a phased approach to transform all mission support services from their current state to an enterprise operating model while maintaining mission focus, improving efficiency, ensuring local authority and valuing the workforce. During MAP, EA will be assessed, and decisions made on future approaches using an Agency-wide decision-making process. While some EA work continues, the implementation of an EA program will occur at the conclusion of the Agency-wide vetting expected after 9/30/2020.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 4/30/2020

25. Report: Data Center Consolidation: Agencies Making Progress but Planned Saving Goals Need to be Established (GAO-16-323; 3/3/2016)

Recommendation: (2) The NASA Administrator should take action to improve progress in the data center optimization areas that were reported as not meeting OMB's established targets, including addressing any identified challenges.

Status: In-Progress. NASA submitted a closure request to GAO in 2017 that was denied as the Agency had not met 4 of the 5 metrics. Since then, the metrics have changed, and the Agency is

currently meeting the metrics outlined and contained in the Integrated Data Collection report. Revised estimated completion date for remaining NASA actions is June 2020.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 6/30/2020

26. Report: Federal Research Grants - Opportunities Remain for Agencies to Streamline Administrative Requirements (GAO-16-573; 7/22/2016)

Recommendation: (1) To further standardize administrative research requirements, the NASA Administrator should coordinate through the OSTP Research Business Models working group to identify additional areas where they can standardize requirements and report these efforts.

Status: In-Progress. All identified agencies are collaborating, discovering and implementing ways across the federal government to reduce burden. These efforts are reported out in an annual report issued through the RBM. The final report will be issued in or around March 2020. The first report was issued in March of 2018. The second report was expected to be released in March 2019 but has not yet been released due to the change in RBM leadership. Next steps to be determined.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 3/31/2020

27. Report: Orion Multi-Purpose Crew Vehicle - Action Needed to Improve Viability into Cost Schedule, and Capacity to Resolve Technical Challenges (GAO-16-620; 7/27/2016)

Recommendation: (1) To provide the Congress and NASA a reliable estimate of program cost and schedule that are useful to support management and stakeholder decisions, GAO recommends the NASA Administrator direct the Orion program to perform an updated JCL analysis including updating cost and schedule estimates in adherence with cost and schedule estimating best practices.

Status: In-Progress. The Orion program will conduct a JCL in accordance with Agency policy to conduct JCLs at KDP-D for programs at least 5 percent over Agency Baseline Commitment.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

28. Report: Federal Chief Information Officers - Opportunities Exist to Improve Roles and Address Challenges to Authority (GAO-16-686; 9/15/2016)

Recommendation: (1) Define the Senior Agency Information Security Officer (SAISO) role in agency policy of contractor oversight system security for information systems that are operated by contractors on the Agency's behalf.

Status: In-Progress. NASA remains committed to ensuring the role of the NASA Senior Agency Information Security Officer (SAISO) is defined in Agency policy in accordance with the FISMA Act of 2014. Given the substantive role the SAISO executes to ensure the cybersecurity of the

Agency, multiple documents are being revised and published to explicitly address this position regarding contractor system security. Because of new federal requirements, the internal Agency reorganization, and continue updating NASA's cybersecurity policies, and internal review process for final release of certain document modifications, this update has taken longer than anticipated.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 3/20/2020

29. Report: Information Technology Reform - Agencies Need to Improve Certification of Incremental Development (GAO-18-148; 11/7/2017)

Recommendation: (1) Ensure that the CIO of NASA establishes an agency-wide policy and process for the CIO's certification of major IT investments' adequate use of incremental development in accordance with OMB's guidance on the implementation of FITARA, and confirm it includes; a description of how CIO certification will be documented; and a definition of incremental development and time frames for delivering functionality, consistent with OMB guidance.

Status: In-Progress. NASA updated the following policies to address the incremental development requirement: NASA Policy Directive (NPD) 2800.1, "Managing Information Technology," and NASA Procedural Requirement (NPR) 7120.7, "NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements." NPD 2800.1 will include, within the OCIO's roles and responsibilities, a responsibility for certifying that IT resources are adequately implementing incremental development. NPR 7120.7 is being updated to include a definition of incremental development and processes for ensuring that the CIO certifies incremental development.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 3/31/2020

30. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (2) The Administrator should direct the Chief Information Officer to update the IT strategic plan for 2018 to 2021 and develop associated implementation plans to ensure it fully describes strategies the agency will use to achieve the desired results and descriptions of interdependencies within and across programs.

Status: In-Progress. NASA requested an extension in October 2019 and provided additional information to GAO on the status of the Cybersecurity & Privacy Program Plan which is currently in the OCIO Review & Disposition process.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 2/28/2020

31. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (4) The Administrator should direct the Chief Information Officer to institute an effective IT governance structure by completing planned improvement efforts and finalizing charters to fully establish IT governance boards, clearly defining roles and responsibilities for selecting and overseeing IT investments and ensuring that the governance boards operate as intended.

Status: In-Progress. Due to the government furlough and the associated delays in both restart and return to full operations, the sixth and final program plan, Cybersecurity, is under review. The program plans and governing board charters for all programs except Cybersecurity are complete and signed. The governing board charter for Cybersecurity was established in 2013 and is still in operation. The program plans define roles and responsibilities for selecting and overseeing IT investments. The ITC and CLT annual reviews were completed in November 2018. To ensure adequate time to allow for review and signature of the final piece of evidence, the Cybersecurity Program Plan, an extension was requested.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 2/28/2020

32. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (6) The Administrator should direct the Chief Information Officer to address weaknesses in oversight practices and ensure routine oversight of all investments by taking action to document criteria for escalating investments among governance boards and establish procedures for tracking corrective actions for underperforming investments.

Status: In-Progress. NASA on-track to complete planned corrective actions in early 2020.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/31/2020

33. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (8) The Administrator should direct the Chief Information Officer to establish an agency-wide approach to managing cybersecurity risk that includes a cybersecurity strategy that, among other things, makes explicit the agency's risk tolerance, accepted risk assessment methodologies, a process for consistently evaluating risk across the organization, response strategies and approaches for monitoring risk over time, and priorities for risk management investments.

Status: In-Progress. From May 2018 to December 2018, the OCIO undertook a significant review of existing processes, policies, and practices to determine where risk management gaps exist. The NASA Chief Cybersecurity Risk Officer created a proposal to support developing a complete cyber risk and resiliency program, of which a core responsibility includes overseeing a cybersecurity risk management strategy. However, the government shutdown from December

2018 to January 2019 delayed this proposal due to OCIO's need to shift funding and operational priorities to resume post-shutdown operations. In June 2019, the OCIO decided to pursue the Department of Homeland Security's (DHS) Continuous Diagnostics and Mitigation's (CDM) DEFEND contract vehicle to support this proposal. As cyber risk management requires a comprehensive organizational approach, OCIO is confident that working with DHS will help integrate risk management practices with current government security tools. This approach is also consistent with GAO-19-384, published July 25, 2019, which includes a recommendation for the Director of the Office of Management and Budget (OMB), in coordination with DHS, to help establish guidance for how to implement consistent cybersecurity risk management policies and procedures across an agency. The OCIO is awaiting a decision from DHS on the current Request for Service.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 9/30/2020

34. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (10) The Administrator should direct the Chief Information Officer to establish an agency-wide approach to managing cybersecurity risk that includes policies and procedures with well-defined roles and responsibilities that are integrated and reflect NASA's current security practices and operating environment.

