Welcome to the First Session of the 2021 NASA Cost and Schedule Symposium!

We will begin at 1:00p.m. Eastern Time. Please mute your microphones and turn off your webcams.

Event Website: https://www.nasa.gov/offices/ocfo/cost_symposium
Welcome to the 2021 NASA Cost & Schedule Symposium!

• Welcome, and thank you all for attending
  • We hope everyone is safe and doing well in this challenging time

• The response to the Symposium “Sessions” is incredible
  • Over 500 registrations! WOW!

• We hear you and hope that you enjoy the Symposium
  • HQ OCFO SID recognizes the importance of the Symposium to the community

• Our goal is to enable the Speakers & Presentations
  • Speakers come from all over the community: NASA CS, Contractors, FFRDC/UARC, Academia, Other US Gov, etc.

• Our other goal is just to get everyone together, even if it’s virtual
  • We know our streaming configuration is somewhat limiting

• Thanks in advance for your patience with us, this is Session #1!
Symposium “Session” Logistics

• Using Microsoft Teams, registered attendees received links to join
  • Additional PDF instructions document for Attendees included

• Attendee microphones and video are muted
  • Please ask questions in the chat – we have active moderation

• Presenters will have their microphone and video ON
  • Slide advancement will be handled by the Presenter(s)

• At the end of each presentation section, Presenters will answer questions
  • Moderator(s) will assist Presenters with the questions from the chat

• About 5 minutes is planned for Questions at the end of each section
  • If time becomes an issue, Moderator will track unanswered questions for Presenters

• There will also be an Open Q&A section at the end of the Symposium Session
  • For the remaining questions plus others as time permits

• For Technical Support during the meeting:
  • Ask your question in the chat, a Moderator will assist you

• During any breaks we will leave the Teams meeting online
• The Presenter briefing files will be posted afterwards to the Symposium website
• Symposium “Sessions” are running weekly on Wednesdays at 1pm Eastern
Symposium is a Team Effort

Mr. Craig McArthur, Director of the Strategic Investments Division – Symposium Sponsor

Mr. James Johnson, Lead Symposium Coordinator

• Paper Selection Committee
  • Michele King
  • Susan Bertsch

• Awards Committee
  • Larry Wolfarth
  • Susan Bertsch
  • Robin Smith
  • Kristen Kehrer
  • Glenn Butts

• Conference Support
  • John Greene
  • Jody Turbeville
  • Mike Waddell

• SID/APARC and Friends
  • Jon Fleming
  • James Johnson
  • Kristen Kehrer
  • Michele King
  • Eric Plumer
  • Robin Smith
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 - 1:30</td>
<td>Welcome - Year in Review</td>
<td>NASA HQ OCFO</td>
</tr>
<tr>
<td>1:30 - 1:45</td>
<td>Guest Speaker</td>
<td>Mr. Steve Shinn – Acting NASA Chief Financial Officer</td>
</tr>
<tr>
<td>1:45 - 2:15</td>
<td>7120.5F Programmatic Policy Update</td>
<td>NASA HQ OCFO</td>
</tr>
<tr>
<td>2:15 - 3:00</td>
<td>Early Effort and Schedule Models for Agile Projects in the US Department of Defense (DoD)</td>
<td>DHS</td>
</tr>
<tr>
<td>3:00 - 3:30</td>
<td>Schedule Assessment Initiatives at National Reconnaissance Office (NRO)</td>
<td>NRO</td>
</tr>
<tr>
<td>3:30 - 4:00</td>
<td>Rethinking the Goals of a Program amid Baseline Overruns</td>
<td>FAA / Cobec</td>
</tr>
<tr>
<td>4:00 - 4:45</td>
<td>Solving for Project Risk Management: Understanding the Critical Role of Uncertainty in Project Management</td>
<td>Galorath</td>
</tr>
</tbody>
</table>

We will be posting additional materials and any following announcements to the website. Symposium Website: https://www.nasa.gov/offices/ocfo/cost_symposium
# Session 2 - Wednesday, April 7, 2021

