

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Contract Management Plan	07/12/2012	MGMT-01	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To describe the contractor’s management organization, approach, and systems.		<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	Technical Administrative SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The contract management plan shall describe the contractor’s organizational structure, contract management approach, and management systems that will be used to ensure technical, schedule, and cost performance. The plan shall be comprehensive in nature and integrate all management systems of the prime, subcontractors, and major vendors.</p> <p><b>B. CONTENT:</b></p> <p>The contract management plan shall address the contractor’s processes for work planning, definition and authorization, scheduling, budgeting, data accumulation, safety and mission assurance, corrective action system processes and procedures, subcontractor management, material control, indirect cost management, baseline control, corporate reachback, and organization structure. The contract management plan shall also discuss the management relationships between the contractor’s key personnel and the associated NASA personnel.</p> <p><b>C. FORMAT:</b></p> <p>The contract management plan shall be delivered in native format and be compatible with JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>Revision required with major scope change.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

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(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Work Breakdown Structure and Dictionary	07/12/2012	MGMT-02	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To organize the tasks to be accomplished in this contract in a product-oriented structure. The WBS and dictionary shall provide the framework for structuring the program implementation plans, establishing and tracking budgets, preparing schedules, developing work force and material estimates, preparing work authorization documents, and reporting contract performance.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The WBS shall encompass all the products and services required to achieve all the requirements of this contract. The WBS shall subdivide the work to be accomplished into elements that serve as the basis for detailed planning and control, and in addition, permit collection of cost and schedule data for each element.</p> <p><b>B. CONTENT:</b></p> <p>The WBS shall depict a family tree composed of all the work required by the contract. The dictionary shall contain a concise description of contract tasks, to be performed and products to be delivered, subdivided by WBS elements. A WBS element may represent an identifiable product, a set of data, a service, a task, or a budget function. Lower levels of detail, which the contractor uses for its own management purposes to validate information reported to NASA, shall be compatible with NASA requirements and be accessible to NASA. The relationship between the WBS and the contractor’s internal organizations and processes should also be provided.</p> <p><b>C. FORMAT:</b></p> <p>The WBS tree is to be in the organization chart format and the associated WBS narrative (WBS Dictionary) in text form and arranged as stated in the contents section of this DRD. The WBS tree and dictionary shall be provided in the Contractors’ format. The WBS structure and Dictionary shall be delivered in native format and be compatible with JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

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(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Contract Management Report	07/12/2012	MGMT-03	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Provide information on the contractor's safety, technical, quality, financial, and deliver-to-schedule progress for use by the contract management team consisting of Engineering, S&MA, and Administrative personnel.		<input checked="" type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-01 Contract Management Plan RV-02 Regular Status Report/Summary Review BP-01 NASA Contractor Financial Management Reporting (NF 533) SMA-03 Safety and Health Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The monthly Contract Management Report shall contain information on the contractor's safety, technical, quality, cost, and deliver-to-schedule performance. This report, along with detailed financial reports, serves as the contractor's formal reports given to NASA for contract surveillance. The Contract Management Report shall be delivered and the associated Summary Review presented at the monthly Contract Management Review (SOW 1.1).</p> <p><b>B. CONTENT:</b></p> <p>Contract Management Report: The contents of the report shall address all active contractual activities and performance. The structure of the report shall be selected by the contractor and agreed upon by the NASA COTR. The following shall be addressed in the report:</p> <p>1. SAFETY SUMMARY</p> <ul style="list-style-type: none"> <li>• OSHA reportable events</li> <li>• Personnel Injuries</li> <li>• JSC on-site Close Calls and Status involving HHP contractor personnel</li> <li>• Inspection Reports of on-site facilities dedicated to HHP contractor activities</li> <li>• Flight Product Safety Related Discrepancy Reports (DR) and summary status of all remaining open DRs</li> </ul> <p>2. COST PERFORMANCE SUMMARY (Performance Based) (For each DO/TO)</p> <ul style="list-style-type: none"> <li>• Project Actual-To-Date Cost &amp; Projected Total Cost - Last Period</li> <li>• Project Actual-To-Date Cost &amp; Projected Total Cost - This Period</li> <li>• Projected Total Cost Addition Due To Approved Changes</li> <li>• Graphics Of Initial Cost Projection, Initial Cost Projection - Approved Changes Projection, Full Cost Projection</li> <li>• Variance not due to approved change and description of cause</li> </ul> <p>3. RESOURCE PERFORMANCE SUMMARY</p> <ul style="list-style-type: none"> <li>• Graphic of the initial planned manpower for each WBS item</li> <li>• Current planned manpower with approved changes</li> <li>• Actual manpower used to date, and % of WBS task completed</li> </ul>			

JSC Form 2341 (Rev October 19, 2011) (MS Word 2007) (Previous editions are obsolete.)

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## 4. TECHNICAL & QUALITY PERFORMANCE SUMMARY STATUS

- Technical /Quality Performance metrics
- Quality issues
- Action to be taken to resolve quality issues
- Continuous improvement initiatives and status
- Other Quality Subjects as needed

## 5. PRODUCT PRODUCTION AND SCHEDULE SUMMARY STATUS

- Overall Schedule Status
- Completed Products and Schedule – Projected vs. Actual
- Projected Next Month's Products and Schedule
- Change from last month due to approved changes
- Variance not due to approved change and description of cause

## 6. MANAGEMENT SUMMARY

- Corrective Actions Taken
- Organization
- Configuration Management
- Risk Management (Risk identification and mitigation plans)
- Any changes to OCI status
- Technology, Innovations, and Process Substantial Improvements
- External Customer status

Contract Management Summary Review: The summary review shall contain the highlights of the report and shall be presented at the Monthly Contract Management Review. The COTR and the contractor shall agree upon the contents of the review. Minutes during the Summary Review shall be taken and submitted with the next status report.

### C. FORMAT:

The Contract Management Report shall be in text form and arranged as stated in the contents section of this DRD. The Contract Management Summary Review shall be a view graph presentation. Both products shall be provided in the Contractor's format. The Contract Management Report and Summary Review shall be delivered in native format and be compatible with JSC standard software loads.

