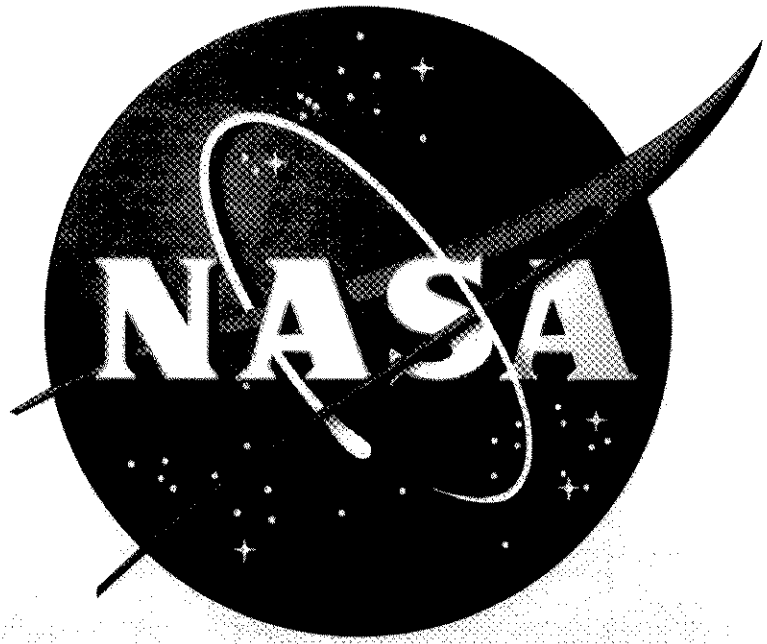
Welcome to the
Johnson Space Center
Multi-Purpose Crew Vehicle (MPCV)
Program Integration Contract (MPIC)
Virtual Industry Day



February 28, 2012
9:00 am – 12:00 pm

Welcome to Multi-Purpose Crew Vehicle Program Integration Contract Virtual Industry Day

Geraldine B. Mason
Contracting Officer

Agenda

Speaker	Subject
Geraldine Mason	Welcome to Virtual Industry Day
Debra Johnson	Welcome
Lucy Kranz	Vision and Objectives Technical Overview
Sharyl Butler	Technical Overview
Charles Williams	Small Business Overview
Connie Pritchard	Safety Overview
Geraldine Mason	Current Contract Overview
Geraldine Mason	Procurement Schedule/Instructions for Submitting Input/Questions

Disclaimer

- These slides are for information and planning purposes only. No solicitation exists at this time.

- This presentation shall not be construed as a commitment by the Government or as a comprehensive description of any future requirements.

- If a solicitation is released, it will be synopsized in the FedBizOpps website and on the NASA Acquisition Internet Service.

Goals of Industry Day

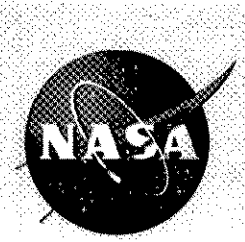
- Promote competition on the proposed acquisition.
- Develop industry understanding of the Government's current vision and objectives.
- Provide industry with the opportunity to meet with the Government early enough in the procurement process to provide input into the Multi-Purpose Crew Vehicle Program Integration Services Contract (MPIC) procurement strategy.
- Encourage offerors to submit questions and comments in writing via the MPIC website. The Government will respond in writing to all questions submitted by posting them to NAIS and the MPIC procurement websites.

Webinar Format

- Duration of the meeting: 3 hours allocated
- Oral questions will not be addressed
- Questions or comments in response to the information presented at Industry Day may be submitted outside this event to the Contracting Officer at: jsc-mpic@mail.nasa.gov by March 5, 2012.
- Questions can also be submitted anonymously to the Contracting Officer by selecting the link titled Anonymous Questions to the Contracting Officer at the MPIC website: http://procurement.jsc.nasa.gov/mpcv/questions.htm
- All questions and responses will be posted via the MPIC website at http://procurement.jsc.nasa.gov/mpcv and NASA Acquisition Internet Service (NAIS) http://procurement.jsc.nasa.gov

Welcome

Debra L. Johnson
Director, Office of Procurement

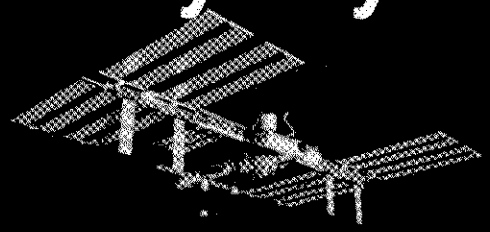


Vision and Objectives
Technical Overview

Lucy Kranz
MPCV Program

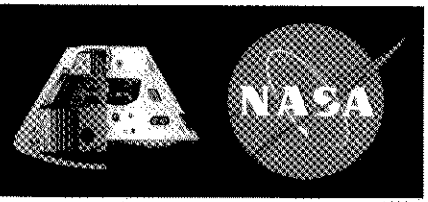
MPCV Program Integration Contract (MPIC)

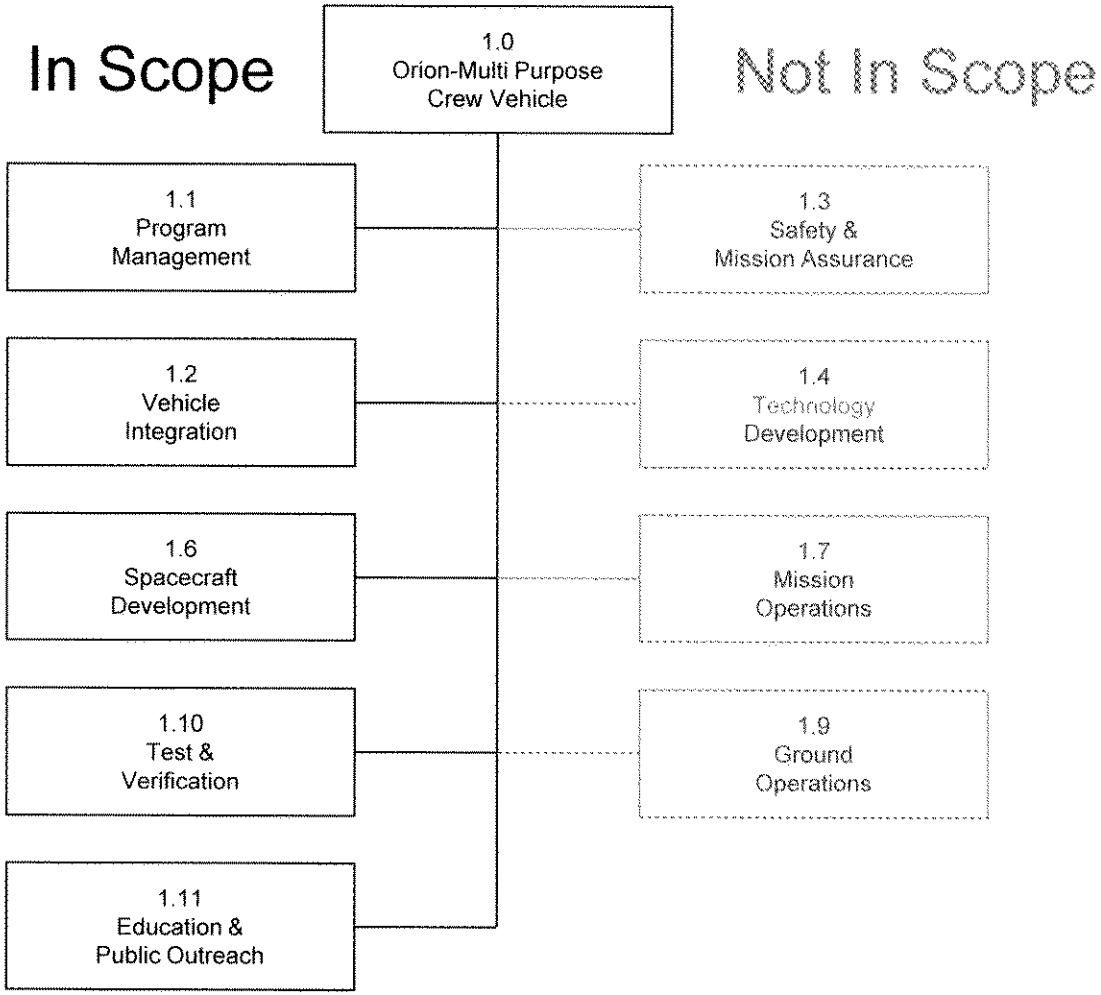
Industry Day



Lucy V. Kranz, Manager
MPCV Program Planning & Control

MPIC Scope (by WBS)