<table>
<thead>
<tr>
<th>Time (ET)</th>
<th>Presentation</th>
<th>Presenter Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 - 1:30</td>
<td>When the Candles Cost More Than the Cake: Estimating the Cost of Longevity for Long-Lived Missions</td>
<td>APL</td>
</tr>
<tr>
<td>1:30 - 2:00</td>
<td>Which Risk Will Ruin My PM’s Day and Why?</td>
<td>Tecolote</td>
</tr>
<tr>
<td>2:00 - 2:30</td>
<td>Lessons Learned from Advance Air Mobility Systems</td>
<td>PRICE</td>
</tr>
<tr>
<td>2:30 - 3:00</td>
<td>Historical Perspective of Alternative Acquisition Approaches for Launch Systems</td>
<td>KAR</td>
</tr>
<tr>
<td>3:00 - 3:30</td>
<td>SLS Stages Independent Cost Estimates Lessons Learned</td>
<td>NASA MSFC / KAR</td>
</tr>
<tr>
<td>3:30 - 4:00</td>
<td>Rescuing a Project in Crisis: The ISS Research FBCE experience</td>
<td>GRC</td>
</tr>
<tr>
<td>4:00 - 4:30</td>
<td>Desk Inferno – Overcoming COVID Hurdles to Light Our Fire</td>
<td>GRC</td>
</tr>
<tr>
<td>4:30 - 5:00</td>
<td>Software Cost Estimation for COVID</td>
<td>JPL</td>
</tr>
</tbody>
</table>

We will be posting additional materials and any following announcements to the website. Symposium Website: [https://www.nasa.gov/offices/octo/cost_symposium](https://www.nasa.gov/offices/octo/cost_symposium)
**Session 3 - Wednesday, April 14, 2021**

<table>
<thead>
<tr>
<th>Time (ET)</th>
<th>Presentation</th>
<th>Presenter Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 - 1:45</td>
<td>NASA PCEC v2.3 (For Real, This Time!)</td>
<td>BAH / TGS / KAR / NASA MSFC</td>
</tr>
<tr>
<td>1:45 - 2:30</td>
<td>Mission Class’s Impact, Imputation, Multiple Builds and More: New Features in the Latest Version of NICM</td>
<td>JPL</td>
</tr>
<tr>
<td>2:30 - 3:00</td>
<td>Space Scientific Instrument Taxonomy (SSIT) Version 2.0</td>
<td>Aerospace</td>
</tr>
<tr>
<td>3:00 - 3:30</td>
<td>Online NASA Software Estimating Tools (ONSET): A Suite of Web-Based Cost Analysis Tools</td>
<td>JPL / NASA HQ</td>
</tr>
<tr>
<td>3:30 - 4:00</td>
<td>Parametric Cost Model for Ground and Space Telescopes</td>
<td>NASA MSFC</td>
</tr>
<tr>
<td>4:00 - 4:30</td>
<td>Mission Operations Cost Estimation Tool (MOCET) 2020/2021 Updates</td>
<td>Aerospace / NASA LaRC</td>
</tr>
<tr>
<td>4:30 - 5:00</td>
<td>A New Schedule Analytics Tool</td>
<td>Tcolote / FK&amp;A / 4DRisk / NASA HQ</td>
</tr>
</tbody>
</table>

We will be posting additional materials and any following announcements to the website. Symposium Website: [https://www.nasa.gov/offices/ocfo/cost_symposium](https://www.nasa.gov/offices/ocfo/cost_symposium)
Year in Review

• **Communication** - PP&C Corner

• **Performance** – Corrective Action Plan Status

• **Policy** - Updated 7120.5F (later in this Session)

• **Deep-dives**
  • Earned Value Management
  • Cost Analysis Data Requirement
PP&C Corner

- PPC Corner provides access to key documentation with regards to the following functions: PP&C Integration, Cost Estimation and Analysis, Earned Value Management, Schedule Management, and Independent Assessment
- Purpose of this beautiful little corner of PPC is to provide easy access to cost, schedule, and EVM analysis capabilities, guidance, methods, and tools
- PPC Corner is now up and running!
  - FAQs
  - Handbooks and Guidance
  - Memos
  - NPRs & Related Documents
  - CoPs
  - Other PPC Links
  - Center Resources
  - PPC Models and Tools
  - External Resources
- We want this corner to evolve and grow! – so input is welcome!