Status: In-Progress. The OCIO is working with outside consultants to map-out current policy processes to identify bottlenecks, gaps, and inefficiencies, and is working to overcome those issues. Additionally, a Cybersecurity Integration Team, an effort consisting of key stakeholder offices from across NASA, is examining a number of policies used to implement cybersecurity across NASA projects. The team is identifying gaps and plans to propose solutions such as specific language to enhance definitions for roles and responsibilities. This will ensure that cybersecurity is considered in both policy and practice throughout all phases of a project's lifecycle.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 11/30/2020

35. Report: Freedom of Information Act - Agencies Are Implementing Requirements but Additional Actions Are Needed (GAO-18-365; 6/25/2018)

Recommendation: (2) The Administrator of NASA should provide agency records of final opinions online.

Status: In-Progress. NASA will publish any final opinions as they are issued and reviewed for public posting.

Office of Primary Responsibility: Office of Communications

Target Completion Date: 1/31/2020

36. Report: NASA Commercial Crew Program - Plan Needed to Ensure Uninterrupted Access to the International Space Station (GAO-18-476; 7/11/2018)

Recommendation: (4) After completing the Agency certification review, NASA Chief Engineer and Chief Safety and Mission Assurance, with support from the NASA Associate Administrator for Human Exploration and Operation and the Commercial Crew Program Manager, should document lessons learned related to loss of crew as a safety threshold for future crewed spaceflight missions, given the complexity of the metric.

Status: In-Progress. Planned corrective actions are in-progress, including collection of data in conjunction with human rating policy stakeholder survey.

Office of Primary Responsibility: Office of Safety and Mission Assurance

Target Completion Date: n/a

37. Report: Federal Chief Information Officers Critical Actions Needed to Address Shortcomings and Challenges in Implementing Responsibilities (GAO-18-93; 8/2/2018)

Recommendation: (1) The Administrator of the National Aeronautics Space Administration should ensure that the department's IT management policies address the role of the CIO for key responsibilities in the 6 areas GAO identified.

Status: In-Progress. Final management actions are nearing completion and are expected to be finalized not later than early 2020.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/31/2020

Non-Concurrences

(Reports Sorted Oldest → Newest)

38. Report: NASA Information Technology - Urgent Action Needed to Address Significant Management and Cybersecurity Weaknesses (GAO-18-337; 5/22/2018)

Recommendation: (3) The Administrator should direct the Chief Information Officer address, in conjunction with the Chief Human Capital Officer, gaps in IT workforce planning by fully implementing the eight key IT workforce planning activities noted in this report.

Status: Non-Concur. NASA is conducting a comprehensive, Agency-wide assessment that is designed to ensure that NASA resources are optimally structured to achieve the NASA mission. The first piece of this assessment is the Mission Support Future Architecture Program which aims at re-aligning mission support functions from a decentralized model to an enterprise model. The OCIO is in the beginning phases of this realignment with estimated completion in FY22. Additionally, the 2018 Strategic Workforce Planning (SWP) project directed the creation of an Agency Workforce Master Plan that: a) Estimates workforce needs five plus years into the future and defines the size and composition of the NASA workforce needed to meet future mission requirements; b) Includes civil service, contractors, and other workforce segments; c) Includes

both mission direct and mission support workforce; and e) Considers external changes, program lifecycle evolution (e.g., future of ISS, Gateway etc.), current Agency demographics, and other environmental or internally-driven factors (e.g. MAP) that impact the workforce. The data collection phase of the SWP project has been completed and the Agency is currently analyzing the data to glean insights and make recommendations.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: n/a

39. Report: Cybersecurity Workforce - Agencies Need to Improve Baseline Assessments and Procedures for Coding Positions (GAO-18-466; 6/14/2018)

Recommendation: (1) The Administrator of the National Aeronautics and Space Administration should evaluate the level of preparedness for cybersecurity personnel not currently holding professional certifications to take certification exams and report this information to Congress.

Status: Non-Concur. NASA non-concurred with GAO's recommendation, citing the fact that there is currently no federal or Agency requirement for employees in cybersecurity positions to hold and/or maintain a professional certification. Without this requirement, there is no plan to assess readiness of cybersecurity personnel to take certification exams. NASA provided the initial assessment to Congress in December 2016 and does not plan to repeat the assessment at this time.

Office of Primary Responsibility: Office of the Chief Human Capital Officer

Target Completion Date: n/a

40. Report: NASA Commercial Crew Program - Plan Needed to Ensure Uninterrupted Access to the International Space Station (GAO-18-476; 7/11/2018)

Recommendation: (1) The NASA Administrator for Human Exploration and Operations should direct the Commercial Crew Program to include the results of its schedule risk analysis in its mandatory quarterly reports to Congress.

Status: Non-Concur. NASA non-concurred with GAO's recommendation. NASA provides quarterly Congressional reports in accordance with the Explanatory Statement accompanying the Fiscal Year 2015 Consolidated and Further Continuing Appropriations Act (P.L. 113-235) which includes a NASA qualitative statement regarding milestone schedules. However, NASA is assessing its schedule process and frequency for releasing flight test and post-certification mission dates to provide the latest schedules as timely as practicable.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: n/a

Appendix B
GAO Recommendations Closed but Not Implemented (Detail)

Closed but Not Implemented

(Sort: Report Numbers Sorted Oldest→ Newest; Recommendation Number→Ascending)

1. **Report: Personal ID Verification - Agencies Should Set a Higher Priority on Using the Capabilities of Standardized Identification Cards** (GAO-11-751; 9/20/2011)

Recommendation: (2) Develop and implement procedures for PIV-based logical access when using Apple Mac and mobile devices that do not rely on direct interfaces with PIV cards, which may be impractical.

Comments: Through the DHS Continuous Diagnostic and Monitoring (CDM) program, NASA began to implement Centrify which allowed PIV logical based access for Apple Macs. During this time NASA worked closely with Apple and developed a Native Apple/Enterprise Connect solution which avoids any out-year maintenance cost. All Mac users who were utilizing Centrify have been migrated to the Native Apple solution as of March 1st (Action is now completed). Phases 1 and 2 of the NASA Mobile Device Management to support mobile devices without using a separate user ID and password are complete. Phase 1 allows users who have a NASA iPhone or Android device to be managed and tracked which allows NASA to wipe mobile devices remotely if the device is lost. Phase 2 allows for certificate lifecycle management meaning users no longer must sync their mobile active directory password and they can receive and read encrypted email on their mobile device. Currently the capability to access NASA applications from mobile devices is not enabled. Phase 3, a future endeavor, will focus on Application Lifecycle Management which will allow users to access NASA applications from their mobile device without using a separate username/password (Action is now completed).

Office of Primary Responsibility: Office of Protective Services

2. **Report: James Webb Space Telescope - Project Facing Increased Schedule Risk with Significant Work Remaining** (GAO-15-100; 12/15/2014)

Recommendation: (1) In order to provide additional information and analyses to effectively manage the program and account for new risks identified after the 2011 re-plan, direct the JWST project to follow best practices while conducting a cost risk analysis on the prime contract for the work remaining and ensure it is updated as significant risks emerge.

