

National Aeronautics and Space Administration



Chief Program Management Officer

Introduction, Challenges, & Forward Plans (NASA Cost & Schedule Symposium)

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Chief Program Management Officer

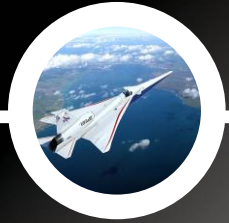
Office of the Administrator

NASA Headquarters

April 26, 2022

NASA Major Projects

Aeronautics



Low Boom
Flight
Demonstrator



Electric Powertrain
Flight
Demonstrator

Exploration Systems Development/Space Operations



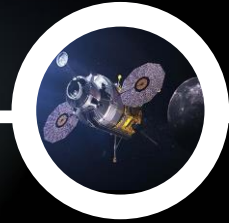
Orion



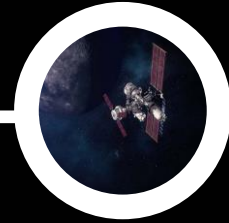
Exploration
Ground Systems



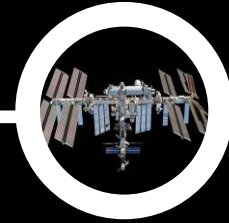
Space
Launch
Systems



Human Landing
Systems

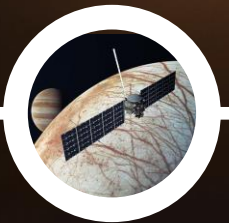


Gateway

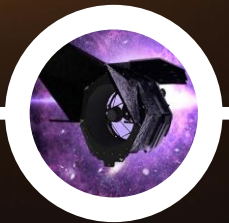


Commercial
Crew Program

Science



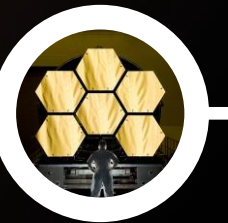
Europa
Clipper



Nancy Grace
Roman Space
Telescope



Mars
Sample
Return



James Webb
Space
Telescope

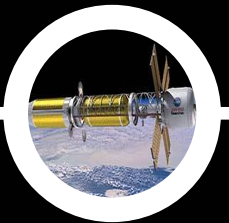
Space Technology



On-orbit Servicing,
Assembly, and
Manufacturing-1



Solar Electric
Propulsion



Space Nuclear
Propulsion/
Power

Assessing Performance of NASA's Major Projects

Multiple reviews of NASA's large complex missions underscore cost and schedule challenges

- First-of-a-kind projects
- Culture of excellence – and optimism
- Managing stakeholder expectations/confidence

