

Attachment J-1

Data Requirements List and Data Requirements Descriptions

DATA REQUIREMENTS LIST (DRL) AND DATA REQUIREMENTS DESCRIPTIONS

The following pages set out the documentation requirements of this contract, starting with a DRL, which is an index to the DRDs. Each DRD prescribes the required data product content, schedule, type, and other particulars for specific data submission requirements.

DRD #	Data Type	DRD Title
CM		
CM = Configuration Management		
PIC-CM-01	1	Configuration Management Plan
II		
II = International Integration		
PIC-II-01	2	ISS Program Support Plans for International Partner Milestone Reviews
PIC-II-02	2	Export Control Audit Results
IT		
IT = Information Technology		
PIC-IT-01	1	IT Management Plan
PIC-IT-02	1	IT Project Plan
PIC-IT-03	1	IT Security Plan and Reports
PC		
PC = Program Control & Business Management		
PIC-PC-01	3	Financial Report
PIC-PC-02	3	RESERVED
PIC-PC-03	3	Workforce Reports
PIC-PC-04	3	Work Breakdown Structure (WBS) and Dictionary
PIC-PC-05	2	RESERVED
PIC-PC-06	2 / 3	Integrated Program Schedules
PM		
PM = Program Management		
PIC-PM-01	1	PI&C Management Plan
PIC-PM-02	2	Integrated Management Review Products (IMRP)
PIC-PM-03	1	Certification of Flight Readiness (CoFR) Plan
PR		
PR = Procurement		
PIC-PR-01	2	Patent Rights – Retention
PIC-PR-02	1	Contract Close-out Plan
PIC-PR-03	3	Wage/Salary and Fringe Benefit Data
PIC-PR-04	2	Data Reprourement Package
PIC-PR-05	3	Task Order Plan
SA		
SA = Safety & Mission Assurance		
PIC-SA-01	1	Mission Assurance and Risk Management (MA&RM) Plan
PIC-SA-02	1	Safety and Health (S&H) Plan
PIC-SA-03	3	Monthly Safety and Health Metrics
PIC-SA-04	3	Safety and Health Program Self-Evaluation
PIC-SA-05	3	Probabilistic Risk Assessment (PRA)
PIC-SA-06	1	RESERVED
PIC-SA-07	2	Hazard Reports and System Description
PIC-SA-08	1	Lessons Learned Program Plan and Lessons Learned
SI		
SI = Systems Integration		
PIC-SI-01	1	ISS Documents Maintenance and Assessment
PIC-SI-02	2	Specification Traceability and Compliance Reports
PIC-SI-03	3	Systems Engineering Technical Assessments
PIC-SI-04	2	On-Orbit Assembly, Modeling, and Mass Properties Data Book (Blue Book)
PIC-SI-05	3	ISS Interior 3D CAD Models
VT		
VT = Vehicle Technical Integration		
PIC-VT-01	1	Operations and Maintenance Requirements and Specifications Database (OMRSD)

PROGRAM INTEGRATION AND CONTROL

Subject to the Clause 52.227-14, Rights in Data - General, this document sets forth the data requirements in each Data Requirements Description (DRD) and shall govern that data required for this contract. The Contractor shall furnish data defined by the DRD's listed on the Data Requirements List (DRL) by category of data. Such data shall be prepared, maintained, and delivered to NASA in accordance with the requirements set forth within this document. In cases where data requirements are covered by a Federal Acquisition Regulation (FAR) or NASA FAR Supplement (NFS) regulation or clause, the regulation will take precedence over this document, per FAR 52.215.8, Order of Precedence – Uniform Contract Format. NASA-Owned/Contractor-Held records shall be managed by the Contractor in accordance with Title 36 of the code of Federal Regulations, Chapter XII B, Records Management, and NPD 1440.6, NASA Records Management. The records shall be organized in accordance with the instructions in NPR 1441.1, NASA Records Retention Schedules, as applicable. The Contractor shall disposition records and non-records in accordance with NPR 1441.1 which has been approved by NASA and the National Archives and Records Administration (NARA). All questions on records management issues shall be directed through the Contracting Officer to the ISS Program Data Management.

Documents included as applicable documents in the data requirements form a part of this document to the extent specified herein. References to documents other than applicable documents in the data requirements of this document may sometimes be utilized. These do not constitute a contractual obligation on the Contractor. They are to be used only as a possible example or to provide related information to assist the Contractor in developing a response to that particular data requirement.

DESCRIPTION

This document identifies and defines the requirements and data types for information and data required under this contract.

The DRDs define, by an individual Data Requirement (DR), the information and data required for each deliverable document.

The data types are used to identify the approval and control required for each DR. The DRL is an index of all the DRs by category.

Documentation submitted pursuant to this clause may incorporate references to other current approved documentation, provided the references are adequate and include such identification elements as title, document number, and approval date (where applicable). However, if the pertinent information is of relatively minor size, the contractor shall incorporate the information itself, in lieu of using a reference. The contractor shall assure that any referenced information is readily available to appropriate users of the submitted document.

DATA TYPES

For the purpose of this clause, the following information/documentation types are applicable:

Type 1 - That information and documentation which requires NASA approval prior to release. Approved type 1 information and documentation shall be controlled, and deviations from or changes to the concepts, techniques, and/or requirements stated therein shall require NASA approval prior to

implementation. All work under this contract covered by approved type 1 documents shall be performed in accordance with those approved documents. The Contracting Officers Technical Representative will have approval authority and will sign the data prior to its release. Contractually binding documents will not be implemented nor revised without contractual authorization.

Type 2 - That information and documentation for which NASA reserves a time-limited right to disapprove, in whole or in part. Type 2 data shall be submitted to JSC for review not less than 45 calendar days prior to its release for use or implementation. The Contractor shall clearly identify the release target date in the "submitted for review" transmittal. If the Contractor has not received any comment prior to the released target date, the document may be released for appropriate use. Any NASA comment received shall be appropriately dispositioned before the document is to be used. Type 2 data may be approved by NASA prior to its submittal.

Type 3 - That information and documentation which is provided to NASA for surveillance, information, review, and/or management control. This information does not require formal NASA review and approval. Information in this category would include design solutions, status, and cost/schedule reporting; analyses and test results, handbooks; and other designated lists, reports, etc.

Type 1 submissions shall be marked "TYPE 1 PRELIMINARY - PENDING NASA APPROVAL" or TYPE 1 APPROVED BY NASA," as appropriate. Additional special designations and deviations may be required on specific submissions in accordance with configuration management requirements.

Type 2 submissions shall be marked "TYPE 2 PRELIMINARY - RELEASE TARGET DATE, xx/xx/xx" or "TYPE 2 FINAL - NASA COMMENTS INCLUDED" or "TYPE 2 FINAL DOCUMENT," where NASA comments were not received.

NOTE: Documents submitted under this clause, even though directly (Type 1) or implicitly (Type 2) approved by NASA, shall not take precedence over the specifications as set out in Section C, Statement of Work.

The Contractor shall formally deliver a complete revised Type 1 or Type 2 data requirement with NASA comments incorporated within 45 days of receipt of comments.

Type 3 submissions shall be marked "TYPE 3 DOCUMENT - FOR INFORMATION, SURVEILLANCE, REVIEW OR MANAGEMENT CONTROL".

NUMBER OF COPIES AND DISTRIBUTION REQUIREMENTS

The Contractor shall provide one copy of each DR to the standard distribution list shown in Block 12 of the DRDs. Additional distribution shall be made as directed, in writing, by the Contracting Officer. The number of copies required will not exceed the limits set forth in Clause 1852.208-81, Restrictions on Printing and Duplicating, without prior Contracting Officer approval. All deliverables shall be made through the GFD workflow in the Program authorized Document Management System.

ELECTRONIC FORMAT

DRDs shall be maintained electronically.

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Configuration Management Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-CM-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) This plan is prepared by the contractor to describe the assignment of responsibility organizationally and the procedures used in accomplishment of the specific configuration management requirements as stated in the SOW and SSP 41170.			5. DRD Category <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) SOW 1.3		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: This CM plan defines the requirements, responsibilities, and procedures for the CM system pursuant to SSP 41170 and as it applies to this contract.

CONTENT: The CM plan shall address, as a minimum, the following:

A. Management Organization, (including reference documents)

1. Identification, Relationships and Integration of Contractor's proposed organization
2. Responsibility and authority for CM including roles in configuration control boards and technical reviews
3. Interfaces between Contractor's CM organization and NASA, subcontractors, and other Contractor's/contracts
4. Training plans

B. Configuration Identification

1. Selection of Configuration Items (CIs) (Hardware, Computer Software Configuration Items [CSCIs], and firmware)
2. Establishment of the functional, allocated and product baselines for hardware and software
3. Assignment and application of configuration identifiers including serial numbers, part numbers, lot codes, software and firmware identifiers

C. Configuration Control

1. Establishment of internal configuration and contractual baselines
2. Implementation of Internal and NASA configuration control
3. Establishment of configuration control boards and processes
4. Identification of processes to control changes, deviations, and waivers to program baselines

D. Configuration Status Accounting

1. Hardware/Software Configuration Status Accounting processes and provisions for reports and/or access to Configuration Status Accounting data
2. Description and methods of processes and tools to provide:
 - i. Identification of current approved configuration documentation and configuration identifiers associated with each CI
 - ii. Status of proposed engineering changes from initiation to implementation
 - iii. Waiver/deviation status and processing
 - iv. Results of configuration audits; status and disposition of discrepancies
 - v. Traceability of changes and confirmation of change incorporation
 - vi. Methods of access to information
3. Retention of historical data
4. Systems and tools (including data elements)

E. Configuration Verification/Audits

1. Audit conduct, policies, procedures, documentation, access, and support
2. Processes, plans, schedules for internal CM audits and subcontractor CM audits

F. Data Management

1. Development, approval, release and submittal of configuration data/documentation (including drawings) in relation to program and contractual events (DRD's, technical reviews, FCA/PCA, Acceptance Reviews, COFR, etc.)
2. Plan for subcontractor data management deliveries/control access
3. Establishment and operation of Engineering Release Unit and CM receipt desk
4. Process for Documentation control (i.e., DCNs)
5. Retention of historical data
6. Systems and tools

FORMAT: Electronic.

9. **OPR:** OH2/NASA ISS Configuration Management Office
10. **FIRST SUBMISSION DATE:** Thirty (30) days after Contract Award. Final due sixty (60) days after contract start.

Frequency of Submission: After initial approval - Annually

Additional Submissions: Updated if major systems or processes are changed

11. **MAINTENANCE:** Electronic, as required (see additional submissions)

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

1 electronic copy: Program Authorized Repository

13. **REMARKS:** None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: ISS Program Support Plans for International Partner Milestone Reviews 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. <p style="text-align: center;">PIC-II-01</p>	3b. RFP/Contract No. <p style="text-align: center;">Final RFP NNJ09ZBG001R</p>
4. Use (Define need for, intended use of, and/or anticipated results of data) Establish necessary planning and commitment for ISS Program teams' participation in the IP Reviews compatible with schedule, procedure and workload constraints applicable on both sides, ISS Program and IP. This deliverable governs the process and the scope of ISS participation in the review.			5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) SOW 1.5.3.2.1		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverable as follows:

SCOPE: This DR contains the content, format, maintenance, and submittal requirements for the ISS Program Support Plans for IP Design, Qualification and Acceptance Reviews.

CONTENT: The Plans shall define ISS Program objectives, bilateral agreements on requirements baseline, ISS Program teams' participation, Milestone Review planning and process, and support schedule for the ISS Program teams. The Plans shall identify specific Data Package content, including IP data provided via IP Bilateral Data Exchange Agreements, Lists and Schedules (BDEALS) documents, and distribution information as well as Review Item Discrepancies (RID) review process, including development and screening procedures. The release of these documents will be via signatures of appropriate NASA ISS Program organization managers and the ISS Program Manager or delegated representative.

FORMAT: Electronic. These Plans will be team documents and will not be ISS Program CM controlled.

9. OPR: OM/Program Integration Office

10. FIRST SUBMISSION DATE: 1 month prior to the IP Milestone Review, as directed

Frequency of Submission: Once.

Additional Submissions: N/A

11. MAINTENANCE: Electronic

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OM/Program Integration Office

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Export Control Audit Results 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-II-02	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) To provide insight into the Contractor's Export Control processes			5. DRD Category <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) NFS 1852.225-70 and clause H.10		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverable as follows:

SCOPE: Audits should include a thorough examination of all export control processes (as outlined in the Contractor's Export Control Plan) associated with this contract, areas for improvement (if any), and corrective action plans for identified areas of improvement. Affected subcontractors are required to do their own self-audits and report the results of the audit to NASA through the contractor. Prior to audit completion, inclusion on the audit process thru informal statuses to the JSC Export Services Team or Center Export Administrator is optional and might prove useful in the success of this effort.

CONTENT:

- A. Define current audit processes,
- B. Document the export control processes audited and audit findings ,
- C. Based on audit findings, the Contractor/subcontractor shall include corrective action plans for any processes identified for improvements and notification of when the correction of any non-conformances has been completed.

FORMAT: Electronic, compatible with the Program authorized repository

9. OPR: JSC Export Control Office or Center Export Administrator

10. FIRST SUBMISSION DATE: September 30, 2009

Frequency of Submission: Annually, at the end of each fiscal year

Additional Submissions: N/A

11. MAINTENANCE: The document shall be maintained electronically.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: Export Control Office/Center Export Administrator (CEA)

Program Authorized Repository Upload Notification: Contracting Officer

Program Authorized Repository Upload Notification: COTR

1 copy (electronic): Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: IT Management Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-IT-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The IT Management Plan is required to manage IT activities within the PI&C, to manage interfaces with other ISS Program users/customers and to manage interfaces with institutional IT providers.		5. DRD Category ___ Technical X _ Administrative ___ SR&QA	
6. References (SOW, Clause, etc.) SOW 1.4.1, 1.4.2		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The Contractor shall provide plans to coordinate and execute all technical and administrative tasks for all activities required to manage ISS Program IT resources and interface with other ISS Program and institutional IT providers.

CONTENT: The IT Management Plan shall be an umbrella document, which encompasses and integrates all IT management activities. As a minimum, the IT Management Plan shall cover:

- A. The significant policies and plans of all aspects of reportable IT.
- B. Levels of approvals.
- C. Flow of authority.
- D. External interfaces with the Government, other ISS Program Contractors, and institutional IT providers.
- E. The relationship between and integration of IT DRDs to the overall management of the IT content.
- F. IT Metrics will be partnered annually and shall include:

(a) **LEVEL 1 METRICS:** The Contractor shall calculate and report service delivery, productivity, system availability, problem identification/resolution, and customer satisfaction for each functional area on a monthly basis. The monthly reports shall be available to the government within 2 weeks following monthly closeout. The Contractor shall use the same information to create and report quarterly and annual roll-ups.

(b) **LEVEL 2 METRICS:** Contractor-specific metrics will augment or provide greater detail than Level 1 metrics and identify key areas of interest (such as the measurement of proactive, vendor-discovered, versus user-discovered, problems). These metrics will be specified by the Contractor and will be used to augment, validate, and ensure the completeness of the Level 1 metrics; however, regular reporting of Contractor-specific metrics to the Government is not

required. These metrics shall also be used to ensure the impartiality, effectiveness, and consistency of the overall metric gathering and reporting process.

(c) **LEVEL 3 METRICS:** The Contractor shall create a set of metrics, comprised of the previously reported Level 1 and Contractor-specific metrics, which will allow for the evaluation of time-based trends. These metrics will illustrate IOSS service level trends over the previous three-month or greater period.

(d) **DAILY METRICS SUPPORT:** The Contractor shall provide identification of work closures on a daily basis and shall provide for online read access to the detailed information for the closed work for a limited number (not to exceed 5) of individuals identified by the Contracting Officer (CO). These individuals should be able to request online reports, formatted from the available parameters.