Comments: NASA conducted a cost-risk analysis of the prime contractor Northrup Grumman Aerospace Systems (NGAS); used NASA best practices; and provided the results of those analyses to GAO together with an outline of the best practices utilized. The project re-baselined again in June 2018 with a very robust budget and schedule for the March 2021 LRD; significantly enhanced oversight over the past year, particularly at NGAS. NASA performed an SRB Schedule Risk Analysis in April 2019, and a JCL in August 2019.

Office of Primary Responsibility: Science Mission Directorate

3. **Report: ISS - Measurable Performance Targets and Documentation Needed to Better Assess Management of National Laboratory** (GAO-15-397; 5/27/2015)

Recommendation: (3) In order for NASA to fully implement the NASA Authorization Act of 2008 and for Center for the Advancement of Science in Space (CASIS) to fulfill its responsibility as outlined in the cooperative agreement, direct the Associate Administrator for the Human

Exploration and Operations Mission Directorate to fully staff the ISS National Laboratory Advisory Committee (INLAC).

Comments: NASA does not plan to staff the International Space Station National Laboratory Advisory Committee (INLAC). NASA and CASIS have held annual public board meetings for the general public and interested parties to foster additional transparency. NASA and CASIS also meet face-to-face no less than quarterly to ensure performance requirements are on track. The next scheduled board meeting for CASIS is February 7, 2020.

Office of Primary Responsibility: HEOMD

4. **Report: Space Launch System - Management Tools Should Better Track to Cost and Schedule Commitments to Adequately Monitor Increasing Risk** (GAO-15-596; 7/16/2015)

Recommendation: (3) To ensure that decisionmakers are able to track progress toward the agency's committed launch readiness date, the NASA administrator should direct the SLS program to include as part of the program's quarterly reports to NASA headquarters a reporting mechanism that tracks and reports program progress relative to the agency's external committed cost and schedule baselines.

Comments: The planned re-baseline of Artemis I will provide the opportunity to establish an updated baseline of the Artemis I cost and schedule data. This information will be reported to NASA Headquarters quarterly once the new baseline has been established.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: March 31, 2020

Appendix C
OIG Recommendations Open More Than One Year (Detail)

Actions Completed

(Sort: Report Numbers Sorted Oldest→ Newest; Recommendation Number→Ascending)

1. Report: NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2015 (IG-16-021; 5/12/2016)

Recommendation: (5) Obtain management decision letters issued by contracting officers to identify potential overpayments and report any overpayments determined to be improper in the Agency Financial Report (AFR) as overpayments identified from outside of payment recapture audits.

Status: NASA Action Completed. Corrective actions were completed on 5/21/19. OIG review/consideration of the adequacy of corrective actions for closure will occur in conjunction with the OIG's FY20 IPIA Audit scheduled for completion in the May 2020 time frame.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: n/a

2. Report: NASA's Response to SpaceX's June 2015 Launch Failure: Impacts on Commercial Resupply of the International Space Station (IG-16-025; 6/28/2016)

Recommendation: (5) Improve coordination with other Federal agencies involved in commercial space. For example, consider a. creating a formal Memorandum of Understanding with the FAA, NTSB, and USAF to coordinate accident investigations; b. coordinating with other Federal agencies to determine the hierarchy and roles of different investigation authorities during all phases of commercial launches with NASA payloads; and c. communicating investigation findings and corrective actions to all interested Federal agencies to allow full and informed decisions.

Status: NASA Action Completed. Planned corrective actions have been completed. Charter has been executed and signed by USAF, NTSB, FAA and NASA for the Quad Agency working group defining how the agencies will coordinate with each other in commercial space mishap investigations, and lesson learned. Request for closure was submitted to the OIG on November 13th. OIG review of actions taken in support of closure is underway.

Office of Primary Responsibility: Office of Safety and Mission Assurance

Target Completion Date: n/a

3. Report: Audit of Industrial Control System Security within NASA's Critical and Supporting Infrastructure (IG-17-011; 2/8/2017)

Recommendation: (1) The NASA Administrator, in conjunction with the Associate Administrator for Mission Support and NASA Mission Directorates, develop a framework to coordinate security efforts across the Agency that promotes uniformity of processes and procedures and enables collaboration between OCIO, OPS, and OSI.

Status: NASA Action Completed. Operational Technology Working Group (OTWG) charter published on August 2019. It defines the roles and responsibilities of the OTWG under the Enterprise Protection Board. Each Center and the Jet Propulsion Laboratory have appointed a

point-of-contact to the OTWG with Center-wide responsibility for addressing OT security and the ability to integrate cross-Center offices in the implementation of OT security activities.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: n/a

4. Report: Audit of Industrial Control System Security within NASA's Critical and Supporting Infrastructure (IG-17-011; 2/8/2017)

Recommendation: (2) The Assistant Administrator for OPS, in conjunction with the Agency Chief Information Officer, develop a standardized process to assess Agency cyber and physical assets for NASA critical infrastructure designation that adequately evaluates criticality to NASA's overall mission.

Status: NASA Action Completed. OPS executed a data call for 100% verification and validation of currently designated NCI assets (July 2019). Validation not only confirmed components of each NCI. It also required Centers and Mission Directorates to validate the continued need for NCI designation in accordance with NPR 1600.1.a. In addition, NPR 1620.3B, "Physical Security Requirements for NASA Facilities and Property" was updated to include OT definition and requirements to include OT when executing Facility Security Assessments; updated, approved, and signed on May 13, 2019. The OTWG Released a Second OT Security Policy Memorandum (May 28, 2019), which initiated a NASA Critical Infrastructure (NCI) OT Data Call. 100 percent of NCI assets were assessed, and 202 OT Systems part of NCI were identified.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: n/a

5. Report: NASA's Parts Quality Control Process (IG-17-016; 3/29/2017)

Recommendation: (3) Identify supplier performance information of common interest and modify SAS data structure to accommodate such information.

Status: NASA Action Completed. On November 29, 2019, NASA provided the OIG with supporting documentation relating to corrective actions taken in response to the recommendation. NASA is awaiting OIG's review of the actions taken along with their disposition determination.

Office of Primary Responsibility: Office of Safety and Mission Assurance

Target Completion Date: n/a

6. Report: NASA's Parts Quality Control Process (IG-17-016; 3/29/2017)

Recommendation: (8) Review a representative sample of PQASPs to identify deficiencies and best practices and revise policy as needed to include quantification and documentation of nonconformance and control risks for ensuring surveillance activities and resources are commensurate with part criticality and overall accepted project risk.

Status: NASA Action Completed. On November 29, 2019, NASA provided the OIG with supporting documentation relating to corrective actions taken in response to the recommendation. NASA is awaiting OIG's review of the actions taken along with their disposition determination.

Office of Primary Responsibility: Office of Safety and Mission Assurance

Target Completion Date: n/a

7. Report: NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2016 (IG-17-020; 5/15/2017)

Recommendation: (3) Revisit the description of the scoring criteria for all risk factors, particularly the risk factors under the External Monitoring and Materiality of Disbursements risk conditions, to ensure the criteria for each level is a fair representation of the risk.

