

This document was approved at the May 18, 2016, APMC

National Aeronautics
and Space
Administration



Headquarters
Washington, DC 20546-0001

Reply to Attn. of: NASA Associate Administrator, Robert Lightfoot

TO: Distribution

FROM: Associate Administrator

SUBJECT: NASA Independent Assessment Principles and Approach

The attached document describes the principles and approach that guide the implementation of the new model for independent assessments outlined in my October 26, 2015 memorandum “Independent Assessment of NASA Program and Projects.” Mission Directorates (MDs) with support from the Centers, Office of the Chief Financial Officer (OCFO), and Office of the Chief Engineer (OCE) will develop plans consistent with these principles and approach.

Overview

The purpose of this white paper is to describe the principles and approach governing the implementation of the new Agency model for independent assessment as directed by the NASA Associate Administrator, Robert Lightfoot, in his October 26, 2015, memorandum “Independent Assessment of NASA Programs and Projects.”

This new model aligns the Agency independent assessment function to ensure mission success and to enhance management accountability. Organizationally, Agency independent assessment has been decentralized from the Office of Evaluation/Independent Program Assessment Office (OoE/IPAO) to the MDs with support from the Centers. Robust independent assessment of NASA Flight Programs and projects is essential for long-term mission success and will continue under the new model. Under this model, the corporate knowledge, expertise, and rigor amassed over the many years of independent assessment performed by the IPAO is preserved, while opportunities for enhanced synergy and efficiencies are gained. The new approach will expand participation in independent assessment of talent from across the Agency. This broader participation will enhance sharing of best practices between mission areas and increase learning and synergy between in-line and independent programmatic analysis work.

The new approach clarifies management responsibility and accountability to foster a more “organic” implementation within the MDs as these organizations are now fully accountable for establishing independent assessment of their Programs and projects and for owning the results. These organizations have a key stake in mission success and possess critical insight into the program areas that present the greatest challenges and would benefit from further assessment. Centers support the MDs in this role. Such informed assessment focus will enhance the value and quality of the independent assessment activity and further the goal of mission success.

This document describes the principles and approach that guide the implementation of this new approach. MDs with support from the Centers, OCFO, and OCE will develop plans consistent with these principles and approach.

Principles and Approach for Independent Assessment

Culture Shift- Independent Assessment is “organic” to the Mission Directorates and Centers

Implementation of this new independent assessment model is predicated on independent assessment becoming part of the “DNA” of the MDs supported by the Centers¹ as an integral component of their management and oversight. This is in contrast with the previous implementation that carried the perception that the centralized independent assessment function was “done” to the MDs and the Centers.

Independent Assessment Responsibility

Under this new model, the MDs with support from the Centers will own the independent assessment of their Programs and projects. It is their responsibility to organize and perform independent assessments that provide timely, accurate, and informed risks, cost and schedule

¹The Jet Propulsion Laboratory is treated as a Center for the implementation of this independence assessment model with provisions for Organization Conflict of Interest (OCI) avoidance.

assessments, and overall performance projections to the decision makers at key decision points during the life cycle of their Programs and projects.

The Convening Authority (CA) roles under the new model are shown in the table below² including the new role for the OCFO, replacing the OoE. The Decision Authority roles remain the same under the new model. The MDs with support from the Centers will coordinate on the Terms of Reference (ToR) for the reviews (including review board membership) with the OCE and OCFO personnel embedded in the MDs. The responsible organizations, MDs, report directly to the Associate Administrator (AA) whose level of insight in independent assessment is unchanged under the new model.

Convening Authorities for Standing Review Board

| | Decision Authority*** | | Technical Authority | | Chief Financial Officer ** |
|---------------------|-----------------------|---------|---------------------|--------------------|----------------------------|
| | NASA AA | MDAA | NASA CE* | Center Director(s) | |
| Programs | Approve | Approve | Concur | Approve | Concur |
| Category 1 Projects | Approve | Approve | Concur | Approve | Concur |
| Category 2 Projects | | Approve | Concur | Approve | Concur |
| Category 3 Projects | | Approve | | Approve | |

NASA CE = NASA Chief Engineer. MDAA = Mission Directorate Associate Administrator.

** Concurrence is obtained via coordination with designated MD Chief Engineer.*

*** Concurrence is obtained via coordination with designated MD embedded OCFO point of contact.*

**** Decision Authorities are designated in NPR 7120.5 E Section 2.3.1. and remain the same under the new model.*

MDs with Center support assume the functions previously performed by the IPAO for Agency-level reviews of Programs, Category 1 and Category 2 projects. These functions include the planning and manifesting of independent reviews, organizing and staffing of independent review teams, monitoring execution of the reviews, reporting results, and capturing lessons learned.

During FY16, the IPAO will close-out the reviews in progress and will transfer all reviews to the MDs. The former IPAO Director will support the AA during the initial implementation of the new approach. MDs and Centers will not stand up separate, IPAO-shadow, independent assessment organizations to perform these functions.