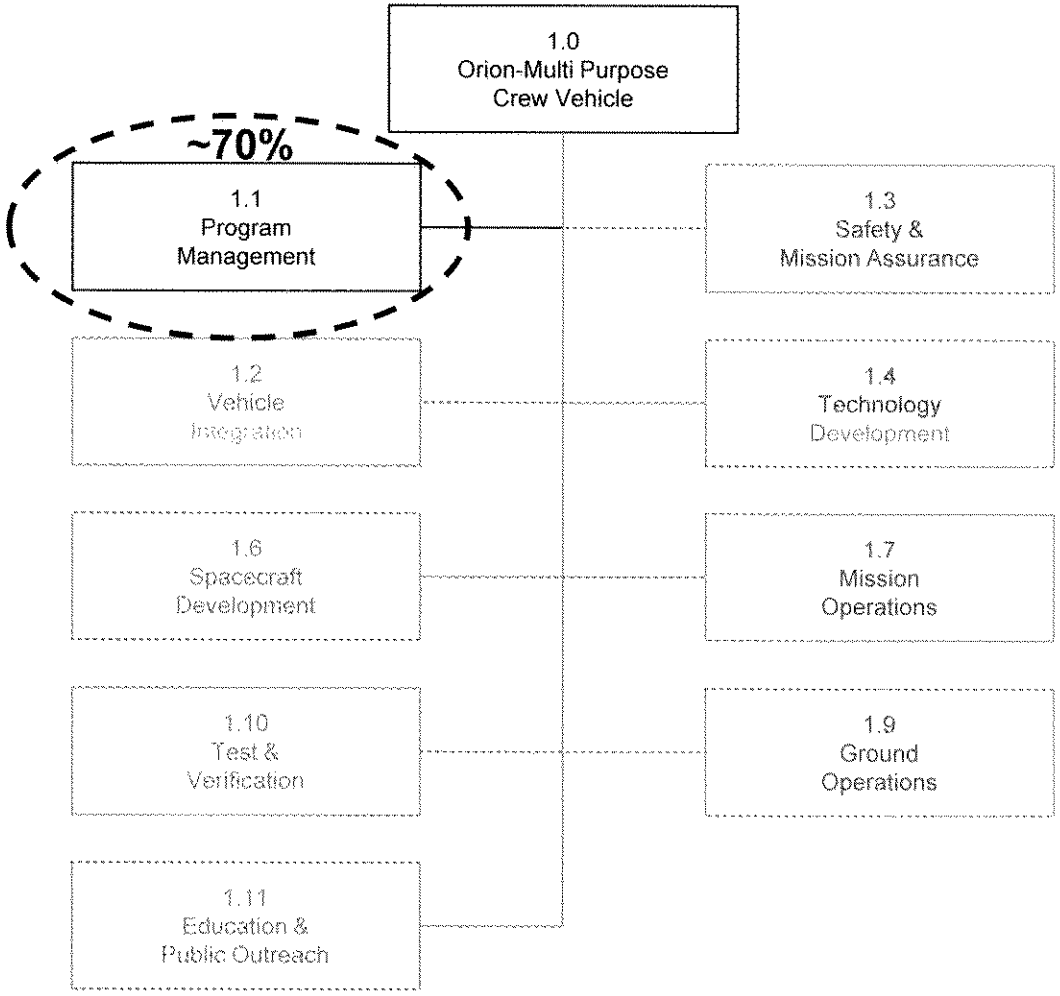




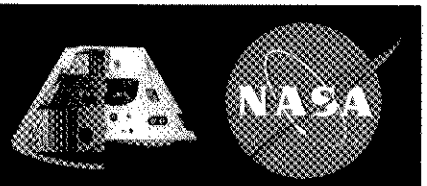
PP&C Work is WBS Element 1.1

Program Planning and Control (PP&C) is a subset of the Program Manager's Roles and Responsibilities

PP&C is about 70% of the total MPIC Statement of Work



PP&C Fundamentals



- **The Program Planning and Control function enables the Program Manager to fulfill his/her commitment to develop and deliver flight products that meet technical requirements within the schedule and budget provided**
- **Values for technical, schedule, and cost go together and equal the Program Manager's commitment to the Agency**
- **Program Manager responsibilities, including the Program Planning and Control function sub-set, are defined by the Agency** (1)

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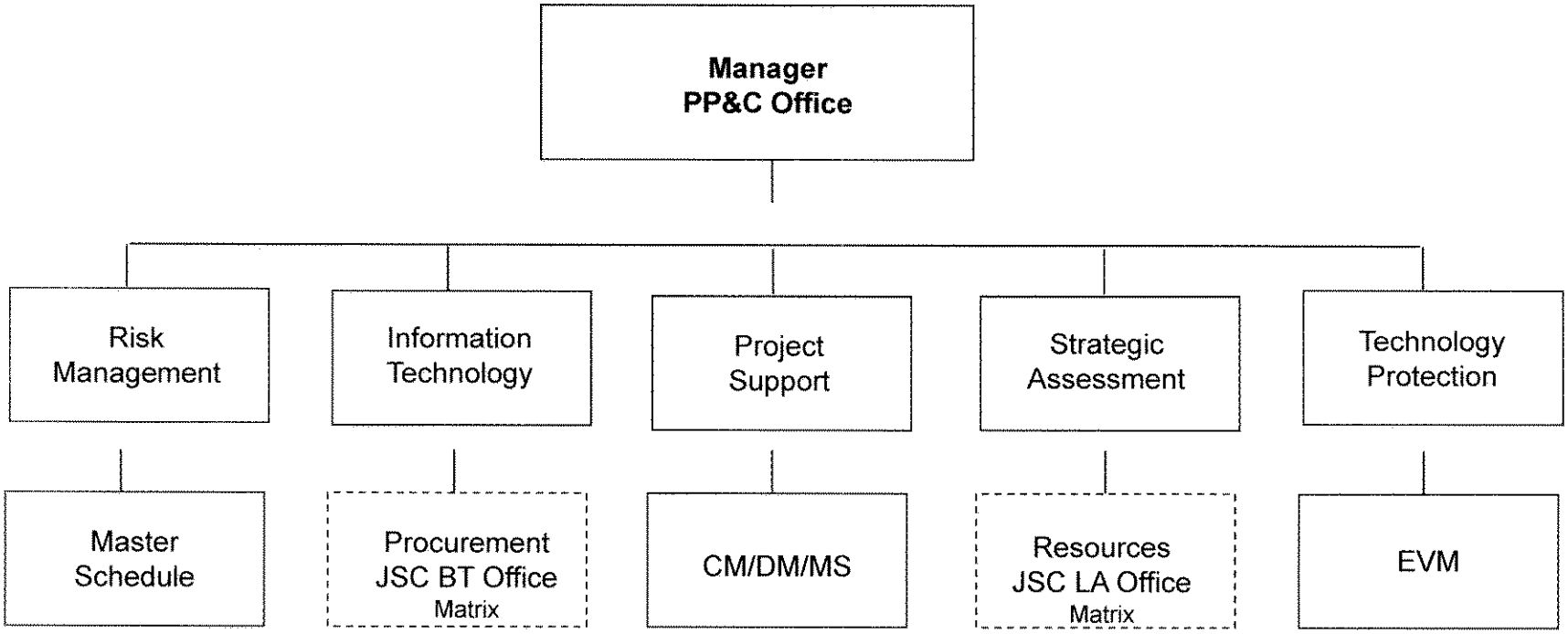
(1) The PP&C subset is provided as Table 1.5.1 in the *MPCV Program Plan*, and Table 1 in the *White Paper, MPCV Approach to Program Planning & Control,* both available in the MPIC Procurement Library

Classic PP&C Implementation

Traditional PP&C is a flat organization of individual planning and control functions together with support services, *not necessarily in the same organization*, each with its own expertise, data resources and tools, developing and reporting individual functional data products directly to Program management,

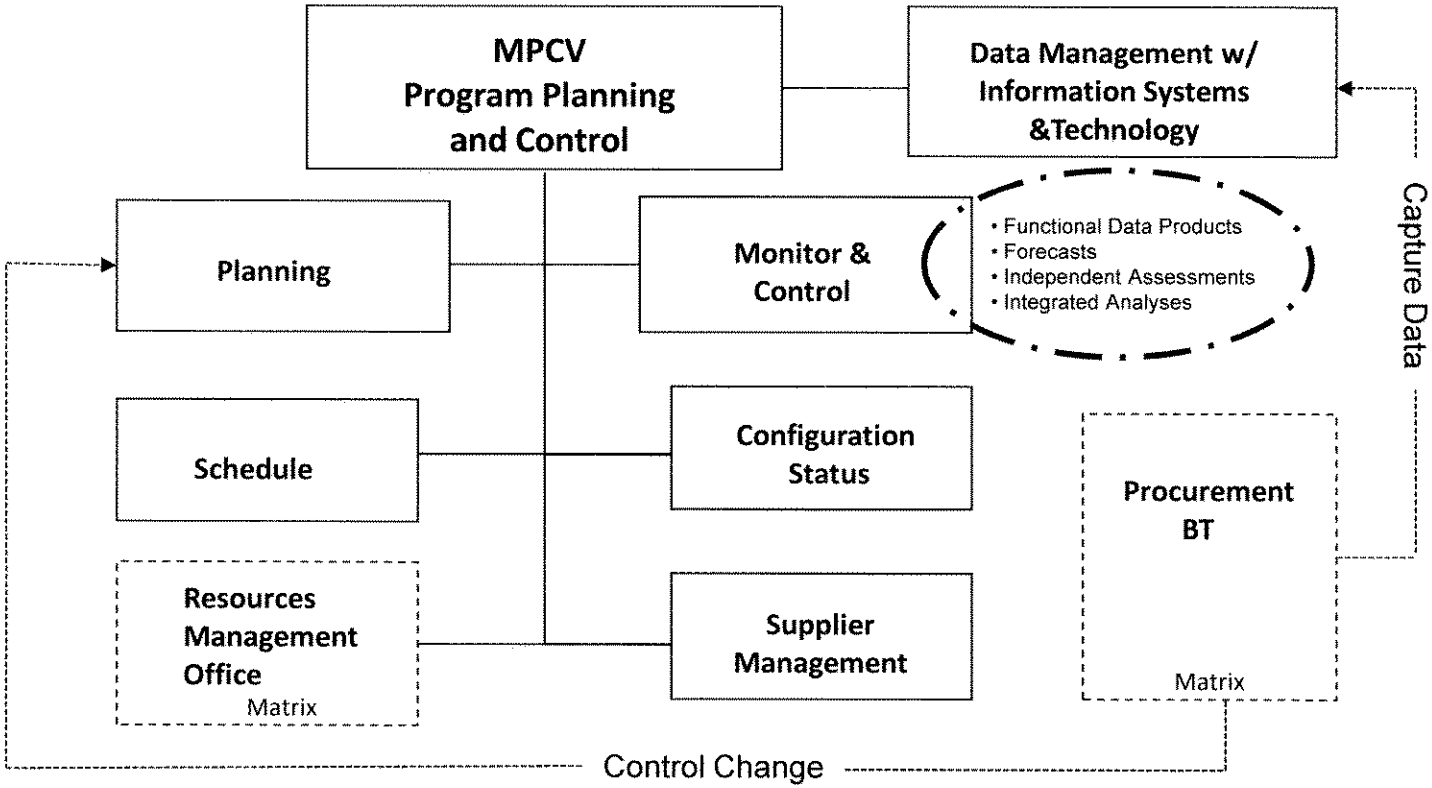
Orion PP&C 2006 - 2010



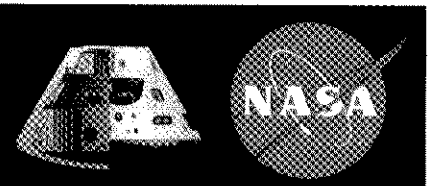
MPCV PP&C Implementation

MPCV PP&C is single organization focused on analyzing integrated performance using functional data products as input along with forecasts and independent assessments to inform the Program Manager of status and threats