Status: NASA Action Completed. Corrective actions were completed on 10/3/19. However, OIG's review/consideration of the adequacy of corrective actions for closure will occur in conjunction with the OIG's FY20 IPIA Audit scheduled for completion in the May 2020 time frame.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: n/a

8. Report: Audit of NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2017 (IG-18-017; 5/14/2018)

Recommendation: (1) Implement a procedure to use information regarding known improper payments, including the latest available data used for payment recapture reporting, when performing the annual risk assessment.

Status: NASA Action Completed. Corrective actions were completed on 10/3/19. However, OIG's review/consideration of the adequacy of corrective actions for closure will occur in conjunction with the OIG's FY20 IPIA Audit scheduled for completion in the May 2020 time frame.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: n/a

9. Report: Audit of NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2017 (IG-18-017; 5/14/2018)

Recommendation: (2) Revise the existing risk assessment process by considering improper payments from prior years identified in external reports reviewed in the assessment year to determine program susceptibility to significant improper payments.

Status: NASA Action Completed. Corrective actions were completed on 10/3/19. However, OIG review/consideration of the adequacy of corrective actions for closure will occur in conjunction with the OIG's FY20 IPIA Audit scheduled for completion in the May 2020 time frame.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: n/a

10. Report: Audit of NASA’s Management and Utilization of the International Space Station (IG-18-021; 7/30/2018)

Recommendation: (3) Ensure there is a contingency plan for each exploration-enabling technology demonstration not scheduled to be fully tested by 2024, such as: a) Identification of alternate testing platforms; b) Impact to technical risk of exploration systems; and c) Impact to the technology demonstration schedule.

Status: NASA Action Completed. Corresponding corrective actions have been completed. Documentation evidencing those corrective actions has been provided to the OIG for review. OIG's closure decision is pending.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: n/a

[Actions In-Progress](#)

(Reports Sorted Oldest → Newest)

11. Report: NASA’s Compliance with the Improper Payments Information Act for Fiscal Year 2014 (IG-15-015; 5/15/2015)

Recommendation: (5) Include cost-type contract payments in the Agency’s recapture audit efforts. If NASA determines this proposal is not cost-effective, the CFO should document its justification for excluding these payments, including demonstrating that costs associated with recovering the funds are projected to be greater than the amount recovered.

Status: In-Progress. NASA is still researching possible solutions to continue executing an effective and efficient internal control platform that provides reasonable assurance that payments are proper, and that NASA is in compliance with the Improper Payments Information Act (IPIA). NASA has determined that including fixed price contract payments in our payment recapture audit program is not cost-effective. We based our determination on a cost benefit analysis that focused on the time, effort and resources expended in the process versus actual funds recovered. On November 7, 2019, OMB provided acceptance of our analysis. As NASA continues to pursue methodologies for demonstrating that including cost type contracts in our recapture program is not a cost-effective activity for the Agency, we will continue to engage and work with the OIG. In short, NASA is continuing to pursue the corrective action necessary to close this recommendation and is exploring ways to confirm whether payment recapture audits on cost type contracts is a cost-effective activity that will bring benefit to the Agency.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 5/31/2020

12. Report: NASA's Response to Orbital's October 2014 Launch Failure: Impacts on Commercial Resupply of the International Space Station (IG-15-023; 9/17/2015)

Recommendation: (7) Consider whether contract provisions relating to the boards should be revised to more closely align with NASA Mishap Investigation Board procedures (NASA Procedural Requirement 8621.1B, Chapter 4).

Status: In-Progress. Final management action is dependent upon in-process revisions to Revision D of NPR 8621 NASA "Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping," which incorporates Chapter 7 for Commercial Space Mishap Investigations.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

13. Report: Audit of NASA Space Grant Awarded to the University of Texas at Austin (IG-16-013; 2/18/2016)

Recommendation: (3) Establish policies and procedures, as part of the NASA Grant and Cooperative Agreement Manual, to periodically review a recipient's actual cost match and document award requirements.

Status: In-Progress. Updates to the Grant and Cooperative Agreement Manual (GCAM) in response to the OIG's recommendation are currently in-progress. Revised GCAM is expected to be by the spring of 2020.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 4/30/2020

14. Report: NASA's Management of the Near-Earth Network (IG-16-014; 3/17/2016)

Recommendation: (7) Ensure that malware protections are functioning as intended on applicable Network components.

Status: In-Progress. Corrective actions intended to fully deploy an Anti-Virus solution nearing completion targeted for early 2020.

Office of Primary Responsibility: Goddard Space Flight Center

Target Completion Date: 1/31/2020

15. Report: Audit of the Spaceport Command and Control System (IG-16-015; 3/28/2016)

Recommendation: (1) The OIG recommends that the Associate Administrator for Human Exploration and Operations commission an independent assessment to evaluate the status of the SCCS software development effort and determine the necessary steps to reduce the risk of further cost, schedule, and performance issues, including consideration of acquiring commercial command and control software to replace some or all of the system currently under development.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 2/28/2021

16. Report: NASA's Response to SpaceX's June 2015 Launch Failure: Impacts on Commercial Resupply of the International Space Station (IG-16-025; 6/28/2016)

Recommendation: (6) Update NPR 8621.1B to include commercial space launches with NASA payloads in official mishap policies. In particular, NASA should a) define commercial space launches with NASA payloads; b) determine the extent to which official NASA mishap policies apply in commercial space launches with NASA payloads; c) describe what types of investigations may occur and the processes to be followed in lieu of an Official Mishap Investigation Board, such as an independent investigation board created by NASA; and d) clarify the scope and purpose of each investigation, such as a NASA defined root cause compared to a technical root cause analysis, and consider the inclusion of programmatic and organizational root cause analysis.

Status: In-Progress. Planned corrective actions are in progress. Rev D of NPR 8621 which includes Chapter 7 for Commercial Space Mishap Investigations, going through final review process.

Office of Primary Responsibility: Office of Safety and Mission Assurance

Target Completion Date: 1/31/2020

17. Report: NASA's Earth Science Mission Portfolio (IG-17-003; 11/2/2016)

Recommendation: (1) Update the Architecture Plan every 5 years to align with the release of Earth Science Decadal Surveys and mid-term Surveys and account for portfolio changes.

Status: In-Progress. The current Implementation Plan is based on the 2007 Decadal Survey (DS). When this recommendation was issued (2016) NASA management did not know the scope and content of the 2017 DS. The draft 2017 DS was released January 5, 2018. The final version of the 2017 DS was not released until several weeks later with some minor changes. The 700-page DS contains significant NASA-focused recommendations. The Earth Science Division (ESD) has developed a strategic approach to address the recommendations for Designated Observables, the Incubation Program, the Earth Venture Continuity, Earth Systems Explorer Program, and other program recommendations. The full strategy is still being developed as are the architecture study results to enable formulation of a full implementation strategy. ESD has drafted a budgetary approach to the implementation of the new DS; however, budget developments may lead to changes in strategy. NASA will work on the revised Architecture Plan, but it is important to note that the previous DS was more straightforward since it recommended specific missions, which are now part of the existing ESD Program of record. The 2017 Decadal, instead of specifying missions, recommends "observables." In addition, the new DS made recommendations to other parts of the ESD portfolio, including technology, research, and applied sciences, which requires additional implementation planning that has been underway. NASA is in the process of conducting pre-formulation studies on the designated observables and developing strategies to implement the resulting projects and observing systems. The architecture

study results for the first designated observable will not be available until the end of calendar year 2020. Results from the remaining four designated observables will follow. The conclusions and results of these studies are absolutely necessary for NASA to develop the Implementation Plan. NASA does not anticipate having the study information needed to develop/update the implementation plan until late FY2021.

