

Strategic Investments Division (SID) Overview

2 February 2017



TRANSPARENCY

Strategic Investments Division

Vision and Mission

- Recognized as the Agency's trusted agent for comprehensive, Agency-level strategic analyses and performance assessments to inform institutional and programmatic investment options and decision-making to accomplish NASA's Mission
- MISSION: SID delivers transparent, independent analyses and advice providing a unique perspective on NASAwide investment strategies to deliver the optimum portfolio in alignment with the Agency's strategic direction while promoting good governance to ensure NASA delivers on its commitments to external stakeholders.



PROFESSIONALISM

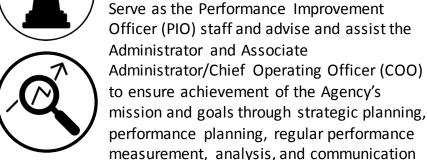


Strategic Investments Division

Focus Areas



Strategic Planning, Performance Management and Reporting





Agency Investment Analysis

Conduct Agency-level portfolio programmatic analyses to inform internal Agency decision-makers and external stakeholders to ensure NASA has the correct mix of programs and projects to accomplish its Mission



Portfolio Intelligence and Analysis

Conduct Mission Directorate portfolio programmatic analyses to inform internal Agency decision-makers and external stakeholders to ensure NASA has the correct mix of programs and projects to accomplish its Mission



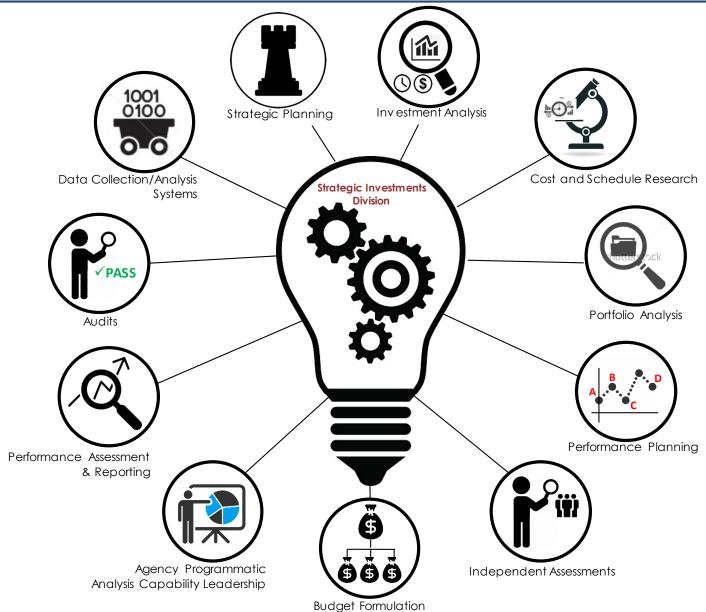
Programmatic Analysis Research & Capability Leadership

Build the Agency Programmatic Analysis Capability (APAC) by implementing Agency policies and encouraging best practices, facilitating communities of practice with internal and external stakeholders and subject matter experts, and cultivating the human network of programmatic analysts across NASA and connecting them to high-quality training, tools, and other leadership resources.