Orion PP&C Oct. 2010 - Forward

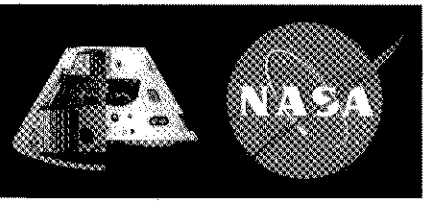


MPCV PP&C captures twenty years of improvement in work definition



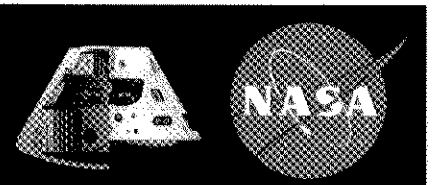
- **Since GAO designated NASA Programs a high-risk area in 1990**
  - Improved business practices and financial management systems
  - Established Baseline performance reporting at Center and HQ levels
  - Added integrated coast and schedule measures
- **Since the NASA Advisory Council evaluated International Space Station (ISS) management and cost performance in 2001**
  - Established Control Account Managers
  - Established a Quarterly performance reviews along with a Reserves Impact Notification system and an Early Warning System to monitor performance
- **Since NASA recommended more disciplined oversight to address key program management challenges in 2009**
  - Single definition for Program Baseline throughout the Agency
  - Strengthened requirements for program/project management, cost estimating and analysis and cost reporting
- **Since NRC reviewed cost growth in NASA Programs and NASA reviewed cost growth in the JWST in 2010**
  - See 'Recommended Readings' in the Technical Library

MPCV PP&C captures twenty years of improvement in tools

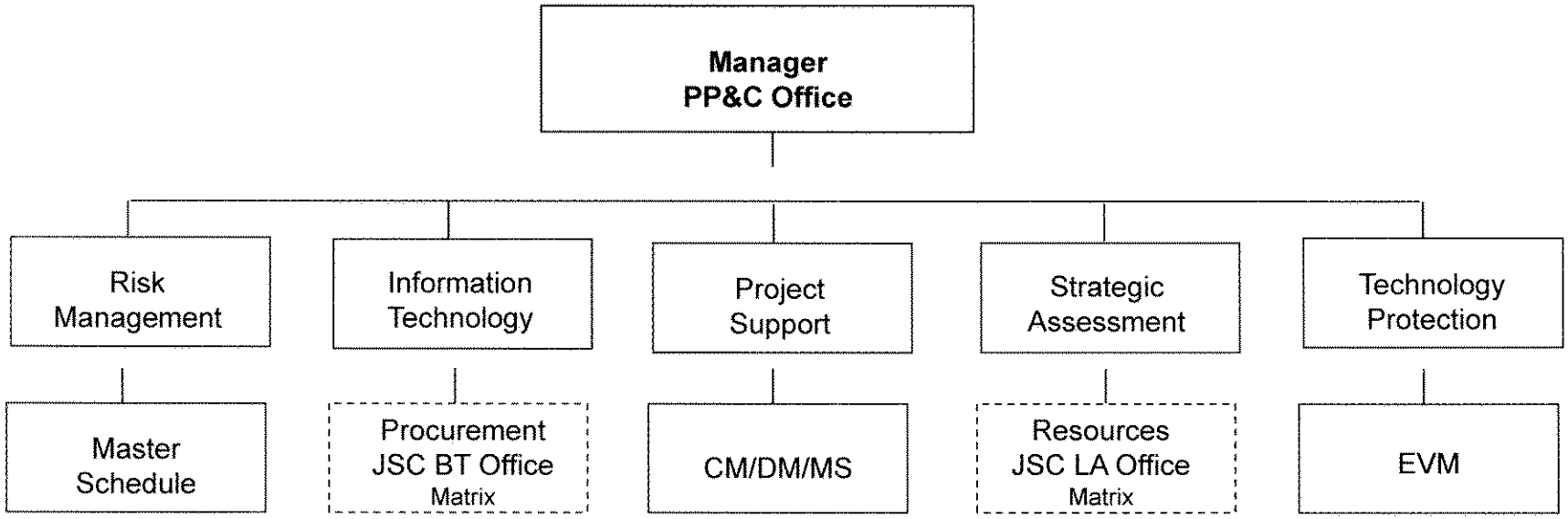


- **Continuously over the past 20 years, the tools available to perform PP&C work have significantly improved, e.g.,**
  - Acquisition Management
  - Budget Process
  - Configuration management
  - Cost Estimating Risk Management
  - Data management
  - Earned Value Management
  - Information Technology
  - Integrated Financial Management
  - Joint Cost and Schedule Confidence Level (JCL)
  - Quality Management
  - Scheduling
  - Technology Protection

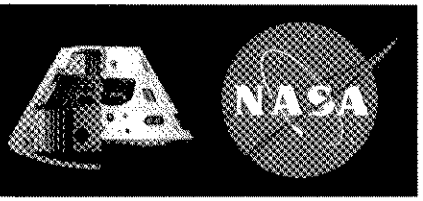
MPCV PP&C is a next generation



- **Because it is organized around the work**
  - Document the Baseline
  - Plan the Work
  - Acquire Resources
  - Assure Flight Product
  - Manage Performance
  - Report Performance
  - Control Change
- **and not around the tools used to perform the work**



But the work and tools go together to analyze Program performance



Work

- Document Baseline
- Plan Work
- Acquire Resources
- Assure Flight Product
- Control Change
- Manage Performance
- Report Performance

Integrated Analysis

Variables

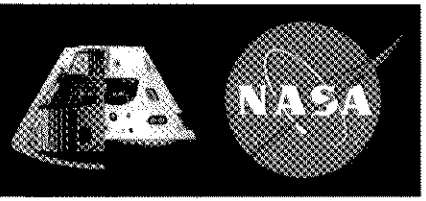
- Requirements
- Schedule
- Resources

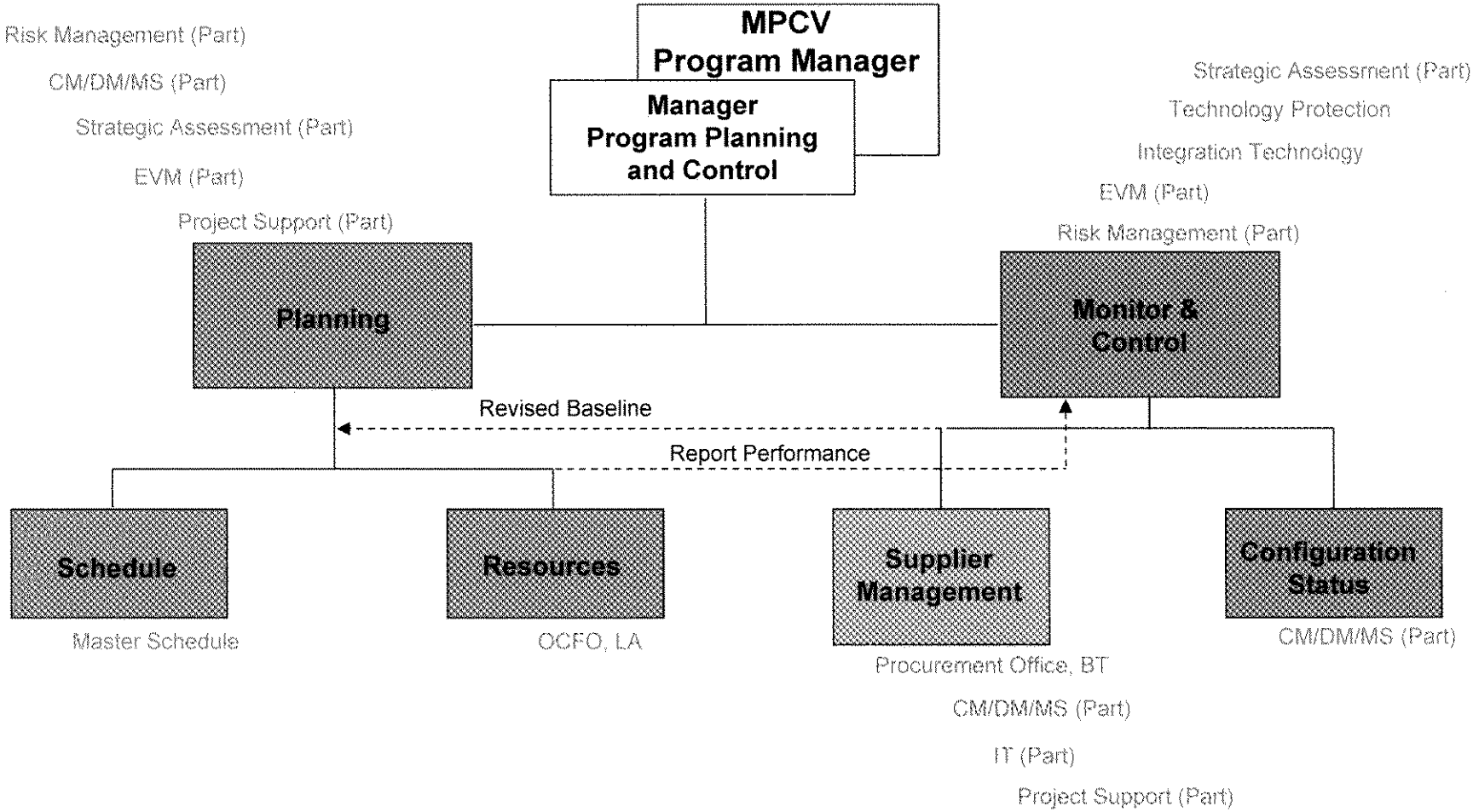
Insight: Work ≠ Tools

Agency Procedures & Tools

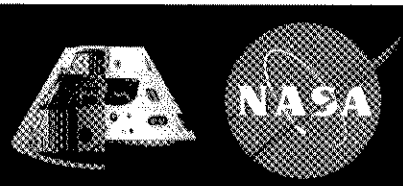
- Acquisition
- Budget Processes (PPB&E, CoF)
- Configuration Management
- Cost Estimating
- Data Management
- Earned Value Management
- Integrated Financial Management
- Joint Confidence Level
- Risk Management
- Quality Management