FORMAT: Contractor-supplied format, compatible with ISS document standards

9. **OPR:** OH/ISS Management Systems Office

10. **FIRST SUBMISSION DATE:** 30 days after contract award

Frequency of Submission: Once

Additional Submissions: The IT Management Plan shall be updated as required to reflect significant changes that occur after its initial publication.

11. **MAINTENANCE:** The IT Management Plan shall be maintained electronically in the ISS EDMS (or equivalent).

12. **COPIES/DISTRIBUTION:**

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OH/ ISS Management Systems Office

1 electronic copy: Program Authorized Repository

13. **REMARKS:** None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: IT Project Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. <p style="text-align: center;">PIC-IT-02</p>	3b. RFP/Contract No. <p style="text-align: center;">Final RFP NNJ09ZBG001R</p>
4. Use (Define need for, intended use of, and/or anticipated results of data) IT Project Plans are required to baseline activities to be performed for all activities for which detailed project management is required to ensure the Contractor implement requirements within costs and schedule.			5. DRD Category X_ Technical ___ Administrative ___ SR&QA
6. References (SOW, Clause, etc.) SOW 1.4.2.1, NPR 7120.5, NPR 7120.7		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverable as follows:

SCOPE: The Contractor shall prepare project plans for coordination and execution of all developmental, sustaining engineering, and technology infusion projects submitted and implemented as part of the contracted work scope under the PI&C contract. For projects, the Contractor shall submit a project plan, which shall be used to assure: requirements are adequately communicated, the proposed design satisfies user operational and performance requirements, the proposed project costs are within budgetary constraints, and the completion schedule is reasonable. For project proposals, the Contractor shall include a preliminary project plan, which shall present the budgetary and technical aspects of the proposed work. Sections of the preliminary project plan may be incomplete or contain rough estimates. A project plan is considered preliminary until submitted in response to a written request for a project plan from the Information Technology Lead or their delegated representative.

CONTENT: For development projects performed under this contract, the Contractor shall provide the following items as directed by the Government:

- Project Plan – see below
- Developed or configured and tested system, ready for use.
- Additional documentation: – see below

FORMAT: The Contractor shall prepare the Project Plan in accordance with NPR 7120.7. If after initial delivery of the plan, the Government issues a change in the requirements, the Contractor shall revise the Project Plan to reflect those changes and resubmit it to the Contracting Officer.

The main body of the project plan provides an overview of the technical need, definition, schedule, and budget for the work. Contained in appendices are the operational concept and the top-level requirements and design. Since these appendices specify the knowledge and constraints at the time the project plan was written they are intended to be superseded by separate requirements and design documents produced during performance of the project. The appendices are retained since they represent the initial baseline for the project. The Project Plan is generated in accordance with P-IM-114, Project Planning Process.

PROJECT PLAN

1.0 INTRODUCTION

If the proposal or project is the result of a service request, then this section restates the operational and performance requirements contained in the service request. If the proposal or project is not the result of a service request then this section states the need and requirements which determined this proposal or project. If this section contains only general requirements, the Contractor shall expand those requirements to comprehensively identify the total requirements in Appendix C. Environmental considerations and requirements should be identified here if needed for special processing and operations and expanded in Appendix C.

The following text is inserted as the first sentence of the introduction:

“The purpose of this proposal or project plan is to provide the proposal information or project evaluation regarding the <proposal or project name> for the ISS PI&C contract. This plan defines the objectives, deliveries, schedule and stakeholder’s responsibilities for the subject project. “

1.1 BACKGROUND

This is a short narrative describing the historical perspective that necessitated the proposal or project.

1.2 SCOPE

This is a short narrative stating the boundaries of the proposal or project in terms of the organizations or systems affected and how the result of this plan is beneficial.

2.0 OBJECTIVES

This is a short narrative stating, the goals and objectives of the project and proposal. This paragraph can refer to the project operational concept, requirements and design details that are documented as appendices to this document. It states why the resultant project is needed, which organization requested it, and who the equipment end users are. This paragraph also identifies whether the plan is for a developmental, sustaining engineering or technology infusion project. If the plan is the result of a service request, then usually, this information can be taken directly from the service request.

The plan shall include the additional information identifying the deliverables that are to be included in the scope of the work planned, as defined by the Contractor and approved by the Government’s Representative:

- Requirements Document - defines functional and performance requirements for the system.
- Design Document and Drawings – defines the design rationale, approach, and system cost elements. Includes diagrams depicting system elements, process and logic flows, and platform and networking architecture. Also includes sustaining engineering and integration requirements.
- User Documentation (e.g., Quick Reference Guide, Users Guide, Administrators Guide)
- Operations Plan – defines operational requirements for supporting the deployed system.

- Deployment Plan – defines the approach and procedures for deploying the system into production.
- Security Plan – Must conform to JSC standard format for security plans.
- Verification of compliance with Section 508 of the Rehabilitation Act of 1974.
- Profile for Out Year Sustaining Engineering Costs – defines operations, sustaining engineering and consumables costs for the 5 year period beginning at the time of deployment.
- Test Plan – defines the testing methodology and test scenarios used to verify that the system functions as required. Test scenarios shall be correlated to each system requirement-by-requirement number.
- Customer Acceptance Testing Results - documents the results of testing performed by system customers, including their concurrence that the system is ready for deployment.
- Requirements Traceability Matrix – defines how each requirement is addressed.
- As-built Design Document and Drawings – describes the system as built and deployed.
- Studies and Market Survey Results – describes the results of studies and market surveys requested by the Government or initiated by the Contractor.
- Training Plans - training on systems capabilities, operations, and architectures, as required, and training materials

Other information may identified by the Contractor and approved by the Government's Representative

3.0 SCHEDULE

The project schedule shall identify tasks, durations, completion dates, their dependencies, milestones, and critical path. For projects with multiple deliveries this information shall be provided for each delivery. Each deliverable identified in the OBJECTIVES above shall be identified on the schedule. The schedule milestones may include the following, referenced to the date of approval of the plan: 1) submission of initial design drawings, 2) submission of acceptance test procedures, 3) completion of system testing, 4) day system becomes operational, and 5) submission of final report. Additional milestones, as defined by the Contractor and approved by the Government's Representative, may be added to the schedule.

4.0 STAKEHOLDER RESPONSIBILITIES

This is a narrative identifying the organizations, and their roles and responsibilities, which are associated with the project.

5.0 BUDGET

The project budget shall identify the costs associated with performing the project including developing, installing, and maintaining the project. The budget shall identify costs such as the following: 1) direct labor personnel-hours and dollar costs for engineering, technician support, drafting, and other direct labor; 2) indirect labor hours and dollar costs; 3) material costs; 4) equipment costs, and 5) other direct costs (ODC) such as travel or training. All dollar costs shall be stated as probable total costs to the Government and shall include G&A, indirect costs, and maximum performance award fee. Additional costs, as defined by the Contractor and approved by the Government's Representative, may be added to the budget.

APPENDIX A – ACRONYMS

This appendix lists and identifies each of the acronyms used in the project plan. If necessary, an additional glossary defining terminology may be added.

APPENDIX B – OPERATIONAL CONCEPT

This section provides the operational concept performed by the system delivered to the government. If the project plan is for proposed work, then this appendix provides a preliminary operational concept and identifies the appropriate documents which will include the comprehensive operational concept. The operational concept documents the functional processing of data with emphasis on user roles. This definition may be depicted as a data or process flow or depicted in several snapshot views of distinct business area functions.

APPENDIX C – REQUIREMENTS

This section provides the requirements of the system to be delivered to the government. If the project plan is for proposed work, then this appendix may provide preliminary requirements and identifies the appropriate documents which will include the comprehensive requirements. Where applicable, include the following: application requirements, system requirements, testing requirements. For projects with multiple deliveries, a cross reference shall be provided that identifies the requirements satisfied by each delivery.

APPENDIX D - DESIGN

This section provides the design and identifies the verification methods. Where applicable, include the following:

- Design approach
- Application design
- Data design
- Hardware, operating system and communications
- External interfaces
- Requirements traceability
- Test and verification methods

If the project plan is for proposed work, then this appendix provides a preliminary design and identifies the design documents which will include the comprehensive design.

In this section the Contractor provides a narrative description and design diagram of the proposed design that will satisfy the operational concept. If the design contains brand name hardware equipment or software, then the design will include the rationale stating why the specific brand name is required.

Additionally, in this section, the Contractor identifies methods of verifying the completed design. Methods can include analyses, tests, or a combination of tests. This section includes or defines the results and data, which are submitted in the final report

to verify the system design. For routine tasks and projects, the Contractor may propose using generic or existing test procedures.

9. OPR: OH/ISS Management Systems Office

10. FIRST SUBMISSION DATE: Within 2 weeks of assignment of a task to develop a Project Plan

Frequency of Submission: Once

Additional Submissions: As required

11. MAINTENANCE: Electronically, changes shall be incorporated by change page or complete reissue

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OH/ISS Management Systems Office

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: IT Security Plan and Reports 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-IT-03	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) To meet IT security reporting requirements		5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) SOW 1.4.2.2.4, NPR 2810.1A, NPD 2810.1A, NFS 1852.204-76, FIPS-PUB-199, NIST SP 800-18, 800-30, 800-34, 800-37, 800-53A, ITS-SOP-0005B, SOP-0009, SOP-0019B, SOP-0030C, SOP-0032, SOP-0033, SOP-0040, SOP-0043		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: This DRD applies to all internal and external Information Technology (IT) systems that are managed under this contract and that contain or process NASA data or information.

CONTENT:

I. Internal Systems

- (a) The Contractor shall update and maintain Certification and Accreditation (C&A) packages and related documentation for ISS Program IT systems as per NPR 2810.1A, ITS-SOP-0030C and NIST 800-37. Major re-certifications of IT Systems requiring C&A occur every three years, and the Contractor must prepare for and support this activity to ensure successful system re-certification. The next major re-certification for the ISS Production Facility system is anticipated to occur in June 2010.
 - (1) The Contractor shall map types of ISS information and ISS Program IT systems to security categories as per NPR 2810.1A, ITS-SOP-0019B, FIPS-PUB-199 and NIST 800-60 (Volumes 1 and 2).
 - (2) The Contractor shall update risk assessments for ISS Program IT systems as per NPR 2810.1A and NIST 800-30.
 - (3) The Contractor shall update and maintain a Security Plan and a Plan of Actions and Milestones (POA&M) for ISS Program IT systems as per NPR 2810.1A, ITS-SOP-0032 and NIST 800-18 Rev 1, assessing security controls as per NIST 800-53A.
 - (4) The Contractor shall perform periodic technical assessment, security testing and continuous monitoring of ISS Program IT systems as per NPR 2810.1A and NITR 2810-12.

- (5) The Contractor shall perform disaster recover, contingency, and continuity of operations planning and testing for ISS Program IT systems as per NPR 2810.1A and NITR 2810-15. The planning and testing shall include support of Center severe-weather annual planning and testing.

II. External Systems

The Contractor shall follow the instructions in ITS-SOP-0033 for any external systems that are managed under this contract.

INFORMATION ON EMPLOYEES IN SENSITIVE AIS POSITIONS/ASSIGNMENTS REPORT: The Information on Employees in Sensitive ITS Positions/Assignments Report shall provide information for personnel screening as required by NPR 2810.1A.

FORMAT: As defined in NPR 2810.1A and the applicable NIST, NITR and ITS-SOP documents specified above.

9. OPR: OH/ISS Chief Information Officer

10. FIRST SUBMISSION DATE: Thirty (30) days after contract award

Frequency of Submission: As defined in NPR 2810.1A

Additional Submissions: As defined in NPR 2810.1A

11. MAINTENANCE: As defined in NPR 2810.1A

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OH/ISS Chief Information Officer

1 electronic copy: Program Authorized Repository

13. REMARKS: None.

**DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)**

1a. DRD Title: Financial Management Reporting 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-PC-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Provide a basis for reporting and evaluating contract cost performance. Financial data contained in the reports must be auditable using Generally Accepted Accounting Principles.			5. DRD Category <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) H.3 NFS 1852.216-80 Task Ordering Procedure (OCT 1996)		7. Interrelationships (e.g., with other DRDs) PIC-PM-02 Integrated Management Review; PIC-PC-3 Workload Reports; PIC-PR-05 Task Order Plan	

8. PREPARATION INFORMATION:

SCOPE:

Contract financial management reports shall identify all task order cost elements and include baseline plan, actuals, and variance analysis. Variances greater than +- 5% shall include an explanation for the variance and identify contractor actions to address the variance. Financial reporting formats shall include:

- Format 1 - Task Order Report
- Format 2 - Contract Summary Report (Task Order)
- Format 3 - Contract Summary Report (Work Breakdown Structure)
- Format 4 - Safety & Mission Assurance Report (Work Breakdown Structure)
- Format 5 - Program Integration Report (Work Breakdown Structure)

CONTENT: Financial Management Report Formats and Instructions are included in Attachment 1. Financial management reporting shall reconcile to DRD PIC-PM-02 Integrated Management Review, DRD PIC-PC-03 Workload Reports, and DRD PIC-PR-05 Task Plan.

FORMAT: Financial Management Reports shall be submitted in Microsoft Excel file (.xls) format, with narrative summaries provided in Microsoft Word file (.doc) format. Note: Alternate contractor formats will be considered.

- 9. OPR:** BG/Contracting Officer - Formats 1 & 2.
 LO/Contract Analyst - Formats 3, 4 & 5.

10. **FIRST SUBMISSION DATE:** Initial report shall be submitted 30 days after authorization to proceed has been granted.

Financial Management Report Frequency of Submission:

- a. **Hardcopy** due not later than 10 working days following the close of the contractor's monthly accounting period.
 - b. **Electronic Copy:** Financial Management Reports shall be loaded into ISS Data Management System (IDMS) no later than 10 working days following the close of the contractor's monthly accounting period. The date of the electronic submittal shall be used to determine the timeliness of delivery.
 - c. **Monthly reporting** will not be required after the contract is physically complete, provided that the final financial report includes actual hours, associated costs, and WYEs, only (no estimates or forecasts). Monthly financial management reporting will be required as long as estimates for the following period are included.
 - d. **Cost reported** after the submission of the final contractor financial report, will require the contractor must submit a revised report in the month the cost change is recognized.
11. **MAINTENANCE:** Financial management reports shall be revised to reflect prior period adjustments, or correct errors when deemed necessary by the Contracting Officer. The revised financial report shall be delivered prior to closure of the current JSC accounting system for the month.

12. **COPIES/DISTRIBUTION:**

1 electronic copy to Program Repository via IDMS workflow

1 original signed hardcopy to BG/Contracting Officer

1 hardcopy to LO/Contract Analyst, and 1 hardcopy to LF6/Cost Accounting

Program Authorized Repository Upload Notification: BG/Contracting Officer, OA/COTR LO, LF6, OH3/Assessment Office, OH2/Data Management.

13. **REMARKS:** None

DRD PIC-PC-01 Attachment 1

The Financial Management Report provides data necessary for the following:

1. Projecting hours, associated costs, and WYEs to ensure that dollar and labor resources realistically support project and program schedules.
2. Tracking contractors' actual hours and associated costs in relation to negotiated contract value, negotiated rates, projected costs, and budget forecast data.
3. Planning, monitoring, and controlling project and program resources.
4. Accruing cost in NASA's accounting system, providing program and functional management information, resulting in liabilities reflected on the financial statements.

Financial Management Reporting

The due dates reflect the date the financial management reports are loaded into IDMS, not the date the reports are generated or mailed by the contractor. It is critical that the financial management reports are submitted in a timely manner to ensure adequate time for NASA to analyze and record the cost into the NASA accounting system.

Variance explanation computation is $\text{Planned Monthly Hours and Associated Costs} - \text{Monthly Actual Hours and Associated Costs} / \text{Planned Monthly Hours and Associated Costs}$. Variance explanations shall include insight to the 3rd level WBS and shall detail the root cause of the variance (i.e., ISS Program change in direction, unexpected problems, etc.). Variance explanations shall address any impact to delivery and/or schedule and the contractor's plan for resolving the impact of the variance. Forecast plans shall be updated to be consistent with the task order schedule.