Office of Primary Responsibility: Science Mission Directorate

Target Completion Date: 11/31/2021

18. Report: Security of NASA's Cloud Computing Services (IG-17-010; 2/7/2017)

Recommendation: (1) Monitor adherence to the requirement that only approved cloud computing services on NASA's cloud services registry be used to transmit, process, and store NASA data and block access on NASA networks to unapproved services that do not have an authorization to operate and established IT system security plans.

Status: In-Progress. Centers provided Corrective Action Plans (CAP) detailing how they would promote the benefits of using OSCAR and encourage program and project managers to review the database prior to procuring flight inventory from outside vendors. All Centers provided CAPs, indicating actions that would be taken to address this recommendation. The CAPs were approved by OSI. Updated: OSI developed a standardized Agency-wide process to document justification for inventory retention and worked with Centers to develop necessary policy to ensure that appropriate documentation accompanies property entering the disposition process. However, under MAP, processes and delivery models are undergoing changes that will require OSI to readdress this action. The new NPD/NPR to be developed will reflect MAP's new agreement with Center management for program and flight inventory CAPs. A NID has been submitted and we expect to update NPD and NPR 4100.1 for Centers to reflect OSI's new cost-effective measures and processes.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/31/2020

19. Report: Security of NASA's Cloud Computing Services (IG-17-010; 2/7/2017)

Recommendation: (2) Ensure NASA personnel at Agency Centers, Mission Directorates, and Program and Project Offices coordinate acquisition of any cloud computing service through CSPO to ensure cloud services are properly accounted for on the Agency's cloud services registry and that all recommended FedRAMP contract provisions are incorporated into the acquisition.

Status: In-Progress. A NID is being prepared and we expect to update applicable policy documents to reflect new processes and procedures to determine the appropriate amount of spare parts required to support unmanned aircraft systems (UAS).

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 6/30/2020

20. Report: Security of NASA’s Cloud Computing Services (IG-17-010; 2/7/2017)

Recommendation: (4) Ensure all approved cloud services are registered with FedRAMP and are FedRAMP compliant.

Status: In-Progress. NASA partially concurred with this recommendation. Although there are nearly 20,000 cloud products available in the marketplace, since the FedRAMP mandate went into effect for Federal agencies in June 2014, less than 100 FedRAMP authorizations have been granted. As a result, “officially” FedRAMP-approved products represent only 0.5 percent of available cloud products. Because so few cloud products have received FedRAMP approval, Federal agencies are inhibited from fully adopting the “cloud first” approach to replacing information technology resources with cloud solutions as directed in the President’s digital strategy. NASA will use FedRAMP approved cloud services whenever available. Otherwise, NASA will perform an appropriate risk assessment, and may make a risk-based decision to approve the service for use at NASA considering mission requirements/ impacts, availability of alternative cloud services, information categorization, other industry compliance standards met, and NASA security safeguards that could be employed to ensure safe use.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/31/2020

21. Report: Security of NASA’s Cloud Computing Services (IG-17-010; 2/7/2017)

Recommendation: (6) Direct all NASA Centers, Mission Directorates, and Program and Project Offices to review their current cloud computing services and take steps necessary to ensure that existing services meet FedRAMP requirements.

Status: In-Progress. The NASA CIO will issue a memorandum to: 1) Direct NASA Centers, Mission Directorates and Program and Project offices to review their current cloud computing services and take steps necessary to ensure that existing services have been vetted such that they have an Authorization to Operate and that they are part of an approved IT Security plan; and 2) Advise the Agency of the new required procurement guidelines and processes regarding the acquisition of cloud computing.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 6/30/2020

22. Report: Audit of Industrial Control System Security within NASA’s Critical and Supporting Infrastructure (IG-17-011; 2/8/2017)

Recommendation: (3) The Assistant Administrator for OPS ensure OCIO and OSI representatives are included in functional reviews of NASA’s critical infrastructure assets and facility security assessments so that cyber and facilities interdependencies are addressed appropriately.

Status: In-Progress. NPR 1620.3B Operational Technology (OT) language (released on May 13, 2019) – The facility security assessment shall be conducted by the Center Protective Services Office with support from the Center CIO and Center Facilities Office, or equivalent offices, and designated representatives of the assessed facility to ensure OT is identified and afforded the

same level of protection as the asset/mission or facility. New language in NPR 1620.3B – “Facilities designated or housing NASA Critical Infrastructure (NCI) shall be designated Facility Security Level III at a minimum.”

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 9/30/2020

23. Report: Audit of Industrial Control System Security within NASA’s Critical and Supporting Infrastructure (IG-17-011; 2/8/2017)

Recommendation: (4) The Assistant Administrators of OPS and OSI, in conjunction with the Agency Chief Information Officer, coordinate the development of a methodology for the identification and protection of interdependencies (either within the facility security assessment or facility security level designation process)

Status: In-Progress. Appendix F of NPR 1600.1, “NASA Security Program Procedural Requirements” (revision of this NPR is on hold during OPS MAP implementation). After OT systems that are part of the components of current NCI assets are identified, NCI policy will be altered to ensure that supporting infrastructure that is critical to the operations or capabilities of an NCI asset will be included in the inventory of components of an NCI asset. (OT systems and interdependencies are identified). Identify roles and responsibilities for maintaining physical security (OPS), cybersecurity (OCIO), and resiliency of interdependencies (OSI). Draft language ready for review by OTWG and Center POCs: September 15, 2019. NID issued December 23, 2019. NPR modification coordinated informally to all: January 2020.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 9/30/2020

24. Report: Audit of Industrial Control System Security within NASA’s Critical and Supporting Infrastructure (IG-17-011; 2/8/2017)

Recommendation: (5) The Agency Chief Information Officer, in conjunction with the Assistant Administrators of OPS and OSI, develop security policy based on NIST SP 800-53, rev. 4 and NIST SP 800-82 guidance for managing the protection of OT within the mission and institutional directorates. At a minimum, this should include: a) defining control systems; b) identifying all OT systems at NASA and a strategy for segmenting OT from IT across the Agency; c) utilizing ICS-CERT alerts when assessing control systems security posture; d) developing system security plans and assessment methodologies for control systems/OT in a way that ensures the use of appropriate system boundaries and effective compensating controls, in the absence of common controls or automation as defined in NIST SP 800-82; and e) developing training for responsible security personnel in line with NIST and DHS guidance on control system security. This may include control system administrators, OCIO approval authorities, control system owners, and assessment teams.