Work performance defines the MPCV Organization





Implemented in October 2010 (FY 2011)



Multi-Purpose Crew Vehicle

Program Integration Contractor

GRC PP&C

LaRC PP&C

Program Planning and Control

Lucy Kranz, Manager

Data Management w/ Information Systems & Technology

Planning

Monitor & Control

Schedule

Resources

Configuration Status

RMO – LZ

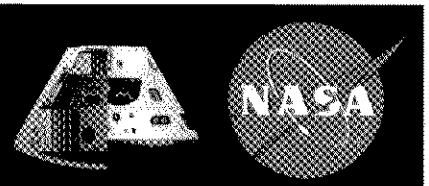
Supplier Management

Planning, Monitor & Control Independent Assessments

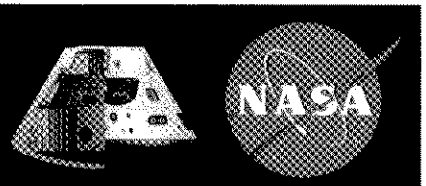
Procurement – BT

Contractors

with the following results



- **Achieved FY2011 affordability objectives**
  - Reduced the content under configuration control and streamlined the configuration control process
  - Reduced the number of DRDs and streamlined the data management process
  - Added assumptions as a performance measure
  - Added independent assessments and forecasts as input to integrated analysis
  - Implemented a more-focused system of management reviews



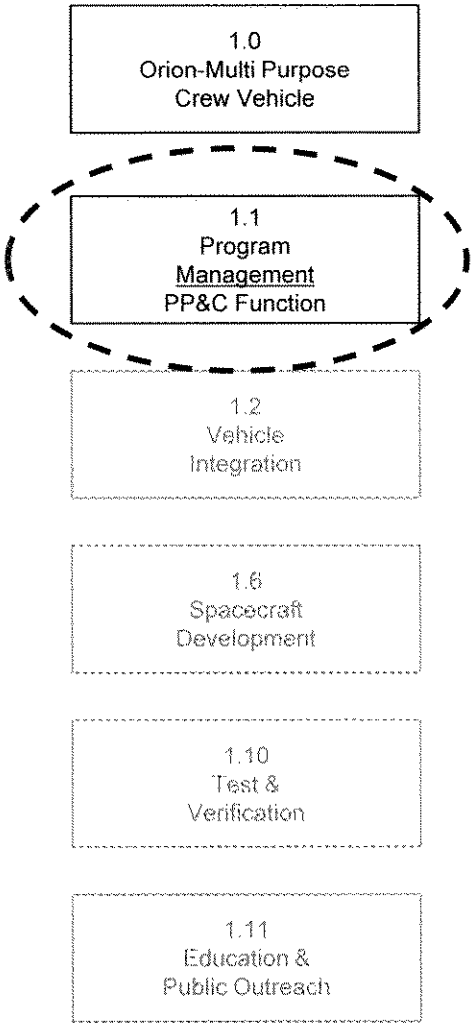
WBS Element 1.1, Outline

Program Management PP&C Function

1. Establish the Program Baseline, attributes and assumptions, and the Fiscal- and End-Year plans as the basis for measuring and reporting performance

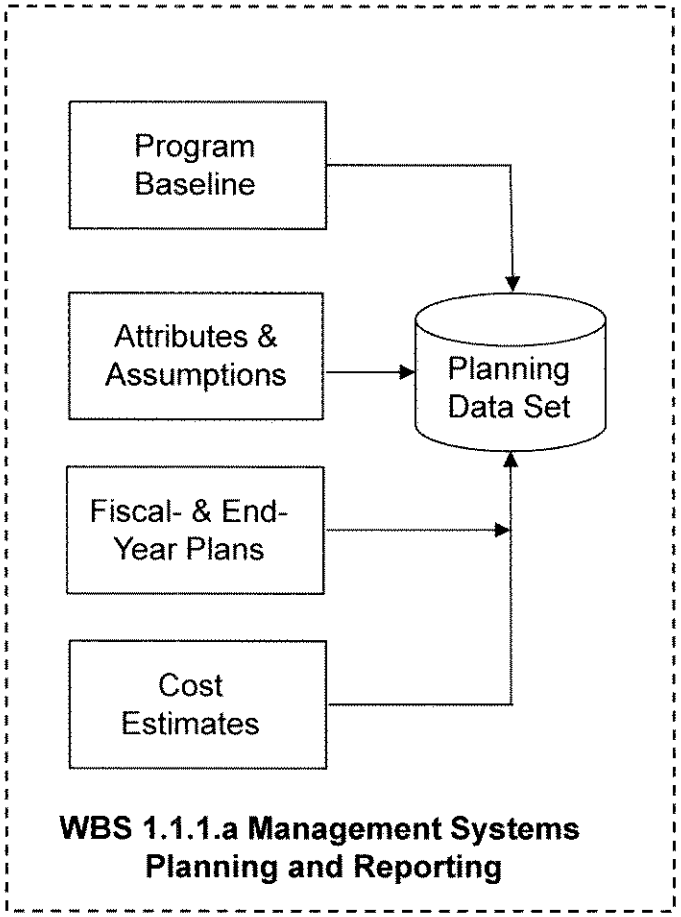
2. Capture Program data and develop functional data products

3. Prepare integrated assessments to inform the Program Manager of performance status and of threats to future performance, along with drivers

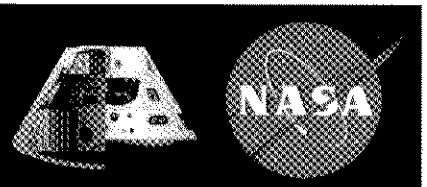


MPIC Data Products (1 of 3): Planning Data Set

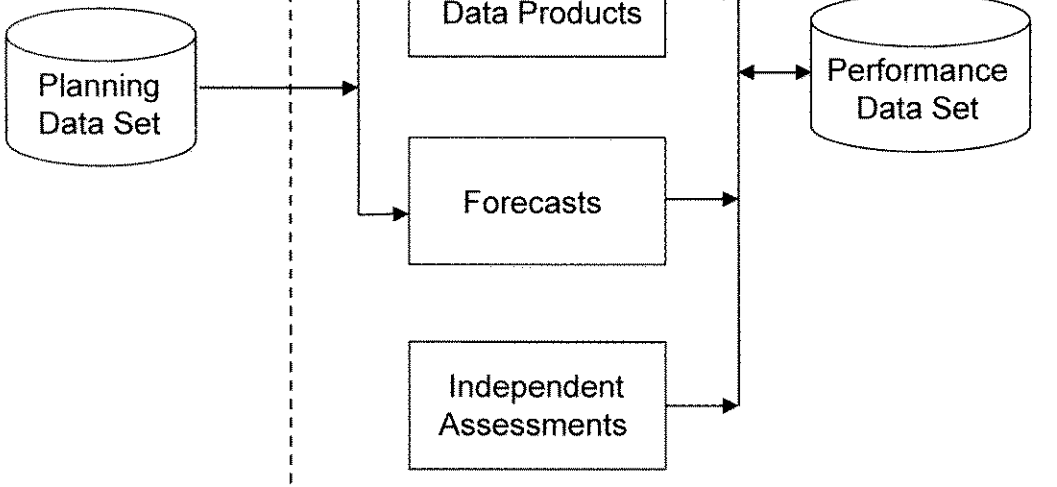
1. ***Establish the Program Baseline, attributes and assumptions, and the fiscal- and end-year plans as the basis for measuring and reporting performance***