Work Year Equivalent (WYE)

Work Year Equivalents (WYE) is a full time equivalent defined as the proposed productive hours needed to comprise one average full time employee. This may be one employee or several part time employees. Productive hours are defined as the total available hours for productive work in a year, excluding overtime, less paid time off.

Format 1

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Format 2

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Format 3

Format 4

Format 5

(Task Order)

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DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Workforce Reports 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. <p style="text-align: center;">PIC-PC-03</p>	3b. RFP/Contract No. <p style="text-align: center;">Final RFP NNJ09ZBG001R</p>
4. Use (Define need for, intended use of, and/or anticipated results of data) To provide workforce information by geographic location.		5. DRD Category ___ Technical <input checked="" type="checkbox"/> Administrative ___ SR&QA	
6. References (SOW, Clause, etc.)		7. Interrelationships (e.g., with other DRDs) All PIC-PC and PIC-PM DRDs	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverable as follows:

SCOPE: The reports provide workforce data by geographic location. There are two types of reports: 1) a Workforce Report by location, and 2) an As Requested Workforce Report.

CONTENT: The Workforce Report shall provide:

A. Workforce Year Equivalent (WYEs) by location, specifically:

- (1) By NASA Center
- (2) By State
- (3) Tailored as request by NASA Headquarters

B. Estimated indirect hours and percent of fiscal year contract.

C. Estimated minor subcontractor hours not reported as WYEs in item 1 and percent of fiscal year contract.

The content of the As Requested Workforce Report will vary based on specific direction provided by NASA Headquarters to support congressional inquiries. There is the potential requirement to provide workforce by Zip Code.

FORMAT: Specific formatting to be tailored by LO/Contractor.

9. OPR: LO

10. FIRST SUBMISSION DATE: Ten (10) Workdays after end of fiscal year

Frequency of Submission: Annual

Additional Submissions: As required for the As Requested Workforce Report

11. MAINTENANCE: Changes shall be incorporated by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: LW

Program Authorized Repository Upload Notification: LO

Program Authorized Repository Upload Notification: OH/Resources Management Office

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: COTR, BG

1 electronic copy: Program secure repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Work Breakdown Structure (WBS) and Dictionary 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. <p style="text-align: center;">PIC-PC-04</p>	3b. RFP/Contract No. <p style="text-align: center;">Final RFP NNJ09ZBG001R</p>
4. Use (Define need for, intended use of, and/or anticipated results of data) Provides framework to define work and to establish financial reporting levels and to correlate schedules.		5. DRD Category ___ Technical X Administrative ___ SR&QA	
6. References (SOW, Clause, etc.)		7. Interrelationships (e.g., with other DRDs) All PIC-PC and PIC-PM DRDs	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Contains the contractual Work Breakdown Structure (WBS), the WBS Dictionary, and a map to the ISS Program WBS.

CONTENT: Contains the contractual WBS, its Dictionary, and ISS Program map as follows:

The WBS and Dictionary shall indicate the mapping of the Contractor WBS to the contract SOW WBS and the ISS Program WBS at the lowest levels of the ISS Program WBS.

- A. WBS: The WBS shall subdivide the total contracted effort into elements that serve as the basis for detailed planning and control of the project, and permit collection of cost and schedule data at element level. These elements include hardware, software, services, tasks, etc. It shall include all subcontracting and major procurement effort at the proper level. It shall be product oriented and structured so that key SOW tasks are at an appropriately high level.
- B. WBS Dictionary: The WBS Dictionary shall define the scope of each WBS element and narratively describe the tasks included in each element
- C. Program WBS Map: The Contractor shall provide a mapping of the contract WBS to the ISS Program WBS.

FORMAT: Per JSC instructions and in a format supported by the Program-authorized electronic library. The WBS shall be in a chart format showing element relationships. The WBS Dictionary shall be ordered in consonance with the WBS and shall reference each WBS element by its identifier and name. Specific formatting for the map to the Program WBS will be done by LO/Contractor.

9. OPR: OH

10. FIRST SUBMISSION DATE: Thirty (30) days after contract start date.

Frequency of Submission: As required

Additional Submissions: N/A

11. MAINTENANCE: Electronically. Information shall be updated as required by the Contractor.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: LW

2 hardcopies: LO

Program Authorized Repository Upload Notification: LO

Program Authorized Repository Upload Notification: OH2/Data Management

1 electronic copy: COTR and BG

1 electronic copy: Program secure repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Program Schedules 1b. Data Type: 2 (Initial), 3 (Subsequent)	2. Date of Current Version	3a. DRD No. PIC-PC-06	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use: The schedules and schedule assessments are needed to support program cost, technical and schedule control activities performed within the Program Planning and Control (PP&C) Office and other Control Account Manager (CAM) Offices. These products will be used in multiple Program reviews and/or reports			5. DRD Category ___ Technical <input checked="" type="checkbox"/> Administrative ___ SR&QA
6. References SOW 1.2.5		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverable as follows:

SCOPE: The contractor shall provide individual schedules at the level necessary to support the requirements of PP&C office and other CAM offices as denoted below. The contractor shall provide monthly schedule assessments for projects or activities identified by the PP&C office. The contractor shall provide schedule assessments for ISS Program change requests exceeding \$1M. The contractor shall provide a Program Level calendar of significant events.

CONTENT: All schedules provided shall utilize an approach (see Attachment A) that shall provide the ability to identify, analyze, mitigate and control scheduling risks and impacts; accurately identify and analyze critical path activities; and allow its users to easily measure the progress toward achieving the intended plan in ISS Projects. The schedules and schedule assessments outlined in Table 1 provided by the Contractor shall include:

SCHEDULE MANAGEMENT:

- A. *Integrated Program Flight Schedule* – The contractor shall provide an integrated flight schedule that contains all flights scheduled to the ISS.
- B. *Integrated Program Schedule Panel (IPSP) Schedules* – The contractor shall provide schedules, schedule status, agendas, charts and meeting minutes that include the details necessary to accomplish weekly IPSP meetings.

- C. *30-60-90 Calendar* – The contractor shall maintain and provide a program calendar that encompasses a rolling 90 days. This calendar shall display the current planned dates for ISS Program Management activities, program meetings, significant events, etc.
- D. *CAM Specific Schedules* – The contractor shall provide integrated schedules for CAM identified activities or projects in a format suitable for each schedule that includes the milestones necessary for management to access the progress of those activities. These schedules shall incorporate data from outside sources (e.g. International Partners) where required.
- E. *Certification of Flight Readiness (CoFR Matrix)* – The contractor shall maintain and provide a CoFR matrix that contains the most current dates for all readiness related meetings (both pre and post flight) for those missions scheduled to fly to the ISS.
- F. *Ad hoc Schedules* – The contractor shall submit schedules for special projects when required to support special taskings from NASA Headquarters or other external agencies.

SCHEDULE ASSESSMENTS:

- A. *Flight Specific Assessments* – The contractor shall provide a schedule assessment for each flight planned to the ISS. These summary assessments shall include an independent assessment of the readiness of each ISS payload, orbital replacement unit (ORU), flight support equipment item and carrier to meet the program need dates to support the launch date. The contractor shall submit these assessments in a format consolidated by flight that can be utilized within the ISS Monthly Program Review (IMPR) and Early Warning System (EWS) Report.
- B. *Critical Item Assessments* – The contractor shall provide independent schedule assessments for the remaining development work on the ISS Program. These assessment shall include a current schedule status for each development item. Develop ISS Program schedules and charts for the IPSP/IMPR monthly. The contractor shall submit these assessments in a consolidated format that can be utilized within the IMPR and EWS.
- C. *Change Request (CR) Assessments* – The contractor shall provide an independent schedule assessment (where applicable) for each CR presented at the Space Station Program Control Board (SSPCB). These assessments shall include an evaluation of the likelihood that the proposed CR will meet the schedule supporting the CR..

FORMAT: See Table 1.

9. OPR: OH3

10. FIRST SUBMISSION DATE: See Table 1.

Frequency of Submission: See Table 1.

Additional Submissions: See Table 1.

11. MAINTENANCE: Changes shall be incorporated by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OH3

1 electronic copy: Program Authorized Repository

13. REMARKS: None.

TABLE 1 PIC-PC-06 DELIVERABLE SUMMARY

SCHEDULE MANAGEMENT					
SOW Paragraph	Deliverable	First Submission	Frequency	Additional Submissions	Format
1.2.5.1.1b	Month-end PIC Schedule	Two months after contract start	Monthly	Informal Updates	E-mail. Electronic. Contractor format acceptable
1.2.5.1.1	Integrated Program Flight Schedule	First month after contract start, on the first Monday of the month	Monthly	5 business days after last day of reporting month	E-mail. Electronic (uploaded to ISS Webpage). Contractor format acceptable
1.2.5.1.2	IPSP Schedules Package	N/A	Twice per month	Informal Updates	Electronic (uploaded to ISS Webpage). 1 color copy delivered to IPSP. Contractor format acceptable
1.2.5.5a	The 30-60-90 ISS Planning Calendar	N/A	Twice per week	Informal Updates	Electronic (uploaded to ISS Webpage)
1.2.5.4	CAM Specific Schedules	N/A	Monthly	Informal Updates	E-mail. Electronic (uploaded to ISS Webpage). Contractor format acceptable
1.2.5.5b	CoFR Matrix	N/A	Weekly	Informal Updates	E-mail. Electronic (uploaded to ISS Webpage). 1 color copy delivered to IPSP. Contractor format acceptable
1.2.5.6	Ad hoc schedules	N/A	N/A	Informal Updates	E-mail. Electronic. Contractor format acceptable
SCHEDULE ASSESSMENTS					
1.2.5.3a, b, & c	Flight Specific Assessments	N/A	Monthly	5 business days after last day of reporting month	E-mail. Electronic. Contractor format acceptable
1.2.5.3b & c	Critical Items Assessments	N/A	Monthly	5 business days after last day of reporting month	E-mail. Electronic. Contractor format acceptable
1.2.5.3b	CR Assessment	N/A	Weekly	Informal Updates	E-mail. Electronic. Contractor format acceptable

DRD PIC-PC-06
Attachment A

Scheduling approaches shall address, but not be limited to, the following information:

Scheduling methodology that is consistent with the current Project Management Institute standards.

Predicted task duration derived from accurate and objective prediction methodologies

Indications of activities by appropriate nomenclature that clearly delineates the task to be performed

Identification of who is responsible for doing the actual work

Required supporting activities or support from other contractors, outside organizations, agencies, or center.

Identification of critical resource requirements.

Clear depiction of the interrelationships and constraints among related tasks

Identification of the critical path, priorities, high risk activities and other significant activities

Special test activities or requirements.

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: PI&C Management Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-PM-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) To enable NASA to evaluate the Contractor's management organization, approach, processes and systems.			5. DRD Category ___ Technical X Administrative ___ SR&QA
6. References (SOW, Clause, etc.) RFP Clause H.10, Additional Export Control Requirements F.6, Phase-In and Close-Out		7. Interrelationships (e.g., with other DRDs) All PIC-PC and PIC-PM DRDs	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The PI&C Management Plan shall describe the basis for the Contractor's management organization, approach, and processes. It shall provide a comprehensive integration of all management systems of the prime and subcontractors. The plan will include those processes specifically required to accomplish the Statement of Work, as well as those systems and procedures that are to be set in place by the contractor. The PI&C Management Plan shall describe the Contractor's approach for accomplishing contract functions while adhering to export laws, regulations and directives.

CONTENT: The PI&C Management Plan shall address the Contractor's plan for work definition and authorization, scheduling, budgeting, data accumulation, Safety and Mission Assurance, Program recovery process, subcontract, material control, indirect cost management, baseline control, and organization structure.

FORMAT: Contractor's format is acceptable.

9. OPR: COTR

10. FIRST SUBMISSION DATE: Draft within thirty (30) days after contract award. Final within ninety (90) days after contract start.

Frequency of Submission: See below

Additional Submissions: Within 45 days after the addition/deletion of major content to the contract or to describe and justify major changes in the Contractor's management organization, approach and/or processes.

11. MAINTENANCE: Electronic. Changes shall be incorporated as required by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: COTR
1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Integrated Management Review (IMR) 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-PM-02	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Provides contract performance summary status including analysis of cost, schedule, and technical performance.		5. DRD Category <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) NPR 7120.5B NPR 9501.2 SOW 1.1.1.1.2 Performance Management Reviews H.3 NFS 1852.216-80 Task Ordering Procedure (Oct 1996), Task Order Progress Reports		7. Interrelationships (e.g., with other <i>PIC-PC-1 Financial Management Reporting</i> PIC-PC-3 Workload Reports; PIC-PR-05 Task Order Plan	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverables as follows:

SCOPE: Provides contract performance summary status including analysis of cost, schedule, and technical performance.

CONTENT:

The contractor shall present a summary contract performance report at a monthly IMR. IMRs shall address technical issues and accomplishments; provide analysis of cost and schedule performance, and include corrective action plan status as appropriate. IMR reports shall be consistent with PIC-PC-1 Financial Management Reporting; PIC-PC-3 Workload Reports; and PIC-PR-05 Task Order Plan. IMR reporting shall include subcontracts performance data for subcontracts that have the potential to impact the successful fulfillment of this contract.

Metrics

The contractor shall develop, maintain, and report contract performance metrics, which demonstrate progress against task order cost, schedule, safety, and technical performance objectives. NASA approved metrics shall reflect meaningful measures of contract performance, which demonstrate successful execution of task order requirements against appropriate performance objectives. NASA approved metrics shall also provide linkage to Program level metrics in the Management Information System.

Integrated Management Review Report

Integrated Management Review Reports shall include the following:

- **Contract Summary Performance Report** - Status of fiscal year contract level costs, schedule, and technical performance. Includes cumulative variance explanations (to fiscal year plan) and End-Of-Year trend variance explanations..
- **Task Order Summary Performance Report** - Status of fiscal year task order level costs, schedule, and technical performance.
- **Metric Performance Chart** - Status metrics plan, actual, variances.
- **Budget Performance Report** - Fiscal year costs and workforce summaries; status of fiscal year reserves, risks, and opportunities, and budget variance explanations.

FORMAT: Specific format to be tailored by the Contracting Officer and the contractor.

9. OPR: BG/Contracting Officer; OA/COTR

10. FIRST SUBMISSION DATE: The first Monthly input should support a review 20 working days after the initial financial month end.

Frequency of Submission: Monthly

11. MAINTENANCE: Changes shall be incorporated as required by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Hard Copies: 2 each BG/Contracting Officer
 1 each OA/COTR
 2 each LO

Program Authorized Repository Upload Notification: LW

Program Authorized Repository Upload Notification: OH3/Assessment Office

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: LO

Program Authorized Repository Upload Notification: BG,OA, LO

1 electronic copy: Program secure repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Certification of Flight Readiness (CoFR) Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-PM-03	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) To provide a management approach and implementation plan for Certification of Flight Readiness (CoFR) endorsement		5. DRD Category <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> Technical <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) SOW 1.1.1.1.4 SSP 50108		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the data delivery as follows:

SCOPE: The plan shall describe the management approach and planned implementation methods for accomplishing the contractor's CoFR responsibilities and requirements of the contract.

CONTENT: Address all Contractor responsibilities for preparing for the CoFR endorsement in accordance with SSP 50108. The CoFR Plan must address relationship to NASA counterparts and the division of responsibility for the CoFR endorsement activities.

FORMAT: Electronic

9. OPR: COTR

10. FIRST SUBMISSION DATE: Draft within 30 days after contract award. Final within 60 days from contract start.

Frequency of Submission: Annually, as required.

Additional Submissions: Update as required. If there are no changes since the last update, the Contractor shall re-certify the CoFR Plan accuracy NLT 1 October of each fiscal year.