What we do

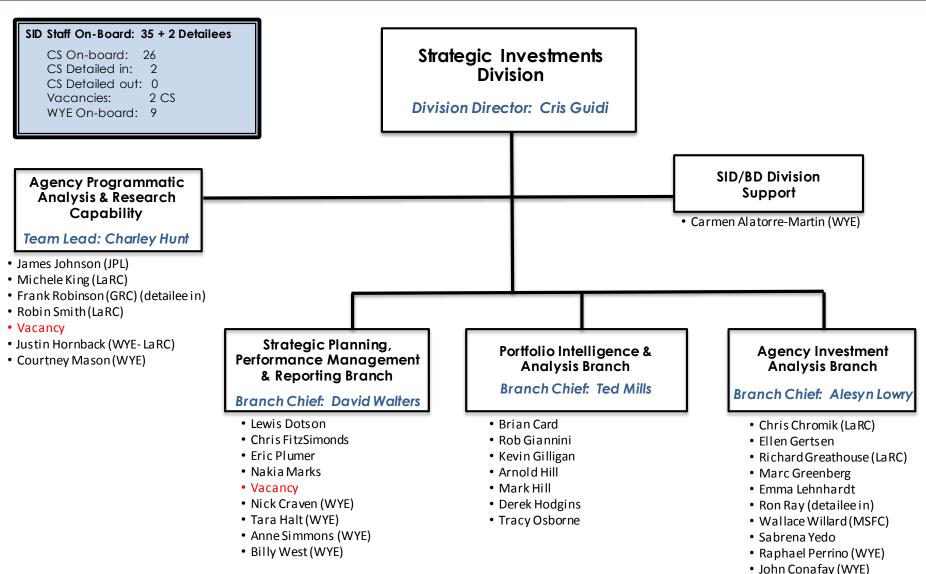
Mutually-dependent Functions





Strategic Investments Division

Revision: 23 January 2017





By the Numbers

SID Demographics

(As of: 24January 2017 - Includes Civil Servants and Contractors; No Detailees)



35

Total Headcount

26

Civil Servants Contractors



35%

Bachelors Degree

65%

Masters Degree



39.3

Average age

63%

37%

(22)

(13)

25-39 y ears old 40-69 years old



76%

(27) NASA HQs

24%

Remote

15% (5): Langley Research Center 3% (1): Marshall Space Flight Center

3% (1): Jet Propulsion Laboratory

3% (1): North Carolina



53%

(18)

Non-Minority Male

26%

Non-Minority Female

(3)

12%

Minority Male

Minority Female



7%

(2) SES/SL

62%

(16)

GS-15 Non-Supervisory

19%

12%

GS-15 Supervisory

(5)

GS-14

Strategic Investments Division



Front Row: Charley Hunt, Rich Greathouse, Jillian Taylor, Marc Greenberg, Chris FitzSimonds, Ron Ray

Middle Row: Anne Simmons, Carmen Alatorre-Martin, Michele King, Ellen Gertsen, Emma Lehnhardt, Eric Plumer, Raphael Perrino, Kevin Gilligan, Cris Guidi, Nakia Marks, Alesyn Lowry

Back Row: Frank Robinson, Ted Mills, Chris Chromik, Derek Hodgins, Wallace Willard, Robin Smith, Justin Hornback, Nick Craven, Arnold Hill, Billy West, Robert Giannini, David Walters,

Lewis Dotson, Tracy Osborne





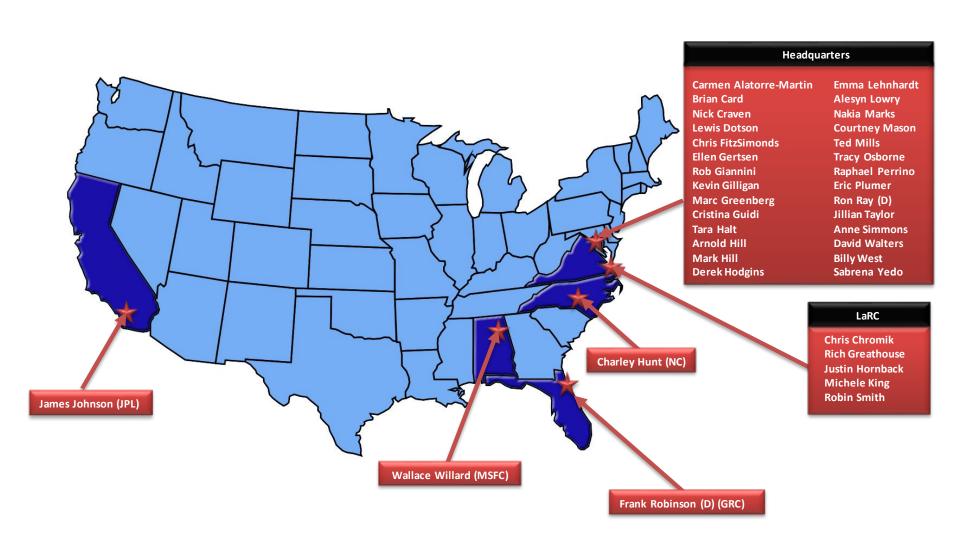


Pictured Left to Right: Brian Card, Vermithrax Pejorative (in waste bin), James Johnson