MPIC Data Products (2 of 3): Performance Data Set



2. Capture Program data and develop functional data products

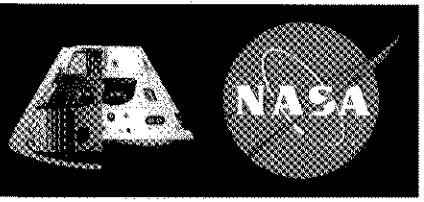


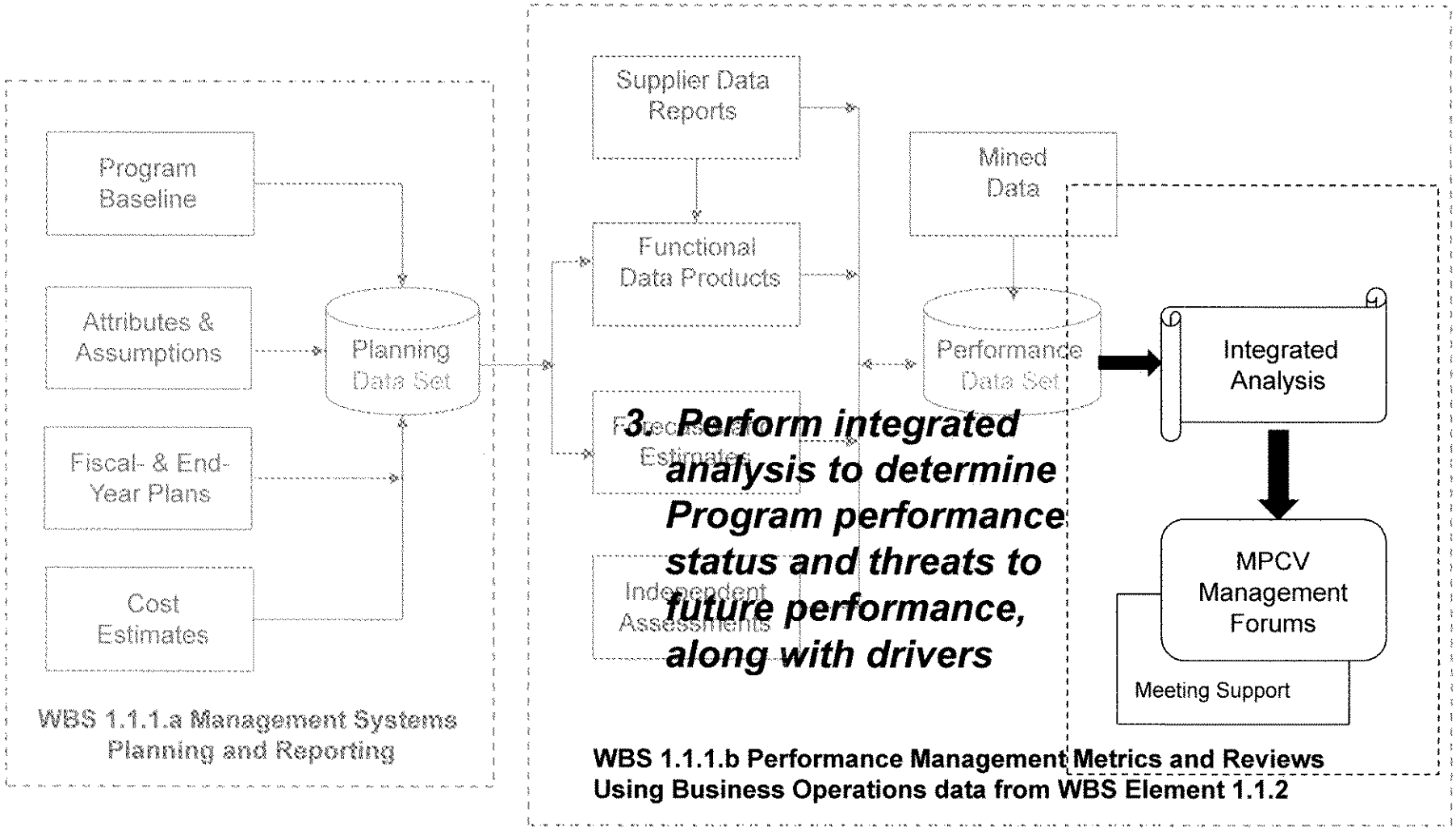
WBS 1.1.1.b Performance Management Metrics and Reviews Using Business Operations data from WBS Element 1.1.2

(1) Functional Data Products
- Cost & Workforce
- Program Master Schedule
- Schedules Variance
- CAM Schedules
- Earned Value
- Assumption Validity
- Risk Assessment

(2) In performance of work under WBS Element 1.2, 1.6 and 1.10 Identify and acquire technical Performance data from Working Group-, Team-, Panel-, and Board-Presentations, and incorporate into the Performance Data Set to augment existing data stores

MPIC Data Products (3 of 3): Integrated Analysis

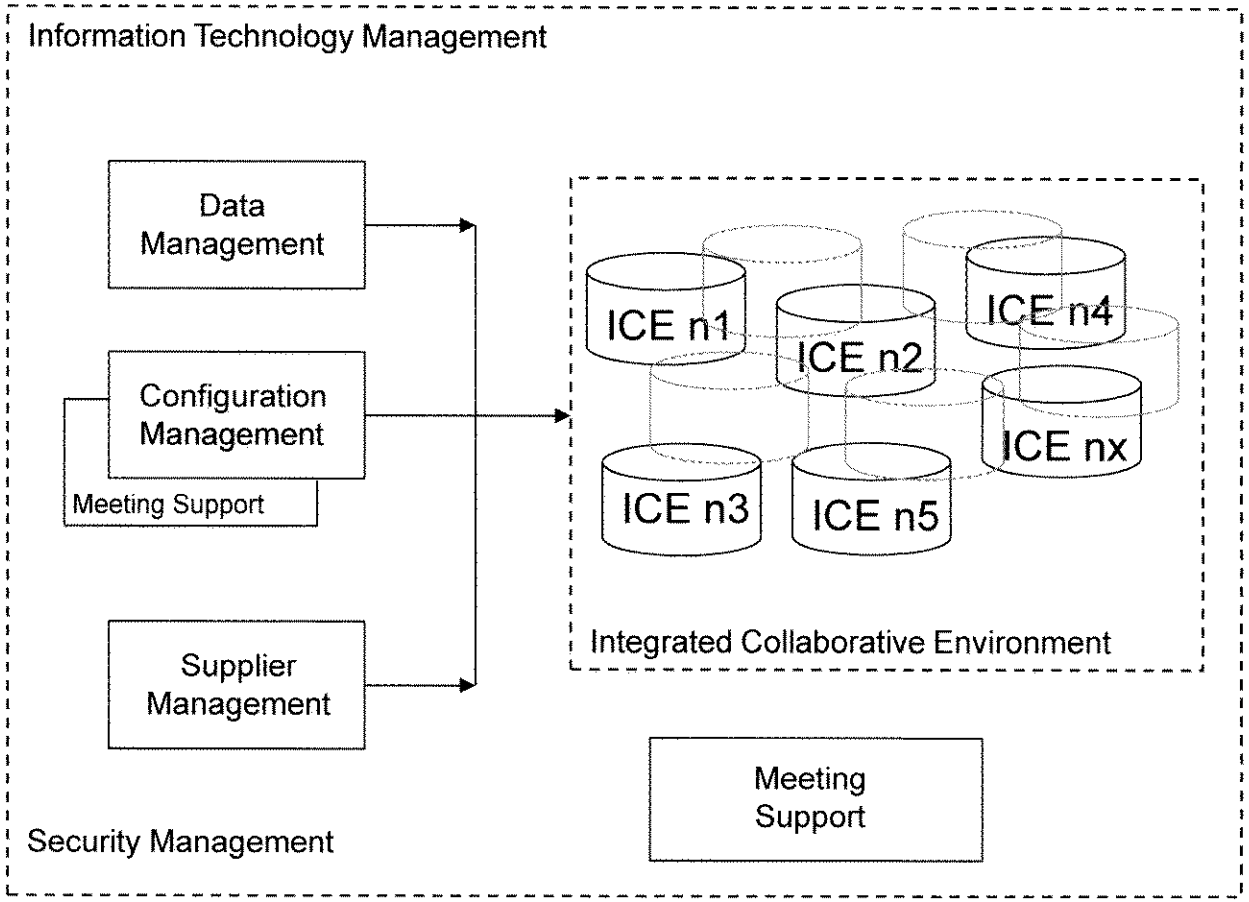




Professional Services

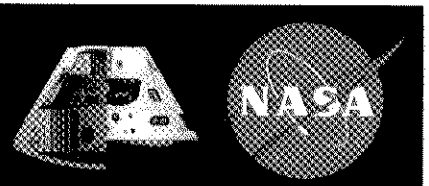
Services

- **Information Technology**
- **Data Management**
- **Configuration Management**
- **Meeting Support**
- **Supplier Management**
- **Security Management**



Technical Library Content

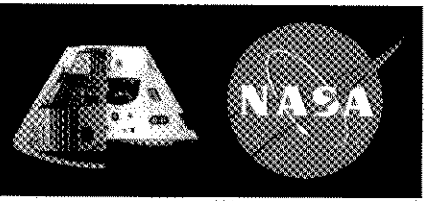
Technical Library: Volume I



Volume I: The Learning Curve

1. White Paper: Affordability in the Orion-MPCV Program, 2nd Draft, January 3, 2012
2. White Paper: MPCV Approach to Program Planning and Control, 3rd Release, November 18, 2011
3. The Learning Curve (a series of five briefings):
    a. Before and After
    b. Why Change
    c. Findings
    d. Definitions
    e. Implementation
4. Presentation: MPCV Program Managers, August 5, 2011
5. Presentation: Human Exploration and Operations Directorate, Exploration Systems Development August 15, 2011
6. Presentation: JSC Center Management Council, September 19, 2011
7. Presentation: Office of the Chief Engineer and Office of the Chief Financial Officer, December 8, 2011
8. Presentation: MPIC Industry Day, February 2012
9. White Paper: Thoughts on Modeling Program Control, May 16, 2011

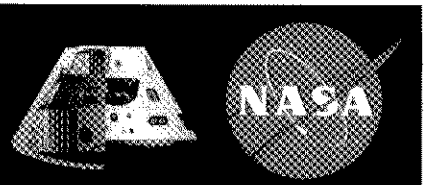
Technical Library: Volume II



Volume II: Recommended Readings

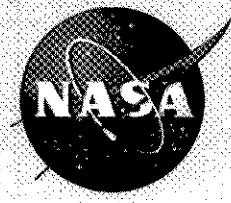
1. NASA Issues Implementing the NASA Authorization Act of 2010, GAO-11-216T, December 1, 2010
2. Additional Cost Transparency and Design Criteria Needed for NASA Projects, GAO-11-364R, March 3, 2011
3. Statement of the Honorable Charles F. Bolden, Jr. Administrator, National Aeronautics and Space Administration before The Committee on Science, Space and Technology, U. S. House of Representatives, July 12, 2011
4. Report on NASA's Top Management and Performance Challenges, November 15, 2011
5. Controlling Cost Growth of NASA Earth and Space Science Missions, National Academies Press, Washington, D.C
6. NASA's Management of the Mars Science Laboratory Project, IG-11-019, June 8, 2011
7. James Webb Space Telescope Independent Comprehensive Review Panel Final Report, October 29, 2010
8. NASA Projects Need More Disciplines Oversight and Management to Address Key Challenges,GAO-09-436T, March 5, 2009
9. NASA Constellation Program Cost and Schedule will Remain Uncertain Until a Sound Business Case is Established,GAO-09-844, August 2009