11. MAINTENANCE: Changes to the plan shall be incorporated as required by change page or complete reissue. Changes to Flight Readiness Status and Endorsements shall be made as required. The Contractor shall maintain a historical file of Flight Readiness Status.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: COTR

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Patent Rights-Retention 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-PR-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Identification of any subject inventions including information on patent applications and related filings.		5. DRD Category <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) NFS Clause 1852.227-11		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Inventions by the Contractor as part of their performance on this government contract.

CONTENT: The content of the deliverable shall include:

- A. A listing every twelve (12) months of all subject inventions required to be disclosed during the period.
- B. A final report prior to closeout of the contract listing all subject inventions or certifying that there were none.
- C. Upon request, the filing date, serial number and title, a copy of the patent application, and patent number and issue date for any subject invention in any country in which the Contractor has applied for patents.

FORMAT: The electronic or paper version of NASA form 1679, Disclosure of Invention and New Technology (Including Software) to disclose subject Invention

9. OPR: BG

10. FIRST SUBMISSION DATE: 12 months after contract start

Frequency of Submission: Once a year

Additional Submissions: Final report at contract closeout.

11. MAINTENANCE: Updated annually by the Contractor and submitted in printed form.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: BG

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Contract Close-out Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-PR-02	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Manage and control contract close-out.		5. DRD Category ___ Technical X Administrative ___ SR&QA	
6. References (SOW, Clause, etc.) RFP Clause F.6		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: This plan shall provide the details necessary to transition the contract to any follow-on contract and to close out the existing contract.

CONTENT: The content of the deliverables shall include:

- A. Implementation Strategy
- B. Task description and schedule
- C. Staffing profile
- D. Cost Estimate

FORMAT: Contractor's format is acceptable

9. OPR: BG

10. FIRST SUBMISSION DATE: Six months prior to the end of the contract

Frequency of Submission: Once

Additional Submissions: N/A

11. MAINTENANCE: Electronically.

12. COPIES/DISTRIBUTION:

1 copy (electronic): Program authorized repository

Program Authorized Repository Upload Notification: OH2/Data Management for distribution to Contracting Officer and COTR

Program Authorized Repository Upload Notification: BG

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Wage/Salary and Fringe Benefit Data 1b. Data Type: 3	2. Date of Current Version	3a. DRD No. PIC-PR-03	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The Wage/Salary and Fringe Benefit Data will be used by the NASA Contracting Officer and the Contract Labor Relations Office to provide the necessary data for submittal of Standard Form (SF) e-98, Notice of Intention to Make a Service Contract and Response to Notice, to the Department of Labor, and to assist in the monitoring of Service Contract Act compliance.			5. DRD Category <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) FAR 52.222-41, Service Contract Act of 1965, As Amended		7. Interrelationships (e.g., with other DRDs) FAR 52.222-41	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The Wage/Salary and Fringe Benefit Data must be submitted by the Contractor, and any subcontractors which are subject to the provisions of the Service Contract Act, to the Contracting Federal Agency. This requirement is in accordance with FAR regulations 22.1007 and 22.1008.

CONTENTS: The Wage/Salary and Fringe Benefit Data should contain the data included in the enclosed DRD forms, titled “Wage/Salary Rate Information,” “Fringe Benefit for Service Employees,” and “Fringe Benefits per Collective Bargaining Agreement.” The Wage/Salary Rate Information shall contain a listing of all exempt and nonexempt labor classifications working on the contract. Separate forms should be utilized for classifications working in different geographic areas and for each subcontractor. Wage determination numbers, appropriation labor organization names, and subcontractor names, must be reflected. All nonexempt labor classifications must be matched to wage determination classes or to Collective Bargaining Agreement (CBA) classifications if union represented employees are working on the contract. Annotate exempt or nonexempt and union or nonunion. The current hourly rates should reflect the actual lowest and highest paid employees, along with a computed average rate. State the number of employees working in each category. Separate Fringe Benefit forms should be completed for non-represented classifications and for each separate CBA, if applicable. A separate form must be completed for the prime and each subcontractor. Three hardcopies and one electronic copy of each Collective Bargaining Agreement are required if organized labor is represented on your contract.

FORMAT: The Wage/Salary and Fringe Benefit Data should be in a format substantially the same as enclosed with this DRD (Forms 2, 3A, 3B, 3C and 4).

9. OPR: BA

10. FIRST SUBMISSION DATE: Thirty (30) days after contract award.

Frequency of Submission: Annually, 90 days prior to the anniversary date of the contract.

Additional Submission: N/A

11. MAINTENANCE: Changes shall be incorporated as required by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: CO

Program Authorized Repository Upload Notification: COTR

Program Authorized Repository Upload Notification: BA2/Contract Labor Relations Officer

1 copy: BA2/Contract Labor Relations Officer

13. REMARKS: Sample Work Sheet

**Attachment to PIC-PR-03
FORM 2
PAGE 1 OF 1**

WORK SHEET FOR SF-98 DATA					
WAGE RATE INFORMATION					
CONTRACTORS LABOR CLASSIFICATION	WAGE DETERMINATION CLASSIFICATION	EXEMPT OR NON EXEMPT	UNION OR NON UNION	CURRENT HOURLY RATE	MYE NO OF EMPLOYEES
Illustration of required data:					
Project Manager	Not Required	E	N	\$40.00	1
Supervisor	Not Required	E	N	\$32.00	1
Electrical Engineer	Not Required	E	N	\$26.50 - \$30.00	3
Engineer Technician, Jr	Engineering Tech, I	N	N	\$16.59 - \$18.00	12
Engineer Technician, Sr	Elect Tech Main II	N	U	\$23.28 - \$24.00	4
Secretary	Secretary I	N	N	\$15.92 - \$17.50	2
File Clerk	General Clerk II	N	N	\$12.97	1
Clerical Data Entry	Word Processor I	N	N	\$12.27 - \$12.90	3

Submit data in the above illustrated format for all labor classifications used, or planned to be used, on this contract.

All nonexempt labor classifications must be matched to wage determination classes listed in the area wage determination or applicable collective bargaining agreement.

(Continue on a blank page if necessary)

FRINGE BENEFITS FOR SERVICE EMPLOYEES

For Period from _____ to _____

Contractor:

Number of nonexempt employees on contract: _____

Total number of employees on contract: _____

1. Health and Welfare Items and Other Fringe Items:
(Indicate whether or not coverage is provided to employees and state current average hourly cost per service employee.)

<u>Item</u>	<u>Coverage Provided</u>	<u>Average Hourly Cost</u>
a. Life Insurance		
b. Accidental Death		
c. Disability		
d. Medical & Hospital		
e. Dental		
f. Retirement Plan		
g. Savings/Thrift Plan		
h. Sick Leave		
i. Tuition Reimbursement		
j. Other (Describe)		

2. Paid Absences

Service Requirement Days per Year

- a. Vacation
- b. Holidays
- c. Sick Leave
- d. Jury Leave
- e. Funeral Leave
- f. Military Leave
- g. Other (Describe)

Signature of Company Representative

Date

(Continue on a blank page if necessary)

FRINGE BENEFITS FOR EXEMPT EMPLOYEES

For Period from _____ to _____

Contractor:

Number of exempt employees on contract: _____

Total number of employees on contract: _____

1. Health and Welfare Items and Other Fringe Items:
(Indicate whether or not coverage is provided to employees and state current average hourly cost per service employee.)

<u>Item</u>	<u>Coverage Provided</u>	<u>Average Hourly Cost</u>
a. Life Insurance		
b. Accidental Death		
c. Disability		
d. Medical & Hospital		
e. Dental		
f. Retirement Plan		
g. Savings/Thrift Plan		
h. Sick Leave		
i. Tuition Reimbursement		
j. Other (Describe)		

2. Paid Absences

Service Requirement Days per Year

- a. Vacation
- b. Holidays
- c. Sick Leave
- d. Jury Leave
- e. Funeral Leave
- f. Military Leave
- g. Other (Describe)

Signature of Company Representative

Date

(Continue on a blank page if necessary)

FRINGE BENEFITS PER COLLECTIVE BARGAINING AGREEMENT

For period from _____ to _____

Contractor:

Contract Number:

Number of employees in bargaining unit _____

Total number of employees on contract _____

1. Shift Differential: (Describe any pay over and above base rates for 2nd, 3rd, weekend, or other shifts.)

2. Health and Welfare Items and Other Fringe Items: (Indicate whether or not coverage is provided to employees and state current average hourly cost per employee covered by a Collective Bargaining Agreement.)

Item	Coverage Provided (Yes or No)	Average Hourly Cost
a. Life Insurance		
b. Accidental Death		
c. Disability		
d. Medical and Hospital		
e. Dental		
f. Retirement Plan		
g. Savings/Thrift Plan		
h. Sick Leave		
i. Tuition		
j. Other (Describe)		

(Continue on a blank page if necessary)

FORM 3C
Page 2 of 2

3. Paid Absences:

	Service Requirement	Days per Year
a. Vacation		
b. Holiday		
c. Sick Leave		
d. Jury Leave		
e. Funeral Leave		
f. Military Leave		
g. Other (Describe)		

4. Severance Pay: (Briefly describe terms and amounts.)

5. Other Fringe Benefits: (Describe any other fringe benefits not included above, and show average hourly cost.)

6. Premium Pay: (Discuss all premium pay provisions not previously shown on this form.)

Signature of Company Representative

Date

(Continue on a blank page if necessary)

FORM 4
Page 1 of 1

DESCRIPTION OF FRINGE BENEFITS		FORM 4	
<input type="checkbox"/> Prime Contractor: <input type="checkbox"/> Major Subcontractor:			
DESCRIPTION	EXEMPT	NON-EXEMPT	Ref.
Insurance (Life)			
Insurance (Health) (Employee/Company Share)			
Insurance (Dental, Disability, Etc.)			
Retirement			
Severance Pay			
Personal Leave			
Sick Leave			
Vacation			
Holidays			
Special Workweek			
Overtime Policy			
Uncompensated Overtime			
Pension Portability			
Pay Differentials Policy Shift Off-site			
Compensatory Leave Policy			
Award Policy Suggestion Other			
Bonus Plan			
Training			
Employee Morale			

(Continue on a blank page if necessary)

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Data Reprourement Package 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-PR-04	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Provide content and format requirements for delivery to NASA of all analytical models, tools, supporting documentation, equipment and resource/cost information used to perform future reprourement activities. Note: This data may be disclosed to competing offerors in the future		5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) Section H.12		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Analytical models, unique tools, supporting documentation, equipment and resource/cost information shall be submitted in accordance with this DR.

CONTENTS:

- A. A catalog of models and tools provided according to any DR on this contract shall be developed which contains the following:
 - 1) Unique name of item,
 - 2) Version number, revision number, or release date as appropriate,
 - 3) Abstract which describes purpose or use of item,
 - 4) Location of electronic copy.
- B. Models and tools to be submitted include:
 - 1) Models which are delivered per requirements contained in any other DR on this contract shall not be redelivered for this DR. However, each shall still be documented appropriately.
- C. Supporting documentation for the use of each item, including those submitted per other DRDs on this contract where that DRD doesn't require it, shall be submitted. The documentation shall include, at a minimum, the following information:
 - 1) Purpose of the model or tool;
 - 2) Inputs required;
 - 3) Governing assumptions or constraints, including definition of the Vehicle configuration if pertinent to the model definition or its use;
 - 4) Model or tool certification history, including description of validation methods used and results of correlation activities;
 - 5) Association with other models, such as connection between an integrated ISS model and a supporting element model;
 - 6) For models, necessary tools such as a specific software modeling environment required to operate the model;

- 7) For tools, necessary platforms such as computer processor requirements or operating system limitations.
- D. Data package containing the following:
 - 1) Labor resources.
- E. List of all direct labor skills by labor category, segregated by current work breakdown structure (WBS).
- F. An estimate of the number of indirect labor skills such as business or computer support normally charged through an indirect expense pool or through a service center expense.
- G. Current annual average wage rates for each labor category and when these wages were last adjusted for escalation. Also indicate whether any adjustments are projected to be made prior to contract expiration.
- H. The number of Work Year Equivalents (WYEs) and the estimated number of productive hours for each labor category currently on contract, segregated by current WBS.
- I. Seniority level of all skills on the current contract:
 - 1) Non-labor resources.
- J. List of all materials, equipment, travel, supplies, etc., and the incurred annual cost by WBS.
- K. Provide a discussion associated with the major items identified above, such as the materials estimate includes a prompt payment discount of TBD% due to large volume discounts you have negotiated with your vendors.
 - 1) The projected liability cost associated with unused accrued paid leave associated with non-exempt personnel. Provide a copy of any Collective Bargaining Agreements in place and a current status of any upcoming negotiations with a union.
 - 2) Equipment (additional information to that listed in #2, a., above):
List of all contractor-owned equipment (at the time of delivery of this DRD) being used in the performance of the contract. The list of equipment shall include:
 - (a) Description of the equipment (include make and model #),
 - (b) Location of the equipment (address, building and room #),
 - (c) Date purchased,
 - (d) Purchase price of the equipment,
 - (e) Current depreciated value of the equipment.

FORMAT: Electronic

9. OPR: COTR

10. FIRST SUBMISSION DATE: 1 year prior to contract end or at the CO's direction.

Frequency of Submission: No periodic submissions required per this DR (this does not relieve the requirement for periodic or incremental deliveries per other DRs).

Additional Submissions: End of period of performance: submission of current version of all models, tools, and supporting documentation which have been updated since first submission

11. MAINTENANCE: All models/tools shall be maintained electronically. All documentation developed to support the use of each model/tool shall also be maintained electronically. Both the models and the supporting documentation shall be updated as necessary to perform the assessments for which they were developed.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: COTR

1 electronic copy: Program Authorized Repository

13. REMARKS: It is only intended that unique models and tools developed for the ISS Program be delivered per this DRD. Unmodified commercially available tools should not be delivered, but must be referenced in the supporting documentation.

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Task Order Plan 1b. Data Type: 3	2. Date of Current Version	3a. DRD No. PIC-PR-05	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Provide content and format requirements for task order negotiations.		5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) Section H, Clause H.3 NFS 1852.216-80 Task Ordering Procedure		7. Interrelationships (e.g., with other DRDs) PIC-PM-02 Integrated Management Review Products; PIC-PC-01 Financial Report; PIC PC-06 Program Schedules	

8. PREPARATION INFORMATION: The contractor shall prepare the deliverable as follows:

SCOPE: Task order plans shall be submitted to the Contracting Officer for the negotiation and definitizing of task orders in accordance with this DRD and NFS 1852.216-80, Task Ordering Procedure.

CONTENTS: The contractor shall develop and maintain a task order plan that documents the reasonableness of the contractor task order proposals and/or revisions.

I. INTRODUCTION

The purpose of the task order plan is to identify the technical approach, period of performance, resource and schedule requirements, and other information necessary to determine the reasonableness of the contractor's task order proposal.

A. BASIS-OF-ESTIMATE (BOE)

The contractor shall develop a task order BOE which shall document the reasonableness of the contractor's task order proposal. The BOE shall identify the technical approach, task scope, assumptions, exclusions, and cost risks and opportunities. The BOE may also reference agreements with the customer if the proposed effort was developed on a partnered basis. The BOE shall identify the resources needed to accomplish the proposed scope of work including:

1. Identify specific labor resources, supporting rationale, and technical approach to meet task order labor requirements.
2. Identify direct labor resources by breakdown structure (WBS) including types and quantities of proposed labor resources. Note: Proposed labor categories shall be consistent with Clause B.4 – Indefinite Delivery/Indefinite Quantity Orders.
3. Identify proposed resources by WBS including loaded labor rates, materials, travel, other direct costs/price, and subcontractor cost/price.
4. Identify threats or constraints that may require work scope restructure or reassessment of the resource-loading requirements.