### D. MAINTENANCE:

See Data Requirements list.

### E. DISTRIBUTION:

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Staffing and Critical Skills Plan	07/12/2012	MGMT-04	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Provide Offeror's approach meeting the staff requirements of the SOW.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-01 Contract Management Plan MGMT-09 Total Compensation Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Staffing and Critical Skills Plan describes the process for attracting and retaining qualified personnel to meet the required staffing levels. Upon approval, the Staffing and Critical Skills Plan will become a part of the contract as Attachment J-15.</p> <p><b>B. CONTENT:</b></p> <p>At a minimum, the offer shall address the following elements:</p> <ol style="list-style-type: none"> <li>1. A narrative that describes the basis of the overall staffing approach</li> <li>2. Staffing of the proposed organizational structure including proposed teaming partners and subcontractor personnel, including the numbers and types of personnel</li> <li>3. Sources of the proposed staff including its plans to use qualified personnel from within the offeror's company, new hires and retention of incumbent personnel including an estimated percentage of each category proposed. Provide rationale for hiring or replacing incumbent personnel</li> <li>4. Job descriptions and qualifications by proposed skill levels</li> <li>5. Retention Plans for maintaining and retaining a qualified workforce for expected high attrition positions throughout the course of the contract</li> <li>6. Plans for staffing flexibility to accommodate changes in requirements, fluctuation in workload and unexpected attrition including how staffing will be managed for newly authorized IDIQ work</li> <li>7. Identify all critical skills across the contract and explain how and to what level those critical skills will be maintained. Also include how the loss of a critical skill will be mitigated. NOTE: This content is due with final submission of the Staffing and Critical Skills Plan (at Contract Start + 30 days)</li> </ol> <p><b>C. FORMAT:</b></p> <p>Contractor's format is acceptable. The Staffing and Critical Skills plan shall be delivered in native format and be compatible with JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p>			

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## **E. DISTRIBUTION:**

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(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Contract Phase-In Plan	07/12/2012	MGMT-05	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To describe the Contractor’s implementation approach to transition development, test, and facility maintenance and operations, functions and data management responsibility from the incumbent contractor.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-01 Contract Management Plan MGMT-04 Staffing and Critical Skills	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>NPR 1600.1 NASA Security Program Procedural Requirements</p> <p><b>SCOPE:</b></p> <p>The HHPC Phase-In Plan provides plans for the transfer of all anticipated on-going development and operation activities during the 61 day contract Phase-In period along with supporting logic and rationale. After approval, the Phase-In Plan will become part of the contract as Attachment J-10.</p> <p><b>B. CONTENT:</b></p> <p>This Phase-In Plan shall describe the overall plan for transition. At a minimum, the plan shall address:</p> <p>a. Schedule with key milestones, and personnel responsible for those milestones</p> <p>b. Metrics used to determine progress for contract transition</p> <p>c. Approach for ensuring continuity of service, including:</p> <ol style="list-style-type: none"> <li>1. Approach for transitioning and processing of multiple IDIQ task/delivery orders and associated task/delivery order plans required for work to begin on day 1 of the contract start.</li> <li>2. Continuous support of purchases and contracts defined in IDIQ task/delivery orders.</li> <li>3. Plan for documentation control transfer.</li> <li>4. Plan for continuance of facilities maintenance and operations.</li> <li>5. Approach for phase-in of critical and high-risk operations and activities and mitigation strategies to minimize impact to JSC.</li> <li>6. Approach for establishing contacts and interfaces with Associate Contractor Agreements and the Government.</li> <li>7. A description of tasks, if any, requiring a continuation of support from the incumbent contractor.</li> <li>8. Uninterrupted support for flight operations with emphasis on crew health and safety</li> </ol> <p>d. Approach and rationale for implementing the plans, procedures, and processes required for performance</p>			

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- of the contract, including property, personnel, facilities, and security.
- e. Approach for informing NASA of milestone status, progress, and issues
  - f. Information Technology Preparation:
    - 1. Identify all contractor-provided applications that will need to be integrated at JSC.
    - 2. Identify any application or system connectivity needs to or from JSC.
  - g. Property control transfer, including schedule and milestones for completing 100% inventory in the following areas:
    - 1. Store stock assets
    - 2. Program stock assets
    - 3. Critical spares
    - 4. Government Furnished Property
    - 5. Installation Accountable Government Property

The schedule shall include notification to the organizations 30 days prior to the initial start of an inventory. Individuals who will be performing inventories shall be identified.

- h. Security considerations, including Homeland Security Presidential Directive (HSPD)-12 badging requirements
- i. Identify risks associated with Phase-in Period and discuss risk mitigation strategy
- j. Associate Contract Agreement implementation plan

## **C. FORMAT:**

Contractor's format is acceptable. The Contract Phase-In Plan shall be delivered in native format and be compatible with JSC standard software loads.

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

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1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Wage/Salary and Fringe Benefit	07/12/2012	MGMT-06	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The Wage/Salary and Fringe Benefit Data shall be used by the NASA Contracting Officer to assist in the monitoring of Service Contract Act compliance.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
FAR 52.222-41, Service Contract Act of 1965 FAR 52.222-42, Statement of Equivalent Rates for Federal Hires			
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Wage/Salary and Fringe Benefit Data shall 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 22.1000.</p> <p><b>B. CONTENT:</b></p> <p>The Wage/Salary and Fringe Benefit Data shall 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 on the contract. Separate forms shall be utilized for classifications working in different geographic areas and for each subcontractor. Wage determination numbers, appropriate labor organization names, and subcontractor names, shall be reflected. All nonexempt labor classifications shall 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 shall reflect the actual lowest and highest paid employees, along with a computed average rate. State the number of employees in each labor category. Separate Fringe Benefit forms shall be completed for non-represented classifications and for each separate CBA, if applicable. A separate form shall be completed for the prime and each subcontractor. Three hardcopies of each CBA are required if organized labor is represented on your contract.</p> <p><b>C. FORMAT:</b></p> <p>The Wage/Salary and Fringe Benefit Data shall be in a format substantially the same as enclosed with this DRD. (Forms 1, 2 and 2A enclosed)</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