Technical Library: Volume III



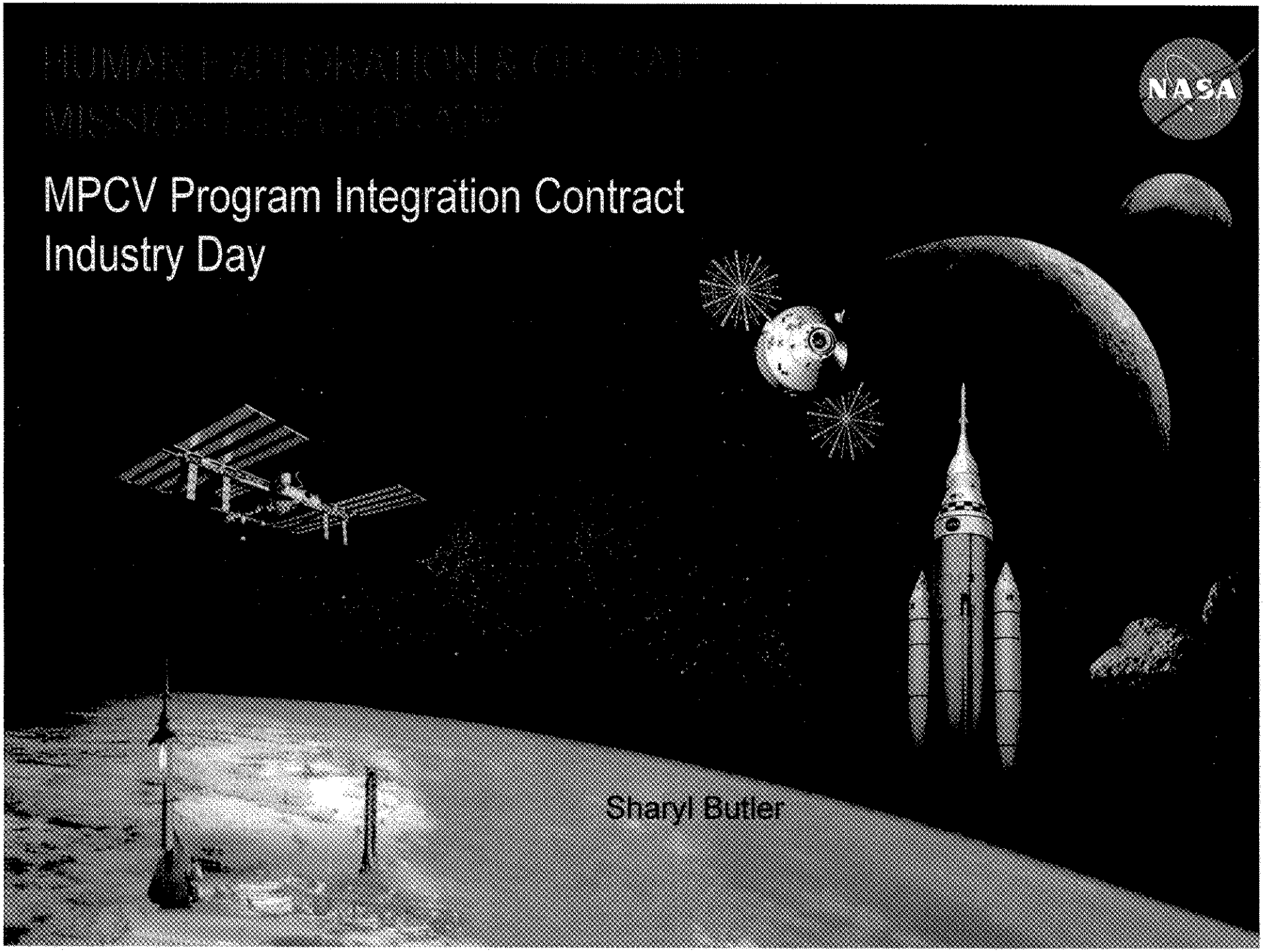
Volume III: Program Documents

1. Program Formulation Authorization Document, Multi-Purpose Crew Vehicle Program, November4, 2011
2. MPCV Program Plan, January 2012 Re-Write
3. CxP 72106, Work Breakdown Structure and Data Dictionary
4. Plan to Maintain the Integrity of the JSC Quality Management System, Revision A to 1st Draft, October 20, 2011
5. CxP 72091, Integrated Risk Management Plan
6. CxP 72088, Systems Engineering Management Plan
7. CxP 72097, Master Verification Plan
8. CxP 72278, CEV Cost Analysis Data Requirements (CADRe)



Technical Overview

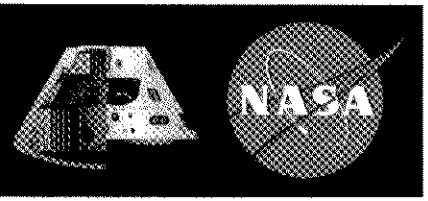
Sharyl Butler
MPCV Program



MPCV Program Integration Contract Industry Day

Sharyl Butler

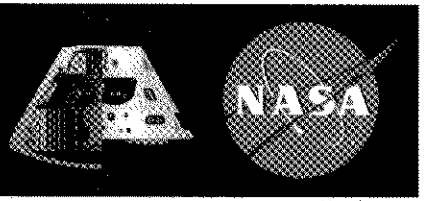
Statement of Work (SOW) Overview

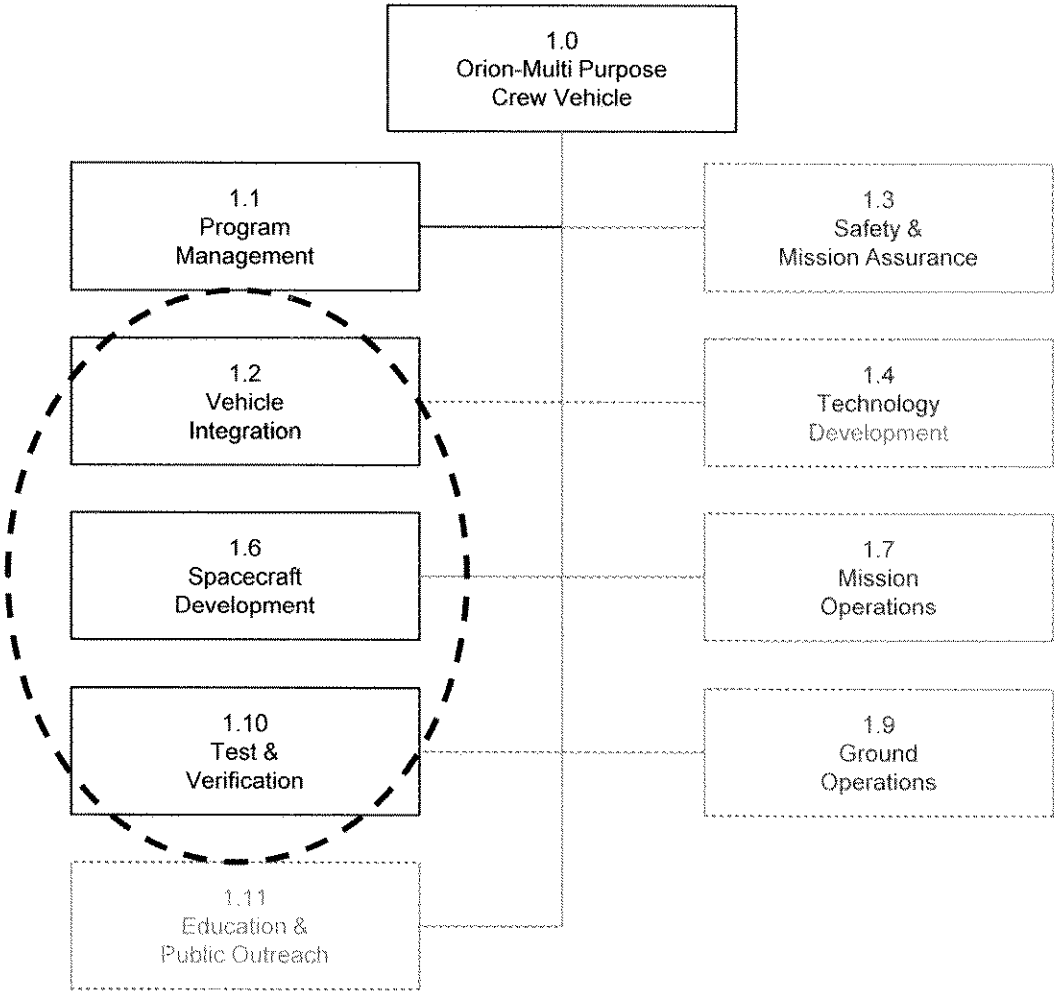


The MPIC will provide professional business and engineering functions for the Johnson Space Center (JSC) MPCV Program Office, including the integration of MPCV Program Office work performed at other NASA centers and with the MPCV Program's prime contractor.