Task order BOE shall be maintained throughout the task order period of performance without revision. Proposed changes to the BOE will be consistent with the above requirements. Historical BOE pricing data shall be maintained by the contractor, and shall be used to develop the resource baseline of future task orders.

B. RESOURCE-LOADED SCHEDULE (RLS)

The contractor shall develop and maintain a resource-loaded schedule for each approved task order. The RLS shall identify time-phased task order deliverables, milestones, and work activities. The RLS shall assign resources to task order activities, monitor progress of activities toward project objectives, and forecast future schedule performance. RLS shall include the following:

1. Period of performance including start and end dates.
2. Time-phased resource loading by task order.
3. Task order deliverables and milestones.
4. Revisions to resource baseline.

Note: All performance and variance analysis reporting shall be traceable to the RLS. (Reference PIC-PM-02 Integrated Management Review Products, PIC PC-06 Program Schedules, and PIC-PC-01 Financial Report).

C. ADDITIONAL INFORMATION

The Contracting Officer may require the contractor to provide additional information to determine the reasonableness of the contractor's task order proposals.

FORMAT: Hard Copy / Electronic - NASA Standard Load (Note: Alternate contractor formats will be considered)

9. OPR: BG/ Contracting Officer

10. FIRST SUBMISSION DATE: Initial submittal due within 1 week of request; final due within 30 days of task order definitization; and with each task order revision.

11. MAINTENANCE: The document shall be delivered and maintained electronically and in the official contract file. Changes shall be incorporated as required by change pages or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: COTR

Program Authorized Repository Upload Notification: BG/Contracting Officer/Contract Specialist

1 electronic copy: Program Authorized Repository

13. REMARKS:

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Mission Assurance and Risk Management (MA&RM) Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-SA-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The plan is used to identify the Contractor processes for establishing and maintaining a Quality Management System (QMS), S&MA integration function, Risk Management and meeting quality assurance requirements.			5. DRD Category <input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> S&MA/PR
6. References (SOW, Clause, etc.) SOW 6.1.1		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Applicable to all NASA Centers and sites where the Contractor is operational.

CONTENT: The plan shall demonstrate the Contractor's compliance with Section 6.0 of the SOW:

- A. S&MA Management (SOW 6.1) - Description of the Contractor's processes for establishing and maintaining a quality records system in accordance with SSP 41173 and SAE AS9100, a Quality Management System in accordance with SAE AS9100, Mishap Investigation and Reporting in accordance with NPR 8621.1.
- B. S&MA Integration (SOW 6.2) - Description of the Contractor's process for developing and maintaining S&MA requirements in IP agreements, identifying and resolving issues affecting S&MA, and coordinating and facilitating S&MA review of change requests.
- C. Program Risk (SOW 6.3) - Description of the Contractor's process for compliance with SSP 50175, NPR 8000.4, JPD 306, JPD 328, NPR 8705.4 and NPR 8705.5.
- D. Quality Assurance (SOW 6.6) - Description of the Contractor's processes for compliance with SAE AS9100, SSP 41173, SSP 30695, SSP 50287, SSP 30223 and SSP 30524 for both hardware and software.

FORMAT: Electronic

9. OPR: OE

10. FIRST SUBMISSION DATE: Draft MA&RM plan by the end of the phase-in period. Final MA&RM plan within 90 days after contract start.

Frequency of Submission: The MA&RM plan shall be reviewed at least annually thereafter and updated as required.

Additional Submissions: If there are no changes since the last update, the Contractor shall re-certify its accuracy NLT 1 October of each year.

11. MAINTENANCE: The document shall be delivered and maintained electronically. Changes shall be incorporated as required by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OE

1 electronic copy: Program Authorized Repository

13. REMARKS: The MA&RM Plan requires approval of the Manager, S&MA/Program Risk Office.

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Safety and Health (S&H) Plan 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-SA-02	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The plan is used to establish Safety, Health, and Environmental Compliance for the contractor in meeting NASA and OSHA Standards.		5. DRD Category ___ Technical ___ Administrative X S&MA/PR	
6. References (SOW, Clause, etc.) SOW 6.1.4 OSHA CSP 03-01-003, Voluntary Protection Program (VPP): Policies and Procedures Manual JSC 17773, Instructions for Preparation of Hazard Analysis for JS Ground Operations JPR 1700.1 JSC Safety and Health Handbook		7. Interrelationships (e.g., with other DRDs) Safety and Health Program Self-Evaluation Monthly Safety and Health Metrics	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Applicable to safety and health activity at all NASA Centers and sites where the Contractor is operational under this contract.

CONTENT: The requirements for this plan as detailed in the instructions on plan content below include instructions for specific reports and data to be submitted to the Government. These instructions are to be included in the plan and represent contractual commitments by the Contractor to provide this information.

FORMAT:

- A. Cover page - to include as a minimum, blocks for the signatures of Contractor's project manager and designated safety official; NASA COTR; JSC Safety and Test Operations Division: JSC Occupational Health Officer: and the NASA Contracting Officer. Other signatures may be required at the discretion of the Government. Once approved by NASA, signatures will be collected and the plan placed on the contract.
- B. Table of Contents. See content below.
- C. Body of plan - as required. Contractor's format is acceptable but should be aligned with the elements of the content below.
- D. When preparing its plan, the Offeror/Contractor is expected to review all the items below and tailor its plan accordingly. The plan will clearly identify those resources to be provided by the Contractor and proposed resources to be provided by the Government. This review and supporting rationale is to be made available to the Government as part of this plan. It can be documented as a checklist or outline, inserted directly in the body of the plan, or in any format developed by the Contractor that clearly conveys the results of this review including the basis for any underlying assumptions.

Details:

1. MANAGEMENT LEADERSHIP AND EMPLOYEE PARTICIPATION

- 1.1 Policy: Provide the Contractor's safety and health compliance policy statement with the plan. Compare the Contractor's policy statement with those of NASA and OSHA and discuss any differences.
- 1.2 Goals and Objectives. Describe your approach to the following:
 - 1.2.1 Specific annual safety and health goals and objectives to be met.
 - 1.2.2 Methods to be used, if any, to improve on the Days Away Case Rate (DACR), the Total Recordable Injury Rate (TRIR), and the total Days Away plus Restricted Duty plus Job Transfer (DART).
- 1.3 Management Leadership. Describe management's procedures for implementing its sustaining commitment to safety and health compliance through visible management activities and initiatives including a commitment to exercise management prerogatives to ensure workplace safety and health. Describe processes and procedures to making this visible in all Contract and subcontract activities and products. Include a statement from the project manager or designated safety official indicating that the plan will be implemented as approved and that the project manager will take personal responsibility for its implementation.
- 1.4 Employee Involvement. Describe procedures to promote, implement, and sustain employee (e.g., non-supervisory) involvement in safety and health compliance program development, implementation and decision-making. Describe the scope and breadth of employee participation to be achieved so that approximate safety and health risk areas of the Contract are equitably represented. Describe methods to be used to obtain employee buy in and address the behavioral aspects of safety.
- 1.5 Assignment of Responsibility. Describe line and staff responsibilities for safety and health program implementation. Identify any other personnel or organization that provides safety services or exercises any form of control or assurance in these areas. State the means of communication and interface concerning related issues used by line, staff, and others (such as documentation, concurrence requirements, committee structure, sharing of the work site with NASA and other Contractors, or other special responsibilities and support). As a minimum, the Contractor will identify the following:
 - 1.5.1 Safety Representative - identify by title, the individual who will be trained and certified in accordance with JPR 1700.1 to be responsive to Center-wide safety, health and fire protection concerns and goals, and who will participate in meetings and other activities related to the JSC Safety and Health program.
 - 1.5.2 Company Physician/Occupational Injury/illness case manager - identify a point of contact who is responsible for the transfer or receipt of company medical data and who will be the primary contact for the company in the event any employee suffers a work related injury or illness (such as the company physician) by name, address, and telephone number to the JSC Occupational

Medicine Clinic, mail code SD32. This will facilitate communication of medical data to Contractor management. Prompt notification to the JSC Occupational Medicine Clinic shall be given of any changes that occur in the identity of the point of contact.

- 1.5.3 Building Fire Wardens - provide a roster of fire wardens at the start of each Contract year (their names, telephone numbers and pagers, and mail codes). Contractor fire wardens are needed to facilitate the JSC fire safety program, including coordination of related issues with NASA facility managers and emergency planning and response officials and their representatives. Fire wardens will be trained in accordance with JPR 1700.1. The Roster shall be maintained by letter to the JSC Safety and Test Operations Division, mail code NS2, with copies to the Contracting Officer and the Contracting Officers Technical Representative. The initial letter shall be received by the Government not later than 15 days after contract start.
- 1.5.4 Designated Safety Official - identify by title the official(s) responsible for implementation of this plan and all formal contacts with regulatory agencies and with NASA.
- 1.6 Provision of Authority. Describe consistency of the plan for compliance with applicable NASA and JSC requirements and contractual direction as well as applicable Federal, State, and Local regulations and how compliance will be maintained throughout the life of the contract.
- 1.7 Accountability. Describe procedures for ensuring that management and employees will be held accountable for implementing their tasks in a safe, healthful, and environmentally compliant manner. The use of traditional and/or innovative personnel management methods (including discipline, motivational techniques, or any other technique that ensures accountability) will be referenced as a minimum and described as appropriate.
- 1.8 Program Evaluation. Describe your approach to safety and health program evaluation. The program evaluation consists of:
 - 1.8.1 [RESERVED]
 - 1.8.2 A written self-evaluation report to be delivered once per year. The self evaluation shall be provided for the Contractor performance evaluation. The self-evaluation shall follow the VPP program evaluation report format found in OSHA CSP 03-01-003, Voluntary Protection Program (VPP): Policies and Procedures Manual, Appendix C, "Format for Annual Submissions", as mandated by the cognizant OSHA regional office. Contractors who have submitted a written self-evaluation as a VPP site may submit their original report to OSHA in lieu of writing a new self-evaluation provided that all action plans and status are updated. The self-evaluation shall as a minimum cover the elements of the approved safety and health plan.
- 1.9 Miscellaneous Reports. The Contractor will acknowledge the following as standing requests of the Government and to be handled as described below.
 - 1.9.1 Roster of Terminated Employees. Identify personnel terminated by the contractor. Send to the JSC Occupational Health Officer, no later than 30 days after the end of each contract year. At the contractor's discretion, the report may be submitted for personnel changes during the previous year or cumulated for all years. Information required:
 - a. Date of report, Contractor identity, and Contract number.

- b. For each person listed, provide name, social security number, and date of termination.
- c. Name, address, and telephone number of Contractor representative to be contacted for questions or other information.

1.9.2 Material Safety Data Sheets (MSDS). The Contractor shall prepare and/or deliver MSDS for hazardous materials brought onto Government property or included in products delivered to the Government. This data is required by the Occupational Safety and Health Administration (OSHA) regulation, 29 CFR 1910.1200, "Hazard Communication", EPA "Emergency Planning and Community Right-to-Know (EPCRA, ref. 40 CFR 302, 311, 312); and the Texas Department of Health (TDH, ref. Chapters 505-507 of the Health and Safety Code), and Federal Standard 313 (or FED-STD-313), "Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities", as revised. This inventory is also required by JPR 1700.1, "JSC Safety and Health Handbook", as revised. 1 copy of each MSDS will be sent upon receipt of the material for use on NASA property to the JSC Central MSDS Repository, maintained by the JSC Occupational Medicine Occupational Health contractor, along with information on new or changed locations and/or quantities normally stored or used. If the MSDS arrive with the material and is needed for immediate use, the MSDS shall be delivered to the Central MSDS Repository by close of business of the next working day after it enters the site.

1.9.3 Hazardous Materials Inventory. The Contractor shall compile an inventory report of all hazardous materials it has located on Government property quarterly, and which is within the scope of 29 CFR 1910.1200, "Hazard Communication"; and Federal Standard 313 (or FED-STD-313), "Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities", as revised. This inventory is also required by JPR 1700.1, "JSC Safety and Health Handbook", as revised. The call for this inventory and instructions for delivery will be issued by the JSC Occupational Medicine Occupational Health contractor, mail code SD33. This information shall use the format used by JSC for chemical inventory compilation to provide the following:

- a. The identity of the material (product number, chemical, manufacturer, and NSN as available).
- b. The location of the material by building, room and area/cabinet number.
- c. The quantity of each material normally kept at each location (number of containers, container size, type container, unit of measure, conversion factor, storage temp and pressure, physical state/form, specific gravity, total pounds).
- d. Peak quantity stored.
- e. Actual or estimated rate of annual usage of each chemical.

1.10 Government Access to Safety and Health Program Documentation. The Contractor shall recognize, in its plan, that all safety and health documentation (including relevant personnel records) be available for inspection or audit at the Government's request. Electronic access by the Government to this data is preferred as long as Privacy Act requirements are met and Government safety and health professionals and their representatives have full and unimpeded access for review and audit purposes. For Contractor activities conducted on NASA property,

the Contractor will identify what records will be made available to the Government in accordance with the criteria of OSHA as implemented in JPR 1700.1, "JSC Safety and Health Handbook", as revised. For the purpose of this plan, safety and health documentation includes but is not limited to: logs, records, minutes, procedures, checklists, statistics, reports, analyses, notes, or other written or electronic document which contains in whole or in part any subject matter pertinent to safety, health, or emergency preparedness.

- 1.11 **Review and Modification of Safety Requirements.** The Contractor may be requested to participate in the review and modification of safety requirements that are to be implemented by the Government including any referenced documents therein. This review activity will be implemented at the direction of the NASA Contracting Officer's Technical Representative (COTR) in accordance with established contractual procedures.
- 1.12 **Procurement.** Identify procedures used to assure that procurements are reviewed for safety and health compliance considerations and that specifications contain appropriate safety criteria and instructions. Set forth authority and responsibility to assure that safety tasks are clearly stated in subcontracts.
- 1.13 **Certified Professional Resources.** Discuss your access to certified professional resources for safety and health protection. Discuss their roles in motivation/awareness, worksite analysis, hazard prevention and control, and training.

2. WORKSITE ANALYSIS

- 2.1 **Analysis of Worksite Hazards.** Contractor worksite hazards shall be systematically identified through a combination of surveys, analyses, and inspections of the workplace, investigations of mishaps and close calls, and the collection and trend analysis of safety and health data such as: records of occupational injuries and illnesses, findings and observations from preventive maintenance activities, facilities related incidents related to partial or full loss of systems functions; etc. Describe how hazards identified by any of the techniques identified below shall be ranked, processed, and mitigated in accordance with JPR 1700.1. All hazards on NASA property, which are immediately dangerous to life or health, shall be reported immediately to the Safety and Test Operations Division. All safety engineering products that address operations, equipment, etc., on NASA property will be subject to JSC Safety and Test Operations Division review and concurrence unless otherwise waived by the JSC Safety and Test Operations Division.
- 2.2 **Industrial Hygiene.** Describe your industrial hygiene program and how it will be coordinated with the JSC Government provided resources for industrial hygiene. In the event corporate resources are used to determine workplace exposures, copies of all monitoring data shall be provided to JSC Occupational Medicine Occupational Health contractor within 15 days of receipt of results.
- 2.3 **Hazard Identification.** Describe the procedures and techniques to be utilized to compile an inventory of hazards associated with the work to be performed on this Contract. This inventory of hazards shall address the work specified in this Contract as well as operations and work environments in the vicinity or in close proximity to Contract operations. The results will be reported to the Government in a manner suitable for inclusion in facilities baseline

documentation as a permanent record of the facility. Specific techniques to be considered include:

- 2.3.1 Comprehensive Survey - A “wall to wall” engineering assessment of the Contractor’s worksite, which includes the Government furnished facilities to be used by the contractor and the immediate vicinity in which contractual work or tasks will be performed. This assessment encompasses facilities, equipment, materials, and processes.
- 2.3.2 Change (Pre-use) Analysis - Typically addresses modifications in facilities, equipment, processes, and materials (including waste); and related procedures for operations and maintenance. Change analyses periodically will be driven by new or modified regulatory and NASA requirements.
- 2.3.3 Hazard Analysis - May address facilities, systems/subsystems, operations, processes, materials (including waste), and specific tasks or jobs. Analyses and report formats will be in accordance with JSC 17773, "Preparing of Hazard Analyses for JSC Ground Operations."
- 2.3.4 The Contractors safety plan will describe the flow of the findings of the comprehensive survey of hazards into hazard analyses and job hazard analyses and subsequently into controls such as design, operations, processes, procedures, performance standards, and training. The contractor will discuss its approach to notify NASA and other parties external to the contract work of its identified hazards and subsequent analyses and controls.
- 2.4 Inspections. Includes assignments, procedures, and frequency for regular inspection and evaluation of work areas for hazards and accountability for implementation of corrective measures. The Contractor will describe administrative requirements and procedures for control of regularly scheduled inspections for fire and explosion hazards. The Contractor has the option, in lieu of this detail, to identify policies and procedures with the stipulation that the results (including findings) of inspections conducted on NASA property or involving Government furnished property will be documented in safety program evaluations or the monthly Accident/Incident Summary reports. Inspections will identify:
 - a. Discrepancies between observed conditions and current requirements, and,
 - b. New (not previously identified) or modified hazards.
 - c. Use of JSC’s Hazard Abatement Tracking System to manage hazards onsite at JSC (see paragraph 3.12 below).
- 2.5 Protective Equipment - Set forth procedures for obtaining, inspecting, and maintaining all appropriate protective equipment, as required, or reference written procedures pertaining to this subject. Set forth methods for keeping records of such inspections and maintenance programs.
- 2.6 Employee Reports of Hazards - Identification of methods to encourage employee reports of hazardous conditions (e.g., close calls) and analyze/abate hazards. The Contractor will describe steps it will take to create reprisal-free employee reporting with emphasis on management support for employees and describe methods to be used to incorporate employee insights into hazard abatement and motivation/awareness activities.