Distributed Team

Staying Connected with Frequent Face-to-Face Meetings

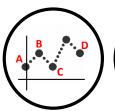




Strategic Planning, Performance Management, & Reporting

Strategy, Tactics/Products













- Inform, manage, and coordinate Agency strategic planning process by developing the NASA Strategic Plan and conducting long-range programmatic analyses to answer critical questions needed to shape and implement NASA's priorities and direction [Strategic Plan, Strategic Assessments]
- Evaluate potential strategic impacts of legislation, guidance, and policy on NASA's programs and long-range mission and goals
- Monitor progress of organizational goals and objectives and periodically evaluate progress
 through implementation of Government Performance and Results Act Modernization Act
 (GPRAMA) requirements and OMB Circulars A-11, A-123, an A-136 guidance by monitoring
 the quality and performance of programs against the plan [Strategic Reviews (SOAR),
 Annual Performance Report/Annual Performance Plan (APR/APP), Annual Performance
 Indicator (API) Assessments, Cross Agency Performance (CAP) Goals, Annual Financial
 Report (AFR)]
- Lead Planning and Programming phases of the PPBE process to ensure strategic guidance is translated into achievable and credible budget submittal resulting in a portfolio that meets Agency goals [Strategic Programming Guidance (APG) thru Program and Institutional Guidance (PAIG), Trade Space Analysis (Issue papers), Budgeting and Execution Support (Congressional Justification)]
- Institutionalize the use of programmatic data collected to better understand cost and schedule growth and to improve future estimates [Cost & Schedule Reporting (OMB Quarterly, Major Program Annual Report (MPAR), etc.)]
- Support and coordinate programmatic and GPRAMA audits through monitoring, tracking, and reporting concerns/recommendations to ensure timely resolution of corrective actions and conduct analyses to determine trends and Agency-wide issues. [QuickLook Book, High Risk, GPRAMA)]

 For Internal Use Only



Strategic Planning, Performance Management, & Reporting Branch Chief: David Walters

| Activity | Primary POC | Alternate POC | Tauri POC |
|--|-------------------|-------------------|---------------------------------|
| GAO QuickLook Book | David Walters | Ellen Gertsen | Billy West |
| GAO High Risk | Ellen Gertsen | David Walters | n/a |
| GPRAMA Audits | Ellen Gertsen | Chris FitzSimonds | Billy West |
| EVM Working Group | Ellen Gertsen | David Walters | n/a |
| Evidence and Evaluation | Chris FitzSimonds | Ellen Gertsen | n/a |
| Strategic Reviews . | Ted Mills | Emma Lehnhardt | n/a |
| Agency Financial Report & Summary of Performance and Financial Information | Emma Lehnhardt | David Walters | Nick Craven |
| Strategic Plan | Ellen Gerts en | Emma Lehnhardt | n/a |
| Agency Priority Goals & Cross-Agency Priority Goals | Chris FitzSimonds | David Walters | Jillian Taylor |
| Performance Planning and Performance Assessments | Chris FitzSimonds | David Walters | Anne Simmons, Jillian Taylor |
| Annual Performance Report/Annual Performance Plan | David Walters | Chris FitzSimonds | Anne Simmons, Jillian Taylor |
| Enterprise Risk Management | Frank Robinson | Emma Lehnhardt | |
| FedStat | Chris FitzSimonds | Emma Lehnhardt | n/a |
| WBS Chart | Chris FitzSimonds | David Walters | Nick Craven |
| Newsletter | Nick Craven | David Walters | n/a |
| Community of Practice | Jillian Taylor | David Walters | n/a |
| Performance Management Systems | David Walters | Chris FitzSimonds | Tara Halt |



Portfolio Intelligence and Analysis

Strategy, Tactics/Products







Provide portfolio insight, foresight, and recommendations regarding the programmatic performance of programs, projects, and institutional investments that enables responsible budgeting and proactive management decisions so that NASA can efficiently manage cost, schedule, and risk; provide recommendations on investment decisions that encompass (but are not limited to) Key Decision Point (KDP) recommendations for Chief Financial Officer (CFO) signature and issue papers themselves; facilitate the KDP Decision Memorandum/data sheet and issue paper processes