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**FORM 1**

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**Wage/Salary Rate Information**

<u>Standard Labor Category</u>	<u>Wage Determination Classification</u>	<u>Exempt or Nonexempt</u>	<u>Union or Nonunion</u>	<u>Current Hourly Rate</u>	<u>FTE No. of Employees</u>
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Illustration of required data:

Program Manager	Not Required	E	N	\$40.00	1
Supervisor	Not Required	E	N	\$32.00	1
Electrical Technician	Electronics Technician Maintenance II: Code 23182	N	U	\$23.89	12
File Clerk	General Clerk III: Code 01113	N	N	\$14.90	2
Secretary	Secretary II: Code 01312	N	N	\$18.57	1

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.

**Wage/Salary Rate Information**

<u>Contractor's Labor Category</u>	<u>Wage Determination Classification</u>	<u>Exempt or Nonexempt</u>	<u>Union or Nonunion</u>	<u>Current Hourly Rate</u>	<u>FTE No. of Employees</u>
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(Contractor to fill-in)

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## FORM 2

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### 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)		

TOTAL

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.)

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

\_\_\_\_\_  
Signature of Company Representative

\_\_\_\_\_  
Date

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FORM 2A

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## 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.)

<b><u>Item</u></b>	<b><u>Coverage Provided</u></b>	<b><u>Average Hourly Cost</u></b>
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

	<b><u>Service Requirement</u></b>	<b><u>Days per Year</u></b>
a. Vacation		
b. Holidays		
c. Sick Leave		
d. Jury Leave		
e. Funeral Leave		
f. Military Leave		
g. Other (Describe)		

\_\_\_\_\_  
Signature of Company Representative

\_\_\_\_\_  
Date

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1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Reserved		MGMT-07	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			

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1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Reserved		MGMT-08	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			

## JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC-STD-123. See work page for instructions)

1. DRD Title Total Compensation Plan	2. Date of current version 07/12/12	3. DRL Line Item No. MGMT-09	RFP/Contract No. NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) The Contracting Officer must evaluate the reasonableness of compensation for service contracts in accordance with NFS 1831.205-670.			5. DRD Category ( <i>check one</i> ) <input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References ( <i>Optional</i> ) FAR 52.222-46, "Evaluation Of Compensation For Professional Employees" FAR 52.237-10, "Identification of Uncompensated Overtime" NFS 1852.231-71, "Determination of Compensation Reasonableness"		7. Interrelationships ( <i>e.g., with other DRDs</i> ) ( <i>Optional</i> )	

### 8. Preparation Information (*Include complete instructions for document preparation*)

#### Data Type: 1

**Scope:** The Total Compensation Plan will identify and discuss wages, salaries, and fringe benefits for professional employees and non-exempt service employees in all proposed labor categories, including those personnel subject to union agreements, the Service Contract Act, and those exempt from both of the above. The Total Compensation Plan and Total Compensation Templates (a) through (e) will be provided for both the prime team members and all subcontractors that meet the criteria in NFS 1852.231-71(d). The Plan will address the requirements of the Service Contract Act and commit to the compliance of all wage determinations. The compensation templates shall be provided in the cost volume.

Upon approval, the Total Compensation Plan will become a part of the contract as Attachment J-13.

#### Content:

1. Provide a discussion of the qualification criteria (education and experience) that is normally associated with the labor classifications identified. Explain how the offeror's proposed compensation plan recognizes the differences in skills and complexities of varied disciplines as well as job difficulty. Discuss the consistency of the plan among the categories of labor being proposed. Differences between benefits offered professional and non-professional employees shall be highlighted.

2. Provide the offeror's company's salary range/wage information for each labor classification identified. Salary ranges will also reflect the impact of employment tenure. Describe planned escalations for exempt and non-exempt employees.

3. Discuss the offeror's company's fringe benefit policies and practices, including leave programs. Indicate any differences in fringe benefits among working groups. Inclusive of, but not limited to, address the offeror's company policy on short and long term disability insurance, and life insurance, including information on the types of benefits offered, and the company share of premium costs.

4. Describe the offeror's company policy on health insurance coverage, including information on the types of health insurance benefits offered, the company share of premium costs, what co-pays are required, the deductibles, the effective date of coverage, and the anticipated escalation of insurance costs. Also include the offeror's policy on assuming health insurance coverage for incumbent employees, including pre-existing medical conditions, and the offeror's policy on spouse and family benefits.

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5. Describe the offeror's policy on retirement/savings plans, including how much the company provides toward the plan and information on vesting. Address escalation and employer/employee cost sharing ratios.
6. Discuss other salary payment policies, such as cost-of-living adjustments, overtime pay, holiday pay, and any other premium pay anticipated.
7. If uncompensated overtime is proposed, it shall be in accordance with FAR 52.237-10, "Identification of Uncompensated Overtime". If proposed, the offeror shall discuss the effects of uncompensated overtime on the Total Compensation Plan, and provide a discussion as to whether the uncompensated overtime is voluntary or involuntary. Describe the possible effects that uncompensated overtime will have on employee morale and retention. The offeror will provide a copy of the company policy for uncompensated overtime with proposal.
8. The offeror will describe incentives to motivate and reward performance and to encourage the retention of personnel. The offeror will describe the policies, procedures, and experience related to these incentives.
9. Explain how wage/salary ranges were established. Supporting information will include data, such as recognized national and regional compensation surveys and studies of professional, public and private organizations used in establishing this proposed TCP. The offeror shall provide written support to demonstrate that its proposed compensation is reasonable.
10. The offeror shall describe their commitment for compliance with the Service Contract Act and all wage determinations. The offeror shall include the rationale for any conformance procedures used or those Service Contract Act employees proposed that do not fall within the scope of any classification listed in the applicable wage determination.