2.7 Accident and Record Analysis

2.7.1 Mishap Investigation – identification of methods to assure the reporting and investigation of mishaps including corrective actions implemented to prevent recurrence. The Contractor will describe the methods to be used to report and investigate mishaps on NASA property and on Contractor or third party property. The Contractor will describe its procedures for implementing immediate notification of NASA using the call tree in 2.7.1.a below. The use of the quick incident reports found at the lower center of the home page of the NASA Incident Reporting Information System (IRIS) at <https://nasa.ex3host.com/iris/newmenu/login.asp> and use of NASA forms as specified in JPR1700.1 or any alternate forms used by Contractor. The contingency plan will emphasize timely notification of NASA; preliminary and formal investigation procedures; exercise of jurisdiction over a mishap investigation involving NASA and other contractor personnel; preparation and submission of a formal report to NASA; follow up of corrective actions; communication of lessons learned to NASA; and solutions to minimize duplications in reporting and documentation including use of alternate forms, etc. The Contractor will discuss its procedures for immediate notification requirements for fires, hazardous materials releases, and other emergencies. The Contractor will include appropriate details to address the following:

Note: the NASA Form 1627 is not attached since it is a three part carbonless form not conducive to reproduction. This form is NOT available from JSC or NASA forms management; it can be obtained from the following link: <http://jschandbook.jsc.nasa.gov/>.

- a. The Contractor will include a mishap contingency plan as part of the Safety and Health Plan which meets the requirements of NPR 8621.1, NASA Procedural Requirement for Mishap and Close Call Reporting, Investigating, and Recordkeeping, and JPR 1700.1, JSC Safety and Health Handbook. The plan will identify the method of immediately notifying NASA in the advent of a type A or B mishap or C property damage mishap and close call with equivalent potential so NASA may take custody of the mishap scene and initiate its investigation as soon as it is safe following the mishap. The Contractor will immediately contact the JSC Safety and Test Operations Division at 281-483-1935 for guidance when a Type A or B mishap or Type C property damage mishap occurs in the course of performing work on a NASA Contract in whole or in part. The contingency plan will clearly identify the Government investigation as taking precedence over any contractor investigation.
- b. For Type C injuries and all lower level mishaps, the Contractor will perform its own investigation and submit a report to NASA in accordance with the requirements of NPR 8621.1. The Contractor will ensure that NASA is promptly notified of any Type D mishap so that NASA provides a civil servant to oversee the investigation in an ex officio capacity prior to start of any formal investigation. All initial reports and selected follow up reporting will be accomplished using IRIS.
- c. When a NASA investigation is required, witnesses will be identified and their names and contact information provided to NASA investigator but witness statement must be requested and collected by NASA. Such statements will be retained by the Government as part of the mishap file in accordance with NPR 8621.1.

- d. The Contractor will deliver to NASA mishap reports which shall include the data specified in NPR 8621.1 for the level of mishap. NASA approval and endorsements will be required as specified in NPR 8621.1 and included in the approved Safety and Health Plan.

2.7.2 Trend Analysis – Describe approach to performing trend analysis of data (occupational injuries and illnesses; facilities, systems, and equipment performance; maintenance findings; etc.). Discuss methods to identify and abate common causes indicated by trend analysis. In support of site-wide trend analysis to be performed by the Government, the Contractor will discuss method of providing data as follows.

- a. Accident/Incident Summary Report - The Contractor shall prepare and deliver Accident/Incident Summary Reports as specified on JSC Form 288, “Accident/Incident Statistics” as revised. All new and open mishaps, including vehicle accidents, incidents, injuries, fires, and close calls shall be described in summary form along with current status. Negative reports are also required monthly. Report frequency is monthly; date due is the 10th days of the month following each month reported. Report to be delivered to the JSC S & MA Directorate through the Safety and Test Operations Division, mail code NS2, by fax to 281-244-0426 or by attaching to an e-mail and transmitting to JSC-Safety-Report-Submittals@mail.nasa.gov.
- b. Log of Occupational Injuries/Illnesses
 - i. For each establishment on and off NASA property that performs work on this Contract, the Contractor shall deliver, to the Government, a copy of its annual summary of occupational injuries and illnesses (OSHA 300 and OSHA 300A or equivalent) as described in Title 29, Code of Federal Regulations, Subpart 1904.5 If the Contractor is exempt by regulation from maintaining and publishing such logs, equivalent data in Contractor’s format is acceptable (such as loss runs from insurance carrier) which contains the data required by JSC Form 288.
 - ii. Data shall be compiled and reported by calendar year and provided to the Government within 45 days after the end of the year to be reported (e.g. not later than February 15 of the year following).

3. HAZARD PREVENTION AND CONTROL

- 3.1 Identified hazards must be eliminated or controlled. In the multiple employer environment of the Center, it is required that hazards including discrepancies and corrective actions be collected in a Center wide information system Hazard Abatement Tracking System (HATS) for risk management purposes. Describe your approach to implementing this requirement.
- 3.2 Appropriate Controls. Discuss approach to consideration and selection of controls. Discuss use of hazard reduction precedence sequence (see JPR 1700.1). Discuss approach to identifying and accepting any residual risk. Discuss implementation of controls including verifying effectiveness. Discuss scope of coverage (hazardous chemicals, equipment, energies, etc.). Discuss need for coordination with safety, health, and emergency authorities at NASA.
- 3.3 Hazardous Operations and Processes. Establish methods for notification of personnel when hazardous operations and processes are to be performed in their facilities or when hazardous

conditions are found to exist during the course of this Contract. JPR 1700.1 will serve as a guide for defining, classifying, and prioritizing hazardous operations; 29 CFR 1910.119 will be the guide for hazardous processes when the material or process meets the requirements therein. Develop and maintain a list of hazardous operations and processes to be performed during the life of this Contract. The list of hazardous operations and processes will be provided to JSC as part of the plan for review and approval. JSC and the Contractor will decide jointly which operations and processes are to be considered hazardous, with JSC as the final authority. Before hazardous operations or processes commence, the Contractor will develop a schedule to develop written procedures with particular emphasis on identifying the job safety steps required. NASA will have access on request to any Contractor data necessary to verify implementation. For all identified operations or processes that may have safety or health implications outside Contract operations, the Contractor shall identify such circumstances to the JSC Safety and Test Operations Division and Occupational Health Officer who will provide additional instructions for further NASA management review and approval.

- 3.4 Written Procedures. Identification of methods to assure that the relevant hazardous situations and proper controls are identified in documentation such as inspection procedures, test procedures, etc., and other related information. Describe methods to assure that written procedures are developed for all hazardous operations, including testing, maintenance, repairs, and handling of hazardous materials and hazardous waste. Procedures will be developed in a format suitable for use as safety documentation (such as a safety manual) and be readily available to personnel as required to correctly perform their duties.
- 3.5 Hazardous Operations Permits. Identify facilities, operations and/or tasks where hazardous operations permits will be required as specified in JPR 1700.1 such as confined space entry, hot work, etc. Set forth guidance to adhere to established NASA JSC procedures. Clearly state the role of the safety group or function to control such permits.
- 3.6 Operations Involving Potential Asbestos Exposures. Set forth method by which compliance is assured with JSC Asbestos Control Program as established in JPR 1700.1, as revised.
- 3.7 Operations Involving Exposures to Toxic or Unhealthful Materials. Such operations must be evaluated by the JSC Occupational Health Office and must be properly controlled as advised by same. JSC Occupational Medicine must be notified prior to initiation of any new or modified operation potentially hazardous to health.
- 3.8 [RESERVED]
- 3.9 Baseline Documentation. Discuss the Contractor's responsibilities for maintaining facilities baseline documentation in accordance with JSC requirements. The Contractor will implement any facilities baseline documentation tasks (including safety engineering) as provided in the Contractor's plan approved by NASA or as required by Government direction.
- 3.10 Preventive Maintenance. Discuss approach to preventive maintenance. Describe scope, frequency, and supporting rationale for your preventive maintenance program including facilities and/or equipment to be emphasized or de-emphasized. Discuss methods to promote awareness in the NASA community (such as alerts, safety flashes, etc.) when preventive maintenance reveals design or operational concerns in facilities and equipment (and related processes where applicable).

- 3.11 Medical (Occupational Healthcare) Program. Discuss the Contractor's medical surveillance program and injury/illness case management to evaluate personnel and workplace conditions to identify specific health issues and prevent degradation of personnel health as a result of occupational exposures. Discuss approach to Cardiopulmonary Resuscitation (CPR), first aid, and, return to work policies and the use of Government provided medical and emergency facilities for the initial treatment of occupational injuries/illnesses.
- 3.12. Hazard Correction and Tracking. Discuss your system for correcting and tracking safety, health, and environmental hazards with particular emphasis on integration with JSC's Hazard Abatement Process (found on line @ <http://www.srqa.jsc.nasa.gov/HATS/>). (The scope is restricted to establishments at JSC, Sonny Carter Training Facility, and Ellington Field.) This includes the following:
- 3.12.1 Personnel Awareness of Hazards. Discuss your approach to communicate unsafe conditions and approved countermeasures to your employees. Discuss your approach to communicating such conditions to the Government and other Contractors whose personnel may be exposed to such unsafe conditions. Discuss communications with Facility Managers. Discuss use of the NASA Lessons Learned Information System for both obtaining lessons from other sources and as a repository for lessons learned during performance of the Contract.
- 3.12.2 Interim and Final Abatement Plans - Describe how you will approach interim and final abatement of hazards. Describe how you will provide data to the JSC HATS for all hazards within Contractor-occupied facilities that are not finally abated (all interim and final abatement actions completed) within 30 days of discovery. Discuss your approach to posting such plans using JSC Form 1240, "JSC Notice of Safety or Health and Action Plan", or equivalent. Discuss compatibility of your system with JSC's role of facility managers in abatement planning, implementation, and verification.
- 3.13 Disciplinary System. Describe your system for ensuring safety and health discipline in your personnel (including subcontractors). Describe your approach to modifying personnel behaviors when personnel are exhibiting discrepant safety and health performance.
- 3.14 Emergency Preparedness. Discuss approach to emergency preparedness and contingency planning which addresses fire, explosion, inclement weather, etc. Discuss compliance with 29 CFR 1910.120 (HAZWOPER) and role in JSC Incident Command System (see JPR 1700.1 for details). Discuss methods to be used for notification of JSC emergency forces including emergency dispatcher, safety hotline, director's safety hotline, etc. Discuss establishment of pre-planning strategies through procedures, training, drills, etc. Discuss methods to verify emergency readiness.

4. SAFETY AND HEALTH TRAINING

Discuss the following:

- 4.1 Describe the Contractor's training program including identification of responsibility for training employees to assure understanding of safe work practices, hazard recognition, and appropriate responses for protective and/or emergency countermeasures, including training to meet Federal, State, and Local regulatory requirements.

- 4.2 Describe approach to identifying training needs including traceability to exercises such as job safety analyses, performance evaluation profiles, hazard analyses, mishap investigations, trend analyses, etc.
- 4.3 Describe approach to training personnel in the proper use and care of personal protective equipment (PPE).
- 4.4 Discuss tailoring of training towards specific audiences (management, supervisors, and employees) and topics (safety orientation for new hires, specific training for certain tasks or operations).
- 4.5 Discuss approach to ensure that training is retained and practiced. Discuss personnel certification programs. Certifications should include documentation that training requirements and physical conditions have been satisfied (examples include physical examination, testing, and on-the-job performance).
- 4.6 Address utilization of JSC safety and health training resources (such as asbestos worker training/certification, hazard communication, confined space entry, lockout/tagout, etc.) as appropriate with particular emphasis on programs designed for the multiple employer work environment on NASA property. If the Contractor wishes to train their personnel in any regulatory mandated training, an agreement will be secured with JSC Occupational Safety Branch and Occupational Health and Test Operations Division and the JSC Occupational Health Officer Support office prior to beginning training. The agreement will ensure that safety and health training resources available from NASA are utilized where appropriate.
- 4.7 Discuss approach to making all training materials and training records available to NASA, and other Federal, state, and local agencies for their review upon request.

FORMAT: Electronic and hard copies

9. OPR: OE

10. FIRST SUBMISSION DATE: The Safety and Health plan shall be submitted in final form with the proposal. Upon NASA approval, the Contractor's Safety and Health Compliance Plan becomes a Contractual Requirement.

Frequency of Submission: The plan shall be reviewed at least annually thereafter and updated as required.

Additional Submissions: The plan shall be updated with the changes highlighted to meet the latest OSHA, JSC, and VPP requirements. If there are no changes since the last update, the Contractor shall re-certify its accuracy NLT October 1 of each year.

11. MAINTENANCE: The document shall be delivered and maintained electronically. Changes shall be incorporated as required by change page or complete reissue.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification:

OE/Safety and Mission Assurance/Program Risk Office

NS/Safety and Test Operations Division

1 electronic copy: Program Authorized Repository

After the plan is approved by NASA, the Contractor will send additional copies to each of the following:

NS/Safety and Test Operations Division (2 hard copies)

JSC Occupational Health Officer (1 hard copy)

JSC Emergency Preparedness Office (1 hard copy)

13. REMARKS: The Safety and Health Plan requires approval of the Manager, S&MA/Program Risk Office. The final plan, as approved by the Contracting Officer, shall be incorporated in the contract as Attachment J-3.

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Monthly Safety and Health Metrics	2. Date of Current Version	3a. DRD No. PIC-SA-03	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
1b. Data Type: 3			5. DRD Category <input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> S&MA/PR
4. Use (Define need for, intended use of, and/or anticipated results of data) Establishes selected Safety and Health Program metrics in accordance with OSHA Requirements			
6. References (SOW, Clause, etc.) SOW 6.1.4 JPR 1700.1, JSC Safety and Health Handbook		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The scope of the information required is limited to NASA Centers and sites where the Contractor is operational under this contract.

CONTENT: The Safety and Health Metrics shall be in accordance with the Safety and Health Plan and JPR 1700.1.