Assess affordability and credibility of current and proposed NASA investments, program
plans, and project plans for multi-year acquisitions to advise Mission Directorates, senior
leadership, and external stakeholders regarding the development of executable Agency
strategies; confirm accuracy of program/project commitment under current budgets, while
ensuring external commitments are defendable, and inform the Agency of disconnects

Products and Services

- Mission Directorate Portfolio Monitoring and Analysis
 - Baseline Performance Review (BPR) Independent Assessment
 - Lifecycle Reviews
 - PPBE Support
 - Portfolio Investment Analyses
 - Historical Analyses
- Consultation to Mission Directorates



Portfolio Intelligence and Analysis Branch Chief: Ted Mills

| Activity | Primary POC | Alternate POC |
|---|------------------|------------------|
| Aeronautics Mission Directorate | Brian Card | |
| Human Exploration & Operations Mission Directorate | | |
| Exploration Systems Development (ESD) | Derek Hodgins | Robert Gi annini |
| Advanced Exploration Systems (AES) | Derek Hodgins | Robert Gi annini |
| Humans to Mars (H2M) | Derek Hodgins | Robert Gi annini |
| Asteroid Robotic Redirect Mission (ARRM) | Robert Giannini | Derek Hodgins |
| International Space Station (ISS) | Robert Gi annini | Derek Hodgins |
| Space Communications and Networks (SCaN) | Robert Giannini | Derek Hodgins |
| Launch Services Programs (LSP) | Robert Gi annini | Derek Hodgins |
| Commercial Crew Program (CCP) | Robert Giannini | Derek Hodgins |
| Mission Support Directorate | | |
| OCIO (Information Technology) | Mark Hill | Arnold Hill |
| SSMS (Procurement, Facilities, Education, etc) | Arnold Hill | Mark Hill |
| Science Mission Directorate | | |
| Astrophysics | Tracy Osborne | Kevin Gilligan |
| Earth Sciences | Tracy Osborne | Kevin Gilligan |
| Reimbursables | Tracy Osborne | Kevin Gilligan |
| Planetary Sciences | Kevin Gilligan | Tracy Osborne |
| Heliophysics | Kevin Gilligan | Tracy Osborne |
| James Webb Space Telescope (JWST) | Al es yn Lowry | Tracy Osborne |
| Space Technology Mission Directorate | Brian Card | |
| Key Decision Point Decision Memos/Datasheet/Briefing Archival | Lewis Dotson | |

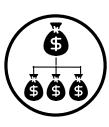


Agency Investment Analysis

Strategy, Tactics/Products







Conduct Agency portfolio programmatic analyses to inform internal Agency decision-makers and external stakeholders to ensure NASA has the correct mix of programs and projects to accomplish its Mission

- Perform Agency-level analyses and evaluations of alternative strategies, to include adjustments to content, schedule, labor, budget, and acquisitions in relation to NASA and external stakeholder objectives and priorities to understand impacts and gaps in achieving NASA's Mission;
- Assess affordability and credibility of current and proposed NASA investments, program plans, and project plans for multi-year acquisitions to advise Mission Directorates, senior leadership, and external stakeholders regarding the development of executable Agency strategies; confirm accuracy of program/project commitment under current budgets, while ensuring external commitments are defendable, and inform the Agency of disconnects;
- Provide insight to historical strategic analysis, delivering context to leadership for informed decision-making on program budget; trend analysis; budget, presidential, and congressional adjustments; and other analyses, and demonstrating how programs, projects, technology budgets, and trends fared over time as well as evaluation of past strategies and comparisons of execution of those strategies

Products and Services

- Planning, Programming, Budgeting & Execution (PPBE) Support: Passback Analysis
- Agency Mission Planning Manifest (AMPM)
- Agency-level Alternative Scenario Planning: Trade Space/Analysis of Alternatives, Strategic Alignment and Gap Analysis, Workforce Assessments, Capability Assessments
- Tools and Model Development
- Historical Analyses: Cost/Schedule Growth, Budget Traces, AMPM Launch Dates, etc.