Independent Assessment Requirements

Requirements for independent assessment of spaceflight Programs and projects at life-cycle reviews, including required assessment products, are specified in NASA Procedural Requirements (NPR) 7120.5 and 7123.1 under the stewardship of the OCE. These requirements have not changed. Provisions for tailoring the requirements in the NPRs to fit the unique needs of a given Program or project is a part of the current implementation and will continue as before. Program and project managers can utilize the Program Project Management Board (PPMB) run by the OCE to assist with tailoring guidance, and serve as a forum to adjudicate issues as they work through

² This table corresponds to Table 2-2 in NPR-7120 E that will be updated accordingly.

the Agency process for tailoring, waivers, and deviations of program and project management policy.

Independent Review Teams

Standing Review Boards (SRBs) will continue performing independent assessment at life-cycle reviews as specified in NPR 7120.5. Consistent with current implementation, SRBs are composed of technical and programmatic experts who have relevant and current experience, are independent from the Program and projects under review, and are free from organizational and personal conflicts of interest. SRBs engage with the Programs and projects through their life cycles to provide continuity. SRBs perform their assessments in accordance with the charter issued by the CAs for the review (or ToR) and report their results and recommendations to the Decision Authority independent of the Program and project under review. These basic attributes of SRBs are not changed under the new approach. MDs may delegate performance of independent reviews as warranted to independent teams led by the Centers while ensuring that the operation of these teams is consistent with the above attributes.

Review Team Independence

The parameters that ensure the independence of the review teams are not altered by the new approach. SRB independence is ensured by selecting SRB members that are not in the chain of command of the Program or project under review with the SRB chair independent of the performing center or institution; who are funded by a source that is separate from the Program or project under review; and who are free from any personal or organization conflict of interest such that they have no stake or involvement in the design, build, or operation of the work being reviewed. These parameters have not changed with the new model. Vetting of SRB civil servants and consultants members to ensure their independence will continue per guidance provided in the NASA SRB Handbook. LaRC Office of the Chief Council (OCC) supported the IPAO in this function and is providing support to the MDs during the initial implementation of the new model.

SRB Selection and Staffing

Under the new model, the SRB chair is selected by the MDs and Centers with the approval of the Decision Authority. Enhanced emphasis is provided under the new model to select SRB chairs from within the civil service senior leadership. After careful consideration of required skills, SRB members are selected by the SRB chair in collaboration with MDs and Centers, and with assistance from the OCE for technical members and from the OCFO for programmatic (cost and schedule) analytical expertise. The SRB composition is approved by the Decision Authority as part of the ToR approval.

The new model emphasizes the involvement in independent assessment from talent across the Agency to enhance synergies and learning between diverse mission areas and to achieve efficiencies. Therefore, careful consideration needs to be given in staffing of SRBs with civil servant personnel to accomplish these objectives while preserving the use of consultants when their expertise is required.

In contrast with the previous centralized implementation where IPAO provided dedicated staff to perform cost and schedule analysis, under the new model, personnel with the pre-requisite expertise performing in-line programmatic work in other projects or mission areas are “tapped” to provide SRB support. The OCFO will be instrumental in brokering the stewardship of these

programmatic analysis capabilities working with the MDs and Centers. The OCFO will also provide qualified personnel to SRBs as needed.

The Review Manager (RM) function will be provided by the MDs and Centers as an additional duty for select individuals and not as a dedicated function. While assigned to support SRBs, personnel will work for the SRB chair. Travel and labor for civil service personnel supporting SRB work will be paid by the MDs. Under the new model, personnel previously dedicated to independent activities at the Agency-level are now redeployed for in-line work.

Reporting

SRBs report to the CAs and the Decision Authority at the Center Management Councils (CMCs), the Directorate Program Management Councils (DPMCs), and the Agency Program Management Council (APMC), as required. There are no changes to the reporting requirements for SRBs under the new model³. MDs and Centers may elect to consolidate CMC and DPMC reporting when warranted.

Retention of Corporate Knowledge

Preservation of the lessons learned and recommended best practices from many years of experience conducting independent assessment of NASA flight Programs and projects is a key part of the new model. This is important not only to capture and communicate current corporate knowledge, but also moving forward to capture and communicate lessons learned and best practices as the “art of independent assessment” is continuously honed.

Review Guidance. IPAO has captured guidelines based on best practices and lessons learned for the conduct of independent assessments in the SRB Handbook (including conflict of interest avoidance and SRB operations to address Federal Advisory Committee Act (FACA)). Going forward, the ownership for the SRB handbook will follow the organizations that assumed responsibility for independent assessment, namely, the MDs (integrating their Centers), the OCFO, and the OCE (designated SRB Handbook Manager). It is envisioned that the SRB handbook will be updated as needed to reflect the changes implemented as part of the new model and to capture best practices from lessons learned going forward. Other documents containing Agency-level review guidance, such as the Project Management Handbook, will be updated as needed.