**Format:** Contractor's format is acceptable but must include the content listed above.

**Distribution:**

1. Contracting Officer (1 electronic copy and 1 hard copy with signature)
2. Contracting Officer's Technical Representative (1 electronic copy and 1 hard copy)

**Submission:**

- i. Initial: Due with proposal
- ii. Frequency: Update and submit as the TCP changes

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
External Customer Plan	07/12/2012	MGMT-10	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Contractor Plan for Identifying External Customers for JSC Capabilities		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NPD 1050.1 “Authority to Enter into Space Act Agreements		Contract Clause H.15 “WORK FOR OTHERS” MGMT-03 Contract Management Report	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The External Customer Plan (ECP) describes the Contractor’s multi-year approach for identifying, attracting, and retaining external customers for JSC. The intent of the plan, is to allow the contractor to market and use SA Directorate facilities, equipment, contractor personnel, and limited NASA capabilities on a non-interference basis, for the purposes of maintaining, and upgrading critical skills, and off-setting the Government’s cost of maintaining such capabilities.</p> <p>The ECP will be negotiated, and agreed upon by the contractor and NASA, prior to approval.</p> <p>Upon approval, the ECP will become a part of the contract as Attachment J-20.</p> <p>After the finalized ECP is approved by NASA, the Contractor shall enter into a formal agreement with NASA that establishes the terms and conditions for use of Government property.</p> <p>A report, referred to as the ECP, shall be provided as part of the Monthly Contract Management Report. The report shall contain a running list of contacts that are being or have been sought through the ECP process.</p> <p><b>B. CONTENT:</b></p> <p>The plan shall describe the Contractor’s approach for retaining skills and offsetting the government’s cost of maintaining facilities by supporting External Customers. The plan shall outline cost avoidance targets that the contractor shall be evaluated against. Cost avoidance is defined as the estimated funds that would have been spent by the Government for the maintenance of facilities, equipment, and capabilities had it not have been paid for by the external customer. Also, it includes any funds for facility usage that are provided to the Government.</p> <p>The ECP shall follow the table of contents below, supplemented by other relevant data identified by the contractor:</p> <ol style="list-style-type: none"> <li>1. Executive Summary-summarize the plan’s key points and approaches, and include targets from Table 1.</li> <li>2. Infrastructure Development: <ol style="list-style-type: none"> <li>i. Directorate Capabilities, Constraints, and Policies: <ol style="list-style-type: none"> <li>a. Identify and evaluate internal capabilities not generally available from the commercial market and unique to NASA.</li> <li>b. Provide a comprehensive checklist of all constraints and policies the Customer must meet in order to operate in the SA facilities.</li> <li>c. Provide a comprehensive process that reviews the potential customer’s requirements against Directorates capabilities, constraints, and policies.</li> <li>d. Describe plans to resolve issues between customer requirements and Directorate schedules, capabilities, con-</li> </ol> </li> </ol> </li> </ol>			

JSC Form 2341 (Rev October 19, 2011) (MS Word 2007) (Previous editions are obsolete.)

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

straints, and policies.

e. (Goal: These checklists and processes will be used to screen/vet potential customers, with the intent that if they satisfy all constraints it makes them eligible to enter into an agreement with the contractor or NASA)

## ii. Procedures:

- a. Identify and describe procedures for reducing/eliminating conflict between government and non-government work.
- b. Identify and describe procedures for coordinating user requests for new services within pre-existing commitments to ensure compatibility and fulfillment with existing resources.
- c. Identify and describe procedures for protecting data between companies and potential Organizational Conflicts of Interest.
- d. Identify schedules and metrics for staying within the plan.

## 3. Costs:

- a. Describe your plan to assist NASA in establishing a price list for use of the Directorates' facilities and capabilities. Identify all factors that you will consider in determining the costs (e.g., equipment maintenance and replacement costs).
- b. Describe your approach for determining the cost avoidance to NASA for each External Customer agreement utilizing accepted accounting practices. Include actual reimbursement to NASA, auditable cost offsets and any other factors deemed appropriate. Propose a format for reporting this data to NASA.
- c. Provide your definition of a "completed" or "booked" External Customer Agreement.

## 4. Recruiting:

- i. Identifying Potential Customers: Describe plans for identifying potential customers, both initially and long-term.
- ii. Marketing JSC Resources: Describe plans for marketing to potential customers, and the estimated associated costs.

## 5. Integration Support:

- i. Describe plans to support both NASA and the customer during agreement development and negotiations.
- ii. Describe plans to document the customer's requirements and how they satisfied all constraints and policies. (This data will be used to demonstrate compatibility between the External Customer's requirements and NASA's facilities. It may also be utilized in the formulation of the formal agreement with the customer, as needed).

## 6. Implementation:

- i. Describe your approach to implementing and executing the External Customer's requirements from the point of a signed agreement/commitment through completion of the External Customer activity.
- ii. Provide milestones and metrics for documenting progress.

## 7. Reporting:

- i. The contractor shall submit monthly reports as part of the Contract Management Report summarizing their progress.
- ii. Reports shall include, at a minimum: Summaries of contacts made, and potential customers, and the associated:
  1. Amount of work expected
  2. Anticipated activities
  3. Timeframe/ Length of use
  4. Level and type of support by the contractor
  5. Estimated support (including cost) of the contractor

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

6. Facility equipment and infrastructure required
7. Additional details not otherwise addressed (e.g., operations, setup, teardown, returning systems to neutral state)

## **C. FORMAT:**

Contractor's format is acceptable. The ECP shall be delivered in native format and be compatible with the JSC standard software loads.