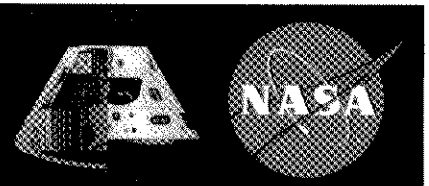
- Business management functions include cost, schedule and performance assessments
- Technical functions include trade studies, analyses and assessments in support of Orion contract management

WBS Elements 1.2, 1.6, and 1.10





SOW – Technical Requirements

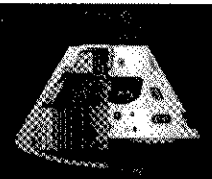


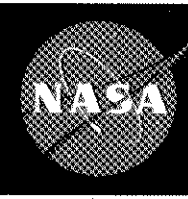
The tasks below are performed in these areas:

1.2 Orion Vehicle Integration
1.6 Spacecraft Development
1.10 Test & Verification

- Development, process improvement and documentation of system requirements
- Risk identification and mitigation planning and reporting
- Evaluations of Engineering Change Proposal and Change Requests
- Planning, coordination and review of design review products
- Requirements analysis, traceability and verification
- Schedule management and reporting
- Management and definition of metrics
- Action tracking and responses
- Performance of special studies

SOW – Technical Requirements (continued)





Additional unique tasks for each office include:

1.2 MPCV Office Vehicle Integration

1.2.7 Flight and Ground Operations

- Definition, planning, and documentation of the concept of operations processes, and procedures
- Development of flight, ground, payload and cargo integration plans

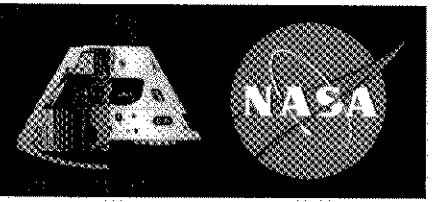
1.2.8 Specialty Engineering

- Perform systems engineering and integration for human engineering, materials and processes, electromagnetic compatibility, EEE parts, natural and induced environments, MMOD, and radiation

1.2.10 Assembly, Integration and Production

- Definition, planning and documentation of the production of the fully integrated, verified and validated vehicle

SOW – Technical Requirements (continued)



Additional unique tasks for each office include:

1.6 MPCV Office Spacecraft Development

1.6.1 Crew and Service Module (CSM)

1.6.1.2 CSM Systems Engineering and Integration

- Management of the integrated crew module architecture definition and engineering functions
- Provide independent assessment and validation of CSM subsystems and components to meet module level and interface requirements
- Participation and review in Interface Control Document (ICD) development

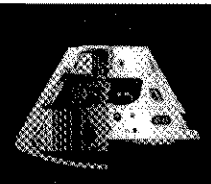
1.6.1.4 CSM Government Furnished Equipment (GFE) Products

- Tracking of GFE and government in-line activity

1.6.1.6 Crew Module Assembly, Integration, and Production

- Definition and documentation of CSM certification and acceptance process, assembly and integration requirements, hardware and software integration and test strategies for acceptance and sustaining engineering
- Development of testing and verification processes for the checkout facility and equipment interface

SOW – Technical Requirements (continued)



Additional unique tasks for each office include:

1.10 MPCV Program Office Test and Verification (T&V)

1.10.1 Test & Verification Management and Administration

- Assessment of master verification strategy for flight and ground interface systems
- Criteria and methodology requirements verification

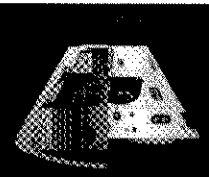
1.10.2 Verification Management

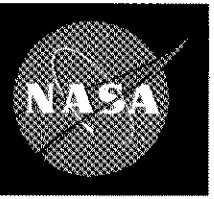
- Develop and manage the Master Verification Plan, SRD verification requirements, and Verification Logic network
- Coordinate the Verification Closure process
- Definition and management of the spacecraft certification and acceptance process

1.10.4 Facilities

- Assessment of development, management and maintenance of Program labs, test beds and test facilities
- Definition and documentation of interface tooling and test equipment requirements

SOW – Technical Requirements (continued)





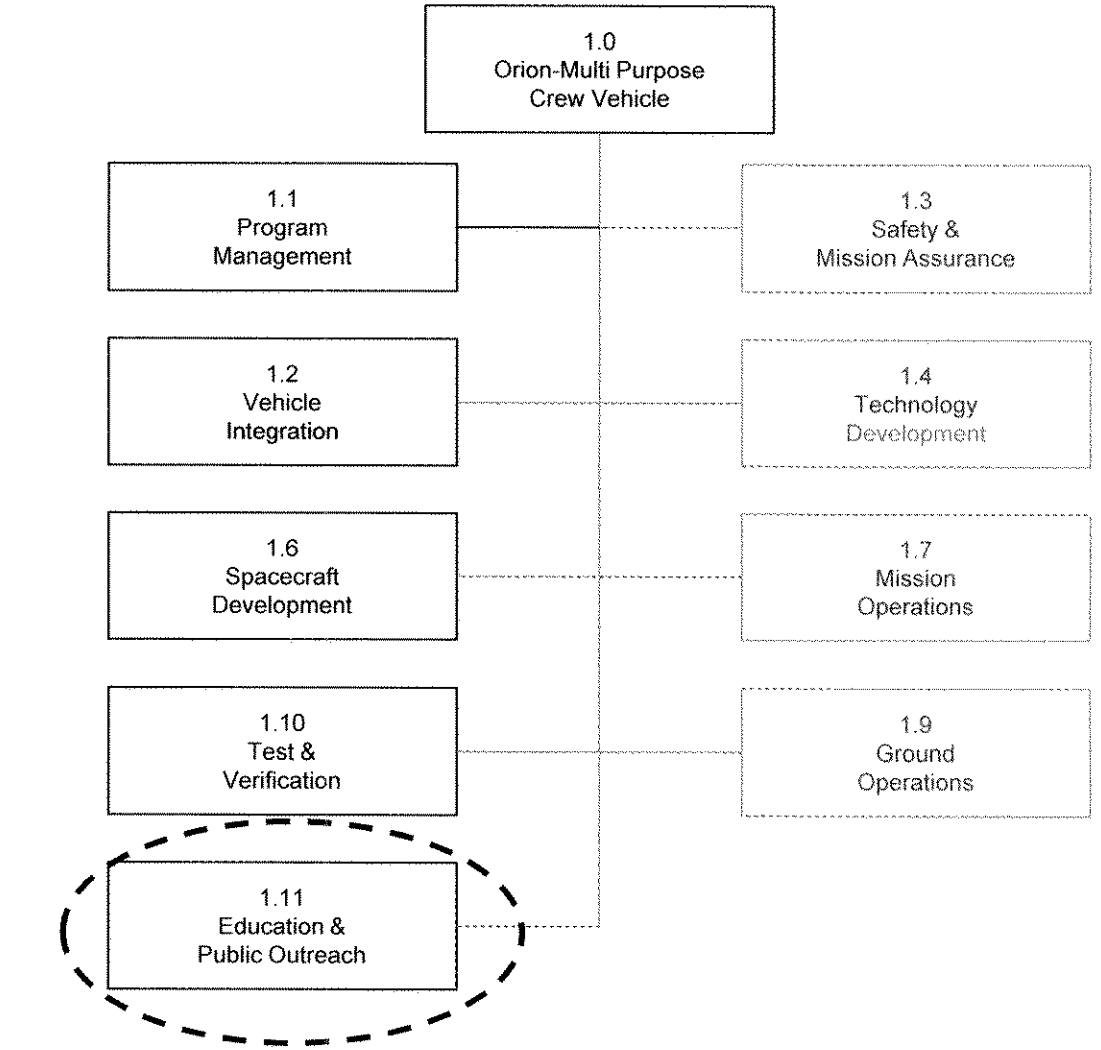
1.10.6 Flight Test

- Development of integrated flight test strategies, objectives, requirements and plans
- Planning and documentation of integrated safety and crew survival-function flight testing
- Identification and arrangement for facilities and associated assets required for flight tests

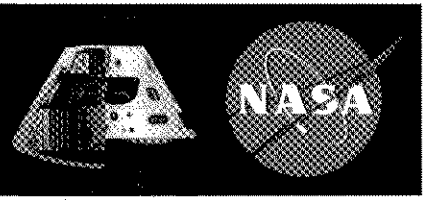
1.10.7 Special Studies – T&V

- Design and development of analysis tools
- Perform as technical advisor and consultant in use of the tools, including training

WBS Element 1.11



SOW – Technical Requirements



1.11 Education and Public Outreach

- Development of products to communicate program accomplishments to the public. Products include videos, animations, printed media, social media, website content, exhibits and broadcast media
- Development of program communication products for updates to the NASA headquarters and other team members

Small Business Overview

Charles Williams
Senior Small Business Specialist

Safety Overview

Connie Pritchard
Safety and Health Specialist

Overview of the NASA Safety Program

- NASA safety objective is to avoid loss of life, personal injury and illness, property loss or damage, environmental harm resulting from any of its activities and to ensure safety and healthful conditions for persons working at or visiting NASA facilities
- NASA shall comply with all applicable regulations
  - NASA Safety & Health requirements
  - Requirements of those federal agencies with regulatory authority over NASA such as OSHA, EPA, and DoT
- NASA requires every employee to report workplace hazards
  - NASA ensures that there is no reprisal to personnel for reporting unsafe or unhealthy conditions

Overview of the NASA Safety Program

- The NASA Safety Policy stresses the individual responsibility of each employee for their own safety and that of their co-worker. Risk within the work environment must be managed to control hazards and continuously improve workplace conditions

- The Occupational Safety & Health Administration (OSHA) has recognized JSC as a leader in health and safety by awarding the "Star" designation level of achievement in the Voluntary Protection Program (VPP)

- As a VPP Star, JSC has a comprehensive and successful safety and health program, is below the national average for the industry in injury/illness rates, has demonstrated good faith in dealing with OSHA, and serves as a safety & health mentor to regional industry