Status: In-Progress. Corrective actions completed and planned include: 1) NPD 2800.1 is being prepared for formal Agency coordination. The directive includes the definition of OT and clarifies that OT is a type of IT and that IT requirements and processes that are currently in policy apply to OT; 2) A survey of Operational Technology systems across Centers, component facilities, and the Jet Propulsion Laboratory was completed in September 2018. A focused data

call to identify all OT systems that are part of NASA Critical Infrastructure was completed in August 2019; 3) The OCIO is testing a process that will automatically distribute US-CERT and ICS-CERT alerts to all ISOs and ISSOs. There is an open ticket with the NOMAD group since early September related to Office 365 mail transport rules that has delayed implementation. Outreach material has been drafted and will be routed through Labor Relations and OGC prior to publication; 4) The OCIO is drafting a handbook to assist in the authorization and assessment of OT systems including the segmentation of OT systems; and 5) During 2018-2019 the OCIO has released training for Information System Owners, Information System Security Officers and Organizational Computer Security Officials as well as Authorizing Officials and Authorizing Officials Designated Representatives and continues to develop and release internal training.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 9/30/2020

25. Report: NASA's Management of Electromagnetic Spectrum (IG-17-012; 3/9/2017)

Recommendation: (2) The Associate Administrator for Human Exploration and Operations should ensure the incorporation of the "Spectrum Guidance for NASA Small Satellite Missions" into formal NASA electromagnetic spectrum policies NPD 2570.5E, "NASA Electromagnetic Spectrum Management - Revalidated 9/13/16," and NPR 2570.1C, "NASA Radio Frequency Electromagnetic Spectrum Management Manual."

Status: In-Progress. Revisions to NPR 2570.1C intended to implement the recommendation are in-progress. Issuance of revised NPR 2570 is expected in the summer of 2020.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 7/31/2020

26. Report: NASA's Plans for Human Exploration beyond Low Earth Orbit (IG-17-017; 4/13/2017)

Recommendation: (4) Include cost as a factor in NASA's Journey to Mars feasibility studies when assessing various potential missions and systems.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 4/30/2020

27. Report: Construction of Test Stands 4693 and 4697 at Marshall Space Flight Center (IG-17-021; 5/17/2017)

Recommendation: (1) Perform a comprehensive review of Program-funded construction projects to ensure adequate analysis, including all life cycle costs, is completed prior to project initiation.

Status: In-Progress. A new protocol was established during the Facilities and Real Estate Division's Business Service Assessment and it will go into NPR 8820 update after MAP is completed.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 12/31/2020

28. Report: Construction of Test Stands 4693 and 4697 at Marshall Space Flight Center (IG-17-021; 5/17/2017)

Recommendation: (2) Develop additional construction project guidance for establishing unallocated construction reserves for program-direct construction facility projects to better account for significant expected risks.

Status: In-Progress. A new protocol was established during the Facilities and Real Estate Division's Business Service Assessment and it will go into NPR 8820 update after MAP is completed.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 12/31/2020

29. Report: Construction of Test Stands 4693 and 4697 at Marshall Space Flight Center (IG-17-021;5/17/2017)

Recommendation: (3) Ensure facility needs, such as construction of new facilities and/or modification of existing facilities, are appropriately included in program planning and scheduling and that testing requirements are adequately understood prior to committing the Agency to construction or modification of test facilities.

Status: In-Progress. Efforts to develop language intended to strengthen the Project Definition ratings Index (PDRI) requirements is being developed and will be incorporated into on-going revisions to NPR 8820 "Facility Project Requirements."

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 7/31/2020

30. Report: NASA's Research Efforts and Management of Unmanned Aircraft Systems (IG-17-025; 9/18/2017)

Recommendation: (2) Create or incorporate into existing policy criteria for defining the UAS subject to acquisition and tracking requirements, distinguishing an aerial drone from a collection of spare parts, and the criteria Centers should use for determining the number of UAS spare parts to maintain.

Status: In-Progress. Logistics and Aircraft Management Divisions chaired an aircraft parts working group that developed a policy requiring organizations to determine the number of spare parts needed to support the UAS prior to obtaining acquisition approval. NASA Procedural Requirement (NPR) 4100.1 will be updated with this new process during OSI Mission

Architecture Program. In the interim, the Logistics Management Division is in the process of drafting a NASA Interim Directive (NID) that contains the new procedures Centers must follow when determining the number of spare parts required to support UAS.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 6/30/2020

31. Report: NASA's Management of Spare Parts for its Flight Projects (IG-18-001; 10/5/2017)

Recommendation: (3) Develop a standardized cataloging process for OSCAR to ensure NASA program and project officials can effectively identify and reserve compatible flight inventory.

Status: In-Progress. Centers provided Corrective Action Plans (CAP) detailing how they would promote the benefits of using OSCAR and encourage program and project managers to review the database prior to procuring flight inventory from outside vendors. All Centers provided CAPs, indicating actions that would be taken to address this recommendation. The CAPs were approved by the Office of Strategic Infrastructure (OSI). OSI developed a standardized Agency-wide process to document justification for inventory retention and worked with Centers to develop necessary policy to ensure that appropriate documentation accompanies property entering the disposition process. However, under MAP, processes and delivery models are undergoing changes that will require OSI to readdress this action. The new NPD/NPR to be developed will reflect MAP's new agreement with Center management for program and flight inventory CAPs. A NID has been submitted and we expect to update NPD and NPR 4100.1 for Centers to reflect OSI's new cost-effective measures and processes.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 12/31/2021

32. Report: NASA's Management of Spare Parts for its Flight Projects (IG-18-001; 10/5/2017)

Recommendation: (5) Work with Center logistics officials to develop alternative approaches to ensure Centers can meet the requirement to conduct complete reviews of spare parts inventories every 5 years.

Status: In-Progress. A NID is being prepared and we expect to update applicable policy documents to reflect new processes and procedures to determine the appropriate amount of spare parts required to support unmanned aircraft systems (UAS).

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 9/30/2021

33. Report: NASA's Surface Water and Ocean Topography Mission (IG-18-011; 1/17/2018)

Recommendation: (6) The Associate Administrator for Science should require all SRBs to explicitly monitor and document variances from NASA's JCL policy – specifically regarding international partners and launch vehicle risks – and their potential cost and schedule impacts.

Status: In-Progress. In response to the recommendation, NASA concurred in that SRB should monitor and document all significant risks, including those from international partners and launch vehicles, associated with project cost and schedule as part of their JCL evaluation at KDP-C or a rebaseline review. For KDP-C, launch vehicle risks will generally not be specific to a NASA launch system given the acquisition and selection process concludes following mission confirmation. Additionally, the Cost Estimating Handbook encourages establishing a set of programmatic, technical and schedule ground rules and assumptions to define the scope of the estimate (i.e., what costs are being included and what costs are excluded). NASA historically includes the Launch Vehicle (LV) as a pass through, with no negative results. With that said, SMD will work with the OCFO to determine if the Handbook language needs to be more definitive about LVs. In March of 2018 SMD and OCFO reviewed the relevant guidance in the Cost Estimating Handbook and concluded that the Handbook's language is sufficiently definitive. However, the OIG maintains its concern that JCL analyses should include all discrete development risks to include important risks managed outside the project. In response to this ongoing concern SMD will reassess the relevant NASA policies to understand if there is any basis for revision.