Agency Investment Analysis Branch Chief: Alesyn Lowry

| Activity | Primary POC | Alternate POC |
|---|-----------------|---------------------------------|
| Agency Analysis Model Development and Maintenance | Sabrena Yedo | Al es yn Lowry |
| Agency Mission Planning Manifest (AMPM) | Al es y Lowry | Sabrena Yedo Emma Lehnhardt |
| Multi-AMPM Cadence (MAC) Analysis | Raphael Perrino | Al es yn Lowry |
| PPBE/Passback Analysis | Al es yn Lowry | Emma Lehnhardt |
| Cost Research for Agency Analysis | Marc Greenberg | |
| Metrics Framework | Ellen Gerts en | Emma Lehnhardt |
| Strategic Objectives Annual Review + (SOAR+) | Ted Mills | Ellen Gersten Emma Lehnhardt |
| Research & Development Tracking | Al es yn Lowry | |
| Future Investment Model (FIM) – Mission Directorate/Center/FTE Modeling | Al es yn Lowry | Sabrena Yedo Emma Lehnhardt |
| Agency Portfolio Assessments | Al es yn Lowry | Emma Lehnhardt |
| Cost Analysis Data Requirements (CADRe) | Eric Plumer | James Johnson |
| Agency Forensics Analysis/Special Studies | Rich Greathouse | Wallace Willard |
| Explanation of Change | Wallace Willard | Rich Greathouse |
| Mission Directorate-Specific Portfolio Scenario Planning/Assessments | | |
| Aeronautics | Brian Card | |
| Human Exploration & Operations | Derek Hodgins | Robert Gi annini |
| Mission Support Directorate | Mark Hill | Arnold Hill |
| Science Mission Directorate | Tracy Osborne | Kevin Gilligan |
| Space Technology Mission Directorate | Brian Card | |



Agency Programmatic Analysis Research & Capability

Strategy, Tactics/Products







Build the capability for Agency programmatic analysis by facilitating communities of practice with internal and external stakeholders and subject matter experts, implementing Agency policies, and encouraging best practices, thereby cultivating and providing insight to the human network of programmatic analysts across NASA and connecting them to high-quality training, tools, and other leadership resources.

- Act as steward of NASA cost and schedule policies and key programmatic capabilities such as cost and schedule analysis capabilities, methods, and tools
- Provide leadership in building the skills of the analytical workforce and developing and promoting improved analytic tools, methods, and data collection techniques for analyzing NASA strategic investment planning
- Maintain the quality, integrity, and independence of Agency programmatic assessment capability
- Strengthen and nurture the Agency programmatic assessment skill base by providing leadership and policy for programmatic discipline training
- Perform programmatic analysis research to continue to improve the programmatic assessment capability process, toolset, and training
- Institutionalize the collection and use of programmatic data to better understand risk-impacted cost and schedule growth and to improve future estimates.
- Track Program and project programmatic assessment findings and perform research of systemic trends
 in performance of the Agency's programs and projects, to shed light onto the effectiveness of the
 Agency's policy initiatives directed to improve project performance, and to understand where the
 Agency might improve core capabilities, analysis methodologies, tools, and training resources

Products and Services

- Independent Review Processes and Logistics
 - Standard Operating Procedure Instruction (SOPI)
 - Programmatic Analyst vetting and selection
 - · Programmatic Analyst Training
- · Cost and Schedule Data Collection

- Cost and Schedule Policy/Guidance
- Cost and Schedule Tool/Model Development
- Programmatic Analysis Advisory Consulting
- Programmatic Analysis Training
- Cost and Schedule Estimating Research
- Communities of Practice (working groups)