Recent performance of major projects have seen significant overruns

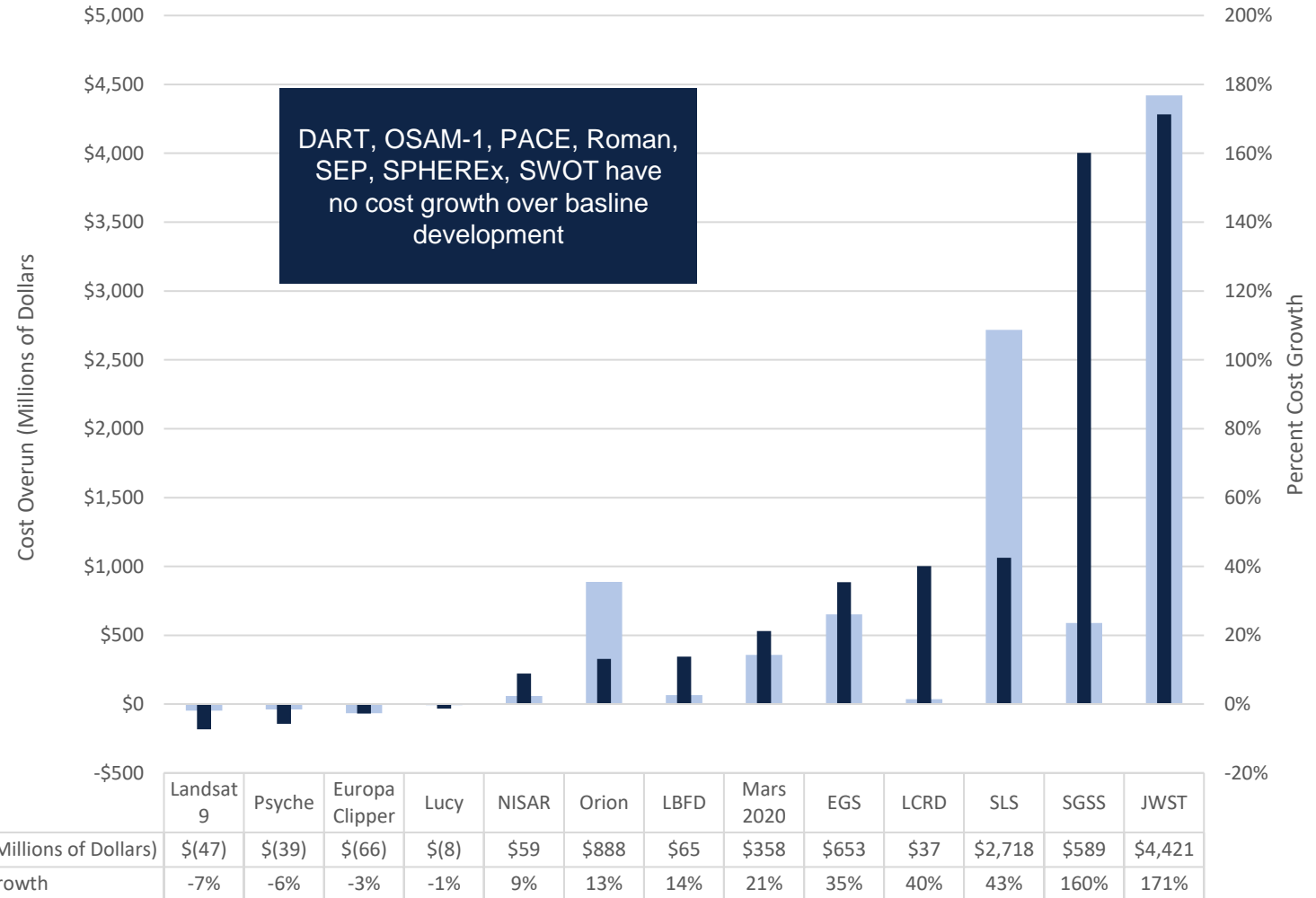
In August 2021, a NASA Tiger Team was formed to review acquisition practices throughout the agency and make recommendations on ways to improve performance in these areas

Emphasis on strengthening and creating greater Enterprise-wide consistency with respect to program and project management

- Double Asteroid Redirection Test (DART)
- Plankton, Aerosol, Cloud, ocean Ecosystem (PACE)
- Spectro-Photometer for the History of the Universe, Epoch of Reionization, and Ices Explorer (SPHEREx)
- Surface Water Ocean Topography (SWOT)

- NASA-Indian Space Research Organization (ISRO) Synthetic Aperture Radar (NISAR)
- Laser Communications Relay Demonstration (LCRD)
- Space Network Ground Segment Sustainment (SGSS)

Cost Performance of NASA's Major Projects Currently in Development



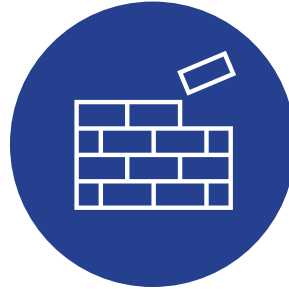
Source: GAO-21-306 Assessments of Major NASA Projects; May 2021

Organizational Response to Improving NASA Program/Project Performance



Elevate existing Program Management Improvement Officer role (PMIO) to the Chief Program Management Officer.

- Still holds designation of NASA PMIO.

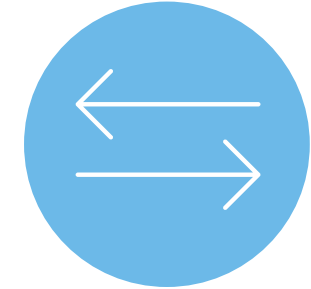


Establish a small office in the A-suite to strengthen NASA's enterprise-wide oversight, management, and implementation of program management policies and best practices across HQ and Centers.

- Augment with Center detailees to enable exchange of PM knowledge



Reports to the Associate Administrator.



Transfer current PM functions from OCE; and expand collaborations with OCFO/SID on PMI Accountability Act compliance.

- APPEL training stays in OCE.