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Technology, Innovations, and Process Improvement Plan and Report	07/12/2012	MGMT-11	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To identify and promote Technology, Innovations, and Process Improvements that will improve SA products, processes, and facility operations.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-03 Contract Management Report	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The contractor shall take the initiative, think creatively, seek vendor sources, and infuse technology and innovations from other industries worldwide. The contractor shall also investigate best practices from contracts or facilities similar to HHPC and JSC, and shall identify potential improvements to the operation of the Space Life Sciences Directorate. The contractor should consider the SOW in its approach but should not limit the proposed changes to processes currently used or described only in the SOW. Upon approval, the plan will become a part of the contract as Attachment J-21.</p> <p><b>B. CONTENT:</b></p> <p>(a) The contractor shall provide its approach for developing new technologies, innovations, and process improvements that when implemented, shall result in improved quality of products or services while maintaining or reducing costs to the Government. The plan shall include the contractor’s process for continuous assessment and reprioritization.</p> <p>(b) The contractor shall propose innovative techniques and methods that would benefit the Government, and in particular the Space Life Sciences Directorate. Any proposed innovations must include sufficient rationale to demonstrate the feasibility, cost, and effectiveness of the contractor’s ideas. Recommendations should address how the proposed innovation will benefit and improve current processes. If the proposed innovation and/or improvements results in an estimated cost savings, the contractor shall provide the estimate of cost savings, the rationale, and the estimating techniques used to support the proposed cost savings. The contractor shall propose an implementation plan and schedule for each proposed innovation. If accepted, implementation of proposed changes, detailed assessments, and proposals will be authorized on a Task/Delivery Order.</p> <p>The initial submission to the DRD shall include the content of 8B(a) and 8B( b), to be delivered separately with the proposal. After contract start, the DRD shall be combined into one plan. A Technology, Innovation, and Process Improvement (TIPI) status, including the implementation and new proposals, shall be delivered as part of the Contract Management Report. The report provided at the mid-point and end of the evaluation period will include an estimate of the total cost savings, and other benefits to the Government realized during the evaluation period, and for three prior evaluation periods. An update to the Plan, to reflect decisions, and contemporary planning will be submitted annually.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **C. FORMAT:**

Contractor's format is acceptable. The TIPI Plan shall be delivered in native format and shall be compatible with the JSC standard software loads.

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Organizational Conflicts of Interest (OCI) Mitigation Plan	07/12/2012	MGMT-12	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Used when the contractor proposes to resolve an organizational conflict of interest by mitigation.		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
FAR Subpart 9.5, Organizational and Consultant Conflicts of Interest		H.12 Mitigation of Organizational Conflict of Interest, H.13 Disclosure of Organizational Conflict Of Interest After Contract Award	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The Organizational Conflict of Interest (OCI) Plan describes the contractor’s approach to mitigate potential OCI issues created by the performance of work in the RFP.</p> <p><b>CONTENT:</b></p> <p>The Organizational Conflict of Interest (OCI) Mitigation Plan shall:</p> <ol style="list-style-type: none"> <li>1. Demonstrate an understanding of (1) OCI principles and (2) the full breadth of OCI issues and the types of harm that can result.</li> <li>2. Describe the actions the contractor intends to take to mitigate the OCIs identified in the RFP. If using a firewall, explain how these actions will operate to successfully address the conflict without adversely affecting performance of the contract. Additionally, identify any potential OCIs created by the requirements of this RFP which the contractor intended to resolves using methods other than mitigation. Specific mitigation strategies shall be appended to the mitigation plan; specific plans to limit future competition will be reflected in the clause at NFS 1852.209-71, —Limitation of Future Contracting.  </li> <li>3. Require the reporting of all potential/actual OCIs during performance of the contract. An OCI report shall include (1) a description of the conflict, (2) the plan for resolving the conflict, and (3) the benefits/risks vis-à-vis contract performance associated with plan approval/acceptance.</li> <li>4. Include a requirement to update this plan as necessary to address specific OCIs. All updates to the plan must be approved by the contracting officer and the updates/changes must be incorporated in the contract to be effective.</li> <li>5. Define company roles, responsibilities, and procedures for screening (i.e., identifying/recognizing, analyzing/evaluating, resolving, and reporting) existing and new business opportunities for actual/potential OCIs.</li> <li>6. Identify any affiliated companies/entities (e.g., a parent company or a wholly-owned subsidiary) and procedures for coordinating OCIs with such affiliated companies/entities.</li> <li>7. Explain how the contractor will flow down the provisions of this mitigation plan to any subcontractor that may have a conflict with regard to performing the requirements of this contract. Discuss affected subcontractors’ OCI program as it relates to this contract and specifically explain how affected subcontractors will identify, resolve, and report OCIs</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

associated with this contract.

8. Establish and require entrance training for new employees, refresher training for existing employees, and exit training for departing employees.
9. Define organizational and employee sanctions for violations of established OCI procedures/requirements/guidelines.
10. Require periodic self-audits to ensure compliance with established OCI procedures/requirements/guidelines.
11. Define records related to the OCI plan (e.g., training and audit records) that will be made available to the Government upon request.

## **B. FORMAT:**

The Contractor's format is acceptable. The Organizational Conflict of Interest Mitigation plan shall be delivered in native format and shall be compatible with JSCs standard software loads.

## **C. MAINTENANCE:**

See Data Requirements list.