Cost and Schedule Analysis Methods and Standards. IPAO has developed methods and standards for the performance of cost and schedule analyses in support of independent reviews performed by SRBs. As part of the OCFO role as the programmatic analysis competency leader, the OCFO assumes ownership over cost and schedule analyses methods and standards. This is synergistic with the OCFO assuming the cost and schedule policy, and policy implementation facilitation roles from the OoE and Cost Analyses Division. It is expected that the OCFO will work with the MDs and Centers to examine, adjust, and broaden the applicability of these methods and standards to address both in-line and independent assessment work. Ownership of the programmatic analysis products from in-line work remains with the Programs and projects.

Competency Stewardship. The new model for independent assessments is transitioning from

³ These requirements including reporting thresholds are specified in NPR 7120.5 with additional guidance in the SRB and PM Handbooks.

dedicated staff performing review management and cost and schedule analysis in support of SRBs to personnel from across the Agency engaging in independent assessments as an additional assigned duty. While the new model significantly enhances cross pollination across Centers and missions areas, consideration needs to be given to retaining the competencies to perform cost and schedule analysis, review management, and for preparing new chairs and membership for service on SRBs.

The OCFO will assess the health of the cost and schedule analysis competency and address needed improvements or gaps, assist MDs in the identification of personnel with prerequisite skills, provide Agency-wide tools for programmatic analysis, and facilitate training in this area by leveraging IPAO-developed training products. MDs with Center support assume the stewardship of the Review Management function leveraging the infrastructure for guidance and training developed by the IPAO. MDs with Center support also assume a stewardship role for preparing new SRB chairs and SRB members for service on SRBs by leveraging IPAO training and other infrastructure such as the NASA Engineering Network (NEN) Independent Assessment Community.

The table below provides a “From – To” summary comparison between the previous implementation and the new independent assessment model.

| NASA Independent Assessment Model Comparison | | |
|---|--|--|
| Area: | From: | To: |
| Culture shift | Independent assessment is “done” to the MDs and Centers. | Independent assessment is “organic” to the MDs and Centers. |
| Responsibility | <ol style="list-style-type: none"> 1. Independent Assessment organized and performed by a central organization: IPAO. 2. IPAO reports organizationally to AA for Independent Assessment. | <ol style="list-style-type: none"> 1. Independent Assessment of Programs and projects continue under the responsibility and accountability of the MD with support from the Centers. 2. MDs report to AA for Independent Assessment (no change in AA level of insight). |
| Requirements | Requirements for independent assessment at Life-cycle Reviews including required assessment products specified in NPR 7120.5 and NPR 7123. | No change |
| Review Teams | Independent assessments performed by SRBs. | No change |
| Review Team Independence | SRB independence ensured by SRB members: <ul style="list-style-type: none"> • Coming from separate chain of command from the Project/program under review • Funded from a separate source from the Program/project under review • Selected with no conflict of interest (e.g., no stake or involvement in the design, build, or operation of the work reviewed) | No change |

| NASA Independent Assessment Model Comparison | | |
|---|--|--|
| Area: | From: | To: |
| SRB Selection | SRB chair selection and technical membership facilitated by IPAO working with Convening Authorities. Cost and schedule analysts and Review Manager assigned by IPAO. Decision Authority approves SRB. | SRB chair selected by MD and Centers with approval of the Decision Authority. SRB members are selected by the SRB chair in collaboration with MDs and Centers and with assistance from the OCE for technical members and the OCFO for cost and schedule analytical expertise. Review management facilitation provided by MD or Center. Decision Authority approves membership (no change). |
| Reporting | SRBs report to the CMC, DPMC, and APMC (when required). | No change |
| Corporate Knowledge | <ol style="list-style-type: none"> 1. Review guidance documented in SRB handbook (owned by the IPAO). 2. Independent cost and schedule analysis methods and standards in support of SRBs (owned by the IPAO) 3. Dedicated IPAO cost and schedule analysts perform independent analyses in support of SRBs. 4. Centralized Review Management with dedicated staff. 5. Limited cross pollination across mission areas due centralized review management and SRB staffing. | <ol style="list-style-type: none"> 1. SRB handbook will continue jointly owned by Mission Directorates, OCFO, and OCE (Book Manager). 2. The OCFO assumes ownership of cost and schedule analyses methods and standards that will broadly apply to both in-line work and independent assessment. 3. Former IPAO analysts redeployed to support in-line work to share analytical expertise. Cost and schedule analysts supporting SRBs assigned from amongst in-line analysts supporting other programs from across the Agency (broader in-line experience). 4. Review management performed as a function by MD or Centers (addressing training and needed support). 5. Enhanced cross pollination across centers and mission areas as SRB are staffed across centers and mission areas. |