Assessing Performance of NASA's Major Projects

- Deputy Administrator (DA) **designated as NASA Chief Acquisition Officer (CAO)***
- The Assistant Administrator for Procurement serves as Deputy CAO; reports to the DA
- The Associate Administrator (AA) serves as the Chair of NASA's two primary management councils that oversee Acquisition decisions, including for major projects: the Acquisition Strategy Council, and the Agency Program Management Council
- The **Chief Program Management Officer position** created, combining the role of the Program Management Improvement Officer* and program management responsibilities previously held by NASA's Chief Engineer; reports to the AA.

*The Chief Acquisition Officer role is required under 41 U.S.C. Section 1702(b)); the Program Management Improvement Officer is required under the Performance Management Improvement Accountability Act.



Note: This chart reflects the updated roles and relationships with respect to NASA Acquisition oversight; other organizations within NASA also play important roles in the acquisition process

NASA HQ Offices Responsible for PM Functions (previous model)

*Includes Mission Support Directorate (**Procurement**¹), Chief Information Officer, Small Business Programs, etc.

**Indicates potential transfer to an A-suite office (does not include additional functions per Tiger Team recommendations)

Acquisition functions in **orange**¹

Program Management Improvement Officer (PMIO)

Per AA

- Advisor for program management policy and tailoring
 - SRB chairs; ToRs; FADs; KDP-DMs; etc.
- Program management integration function

Per OMB

- Compliance with PMI Accountability Act (PMIAA)
- PMIAA portfolio reviews

Senior Technical Advisor

Per AA

- Steward of NPD 1000.5¹
- Provides guidance to MDs¹ for Pre-ASMs and ASMs¹
- Works with Council Staff¹ Director to manage ASC¹

Mission Directorates

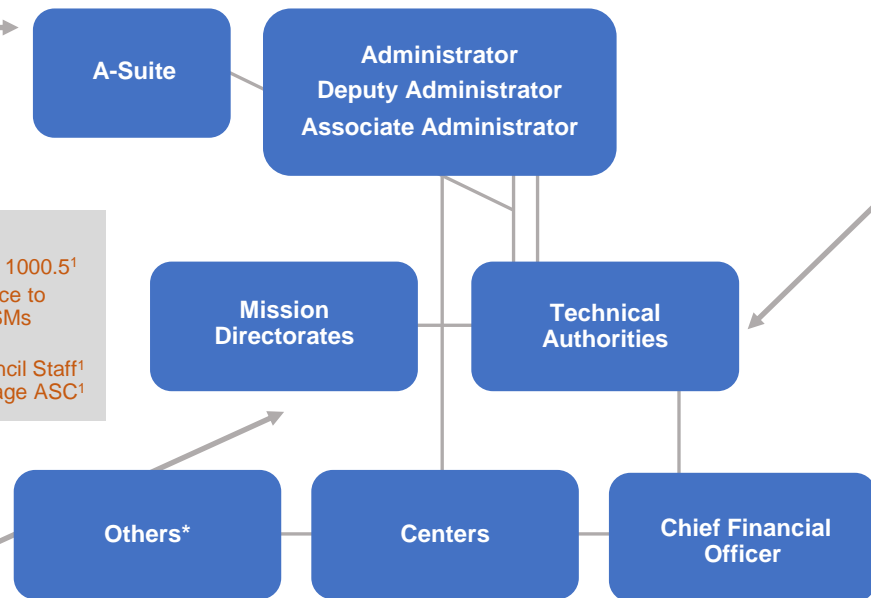
- SRB process (independent program/project cost, schedule, risk analysis)
- Implementation of Program/Project performance
- Reporting at APMC and BPR
- Responsible for Pre-ASM & ASM products at ASC¹

Chief Engineer (OCE)

- Implementation of programmatic policy and tailoring**
- PM training & certification**
- Chairs P/P Management Board**
- P/P technical assessments (BPR)

Strategic Investments (SID)

- Programmatic Policy**
- SRB Programmatic Policy; handbook**
- Cost & schedule capability; handbooks
- PP&C steward
- P/P assessments (BPR)
- Strategic studies (Insights, AMPM)



Chief Program Management Officer Roles & Responsibilities (new model)

Current

Program Management Improvement Officer (PMIO)

Per AA

- Advisor for program management policy and tailoring
- SRB chairs; ToRs; KDP-DMs; etc.
- Program management integration function