Office of Primary Responsibility: Science Mission Directorate

Target Completion Date: 2/29/2020

34. Report: Review of NASA's Purchase and Travel Charge Card Programs (IG-18-014; 2/28/2018)

Recommendation: (1) Establish a procedure to monitor whether travelers are using their travel cards for all official travel expenses. Possible options include but are not limited to:
a) modifying NSSC's existing pre and post-payment procedures performed on travel vouchers;
and b) instructing CAPCs to include this review as part of their oversight responsibilities.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Ames Research Center

Target Completion Date: 3/30/2020

35. Report: NASA's Management of the Goddard Institute for Space Studies (IG-18-015; 4/5/2018)

Recommendation: (4) Hire a senior administrator to serve as a Deputy Chief of GISS for Administration to manage the Institute's grants, cooperative agreements, personnel, and procurement actions.

Status: In-Progress. An unexpected delay in the issuance of a corresponding vacancy announcement was encountered. However, the vacancy announcement was issued and closed in late November. The selection process is underway.

Office of Primary Responsibility: Goddard Space Flight Center

Target Completion Date: 4/30/2020

36. Report: NASA's Management of the Goddard Institute for Space Studies (IG-18-015; 4/5/2018)

Recommendation: (8) To the extent practicable, implement the GAO's best practices for establishing partnerships, including the formalization of agreements that outline the roles and responsibilities of each agency in the performance and application of climate research performed at GISS.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Science Mission Directorate

Target Completion Date: 6/30/2020

37. Report: Audit of Commercial Resupply Services to the International Space Station (IG-18-016; 4/26/2018)

Recommendation: (5) The Associate Administrator for Human Exploration and Operations Mission Directorate ensure the ISS Program: decides by January 2020 whether to compete task orders beyond the minimum guarantee of six for each contractor through the existing contract or through the On-Ramp clause.

Status: In-Progress. The ISS program is not at a point in time that it can intelligently decide if "to compete task orders beyond the minimum guarantee of six for each contractor." The factors that have created this situation: 1) CRS2 providers have not begun to fly their new and/or augmented capabilities for this contract. This leads to unproven estimates of the providers' performance capabilities. First launches have a NET of August 2020 and would take about a year to have all three providers' first flight; 2) CCP schedule movement to the right has delayed the crew compliment increase and its corresponding increase in up-mass requirements that would eventually drive additional orders; and 3) Although the ISS extension to 2030 is officially supported in the recent ESA ministerial meeting, it is still under discussion by the other governments of the ISS partnership. The ISS extension would eventually drive additional orders as well. Given the environment today, the ISS program believes that a decision "to compete task orders beyond the minimum guarantee of six for each contractor" should be pushed to the first quarter of FY2021.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 10/31/2020

38. Report: Audit of NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2017 (IG-18-017; 5/14/2018)

Recommendation: (3) Develop a process for tracking overpayments identified and subsequently recovered through reductions in future billings on existing contracts such as contract credits.

Status: In-Progress. OCFO is still in the process of researching an automated solution. Collaborative efforts between key stakeholders including OCFO, NSSC, GRC [process champion], and the Office of Procurement are on-going.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 5/31/2020

39. Report: Audit of NASA's Information Technology Supply Chain Risk Management Efforts (IG-18-019; 5/24/2018)

Recommendation: (2) Ensure NASA's assessed and cleared listing (ACL) is updated weekly and that it contains a selection of cleared IT and communications products and services sufficient to meet Agency needs.

Status: In-Progress. The OCIO currently performs a review and update of the ACL weekly. Additionally, OCIO is implementing additional capabilities through the Risk Information Security and Compliance System (RISCS) that will further automate the ACL.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 9/17/2020

40. Report: Audit of NASA's Information Technology Supply Chain Risk Management Efforts (IG-18-019; 5/24/2018)

Recommendation: (7) Direct all NASA Centers, Mission Directorates, and Program/Project Offices to review and strengthen their current supply chain risk management efforts to ensure only assessed and cleared IT and communications products and services enter the Agency's supply chain.

Status: In-Progress. The NASA OCIO is updating NPD 2800.1 C, Managing information Technology. It will be released to all NASA Centers, Mission Directorates, and Program Offices to strengthen current SCRM efforts. NASA is also developing supply chain controls and processes in the NASA Risk Info. Security and Compliance Systems (RISCS) to enable the NASA community to document, assess, and track SCRM activities.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 9/17/2020

41. Report: Audit of NASA's Security Operations Center (IG-18-020; 5/23/2018)

Recommendation: (1) The Agency CIO develop a charter and set of authorities signed by the NASA constituent executives (including the NASA Administrator) that addresses the SOC's organizational placement, purpose, authority, and responsibilities.

Status: In-Progress. The OCIO has developed a charter for the NASA SOC that addresses the SOC's organizational placement, purpose, authority, and responsibility within the OCIO Cybersecurity & Privacy Division. The OCIO will present the charter to SOC stakeholders for review and concurrence by the Agency ITC and the NASA SAISO, for NASA CIO approval and signature. The charter will then be sent, through the Office of the Administrator, for the NASA Administrator's concurrence, prior to publication.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/31/2020

42. Report: Audit of NASA's Security Operations Center (IG-18-020; 5/23/2018)

Recommendation: (2) The Agency CIO, in conjunction with the SAISO, establish Operational Level Agreements with NASA Centers, Mission Directorates, the Communications Services Office, the End User Services Office, the Agency Applications Office, and Web Services Office to clearly define incident response roles and responsibilities, ensure data storage and sharing needs are addressed, and opportunities to leverage economies of scale are identified and acted upon in support of Agency cybersecurity goals. The agreements should include (but not be limited to) the following issues: a) responsibilities of signing parties; b) data visibility, sharing, storage, and logging requirements; c) change management plan; d) communications plan; e) an explanation detailing the technology deployments necessary to support the agreement; and f) service levels expected detailing the service benefit to both parties in line with Agency goals.

Status: In-Progress. NASA partially concurred with this recommendation and noted that the NASA SOC will work with the OCIO Information Technology (IT) Business Management Division to determine the governance for establishing or updating appropriate Operational Level Agreements (OLAs). The NASA SOC will also update the existing Service Level Agreements between the SOC and: 1) the Communications Services Office; 2) the Computer Service Program Office; and 3) Center CIO Offices, converting the Service Level Agreements to Operational Level Agreements.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/22/2020

43. Report: Audit of NASA's Security Operations Center (IG-18-020; 5/23/2018)

Recommendation: (6) The Agency CIO identify and reduce unnecessary duplication of the incident monitoring, detection, and response capabilities, including toolsets and competencies available Agency-wide to enhance the capabilities and resources of the SOC and realize efficiencies in the management of these capabilities.

Status: In-Progress. The OCIO will identify the incident monitoring, detection, and response services across the Agency. The SAISO will document and assess duplication of services and provide a recommendation to the Agency CIO for targeted implementation in FY20.

Office of Primary Responsibility: Office of the Chief Information Officer

Target Completion Date: 1/31/2020

44. Report: Audit of NASA's Management and Utilization of the International Space Station (IG-18-021; 7/30/2018)

Recommendation: (4) Complete all end of mission critical systems and open work related to nominal and contingency deorbit operations.

Status: In-Progress. Planned corrective actions, including ISS ongoing discussions with the Partner related to export control document markings and other issues pertaining to SSP 51066 are in-progress.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

45. Report: Audit of NASA's Management and Utilization of the International Space Station (IG-18-021;7/30/2018)

Recommendation: (5) Develop options for obtaining supplemental emergency deorbit propellant support from U.S. commercial vehicles.