I. Management Commitment and Employee Involvement.

Date of Management Safety Committee Meeting		Type/Title of Meeting	No. of Managers attending		No. of supervisors attending		No. of non-supervisory attending	
This month	Year to date		This month	Year to date	This month	Year to date	This month	Year to date

Include electronic copies of minutes or representative information

No. of Employee Safety Meeting		Type/Title of Meeting	No. of Employees attending		No. of managers/supervisors attending	
This month	Year to date		This month	Year to date	This month	Year to date

Include electronic copies of minutes or representative information

II. Worksite Analysis. Refer to JPR 1700.1 for definitions of terms.

Division	No. of Hazard Analyses				No. of Job Safety Analyses				No. of Routine Inspections			
	Required		Performed		Required		Performed		Required		Performed	
	This month	Year to Date	This month	Year to Date	This month	Year to Date	This month	Year to Date	This month	Year to Date	This month	Year to Date
Total												

III. Hazard Prevention and Control - hazards below were found during routine and special inspections, close calls, mishap investigations, etc., and require correction.

No. of Hazards found			No. of Hazards closed <30 days			No. of Hazards open <30 days	No. of Hazards open >30 days			No. of Hazards closed >30 days			No. of JF1240s in place
Prior to month	This month	Year to date	Prior to month	This month	Year to date		Prior to month	This month	Year to date	Prior to month	This month	Year to date	

Attach copies (electronic ok if sent by e-mail) of JF 1240's (or equivalent) including monthly updates. Mark JF 1240's where abatement has been completed as closed.

IV. Safety and Health Training - List courses specific to loss control initiatives (such as slips/trips falls, material handling; etc.) Report other training as "Generic safety training not otherwise specified" (examples include Hazard Communication, Confined Space entry, HAZWOPER, system safety, job safety analysis, etc.) Do not include job proficiency course work where safety is an issue (such as radiography, welding, painting, etc.)

Course Title	No. to be Trained	No. Trained	On Schedule

Instructions for Completing JSC Form 2341

General. JSC Form 2341 will be prepared to describe the content and provide preparation information for data required to support of JSC programs. For more detailed instructions, see JSC STD-123.

1. **DRD Title.** Enter the title of data or document required. The title should include a principal noun which best establishes the basic concept of the data.
2. **Date of current DRD version.** If an existing DRD is revised, enter the revision date. For a new DRD, enter origination date.
3. **DRL Line Item.** Enter the individual line item number from block 1 of JSC Form 2323, "JSC Data Requirements List," as completed for a specific procurement.

RFP/Contract No. The assigned procurement office enters the number of the specific procurement document to which the DRD is attached.

4. **Use.** Enter a synopsis of the intended use of the document. Include the reason for the requirement and identify the using organization if necessary.
5. **DRD Category.** Check the type of information described. SR&QA DRDs must be approved by a representative of the JSC Safety, Reliability, and Quality Assurance Office.
6. **References (Optional).** List applicable documents (NASA or JSC manuals, military specifications, Federal standards, NASA procurement regulations, etc.) containing additional information concerning the data requirements. If original DRD refers to obsolete documents, these should be deleted when the DRD is revised.
7. **Interrelationships (Optional).** Enter other data requirements or passages in the same SOW that will affect or be affected by this DRD. References to paragraphs in the SOW may not be substituted for the information in block 8.
8. **Preparation Information.** Provide instructions for preparation of the data required. JSC STD-123 contains suggestions for completing this section. If additional pages are required, use blank 8 1/2 X 11 inch sheets.

Note: For definitions refer to JPR 1700.1 and OSHA requirements for definitions of terms.

FORMAT: Electronic, Excel spreadsheet or in tables compatible with MS Word.

9. **OPR:** OE

10. **FIRST SUBMISSION DATE:** Monthly by 10th of month following month being reported.

Frequency of Submission: Monthly by the 10th day of the month following the month being reported

Additional Submissions: N/A

11. MAINTENANCE: The document shall be maintained electronically.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification:

OE/Safety and Mission Assurance/Program Risk Office

NS/Safety and Test Operations Division

SD3/Occupational Health Officer

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Safety and Health Program Self-Evaluation 1b. Data Type: 3	2. Date of Current Version	3a. DRD No. PIC-SA-04	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) To provide Self-Evaluation of Contractor's safety and health program performance.			5. DRD Category ___ Technical ___ Administrative X S&MA/PR
6. References (SOW, Clause, etc.) SOW 6.1.4		7. Interrelationships (e.g., with other DRDs) Safety and Health Program Self-Evaluation	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The scope of the information required is limited to NASA Centers and sites where the Contractor is operational under this contract.

CONTENT: The Contractor shall conduct an annual self-evaluation of its safety and health program as required by its safety and health plan.

Information required:

1. The internal assessment of safety and health program effectiveness during the report period (i.e., the previous year) indicating the status of goals or objectives previously established and areas of strength and weakness in Contractor safety program performance.
2. Safety and health concerns and resolutions relating to JSC operations which may have been identified during the report period.
3. Unresolved safety and health concerns relating to JSC operations which the Contractor feels merit attention of JSC safety and health management.
4. The goals and objectives of the Contractor safety and health program for the next report period.
5. An analysis of the contractor's performance at JSC-administered establishments in each of the 32 Voluntary Protection Program sub-elements found in the Federal Register Notice 65:45649-45663, July 24, 2000.
6. Attach action plans for identified problem areas. Action plans must include schedule for periodic progress reports to the Government on a frequency agreed to by the Government and the Contractor for each problem area.

FORMAT: Format to be as required by the cognizant OSHA regional office. Contractors who have submitted a written self-evaluation as a VPP site may submit their original report to JSC in lieu of writing a new self-evaluation provided that all action plans and status are updated.

9. OPR: OE

10. FIRST SUBMISSION DATE: September 30, 2010

Frequency Of Submission: Annually on September 30th of each year.

Additional Submissions: N/A

11. MAINTENANCE: The document shall be maintained electronically.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification:

OE/Safety and Mission Assurance/Program Risk Office

NS/Safety and Test Operations Division

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Probabilistic Risk Assessment (PRA)	2. Date of Current Version MOD 1	3a. DRD No. PIC-SA-05	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
1b. Data Type: 3			5. DRD Category ___ Technical ___ Administrative X S&MA/PR
4. Use (Define need for, intended use of, and/or anticipated results of data) The PRA provides an analytical capability to quantify safety and risk issues and is designed to support strategic decisions. As an integral part of risk assessment, PRA helps determine, (i) what can go wrong that could lead to an undesired outcome, (ii) how likely is this to happen, and (iii) if it happens, what consequences are expected. Effective resource allocation depends on a good, thorough risk model, like PRA.		6. References (SOW, Clause, etc.) SOW 6.3.2	
7. Interrelationships (e.g., with other DRDs)			

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Risk model capable of assessing risks due to changes in ISS configuration, operations, or environmental factors. The Risk model will address ISS systems and visiting vehicles.

CONTENT: PRA analyses and reports shall be in accordance with NPR 8705.5, PRA Guidelines for NASA Programs and Projects. There shall be a PRA final report for each configuration modeled which contains:

- (i) An introductory section,
- (ii) PRA Development Approach,
- (iii) a detailed section describing the model including end state definitions, master logic diagram, event sequence diagrams, fault trees, data collection and analysis methods, ground rules and assumptions,
- (iv) Results of the modeling effort, and
- (v) Future work and recommendations.

FORMAT: Electronic

9. OPR: OE

10. FIRST SUBMISSION DATE: As required by Task Order.

Frequency of Submission: As required

Additional Submissions: As required

11. MAINTENANCE: The documents shall be maintained electronically.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OE

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Hazard Reports and System Description 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-SA-07	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The Contractor shall ensure the safety of crew and ISS by using the Hazard Reports and System Description to assess mission integration and operation of ISS.			5. DRD Category ___ Technical ___ Administrative <u>X</u> S&MA/PR
6. References (SOW, Clauses, etc) SOW, Paragraph 6.4 SSP 30309, Safety Analysis and Risk Assessment Requirements Document SSP 30599, ISS Safety Review Process		7. Interrelationships	

8. PREPARATION INFORMATION: The Contractor shall prepare the DRD as follows:

SCOPE: Submittals shall consist of Hazard Reports and System Descriptions (as defined in “Content”) on flight and/or stage specific integrated safety assessments for operation of the ISS vehicle for compliance with Section C, Statement of Work, paragraph 6.4.

CONTENT: The Hazard Reports and System Descriptions shall document the program approach for executing the safety process in accordance with SSP 30309, Safety Analysis and Risk Assessment Requirements Document.

- A. System Description: The Contractor shall provide a description of the on-orbit ISS Operations in accordance with SSP 30599, Safety Review Process. Functional diagrams shall be submitted and supplemented with descriptions of interfaces and operations.
- B. Hazard Report: Hazard Reports shall include the following data fields:

- Hazard Report Number
- Hazard Title
- Review Level
- Revision Date
- Scope
- Hazard Description
- Cause Summary
- Program Stage
- Interfaces
- Status of Work
- Remarks
- Submittal Concurrence
- Approval

- Mission Phase
- Severity Category
- Likelihood of Occurrence
- Controls
- Method for Verification of Controls
- Safety Requirements
- Detection and Warning Method
- Cause Remarks
- CIL Reference
- Point of Contact

Note: The Hazard Reports and System Descriptions for “Mission Integration” do not follow submittal and approval of the typical Phase I, Phase II, and Phase III deliveries. The uniqueness of the safety assessments requires a “content level” commensurate with the maturity of a Phase III submittal, including verification of the established controls. This is required as the “System Description” needed to process the hazard report is finalized only months before flight.

FORMAT: These deliverables shall be in the format described in SSP 30599.

9. OPR: OE

10. FIRST SUBMISSION DATE: 60 days prior to the first flight where the Contractor takes responsibility for Mission Integration

Frequency of Submission: Each report will be submitted for approval and resubmitted, as required, until approved by the ISS Safety Review Panel (SRP). Reports being submitted for ISS SRP approval shall be sent to the ISS SRP Coordination Office.

Additional Submissions: Submittal of the Hazard Report and System Description will be based the Contractor’s periodic reassessment of the hazards and controls. At a minimum, each operational stage shall be assessed 60 days in advance. Results of this assessment shall be provided to the ISS SRP Coordination Office.

11. MAINTENANCE: The document shall be delivered and maintained electronically. Changes shall be incorporated as required by change page or complete reissue.

12. COPIES/DISTRIBUTION: (post ISS SRP approval)

Program Authorized Repository Upload Notification: OH2/Data Management
Program Authorized Repository Upload Notification:
 OE/Safety and Mission Assurance/Program Risk Office
 NE/ISS SRP Coordination Office
1 electronic copy: Program Authorized Repository

13. REMARKS: The Hazard Reports and System Description shall be prepared in accordance with SSP 30309 in support of the ISS safety review and the ISS CoFR processes.

DATA REQUIREMENTS DESCRIPTION

(Based on JSC-STD-123)

1a. DRD Title: Lessons Learned Program Plan and Lessons Learned 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-SA-08	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
C. Use (Define need for, intended use of, and/or anticipated results of data) Establishes Process for obtaining Lessons Learned from Contractor for possible publication in JSC Lessons Learned Database and NASA Lessons Learned Information System (LLIS)			5. DRD Category <input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> S&MA/PR
6. References (SOW, Clause, etc.) SOW 6.1.5		7. Interrelationships (e.g., with other DRDs)	

- 8. PREPARATION INFORMATION:** The Contractor will develop and implement a lessons learned program plan consistent with the areas defined in the statement of work and/or the work breakdown structure.

Lessons Learned Program Plan. The lessons learned program plan will include:

- A. Lessons learned program structure and management responsibility for lessons learned.
- B. Lessons Learned advocacy throughout the contracted effort.
- C. Approach to selection, review, and validation of lessons learned using contract and Government assets.
- D. Approach used to balance trade secret and security imperatives vice Government rights in data and the need to capture lessons for publication in Government information systems and processes.
- E. The dissemination of lessons learned throughout appropriate NASA Programs including the retrieval and dissemination of lessons published in the JSC Lessons Learned Database and the NASA Lessons Learned Information System.
- F. Information on the successful use of retrieved lessons including how they were used, by whom, for what purposed, and implementation detail delivered to the Government as additional recommendations for previously published lessons.
- G. Goals for the Contractor’s lessons learned program including schedules, scope, breadth, quality, and quantity of lessons the Government can expect as delivered lessons. Appropriate metrics for identification, publication, and dissemination are highly desirable.
- H. The approach to the selection of media to be used for of supporting data inclusion with each lesson learned (such as photographs, analyses, diagrams, schematics, drawings, and streamed video.)

Access to the JSC Lessons Learned Database (LLDB) and the NASA Lessons Learned Information System (LLIS).

1. To obtain access privileges to the JSC Lesson learned Database, JSC Domain Internet access is required to enter and review lessons learned information. The JSC lessons learned databases is accessible at <http://lldb.jsc.nasa.gov/>.
2. To obtain access to the NASA Lessons Learned Information System, go to <http://nen.nasa.gov/portal/site/llis/menuitem.41d2c6248694d611b649cc1036793ea0/> and follow instructions.

Criteria for Selecting Lessons Learned. Uncommon insight arising from any event or observation that will benefit from sharing with a larger community of interested parties. Lessons learned are intended to prevent recurrence of undesirable events and to allow NASA and its team members to capitalize to the greatest extent practical on unique successes requiring documented insight for retrieval on demand. Sharing of lessons with other Government agencies is also expected.

Frequency of submission for lessons learned. As follows (in order of decreasing Government preference):

- A. Data entry to the JSC LLDB or NASA LLIS within 30 days of a triggering event;
- B. Within 30 days of a program milestone, mishap investigation, or hazard or other engineering analysis / evaluation is completed; or
- C. 30 days prior to end of contract evaluation period or 45 days prior to end of contract, whichever is applicable.

Distribution of Lessons.

Lessons are distributed by entry into the JSC Lessons Learned Database which submits lessons to the NASA Lessons learned Information System once approved and published. The NASA Lessons Learned Information System may be used directly if the contractor is outside the JSC domain or firewall.

Content of Lessons.

1. Subject - one line subject of the lesson.
2. Lesson Learned - usually one sentence that describes insight gained
3. Description of Event - narrative that describes what happened.
4. Recommendations - may be an action plan, suggestion, etc., that was adopted at event source.
5. Supporting documentation – submit as needed to augment understanding of lesson (photographs with or without pointers and text labels), illustrations, drawings, etc.)

6. Contact name and e-mail address (for follow up by Government prior to publication of lesson).

Evaluation of Contactor Lessons Learned Program performance.

The following characteristics are evaluated by the Government in order of decreasing importance:

1. Effectiveness of approach to lessons learned advocacy.
2. Ability to recognize and capitalize on lessons learned in a timely manner.
3. Breadth of participation by the contracted effort to include from where lessons originate for publication and to whom lessons are disseminated for use by contract assets.
4. Technical quality of lessons submitted including thoroughness and readiness of supporting documentation for publication.

FORMAT: Electronic

9. **OPR:** OE and JSC Office of the Chief Engineer

10. **FIRST SUBMISSION DATE:** Draft Lessons Learned Program Plan by the end of the phase-in period. Final Lessons Learned Program Plan within 90 days after contract start.

Frequency of Submission: The Lessons Learned Program Plan shall be reviewed at least annually thereafter and updated as required.

Additional Submissions: If there are no changes since the last update, the Contractor shall re-certify its accuracy NLT 1 October of each year.

11. **MAINTENANCE:** The document shall be delivered and maintained electronically. Changes shall be incorporated as required by change page or complete reissue.

12. **COPIES/DISTRIBUTION:**

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OE and JSC Office of the Chief Engineer

1 electronic copy: Program Authorized Repository

13. **REMARKS:** The Lessons Learned Program Plan requires approval of the Manager, S&MA/Program Risk Office with concurrence by the JSC Office of the Chief Engineer.