Per OMB

- Compliance with PMI Accountability Act (PMIAA)
- PMIAA portfolio reviews



From OCE & OCFO

Implementation of Programmatic Policy

- Policy (7120.5, 7120.8)
- Tailoring Stewardship
- Handbook ownership (PM Handbook, SRB Handbook)

From OCE

Program Management Stewardship

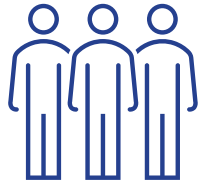
- Establishes PM Community of Practice
- Chairs P/P Management Board
- Enables PM knowledge sharing
- Advises on PM training
- Approves PM certification (optional)

Additional

Additional duties based on Tiger Team recommendations

- Strengthening SRB practices
- Engaging Decision Authority in early SRB initialization
- Active involvement in Cat 1 program reviews
- Commissioning assessments for CAO (e.g., SID Insights)
- Partnering with the Chief Knowledge Officer to engage Programs and Projects in identifying, communicating, and applying lessons learned across the Agency

Current Status with the Chief Program Management Officer (CPMO)



Seven individuals are now a part of the CPMO (perms/detailees). They bring a spectrum of experiences from NASA Headquarters, Centers, DoD, and program/project management. Additionally, CPMO receives extensive matrixed support from OCFO/SID on a broad range of products and activities, leveraging their independent programmatic and analytical expertise.



CPMO has been meeting with the NASA Headquarters offices, Mission Directorates, and now, the Centers. External stakeholder roadshows are also in work (in partnership with OCFO and Office of Procurement).



CPMO is focusing on a series of near-term activities as detailed in the next several charts.

Strengthening Program and Project Management Practice

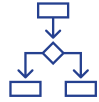
CPMO Focus Areas



Create a more robust structure for Acquisition Planning



Develop NASA-wide Project Management Community of Practice



Focus on Commitments made at Key Decision Points



Build in Diversity, Equity, Inclusion and Accessibility



Strengthen Project Management Performance



Strengthen Standing Review Boards

Create a more robust structure for Acquisition Planning

Addition of a “decision framing meeting” to ensure early discussions on acquisition plans.

The decision framing meeting allows for critical questions to be discussed without formal decisions, but rather steering and guidance for the follow-on Acquisition Strategy Meeting (ASM).

The Acquisition Strategy Council (ASC) recently exercised this practice with the SLS production and operations acquisition.

Addition of templates for briefers to follow when building ASM presentation materials.

Guidance for NASA's acquisition policy (NPD 1000.5C) has been translated into a common template and updated to include a standard set of decision criteria.

The first acquisition to apply this template was the Landsat Next acquisition.

Addition of an Acquisition Plan for high dollar acquisitions.

More formal documentation captures the acquisition and procurement decisions prior to an RFP release.

The acquisition plan will be a living document, to be updated throughout the life cycle of the procurement.

Addition of an annual forecast for strategic planning and awareness

The first acquisition forecast was presented in February 2022 to the ASC. Each Mission Directorate (MD) designated the Pre-ASM, ASM, and Procurement Strategy Meetings for the next two calendar years, specifically for the acquisitions that meet the threshold for the ASC.

Previewing the MD expectations and flow of acquisition topics enables the ASC to plan the throughput in the near-term calendar, adjusting as needed.

Such a forecast will be produced annually at the beginning of the year.

Develop NASA-wide Project Management Community of Practice

Reconstitute the Program/Project Management Board (PPMB) and leverage to support Agency program management collaboration and improvements.

Reconstituted PPMB, chair and management transitioned from OCE to CPMO, membership remains the same, charter update in progress.

First meeting chaired by the Chief Program Management Officer (CPMO) was held on March 2; established plan for monthly meetings and CPMO rollout briefings to the Centers.

Develop/emphasize areas for mentoring and training future project managers.

PM internships, cross training (MD to MD, Center to Center, Directorate to Directorate), detailees, utilizing Agency/Center organizations.

Assess and reinvigorate lessons learned capture and distribution methods

Examples: “Pause and Learn” sessions at project phase transitions, improvement of IT infrastructure for easier distribution of lessons, Masters’ Forums, rotational assignments, experiential learning.

CPMO is now collaborating with the Agency’s Chief Knowledge Officer.

Consider best ways to reward/incentivize project teams (e.g., PM Excellence Awards).

Partnering with the Chief Knowledge Officer to engage Programs and Projects in identifying, communicating, and applying lessons learned across the Agency.