Agency Programmatic Analysis Research & Capability Team Lead: Charley Hunt

| Activity | Primary POC | Alternate POC |
|--|-----------------------|------------------------|
| Programmatic Analysis Advisory Consulting | | |
| Costing Support | Charley Hunt | James Johnson |
| Scheduling Support | Mi chele King | Robin Smith |
| SRB Programmatic Analysis Support | Charley Hunt | Justin Hornback (Reed) |
| Range Estimate and Joint Cost and Schedule Confidence Level Policy | | |
| Policy Clarification and Jumpstart Assistance | Charley Hunt | James Johnson |
| Waiver/Tailor Request | Charley Hunt | James Johnson |
| Cost Analysis Data Requirement (CADRe) | Eric Plumer | James Johnson |
| One NASA Cost Engineering (ONCE) Database | James Johnson | Eric Plumer |
| Handbooks and Documents | | |
| Standard Operating Procedure Instruction (SOPI) | Brian Rutkowski (OCE) | Charley Hunt |
| Cost Estimating Handbook | Chris Chromik | James Johnson |
| Schedule Management Handbook | Mi chele King | Robin Smith |
| Schedule Initiative | Michele King | Robin Smith |
| Programmatic Analysis Training | Mi chele King | Chris Chromik |
| Cost and Schedule Estimating Research | Charley Hunt | Marc Greenberg |
| Cost Tool/Model Development | James Johnson | Charley Hunt |
| Schedule Tool/Model Development | Michele King | Robin Smith |
| Independent Assessment Peer Reviews | Rich Greathouse | Chris Chromik |
| Contracting | Nakia Marks | Charley Hunt |
| APAC Information Management | Courtney Mason (FIS) | Nakia Marks |

| Vision | Recognized as the Agency's trusted agent for comprehensive, Agency-level strategic analyses and performance assessments to inform institutional and programmatic investment options and decision-making to accomplish NASA's Mission. | | | |
|--------|---|--|--|---|
| VALUES | TRANSPARENCY | COLLABORATION | P R O F E S S I O N A L I S M | INDEPENDENCE |
| KEY | SID undertakes to be open, honest and | SID emphasizes collaboration across diverse skill sets within SID, across NASA, and the NASA | SID adheres to the highest professional standards in | SID maintains a distinct, unbiased, independent, and objective perspective in |

performance of work and interactions with others

stakeholders to ensure NASA has the

correct mix of programs and projects to

· Workforce

stakeholder community SID delivers transparent, independent analyses and advice providing a unique perspective on NASA-wide investment strategies to deliver the optimum portfolio in alignment with the Agency's strategic MISSION direction while promoting good governance to ensure NASA delivers on its commitments to external stakeholders. Strategic Planning, Performance Management Programmatic Intelligence and **Agency Investment Analysis**

and Reporting Analysis

stakeholders to ensure NASA has the

correct mix of programs and projects to

· Provide portfolio insight, foresight, and

recommendations regarding programmatic

management decisions so that NASA can

efficiently manage cost, schedule, and risk

Provide consultation and recommendations

performance of programs, projects, and

institutional investments that enable

responsible budgeting and proactive

accomplish its Mission.

Knowledgeable

Focus Agency Programmatic Analysis Research & **AREAS** Capability Build the Agency Programmatic Analysis Capability (APAC) by Conduct Mission Directorate portfolio Conduct Agency-level portfolio and implementing Agency policies and encouraging best practices, Advise and assist the Administrator and Associate budget analyses to informinternal and budget analyses to informinternal Administrator/Chief Operating Officer (COO) to ensure facilitating communities of practice with internal and external Agency decision-makers and external Agency decision-makers and external **PURPOSE** achievement of the Agency's mission and goals through stakeholders and subject matter experts, and cultivating the

strategic planning, performance planning, regular performance measurement, analysis, and communication. ATTRIBUTES Accountability Commitment Predictability Inform, manage, and coordinate Agency strategic planning process by conducting long-range programmatic analyses to answer critical questions needed to shape and implement NASA's priorities and direction Evaluate potential strategic impacts of legislation, guidance, and policy on NASA's programs and long-range mission and goals; Monitor progress of organizational goals and objectives and periodically evaluate progress through implementation of Government Performance and Results Modernization Act (GPRAMA) requirements and OMB Circular A-11 guidance by monitoring guality and performance of programs against the plan Report to external stakeholders NASA's GPRAMA goals and **FOR** objectives, presented in annual performance plans, and results of progress made toward achieving those annual performance plans. · Lead Planning and Programming phases of PPBE process to ensure strategic guidance is translated into achievable and credible budget submittal resulting in a portfolio that meets Agency goals