## **D. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Small Business Subcontracting Plan and Reports	07/12/2012	MGMT-13	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To describe the Contractor's planned approach to meeting Small Business Subcontracting.		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-01 Contract Management Plan MGMT-03 Contract Management Report	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>FAR 52.219-9 Small Business Subcontracting Plan NFS 1852.219.75 Reporting Requirements</p> <p><b>SCOPE:</b></p> <p>The WBS shall encompass all the products and services required to achieve all the requirements of this contract. The WBS shall subdivide the work to be accomplished into elements that serve as the basis for detailed planning and control, and in addition, permit collection of cost and schedule data for each element.</p> <p><b>B. CONTENT:</b></p> <p>At a minimum, the offer shall address the following elements:</p> <ol style="list-style-type: none"> <li>1. Identification of Small Businesses whose offer is part of the proposal</li> <li>2. Qualifications of Small Businesses and Small Business personnel</li> <li>3. Small Business Category and percentage of the proposal assigned for each subcontractor</li> <li>4. Management approach to subcontracting with small disadvantaged, Women-owned, HUB Zone, Veteran Owned, and Service Disabled Veteran Owned businesses, and MSIs.</li> <li>5. For future subcontracting: Area of work, percentage of contract that will be subcontracted, potential subcontractors and their small business subcategory classification.</li> <li>6. For future subcontracting: Management strategy that will be used to assure subcontractors are qualified to perform the assigned contract scope.</li> </ol> <p><b>REPORTS:</b></p> <ol style="list-style-type: none"> <li>1. Contractors are required to submit subcontracting data in the Electronic Subcontracting Reporting System (eSRS) which has replaced the paper Standard Form 294 and SF 295 Summary Subcontracting Reports.</li> <li>2. All Contractors are required to register and file both types of subcontracting reports (SF 294 and SF 295 data) using the eSRS system. The web-site to register is <a href="http://www.esrs.gov">www.esrs.gov</a>.</li> <li>3. In addition to eSRS submission, the Contractor shall provide a summary of small business data. Compared to established goals per DRD-HHPC-MGMT-03, Contract Management Report.</li> </ol> <p><b>C. FORMAT:</b></p> <p>The Contractor's format is acceptable. Small Business Subcontracting Plan shall be delivered in native format and be compatible with the JSC standard software loads.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Contract Close-Out Plan	07/12/2012	MGMT-14	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To describe the Contractor’s planned approach for the Contract Close-Out.		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-01 Contract Management Plan BP-10 Reprocurement Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This plan shall provide the details necessary to transition the contract to any follow-on contract, and to close out the existing contract.</p> <p><b>B. CONTENT:</b></p> <p>The Contract Closeout Plan content and deliverables shall include:</p> <ol style="list-style-type: none"> <li>1. Implementation Strategy</li> <li>2. Task description and schedule</li> <li>3. Staffing Profile</li> <li>4. Cost Estimate</li> <li>5. Plan for delivery of final documentation, including electronic copies of all contract files</li> </ol> <p><b>C. FORMAT:</b></p> <p>The Contractor’s format is acceptable. The Contract Closeout Plan shall be delivered in native format and be compatible with the JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Environmental and Energy Consuming Product Compliance Reports	07/12/2012	MGMT-15	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Used to complete JSC's required annual report to NASA HQ on affirmative procurement, waste reduction, energy efficient product procurement, and ozone depleting substances.		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
JPR 8550.1, JPR 8553.1		MGMT-01 Contract Management Plan BP-10 Reprocurement Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This report shall provide the details necessary for the Environmental and Energy conserving efforts related to HHPC</p> <p><b>B. CONTENT:</b></p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

For Section I and III, where the Contractor does not purchase any designated product during the fiscal year, the report shall be a statement to that effect.

For Section IV, if the Contractor does not purchase, own, operate, maintain, or repair ODS equipment on-site ; or does not store, purchase or use ODS chemicals, the report shall be a statement to that effect.

Fiscal year is the Federal Government fiscal year and is defined as October 1 through September 30.

## I. Annual Affirmative Procurement Report

The Contractor shall track and report each December 1 to the JSC Environmental Office the following information regarding the purchase by the Contractor (including subcontracts) of all products on the U. S. Environmental Protection Agency's Comprehensive Procurement Guideline list and items on the USDA Farm Bill Biobased list:

- a. The total amount of each item purchased during the previous fiscal year in \$,
- b. The total amount of each listed item purchased during the previous fiscal year that contained at least the minimum recommended percentages of recycled content or biobased content during the fiscal year in \$,
- c. The total amount of each listed item purchased during the previous fiscal year that contained some recycled content or biobased content but less than the minimum recommended percentages of recycled content or biobased content during the fiscal year in \$,
- d. The number of waivers and the name of the item each waiver was requested for submitted to the Environmental Office during the previous fiscal year,
- e. The total amount purchased for each waived item during the previous fiscal year in \$, and
- f. A narrative explanation of constraints for purchasing each item that did not meet affirmative procurement or biobased content requirements during the previous fiscal year.

## II.a Waste Reduction Activity Report

The Contractor shall track and report each December 1 to the JSC Environmental Office any new process improvements or programs undertaken by the Contractor (or subcontractors) that have contributed to waste reduction during the previous fiscal year. Waste reduction means preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products. This may be done through recycling\* or waste prevention\*\*. *This may be accomplished through source reduction and/or by increasing reuse and recycling of items that would normally go to the landfill (trash).* The information will be included in JSC's annual report to NASA HQ on waste reduction activities. Limit responses to one page or less per item. The response should include a description of the activity, the materials or wastes reduced, an estimated volume or weight of reduction, and a contact name and phone number for a person knowledgeable about the reduction activity.

\* Recycling means the series of activities, including collection, separation, and processing by which products or other materials are recovered from the solid waste stream for use in the forms of raw materials in the manufacture of products other than fuel for producing heat or power by combustion.

\*\*Waste prevention means any change in the design, manufacturing, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they are discarded. Waste prevention also refers to the reuse of products or materials.

## II.b For Construction/Facility Modification Contracts Only:

The Contractor shall track and report to the JSC Environmental Office the total weight in pounds of material sent to the landfill (this does not include shipments managed and paid for by the Environmental Office or their support contractor) and the total number of pounds of material recycled by media (scrap metal, wood, concrete, soil). The report is due within 30 days of completion of all waste generating and recycling activities or of final waste shipments associated with the project and in no case later than completion of the contract.