Focus on Commitments made at Key Decision Points

CPMO supporting Agency councils, key acquisitions, performance review meetings (i.e., DPMCs, APMCs, ASMs, PSMs, BPRs, etc.).

Review and update (as needed) Decision Memos and Datasheet Templates; provide samples as a resource to all Mission Directorates.

Continue to provide feedback on decision memos before drafts/finals go to KDPs and the NASA AA and Mission Directorate AA.

Look at opportunities to collaborate with the projects and MDs on reserves levels – How do we best position ourselves for commitments that are executable for the long haul?

Support robust discussions at Acquisition Strategy Meetings, including the Analysis of Alternatives.

Build in Diversity, Equity, Inclusion, Accessibility (DEIA)

CPMO actively supports NASA's DEIA strategy.

Examples:

Contracting/Contractor DEIA opportunities: Most of NASA's programs and projects utilize contracts to achieve their objectives. How do we utilize the entire Program/Project team (civil servants and contractors) to support NASA's DEIA strategy? With the Office of Procurement leading the way, CPMO is looking at ways to best support initiatives.

Employee Resource Groups – Lot of great things happening across the Agency; how do we leverage what others are doing out there to support Program/Project Teams? (recruitment, sponsoring, mentoring, training, internships, details, cross-training).

CPMO is reaching out to various offices, directorates, and organizations to understand current efforts.

Strengthen Project Management Performance

Assessments: programmatic; technical; procurement.

CPMO can be used as a resource to provide access to SMEs, troubleshooters, advisors to address issues.

What works/what doesn't work with performance metrics. Areas for improvement with earlier warning signs and earlier opportunities to course correct.

It's all about collaboration to support mission success, never "gotcha".

Develop tailoring approach at the beginning of the project life cycle and downstream as appropriate.

Develop a coordinated Agency approach to senior executive dialogues between Agency leadership and Industry.

Orchestrate the Corrective Action Plan response to address the GAO's biennial High Risk Report on NASA's acquisition practices.

Strengthen Standing Review Boards

Engage the Convening Authorities in early Standing Review Board (SRB) formulation.

Establish a go-to list of viable SRB chair candidates to expedite selection process.

Develop a community of practice for SRB chairs and a pipeline for future SRB chairs; enable lessons learned thru experienced chairs.

Develop model/sample Life Cycle Terms of Reference documents.

Strengthen SRB practices - Create communications paths between CPMO and SRB chairs on plans going into life cycle reviews.

Apply best practices on review content, conduct, etc. “Do what makes sense.”

What's Next?

Near term goal is to achieve a series of quick wins in the first six months of standing up the office. Planning to brief the APMC in the July 2022 time frame to detail progress made and seek input on course corrections.

Longer term goal is to effect tangible, measurable improvement in project/program performance through effective collaborations with the Mission Directorates, Centers, Program/Projects, and mission support organizations.

The CPMO group needs your help to truly make a difference. Open communication and collaboration will be critical to mission success.



Backup

PPMB Additional Information and CPMO Contacts

- PPMB contacts:
 - Chair
 - Dave Mitchell - david.f.mitchell@nasa.gov
 - Board Management
 - Tracy Osborne - tracy.l.osborne@nasa.gov
 - Ellen Stigberg - ellen.r.stigberg@nasa.gov

PPMB Roster and Other Attendees

PPMB Member	Organization
Laurie Grindle	AFRC
Jay Bookbinder	ARC
Marla Perez-Davis	GRC
Cynthia Simmons	GSFC
Leslie Livesay	JPL
Emma Lehnhardt	JSC
Brian Rutkowski	KSC
Jim Price	LaRC
Larry Leopard	MSFC
Joe Schuyler	SSC
Ed Waggoner	ARMD
Tonya Mcnair	ESDMD/SOMD
Wanda Peters	SMD
Prasun Desai	STMD

PPMB Member	Organization
Craig McArthur	OCFO
Johnny Nguyen	OSMA
Ralph Roe	OCE

Other Attendees

Adrienne Ross	OCPMO
Mike Blythe	OCPMO
Mary Skow	OCPMO
Charles Hunt	OCFO
Jonathan McCall	Detail to OA
Joe Pellicciotti	Deputy Chief Engineer
Tiffany Smith	Chief Knowledge Officer
MD Chief Engineers	



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