PPC Corner URL: www.nasa.gov/content/ppc-corner
High Risk List

The Government Accountability Office (GAO) produces a biennial report via their High Risk Series (or “High Risk List”) that identifies federal government operations with vulnerabilities to fraud, waste, abuse, and mismanagement, or in need of transformation to address economy, efficiency, or effectiveness challenges. NASA’s acquisition management has been High Risk since the first report issued in 1990.

On March 2, the GAO published the latest iteration of the report. There are five removal criteria that GAO sets forth for high risk area designations to be considered for removal: Leadership Commitment, Capacity, Action Plan, Monitoring, and Demonstrated Progress.

NASA’s High Risk Ratings Improved Since 2019 Report:

Of the 36 total high risk areas, GAO highlights NASA’s acquisition management as one of only seven that improved over the past two years.

NASA is now meeting three of five removal criteria – leadership commitment, action plan, and monitoring. The other two criteria – capacity and demonstrated progress – remain partially met (see graphic to right).

This represents a marked improvement from the 2019 report, where NASA had only met one of the five criteria. NASA is moving in the right direction.

NASA outlines its initiatives to address High Risk in its Corrective Action Plan, which was last updated in August 2020 and on which GAO bases much of its improved assessment.

Increased use of EVM reporting and analysis. Senior leadership requiring programs/projects to submit EVM data to a central repository and metrics to be reported at the Baseline Performance Review (BPR).

Want to know more?

• **Implement Program Planning and Control (PP&C) Training Curriculum (2018 CAP)**
  - The initiative continues to make progress, but at a slow pace due to lack of funding supporting the initiative’s activities. NASA remains understaffed in the PP&C arena, especially within the Schedule Management function
  - Training courses remain in development and none have yet been deployed
  - Competency models exist for EVM, Schedule, and Resource Management, with an update underway for Cost Estimating and Analysis
  - Work is also underway with the Office of Human Capital Management to institutionalize competency models at the enterprise level.

• **Implement Cost Analysis Data Requirements (CADRe) Enhancements for Category III/Class D Missions (2020 CAP)**
  - Projects that are in the targeted $50M-$150M life cycle cost range are producing CADRe as they approach applicable review milestones
  - Tailoring for projects under 50M will be captured as a group tailoring within NPR 7120.5F
• **Create a Schedule Repository (2018 & 2020 CAP)**
  • The December 2018 CAP kicked off a pilot of a new Schedule Repository for the Agency.
  • The pilot was deemed successful and the Schedule Repository was established as a full CAP initiative in the August 2020 CAP update.
  • Thus far, applicable programs and projects have completed six quarterly schedule submissions. OCFO SID is working to further codify Schedule Repository requirements to streamline the schedule submission and file collection process. Streamlining includes actions such as utilizing a single interface for submissions, performing data quality checks to provide feedback to submitters on schedule adherence to best practices, and documenting reporting compliance.

• **Enhance Earned Value Management (EVM) Implementation (2020 CAP)**
  • NASA delegated 100% (17) of the applicable contracts to the Defense Contract Management Agency (DCMA) for EVM surveillance. Prior to the CAP, only 37% of applicable contracts used DCMA or an equally effective method for EVM surveillance.
  • 95% of in-house projects with the EVM requirements have had the EVM capability rolled out to applicable Centers.
  • 100% (28) of projects with EVM requirements are submitting data to the NASA central repository. Prior the CAP, NASA did not have a centralized repository for EVM data that includes reports and schedules. The repository now has EVM data for 28 projects that include 68 project elements such as instruments, spacecraft, and other contracts.
  • 100% of applicable projects are including EVM reporting at the Baseline Performance Review.