Status: In-Progress. Planned corrective actions are on-going and are targeted for completion in late 2020.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 12/31/2020

46. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (2) Direct Boeing to complete delivery of two Core Stages and the EUS using an Earned Value Management System with realistic schedule assumptions and appropriate cost estimates through the end of the contract in 2021.

Status: In-Progress: NASA is continuing work on this and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

47. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (3) Complete a review of the Boeing Stages contract that includes an independent federal government cost estimate to confirm the funding amounts needed to complete all deliverables.

Status: In-Progress. NASA is continuing work on this and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

48. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (4) Renegotiate the Boeing Stages contract based on both Boeing and federal government cost estimates.

Status: In-Progress: NASA is continuing work on this and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

49. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (7) Implement an acquisition strategy for building Core Stages beyond Core Stage 2 for future missions that includes consideration for awarding the contract as a fixed-price, end-item deliverable contract with each Core Stage separated into unique task orders with specific performance milestones.

Status: In-Progress: NASA is nearing completion of planned corrective actions and expects to provide the OIG with evidence of those actions in the near-term.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

50. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (4a) Renegotiate the Boeing Stages contract by: separating each deliverable (Core Stage 1, Core Stage 2, and EUS) into its own CLIN for tracking costs, performance, and award fees.

Status: In-Progress. NASA is continuing to pursue corrective actions and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

51. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (4b) Renegotiate the Boeing Stages contract by removing the system integration fee structure and capping potential award fees at 12.5 percent of estimated costs.

Status: In-Progress. NASA is continuing to pursue corrective actions and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

52. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (4c) Renegotiate the Boeing Stages contract by determining the amount of cost overruns to date and ensuring no future fees are paid on this amount.

Status: In-Progress. NASA is continuing to pursue corrective actions and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

53. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (4d) Renegotiate the Boeing Stages contract by: reducing the performance evaluation period to 6 months with interim reports at 3 months.

Status: In-Progress. NASA is continuing to pursue corrective actions and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

54. Report: NASA's Management of the Space Launch System Stages Contract (IG-19-001; 10/10/2018)

Recommendation: (4e) Renegotiate the Boeing Stages contract by removing provisional performance award fee payments to reflect the current contractor's performance.

Status: In-Progress. NASA is continuing to pursue corrective actions and is on track to award the contract by 1/31/2020. Once the contract is awarded, NASA will request closure of this recommendation.

Office of Primary Responsibility: Human Exploration and Operations Mission Directorate

Target Completion Date: 1/31/2020

55. Report: Audit of NASA's Historic Property (IG-19-002; 10/22/2018)

Recommendation: (1) To improve the management of NASA's efforts to retrieve lost historic personal property, the OIG recommends the NASA General Counsel develop a process to more effectively identify, validate ownership of, and coordinate within NASA and/or with other agencies on recovery of historic property.

Status: In-Progress. Planned corrective actions are in-progress. Stakeholders (OGC, OSI and Office of Communications) are working towards finalization and publication of a NASA Procedural Requirements (NPR) that will address the process and procedure for identifying and recovering historic property.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 5/31/2020

56. Report: Audit of NASA's Historic Property (IG-19-002; 10/22/2018)

Recommendation: (2) To improve NASA's identification and management of heritage assets, the OIG recommends that the Assistant Administrator for Strategic Infrastructure, in coordination with the Associate Administrator for Communications: Develop comprehensive procedures for identifying and managing heritage assets, including defining roles and responsibilities for the different NASA entities responsible for evaluating what historic items would most effectively be maintained by the Agency and considered as heritage assets.

Status: In-Progress. A draft policy directive has been developed and is currently under review. A meeting is planned for January 9, 2020 for the purpose of dispositioning comments received in response to the draft directive.

Office of Primary Responsibility: Office of Communications

Target Completion Date: 5/14/2020

57. Report: Audit of NASA's Historic Property (IG-19-002; 10/22/2018)

Recommendation: (3) To improve NASA's identification and management of heritage assets, the OIG recommends that the Assistant Administrator for Strategic Infrastructure, in coordination with the Associate Administrator for Communications: Evaluate and justify the existing list of NASA and contractor held heritage assets to determine whether NASA is the most effective owner and what property the Agency will retain because of its historical value.

Status: In-Progress. The Office of Communications and the Office of Strategic Infrastructure are coordinating on planned actions intended to implement the recommendation.

Office of Primary Responsibility: Office of Communications

Target Completion Date: 6/14/2020

58. Report: Audit of NASA's Historic Property (IG-19-002; 10/22/2018)

Recommendation: (4) To improve the management of Columbia and Challenger artifacts, the OIG recommends the Kennedy Space Center Director: Ensure agreements are signed, appropriately updated, and include all necessary loan terms, including a security plan developed by the borrower and reviewed by the Center's Office of Protective Services prior to property transfer.

Status: In-Progress. Substantive corrective actions taken include: A) Updated Kennedy NASA Procedural Requirements (KNPR) 8621.1, "Columbia Research and Preservation" and; B) Modified the Concession Agreement: "Article 28 – Space Shuttle Atlantis Memorial Gallery Exhibit." Related documents are in the final review and approval cycle with an estimated completion date of January 2020.

Office of Primary Responsibility: Kennedy Space Center

Target Completion Date: 1/31/2020

59. Report: Audit of NASA's Historic Property (IG-19-002; 10/22/2018)

Recommendation: (5) To improve the use of funds generated from National Historic Preservation Act (NHPA) leases, the OIG recommends the Assistant Administrator for Strategic Infrastructure: Ensure NASA policy and procedures for using the proceeds from facilities leased under NHPA authority appropriately aligns with Agency goals to minimize excess facilities.

Status: In-Progress. OSI is crafting the policy to update and outline NASA's established criteria for entering into NHPA leases. Based on this revision, the OIG determined that the intent of their recommendation has been achieved. OSI is working towards closure by October 31, 2020 for the approval and publication of a revised NPR 8800.15.

Office of Primary Responsibility: Office of Strategic Infrastructure

Target Completion Date: 10/31/2020

60. Report: NASA's Management of Extended Temporary Duty Travel (IG-19-007; 11/28/2018)

Recommendation: (1) Review the ETDY travel authorization and lodging costs after the first 30 days of ETDY travel to validate, adjust, and update, if necessary, the authorized lodging reimbursements to more closely match actual lodging expenses—but not to exceed the 65 percent maximum per diem rate.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 12/31/2020

61. Report: NASA's Management of Extended Temporary Duty Travel (IG-19-007; 11/28/2018)

Recommendation: (2) Revise NASA policy to explicitly state that actual lodging costs will be reviewed after the first 30 days of ETDY travel and authorizations adjusted, if needed.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 1/1/2021

62. Report: NASA's Management of Extended Temporary Duty Travel (IG-19-007; 11/28/2018)

Recommendation: (3) Include in all ETDY travel authorizations a statement that lodging costs will be reviewed after the first 30 days of ETDY travel with the corresponding authorized reimbursements adjusted to more closely match actual lodging expenses—but not to exceed the 65 percent maximum per diem rate.

Status: In-Progress. NASA continues to work toward implementation of this recommendation. Related corrective actions are in-progress.

Office of Primary Responsibility: Office of the Chief Financial Officer

Target Completion Date: 1/2/2021