## III. Annual Energy Efficiency Product Procurement Report

The Contractor shall report to the JSC Energy Manager, on December 1 of each year, information on purchases of energy consuming products made by the Contractor (including subcontracts) beginning upon contract start. This includes the purchase of premium efficiency motors and efficiency lighting covered by the Energy Policy Act of 2005. The report shall provide the following:

- a. A list of all energy consuming products purchased during the previous fiscal year.
- b. The total purchase cost of each item on the list.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- c. A designation of which items were Energy Star or Federal Energy Management Program (FEMP)-sanctioned.
- d. For each Energy Star or FEMP-sanctioned product purchased, provide:
  - i. The simple payback value as determined by the contractor's life cycle cost analysis.
  - ii. The annual savings in dollars and BTUs due to the purchase of the item
- e. Metrics which show the effectiveness of the contractor's purchases
  - i. Percentage of purchased products that are Energy Star and FEMP-sanctioned against the total number of energy consuming products purchased.
  - ii. Total dollar value of the purchased products that are Energy Star and FEMP-sanctioned against the total dollar value of all energy consuming products purchased.

## IV. Ozone Depleting Substances (ODS) Reports

The Contractor shall track and report each December 1 to the JSC Environmental Office the following information for the previous fiscal year related to ODS equipment that the contractor purchases, owns, operates, maintains, or repairs on-site:

- a. A list of the names of all EPA-Certified service technicians employed and their certification dates
- b. A list of any ODS recovery/recycling equipment that will be used and copy of the 40 CFR 82.162 EPA registration
- c. A list of any refrigeration/air conditioning units with a full charge of more than 50 pounds, not previously reported, including
  - i. any identifying equipment numbers
  - ii. the location of the equipment (building/room)
  - iii. the owning organization or contract name and number
  - iv. a narrative description of the equipment.
  - v. refrigeration or air conditioning equipment with a full charge of > 50 pounds, permanently removed from service during the year.
- d. For each ODS chemical stored, purchased or used, track and report each December 1 for the previous fiscal year:
  - i. ODS Chemical Name;
  - ii. Quantity stored (pounds);
  - iii. Quantity purchased (pounds); and
  - iv. Quantity used (pounds).

## C. FORMAT:

The Contractor's format is acceptable. The Contract Closeout Plan shall be delivered in native format and be compatible with the JSC standard software loads.

## D. MAINTENANCE:

See Data Requirements list.

## E. DISTRIBUTION:

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Information Technology (IT) Capital Planning and Investment Control (CPIC)	07/12/2012	IT-01	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To document the Contractor’s compliance with Federal and NASA IT CPIC Planning and Reporting regulations and requirements.		<input type="checkbox"/> Technical	
		<input checked="" type="checkbox"/> Administrative	
		<input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-05 Contract Phase-In Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>Clinger-Cohen Act            OMB Circular A-130            OMB Circular A-11</p> <p><b>SCOPE:</b></p> <p>Information Technology (as defined in the Clinger-Cohen Act) is subject to certain scrutiny and reporting requirements as set forth in Legislative actions, Executive and Agency mandates, and directives. The Office of Management and Budget (OMB) Circular A-130 establishes the foundation for CPIC. OMB Circular A-11 establishes the guidelines and requirements for reporting to the Executive Branch. Any additional reporting requirements associated with the CPIC data collection and reporting process will be covered by this DRD.</p> <p><b>B. CONTENT:</b></p> <p>In conformation with CPIC process, the contractor shall participate in data collection and reporting efforts. The contractor shall furnish the data needed for the Agency to comply with OMB reporting requirements including, but not limited, to those documented in OMB Circular A-11. Accurate and complete data submissions are to be made in a manner consistent with the reporting structure, and with the timeframes established for the JSC.</p> <p>Additionally, the Contractor shall submit their Fiscal Year (FY) spending plans for review, and approval prior, to the beginning of the FY. Format, reporting processes, and procedures will be provided annually, based on the JSC and Agency requirements.</p> <p>Examples of documentation, formats, processes, procedures, and structures can be provided upon request. However, all formats, processes, procedures, and structures are subject to changes.</p> <p><b>C. FORMAT:</b></p> <p>IT CPIC documentation shall be delivered in native format, and be compatible with the JSC standard software loads.</p> <p><b>SUBMITTAL FREQUENCY:</b></p> <ol style="list-style-type: none"> <li>1. Initial submit per Phase-In requirements</li> <li>2. Annual CPIC data call during Planning, Programming, Budgeting, and Execution per the Office of the Chief Information Officer’s schedule.</li> <li>3. Execution year spend plan annually prior to Fiscal Year start.</li> </ol> <p><b>D. MAINTENANCE:</b></p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

See Data Requirements list. Notification of CPIC data delivery shall be performed via e-mail. All CPIC data shall be delivered to the designated repository.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Information Technology (IT) Security Program Plan and Reports	07/12/2012	IT-02	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To ensure that IT security reporting requirements are met for all IT systems utilized during work associated with TOs on this contract..		<input checked="" type="checkbox"/>	Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NFS 1852.204-76 “Security Requirements for Unclassified IT Resources” NPR 2810.1(series): Security of Information Technology. OMB Circular A-130: Management of Federal Information Resources			
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p>The contractor shall prepare the deliverables as follows:</p> <p>A. SCOPE:</p> <p>All contracts that purchase, lease, network to, or otherwise utilize Government-funded IT (as defined by the Clinger-Cohen Act of 1996 and referenced by OMB Circular A-130) must comply with NASA IT Security Requirements.</p> <p>B. CONTENT:</p> <p><u>IT SECURITY MANAGEMENT PROGRAM PLAN:</u></p> <p>The Contractor shall submit an IT Security Management Program Plan for its unclassified technology information resources. This program plan shall describe the policy, processes, and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contact. The Contractor’s IT Security Management Program Plan shall be compliant with the IT security requirements in accordance with Federal and NASA policies as referenced in OMB Circular A-130 and NPR2810.1(series).</p> <p><u>IT SECURITY PLAN:</u></p> <p>The Contractor shall have an Information Systems Security Officer (ISSO) who is responsible for the contractor’s system(s) in accordance with the definitions set forth in NPR2810.1(series). The IT security plan shall be kept up to date as changes to the baseline configuration of the system occur and shall be documented in the IT Security Plan. Note: An IT Security Plan is specific to a system or group of systems, while an IT Security Management Program Plan is defined as the elements a contractor has outlined to meet the IT Security requirements for interfacing with other contractors and NASA, training requirements and meeting the requirements in NPR 2810.1(series).</p> <p><u>IT SECURITY AWARENESS TRAINING:</u></p> <p>Employees subject to this contract shall complete the NASA approved IT Security Awareness Training annually. The contractor shall provide evidence that periodic IT security awareness training has been met for all employees subject on this contract. The contractor shall submit periodic reports (as required by the CO) detailing the overall status of the annual training program. The annual training program is defined as the period from October 1<sup>st</sup> through September 30<sup>th</sup>.</p> <p><u>PRIVACY ACT AND HIPAA (HEALTH INFORMATION PORTABILITY AND ACCOUNTABILITY ACT) TRAINING</u></p> <p>Some of the data on this contract is subject to the Privacy Act of 1975 (as amended) and may be subject to the Health Information Portability and Accountability Act. The contractors shall provide a process for handling personally identifiable medical information and maintaining systems that contain personally identifiable medical information. The contractor shall be trained in the appropriate protection and handling methods. The contractor shall provide evidence that periodic Privacy ACT &amp; HIPAA awareness training has been met for all employees meeting the criteria above. The annual train-</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