MESSAGES

accountable

Strategic Investments Division (SID)

accomplish its Mission. leadership resources. Flexible **Balanced** Cultivate Educate Innovate Perform Agency-level analyses and Act as steward of NASA cost and schedule policies and key evaluations of alternative strategies, to programmatic capabilities such as cost and schedule analysis include adjustments to content, schedule, capabilities, methods, and tools labor, budget, and acquisitions in relation Provide leadership in building the skills of the analytical workforce and to NASA and external stakeholder developing and promoting improved analytic tools, methods, and data objectives and priorities to understand collection techniques for analyzing NASA strategic investment planning impacts and gaps in achieving NASA's Maintain the quality, integrity, and independence of Agency Mission programmatic assessment capability · Assess affordability and credibility of · Strengthen the abilities of individuals with the goal of institutionalizing current and proposed NASA investments sustainable practices that will aid NASA in continuously improving its to advise OCFO leadership, Mission programmatic capabilities, including cost estimating and schedule risk Directorates, and Agency senior leadership analysis Provide insight into Agency strategy and Strengthen and nurture the Agency programmatic assessment skill base resource allocation, delivering context to by providing leadership and policy for programmatic discipline training

Revision: 17 October 2016

Programmatic

Working Group

Consulting

Leadership

· Community of

Practice - ScoPE,

ECASG, CIPT, etc.

analy sis and reporting

human network of programmatic analysts across NASA and

connecting them to high-quality training, tools, and other

on OCFO Products and investment decisions that encompass (but are not limited to) KDP recommendations for Chief Financial Officer **STRATEGIES** signature and issue papers themselves · Facilitate the KDP Decision Memorandum, **DELIVERY** data sheet and issue paper processes · Assess affordability and credibility of current Agency leadership to enable informed · Perform programmatic analysis research to continue to improve the and program/project plans for multi-year decision-making, and inform external programmatic assessment capability process, toolset, and training acquisitions to advise OCFO leadership, stakeholders; to include assessments, Institutionalize the collection and use of programmatic data to better Institutionalize use of programmatic data collected to better Mission Directorates, and Agency senior trending, and forecasting of budgets, understand risk-impacted cost and schedule growth and to improve understand cost and schedule growth and to improve future leadership mission content, workforce, costs, and future estimates other factors influencing the ability of · Track Program and project programmatic assessment findings and · Confirm accuracy of program/project · Support and coordinate programmatic and GPRAMA audits through commitment under current budgets, while NASA to achieve its mission perform research of systemic trends in performance of the Agency's monitoring, tracking, and reporting concerns/recommendations to ensuring ex ternal commitments are programs and projects, to shed light onto the effectiveness of the defendable, and inform the Agency of ensure timely resolution of corrective actions and conduct analyses to Agency's policy initiatives directed to improve project performance determine trends and Agency-wide issues disconnects · GAO/IG Audits · Mission Directorate Consultation Agency Investment Analyses · Agency Mission Planning · Independent Review Strategic · Performance Reporting · Cost/schedule policy Planning APR/APP & AFR Performance on OCFO Products Trade Space/AoA Manifest (AMPM) Tool development processes and TACTICS / APGs Business · Performance Monitoring and Strategic Alignment/Gap · Analysis Tools/Model · Cost estimating research Standard Operating Strategic Budget

Planning and · CAP Goals Forecasting analysis Development Independent Review Procedures Systems Analysis **PRODUCTS** Programming SOAR (PMM. PMMe) · BPR/OCFO Monthly Reviews Workforce /Capability · Historical Analyses Logistics (vetting, Programmatic AND Budgeting · Legislative Requirements (e.g., Performance · Lifecycle Reviews Assessments Budget traces selection, training) Analysis Training Cost/ Schedule OMB A-11, A-123) Community of Key Decision Point Passback Assessment · Cost/Schedule Growth ONCE Database Peer Reviews **PROCESSES** · Performance Assessments Memos/Datasheets · GAO High Risk Trace AMPM Launch Dates CADRe Reporting Practice Development

· Portfolio Investment Analysis