• **Update Probabilistic Programmatic Policy (2018 CAP)**
  • Codified in NPR 7120.5
  • Mars 2020 will be first project to conduct JCL at KDP-B
EVM Reviews (IBRs/Surveillance/Assessments/Compliance)

- 14 Integrated Baseline Reviews (IBRs) across Mission Directorates
- 5 EVMS Compliance Reviews (NASA led UC-LASP; DCMA led AR, Bechtel, Leidos, L3-Harris)
- 2 EVM Assessments (Mobile Launcher 2 & SLS Block II PDRs)
- 3 Agency EVMS In-house Surveillance Reviews (quarterly)
- 3 APL, JPL, SwRI EVMS Surveillance Reviews (quarterly)
- On-going DCMA Contractor Surveillance Reviews
- On-going Center/In-house Project Joint Surveillance Reviews
COVID-19 EVM Reporting Charts
Recently CADRes Completed

<table>
<thead>
<tr>
<th>ICESAT II LRD</th>
<th>GeoCarb dPDR</th>
<th>GUSTO CDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parker Probe LRD</td>
<td>ICON LRD</td>
<td>TSIS-2 SRR</td>
</tr>
<tr>
<td>JWST SIR</td>
<td>Psyche PDR, CDR</td>
<td>IMAP SRR</td>
</tr>
<tr>
<td>Roman PDR</td>
<td>Europa PDR</td>
<td>Gateway FSR</td>
</tr>
<tr>
<td>Deep Space Atomic Clock LRD</td>
<td>LUCY CDR, SIR</td>
<td>AWE SRR</td>
</tr>
<tr>
<td>OCO-3 LRD</td>
<td>IXPE CDR</td>
<td>DSOC CDR</td>
</tr>
<tr>
<td>TESS LRD</td>
<td>NeoCAM SRR</td>
<td>TROPICS, SIR, pSTR</td>
</tr>
<tr>
<td>TEMPO PSR</td>
<td>EMIT SRR</td>
<td>SOC LRD</td>
</tr>
<tr>
<td>NiSAR CDR</td>
<td>PREFIRE SRR</td>
<td>Landsat-9 SIR</td>
</tr>
<tr>
<td>GEDI LRD</td>
<td>LOFTID PDR</td>
<td>EMIT PDR</td>
</tr>
<tr>
<td>GOES-S LRD</td>
<td>JPSS 3-4 PDR, CDR</td>
<td>Spitzer EOM</td>
</tr>
<tr>
<td>Restore-L PDR</td>
<td>XRI SM CDR</td>
<td>MEGANE PDR</td>
</tr>
<tr>
<td>PACE PDR, CDR</td>
<td>LBFD CDR</td>
<td>GPIM LRD</td>
</tr>
<tr>
<td>MAIA CDR</td>
<td>CLARREO PF CDR</td>
<td>DSCOVR LRD</td>
</tr>
<tr>
<td>Sentinel-6</td>
<td>MEGANE SRR</td>
<td>NEA Scout SRR</td>
</tr>
<tr>
<td>DART CDR</td>
<td>SPHEREx SRR</td>
<td></td>
</tr>
<tr>
<td>ECOSTRESS LDR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Want to Learn More about CADRe?: [https://www.nasa.gov/content/ppc-cadreonce](https://www.nasa.gov/content/ppc-cadreonce)
Recently Completed Launch CADRes

- TESS
- GOES-S
- GEDI
- OCO-3
- DSAC
- Parker Probe
- ICESAT-2
- DSCOVR
- GPIM
- ICON
- eCryo
- SOC
- ECOSTRESS
### 2021 NASA Cost & Schedule Symposium

<table>
<thead>
<tr>
<th>Session #</th>
<th>Date and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session #2</td>
<td>April 7&lt;sup&gt;th&lt;/sup&gt;, 1pm (Eastern)</td>
</tr>
<tr>
<td>Session #3</td>
<td>April 14&lt;sup&gt;th&lt;/sup&gt;, 1pm (Eastern)</td>
</tr>
<tr>
<td>Session #4</td>
<td>April 21&lt;sup&gt;st&lt;/sup&gt;, 1pm (Eastern)</td>
</tr>
<tr>
<td>Session #5</td>
<td>April 28&lt;sup&gt;th&lt;/sup&gt;, 1pm (Eastern)</td>
</tr>
</tbody>
</table>

THANK YOU FOR ATTENDING!

For more information on the 2021 NASA Cost & Schedule Symposium “Sessions”

[https://www.nasa.gov/offices/ocfo/cost_symposium](https://www.nasa.gov/offices/ocfo/cost_symposium)