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: ISS Documents Maintenance and Assessment 1b. Data Type: 1	2. Date of Current Version	3a. DRD No. PIC-SI-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Maintain technical integrity and traceability of systems and interface requirements and implementations for the ISS			5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) SOW 2.2.1 SSP 41171		7. Interrelationships (e.g., with other DRDs) PIC-SI-02	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: This DRD establishes the content, format, maintenance, and submittal requirements for the International Space Station System Specification, Partner Segment Specifications, IRDs, and ICDs.

CONTENT: The administered documents shall contain the top-level design, performance, and interface requirements for the ISS System, including requirements allocations and traceability reporting of requirements to all segments (e.g., U.S.O.S, Russian, JAXA JEM and CAM, ESA Columbus, ASI Node 2), and design details of all inter-system and inter-module interfaces affecting more than just the prime Contractor's internal interfaces. Content shall be sufficient to assure software, mechanical, and functional compatibility of all elements and segments that must be integrated to form the ISS System. PIRNs or Change Requests add technical updates to the ISS Program through these documents. Book management responsibility, PI&C technical activity level, and modification process (PIRN or CR) are noted in Addendum 6.

FORMAT: All ICDs shall be maintained and updated in two parts: Part I shall contain interface requirements and Part II shall contain the interface design implementation. The IRDs shall be maintained and updated in one part. The format of all interface documents shall be in accordance with SSP 41174. Requirements Specification Documents shall meet the standards specified in SSP 41171, except as modified in IP specifications by negotiations with the International Partner/Participant.

9. OPR: OM/Program Integration Office

10. FIRST SUBMISSION DATE: 6 months after contract start

Frequency of Submission: Update as required, with initial frequency indicated by the 2010 activity level, generally moving to fewer updates as the station matures and systems

are activated on-orbit. High activity levels will indicate initial quarterly submission; Low activity levels may require less than one update per year for most documents. Final submission shall be prior to the end of the contract period of performance. After documents supplied under this DRD are added to the Applicable Documents List of this contract (Attachment J-8), updates will be accomplished in accordance with SSP 41170.
Additional Submissions: N/A

11. MAINTENANCE: Specifications shall be maintained electronically and in accordance with SSP 41171, or as modified by negotiations with the Partner/Participant. ICDs/IRDs shall be maintained electronically in accordance with SSP 30459 and SSP 41174.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management
Program Authorized Repository Upload Notification: OM/Program Integration
Office

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Specification Traceability and Compliance Reports 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-SI-02	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Document specification traceability to support closure for the ISS System Specification, U.S. On-Orbit Segment Specification, and IP/Ps Segment Specifications. Document traceability from the ISS System Specification, the U.S. On-Orbit Segment Specification, and to the IP/Ps Segment Specifications.			5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) SOW 2.2.1		7. Interrelationships (e.g., with other DRDs) PIC-SI-01	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The Specification Traceability and Compliance Reports document the requirements traceability flowdown and support verification closure for:

- A. SSP 41000, ISS System Specification
- B. SSP 41160, ESA Segment Specification for Columbus
- C. SSP 41162, U.S. On-Orbit Segment Specification
- D. SSP 41163, Russian Segment Specification
- E. SSP 41165, Segment Specification for the Japanese Element Module (JEM)
- F. SSP 41167, Mobile Servicing System Segment Specification
- G. SSP 50273, HTV Segment Specification
- H. SSP 50333, Cupola Segment Specification
- I. SSP 50439, ESA Segment Specification For The Automated Transfer Vehicle (ATV)
- J. SSP 50318, Prime Item Development Specification for Node 3

CONTENT:

- A. The Specification Traceability Report shall contain the following for each of the specifications identified above:
 - (1) Requirements with no lower level requirements.
 - (2) Requirements with no parent requirements.

FORMAT: Electronic

9. OPR: OM/Program Integration Office

10. FIRST SUBMISSION DATE: 6 months after contract start

Frequency of Submission: Twice annually update as required and to support Stage Integration Review (SIR). Final submission shall be prior to the end of the contract period of performance.

Additional Submissions: N/A

11. MAINTENANCE: The reports shall be maintained electronically.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OM/Program Integration Office

1 electronic copy: Program Authorized Repository

13. REMARKS: None.

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Systems Engineering Technical Assessments 1b. Data Type: 3	2. Date of Current Version	3a. DRD No. PIC-SI-03	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) To provide recommendations to the ISS Program management on the strategic implications of the ISS Program launch schedules, manifests, and ISS on-orbit operations, and assist in the NASA's development of strategic requirements.			5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) SOW 2.2.2		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: Each technical assessment shall specify the stage(s) or configuration(s) for which the assessment is valid. Each assessment shall also include clear definition of assumptions (including bounding operational constraints and configuration assumptions) invoked in the assessment.

CONTENT: The technical assessment documentation shall include the SOW requirement(s) being addressed by the assessment, if applicable, and the following:

- A. Coordination list
- B. Background information sufficient to inform a cognizant ISS customer of the applicability of this analysis to their discipline
- C. Summary of methodology and rationale for confidence in the results
- D. Summary of findings and recommendations
- E. Supporting data

FORMAT: Contractor supplied web-based format, compatible with ISS document standards. Format includes but is not limited to briefing charts in electronic form.

9. OPR: OM

10. FIRST SUBMISSION DATE: As needed by direction of the OPR

Frequency of Submission: As required

Additional Submissions: Technical assessments are required on most Systems Engineering and Integration (SE&I) deliverables.

11. MAINTENANCE: Electronically, as required

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OM

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: On-Orbit Assembly, Modeling, and Mass Properties Data Book (Blue Book) 1b. Data Type: 2	2. Date of Current Version	3a. DRD No. PIC-SI-04	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The data book provides the ISS Program on-orbit mass properties, geometric, and aerodynamic data of the ISS mated, intermediate assembly, and stage configurations. This data is utilized by ISS Program/SSP subsystem teams (e.g. GN&C) that require on-orbit stage mass properties. The figures are also used in other ISS/SSP documents where ISS on-orbit figures are required.			5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References SOW 2.2.3.2.2 SOW 2.2.3.2.11 SOW 2.2.3.2.12 JSC 26557 SSP 30219		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: This DR establishes the content for the development of On-Orbit Assembly, Modeling and Mass Properties Data Book (*Blue Book*) (JSC 26557). It will define the data sources for the development and the content of the Blue Book.

CONTENT: This *Blue Book* (named so because of the blue book covers) provides comprehensive assembly, mass and aerodynamic properties data for the full range of the ISS construction activities for the 18 months from the document release. Volume I contains free flying and Orbiter-attached configuration properties. In Volume II the mass property and aerodynamic data are organized into a multi-body system utilized by analysts. Volume II provides data used by a limited number of customers within the ISS analysis community. The reference document JSC 26557 is the current On-orbit Assembly, Modeling, and Mass Properties Data Book. The tool MODGEN was used extensively for the data book development and is available for use by the contractor as identified in Section C, Addendum 2, Table 1.

ISS geometry, mass properties, and on-orbit orientation information is obtained from the ISS Sustaining Engineering Contract. The coordinate systems are defined in SSP 30219, Space Station Reference Coordinate Systems.

Elements moments of inertia, products of inertia and centers of pressure reported in this document shall be given with respect to the specific element, body, or vehicle center of mass. The center of mass and other significant points shall be reported with respect to the SSACS frame.

Vehicle configurations and dimensions shown in this document shall be derived from data for static, on-orbit element configurations. Dynamic conditions due to applied loads, including

internal pressure deformations of individual elements, and thermal effects will not be depicted or dimensioned in this document.

Orbiter specific mass properties shall be obtained from mission specific Shuttle Operations Data Books (SODBs).

The following information shall be provided for each configuration as defined by the Configuration List and the Assembly Matrix. Data will be given in the Space Station Analysis Coordinate System (SSACS) as defined in SSP 30219:

Detailed description

Solid model isometric hidden line drawing illustration

Reference point in SSACS and RSA Analysis Coordinate Systems

Total ISS on-orbit mass (lb, kg)

Center of mass location (X, Y, Z in ft, m)

Inertia tensor* (slug*ft**2, kg*m**2)

Principal moments of inertia (IXX, IYY, IZZ in slug*ft**2, kg*m**2).

The origin of the principal axes coordinate system is located at the configuration center of mass.

Principal to body Euler rotation angles

Projected areas (X, Y, Z in ft**2, m**2)

Aerodynamic centers of pressure are referenced in the SSACS frame to specific element, body, or vehicle center of mass and not the modeling origin.

Center of pressure offset matrix (with respect to the center of mass)

* Inertia matrix off-diagonal elements are negative integrals on these pages.

Configurations shall contain other extra data sets, including these items:

Element interfaces

Element properties*

The mass properties are given when the element either (a) initially is delivered to ISS, (b) increases or decreases in mass, (c) moves to a new location on the ISS, or (d) changes configuration [such as mechanism deployment or retraction].

Element dimensioned four-view drawings

Orbiter attach point location

Mass properties for an attached Orbiter vehicle*

Mass properties for mated ISS - Orbiter stack*

Dimensioned hidden line illustration of the final *Blue Book* ISS stage configuration showing interface to interface dimensions and other ISS key dimensions, such as solar array area or radiator location. Dimensions shall be in mm (inches).

* Inertia matrix off-diagonal elements are negative integrals on these pages.

Additional drawings shall be provided:

J-size drawing showing all the *Blue Book* configurations

C-size exploded isometric of the final *Blue Book* stage configuration

C-size dimensioned drawing of the final *Blue Book* stage configuration

Other drawings as required.

FORMAT: Delivery to NASA of the document volumes shall be made available electronically in Microsoft Word and Acrobat. Hardcopies will be available for users as required. The illustrations shall also be available individually in tif, gif, and pic formats. The individual mass property sets

will also be available separately in the user's required format. All electronic files will be available from an ftp server from JSC and non-JSC users (including International Partners) and are subject to the export control regulations.

9. OPR: OM2, External Configuration, Analysis, Modeling and Mass Property Team

10. FIRST SUBMISSION DATE:

Frequency of Submission: The individual electronic files of the Blue Book (JSC 26557) shall be delivered every June and December. Volumes I and II shall be delivered electronically and in hard copy every January and July. Construction of one data book per year is scheduled to address flight and operation plan modifications affecting missions close to launch. Users will be notified by mail notification to the user distribution list of document deliveries and updates.

Additional Submissions: Change pages shall be produced if a significant change in the assembly sequence or mission timeline occurs. Prior approval by the OPR is required.

11. MAINTENANCE: All versions of the deliveries must be maintained electronically and must be accessible by the ISS Program/SSP users.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OM2/External Configuration,
Analysis, Modeling and Mass Property Team

1 electronic copy: Program Authorized Repository

13. REMARKS: None

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: ISS Interior 3D CAD Models 1b. Data Type: 3	2. Date of Current Version	3a. DRD No. PIC-SI-05	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) Input to vehicle integration to support the development of the on-orbit stage models to perform internal volume configuration analyses of the USOS. The models will be used for performing analyses related to IVA operations and Station interior integration included but not limited to crew translation paths, worksite operational volumes, visibility and access to critical equipment and controls, and other IVA-related functions.			5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (SOW, Clause, etc.) SOW 2.2.2.1.4.4.3		7. Interrelationships (e.g., with other DRDs)	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: USOS pressurized elements, systems racks, payloads, payload racks, and significant GFE items that are part of the IVA environment and impact the Station crew’s habitable environment. Best available and as-designed validated models for the planned interior are required.

CONTENT: Validated 3-D CAD models with sufficient detail that the internal geometry shows an accurate depiction of the ISS stage configuration. High fidelity models of modules, racks, payloads, and significant GFE items should be provided for on-orbit configurations. CAD models of interior features are required that may include the following: internal pressure shell, standoffs, hatches, ports, stowage compartments, rack attachments, vents, lights, handrails, racks, seat track, emergency equipment, and significant GFE (i.e Cycle Ergometer with Vibration Isolation and Stabilization [CEVIS], Interim Resistive Exercise Devise [IRED], Crew Medical Restraint System [CMRS], etc.). All objects that deploy, rotate or otherwise move shall be documented and modeled with location and limit parameters described.

FORMAT:

- A. Models shall be full scale in English (inches) units.
- B. Models shall be constructed to nominal dimensions.
- C. Models should be built with respect to element local coordinate system as defined by SSP 30219.
- D. Models shall be maintained in Pro-Engineer (or equivalent)
- E. Translation: STEP AP203 neutral file format acceptable only if Pro-Engineer formats are not available.
- F. Solid Models Only—Models may be unparameterized “dumb solids” meaning tolerance data; model history, material properties, etc. need not be included.

- G. Model parts should be individual entities and not fused together. This will allow CAD team to update the model based on hardware measurements. Assembly structure, part names and part numbers would be helpful. However, for controlling file size growth and having redundant geometry, all identical components (i.e., handrails, connectors, etc) will be nested in detail/ditto space/assemblies. For example if 20 identical handrails are used, only one detail is required and the rest should be in ditto space/assembly.
- H. Description on movement limits for any articulating items should be provided.
- I. As-designed and As-built (validated and final) models shall be validated to released engineering MBD data sets/drawings. MBD data sets/drawings shall be located in the VMDB.
- K. Where interior subassemblies are supplied as separate models, sufficient documentation shall be provided to support correct geometrical integration of each subassembly into its larger interior element.
- L. A model tree shall be provided which documents the element model assembly architecture as well as model and subassembly titles.
- M. Models shall be under configuration management so that the pedigree and source of models, including validation data, are documented and retained.
- N. Models and associated assembly trees and configuration data shall be delivered electronically via FTP site or as Compact Discs.

9. OPR: OM

10. FIRST SUBMISSION DATE: See below

Frequency of Submission: High fidelity best available 3-D CAD model required at L-16 months. High fidelity validated 3-D CAD model required at L-9 months

Additional Submissions: N/A

11. MAINTENANCE: Models must be maintained electronically.

12. COPIES/DISTRIBUTION:

Program Authorized Repository Upload Notification: OH2/Data Management

Program Authorized Repository Upload Notification: OM

1 electronic copy: Program Authorized Repository

13. REMARKS: All ISS interior CAD models shall be deliverables to NASA and be made available to the ISS community or other users. Individual models shall be available at the level of modules, racks, and GFE.

DATA REQUIREMENTS DESCRIPTION
(Based on JSC-STD-123)

1a. DRD Title: Operations and Maintenance Requirements and Specifications Database (OMRSD) 1b. Data Type: 1	2. Date of Current Version: March 6, 2008	3a. DRD No. PIC-VT-01	3b. RFP/Contract No. Final RFP NNJ09ZBG001R
4. Use (Define need for, intended use of, and/or anticipated results of data) The OMRSD contains the requirements for processing the International Space Station components at KSC for flight readiness.		5. DRD Category <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References (SOW, Clause, etc.) OMRS File 10 Database - SOW 3.1.1.1.2.3, Systems Engineering and Test and Verification (T&V) Support OMRS File 10 Database - NSTS 08171		7. Interrelationships (e.g., with other DRDs) N/A	

8. PREPARATION INFORMATION: The Contractor shall prepare the deliverable as follows:

SCOPE: The requirements, specifications and criteria in the OMRSD apply to pre-launch, launch, in-flight, recovery and turnaround operations of the International Space Station elements and payloads.

CONTENT: Approved/closed requirements for certification of flight readiness. Database houses active requirements for possible utilization on future flights.

FORMAT: Electronic.

9. OPR: Vehicle Office (OB)

10. FIRST SUBMISSION DATE: As needed following Shuttle retirement

Frequency of Submission: As required per Requirement Change Notice updates.

Additional Submissions: Procedures and Requirements Allocation Matrix for closed loop tracking.

11. MAINTENANCE: Electronic, as required (see additional submissions)

12. COPIES/DISTRIBUTION: N/A

Program Authorized Repository Upload Notification: OMRSD Facilitator at KSC

13. REMARKS: None