What would be expected of you at JSC

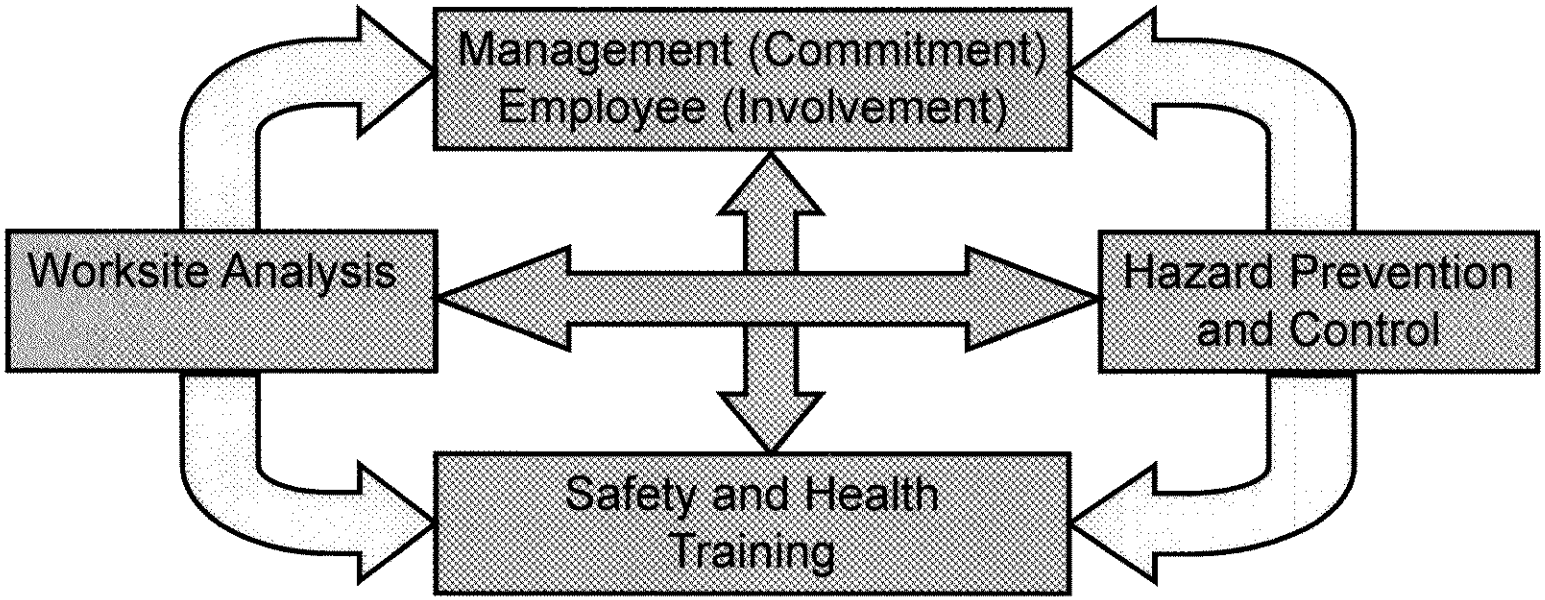
- All contractors performing work at JSC shall comply with all applicable safety and health regulations
- JSC does not assume the responsibility of the "employer" for contractor employees
- Every major onsite contractor shall have a designated safety official and shall conform to a written safety and health plan
- Failure to comply with safety and health requirements may result in contract termination, lower fee, and exclusion from future contract awards

The Safety & Health Deliverables

- Safety & Health Plan shall include detailed discussion of the policies, procedures, and techniques that will be used to ensure the safety and occupational health of your employees and to ensure the safety of all working conditions throughout the performance of the contract.
- Statement regarding past OSHA citations will be required
- Records of OSHA recordable injuries (OSHA Logs & calculated frequency rates)
- Insurance carrier information including experience modifier

A Successful Safety Program Model

- Based on 4 Basic VPP elements defined by OSHA Region VI



The Safety & Health Plan

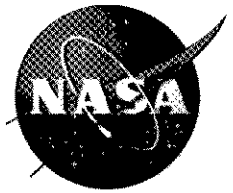
Safety & Health Plan provisions you should expect to address on a typical JSC service contract

- *Management Leadership and Employee Participation*
  - Management Commitment – demonstrable leadership via goals, objectives, and policy statements
  - Planning – safety is planned, it doesn't just happen
  - Written Safety & Health Program
  - Authority and Resources – roles and responsibilities, funds, manpower (designated safety and health official, safety representative, medical contact, fire wardens)
  - Employee Involvement – participation at all levels
  - Safety & Health Program Evaluation – how is the program doing

The Safety & Health Plan

- *Worksite Analysis*
  - Management Understanding – of hazards (recognition and response)
  - Industrial Hygiene – specialized area requiring technical support and coordination
  - Pre-use Analysis – before you use a new or modified piece of equipment or process, what has changed with respect to the hazards involved?
  - Hazard Analysis – of jobs, equipment, systems, processes
  - Routine Inspections – to catch hazardous conditions before someone is hurt
  - Employee Hazard Reporting – ways to encourage reporting
  - Accident/Incident Investigations - response, reporting and correcting negative findings

The Safety & Health Plan



- *Hazard Prevention and Control*
  - Certified Professional Resources – safety professionals, industrial hygienists, trainers, system safety practitioners
  - Hazard Elimination or Control
    - Maintain a list of hazardous operations and processes
    - Develop written procedures to identify safety procedures
    - Methods for notification of personnel
  - Hazard Control Programs – such as lockout/tagout, confined space entry, asbestos/toxic exposure, PPE
  - Occupational Healthcare Program – medical surveillance program, treating injuries & illnesses, case management
  - Prevention Maintenance – of equipment and systems
  - Disciplinary System – approach to modify behaviors
  - Emergency Preparedness – fire, explosion, weather

The Safety & Health Plan

- *Safety and Health Training*
  - Program Description – describe your training program to ensure safe work practices, hazard recognition and to meet all regulatory requirements
  - Tailor training toward specific audiences – managers, supervisors, employees (crafts, office workers, etc.)
  - Discuss certification programs – training requirements and physical conditions
  - Train for emergencies – fire drills, evacuation drills, site emergencies
  - Personal Protective Equipment – training in the use and care of PPE
  - Training in hazard communication, confined space entry, lockout/tagout, etc.

The Safety & Health Plan

- Safety and Health Goals – should be measurable

- Miscellaneous reports contained in body of the Data Requirement – statistics; mishap reports; close call reports; hazard reports; inspection reports; building fire wardens; hazardous materials inventory; roster of terminated employees; material safety data sheets; OSHA logs; program self evaluation.

Recommendations

- For the good of your employees and your business, take safety seriously and proactively plan to PREVENT injuries
- Understand the data requirements
- Tailor your plan to what you will do on the contract
- Contact the procurement point of contact on this solicitation if you have any questions
  - Any RFP requirement you feel is inappropriate for the plan, tell us why

References

- NASA Federal Acquisition Regulation Supplements (NFS)
  http://nais.nasa.gov/far/
  - NFS 1852.223-70 - Safety and Health
  - NFS1852.223-73 - Safety and Health Plan
  - NFS 1852.223-75 - Major Breach of Safety or Security

- General NASA information
  http://www.nasa.gov/
- Occupational Safety & Health Administration
  http://www.osha.gov/
- JSC Safety and Health handbook (JPR 1700.1)
  http://jschandbook.jsc.nasa.gov/

Procurement Overview

Geraldine Mason
Contracting Officer

Current Contract Overview - OPIC

- Contract Number: NNJ08TA13C
- Prime Contractor: Barrios Technology, Ltd.
- Contract Type: Cost-Plus-Fixed-Fee, Indefinite Delivery/Indefinite Quantity
- Period of Performance: 4/11/08 - 4/10/13
- Skills currently provided on contract include:
  Professional Engineering Services
- A copy of the current contract is available at:
  http://www.nasa.gov/centers/johnson/pdf/222233main_CONTRACT_NNJ08TA13C.pdf

Proposed Contract - MPIC

- **NAICS Code:** 541712
- **Size Standard:** 1,000 employees
- **Set-aside:** Total Small Business

Special Consideration

NOTE TO PROSPECTIVE OFFERORS

Prospective offerors are reminded not to contact incumbent personnel (either directly or through electronic means) during duty hours or at their place of employment, as such contacts are disruptive to the performance of the current contract.

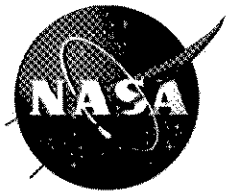
Procurement Schedule

- The MPIC procurement schedule is posted to the MPIC procurement website at http://procurement.jsc.nasa.gov/mpcv.

- Following the release of the Draft SOW, Industry will have an opportunity to submit questions in writing so that the Government may officially respond.

Milestone	Planned
Request for Information	11/10/2011
Draft Statement of Work	2/22/2012
Industry Day	2/28/2012
RFP	6/1/2012
Contract Award	11/15/2012

Get Connected



It is your responsibility to monitor the websites for release of any information regarding this procurement and downloading your own copy of this information.

How to Get Connected

- **Multi-Purpose Crew Vehicle Program Integration Contract Website**

  http://procurement.jsc.nasa.gov/mpcv
  - Click on Interested Parties Link
    - Fill-out requested information
    - All interested parties will be posted on the MPIC website

- **NASA/JSC Business Opportunities Home Page**

  Set up your user profile
  http://prod.nais.nasa.gov/cgi-bin/eps/bizops.cgi?gr=D&pin=73

- **NASA Acquisition Internet Service (NAIS)**

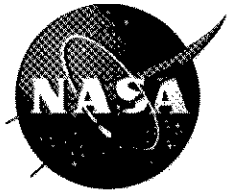
  http://procurement.nasa.gov

- **JSC Procurement Website**

  http://procurement.jsc.nasa.gov/

- **Industry Assistance – Bldg. 111 – JSC**
  - Phone number: (281) 483-4511

Contractor Input is Encouraged



- We encourage contractors to provide input regarding such things as technical requirements, contract type, contract duration, etc. Please send your inputs or questions to the following e-mail address by no later than COB March 5, 2012 to: jsc-mpic@mail.nasa.gov.

- Anonymous questions to the Contracting Officer may also be sent to: http://procurement.jsc.nasa.gov/mpcv/questions.htm.

- All questions and responses will be posted via the website at http://procurement.jsc.nasa.gov/mpcv and NASA Acquisition Internet Service (NAIS) http://procurement.jsc.nasa.gov.

- An interested parties list will be posted to the MPIC website at http://procurement.jsc.nasa.gov/mpcv . Unless the Contracting Officer is notified in writing that they do not want to be listed, all participants will be posted to the list. Please send the request titled, "Please do not post to Interested Parties List" to: jsc-mpic@mail.nasa.gov.

Thank you for your interest!

Visit:

http://procurement.jsc.nasa.gov/mpcv/