ing program is defined as the period from October 1<sup>st</sup> through September 30<sup>th</sup>.

## IT SECURITY ROLE BASED TRAINING:

Employees subject to this contract shall complete NASA approved IT Security Training annually related to the following Role Based functions:

- IT Security Manager
- Information System Owner (ISO)
- Information Systems Security Officer (ISSO)
- Organizational Computer Security Official – Representative (OCSO-R)

The contractor shall provide evidence that periodic IT security training has been met for all employees subject on this contract. The contractor shall submit periodic reports (as required by the CO) detailing the overall status of the annual training program. The annual training program is defined as the period from October 1<sup>st</sup> through September 30<sup>th</sup>.

## INFORMATION ON EMPLOYEES IN SENSITIVE POSITIONS/ASSIGNMENTS REPORT:

The Information on Employees is Sensitive. ITS Positions/Assignments Report shall provide information annually for personnel screening as required by NPR 2810.1(series), and NPR 1600.1 on position risk.

## IT POINT OF CONTACT:

The contractor shall identify a point of contact that NASA may reach in its attempt to address IT and IT Security issues. The point of contact shall have the authority to ensure appropriate actions occur.

## C. FORMAT:

The product shall be in a Microsoft Office compatible format.

## D. MAINTENANCE:

See Data Requirements List (DRL).

## E. DISTRIBUTION:

Distribution shall be in accordance with the DRL.

## F. APPLICABLE DOCUMENTS:

See Applicable and Reference Documents List (ARDL)

## JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC-STD-123 )

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No.
NF533 DRD	02/10/2012	BP-01	NNJ13HA02C
4. Use (Define need for, intended use of, and/or anticipated results of data)			5. Category (Check one)
Provide a basis for reporting and evaluating cost and expenditure in support of this contract. The data contained in the reports must be auditable using Generally Accepted Accounting Principles. Supplemental cost reports submitted in addition to the NF 533 must be reconcilable to the NF 533.			<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA
6. References (Optional)		7. Interrelationships (e.g., with other DRDs)	
NPR 9501.2E			
8. Preparation Information (Include complete instructions for document preparation).			

**Approved By:**

*Original signed by*

\_\_\_\_\_  
Dorothy E. Swanson – Chief Financial Officer

\_\_\_\_\_  
Date

## **NASA Form 533 (NF533) Reports**

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The NASA Form 533 (NF533) reports provide data necessary for the following:

1. Projecting costs and hours to ensure that dollar and labor resources realistically support project and program schedules.
2. Evaluating contractors' actual cost and fee data in relation to negotiated contract value, estimated 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, and resulting in liabilities reflected on the financial statements.

Cost is a financial measurement of resources used in accomplishing a specified purpose, such as performing a service, carrying out an activity, acquiring an asset, or completing a unit of work or project. NASA Procedural Requirements (NPR) 9501.2E entitled "NASA Contractor Financial Management Reporting," or its most current revision, identifies the cost reporting requirements for a contract. NF533 formats are provided in *Appendix A*.

NASA is required by law to maintain accrual accounting, which requires cost to be reported in the period in which benefits are received, without regard to time of payment.

The reports (NF533M [Monthly] and NF533Q [Quarterly]) are the official cost documents used at NASA for cost type, price determination, and Fixed Price Incentive contracts. The data contained in the reports must be auditable using Generally Accepted Accounting Principles (GAAP). Supplemental cost reports submitted in addition to the NF533 must be reconcilable to both the NF533M & NF533Q.

**Common NF533 Cost Elements**

Examples of accrual accounting for common cost elements reported on the NF533 follow:

<b>Cost Elements</b>	<b>Definitions</b>
<i>Labor</i>	<p>Reported to NASA as hours and cost are incurred, in the following categories:</p> <ul style="list-style-type: none"> <li>Prime Labor Hours               <ul style="list-style-type: none"> <li>Base Hours</li> <li>Overtime Hours</li> <li>Indirect Labor Hours</li> <li>Total Prime Labor Hours</li> </ul> </li> <li>Partner Labor Hours               <ul style="list-style-type: none"> <li>Base Hours</li> <li>Overtime Hours</li> <li>Indirect Labor Hours</li> <li>Total Partner Labor Hours</li> </ul> </li> <li>Total Labor Hours               <ul style="list-style-type: none"> <li>On-site WYEs (direct &amp; indirect)</li> <li>Off-site WYEs (direct &amp; indirect)</li> <li>Total Work Year Equivalentents (WYEs)</li> <li>Total Prime Labor Dollars</li> <li>Total Partner Labor Dollars</li> <li>Total Labor Dollars</li> </ul> </li> </ul>
<i>Equipment &amp; Materials (commercial off the shelf)</i>	Generally reported to NASA when received and accepted by the contractor.
<i>Manufactured Equipment</i>	Defined as any equipment that is produced to specific requirements that make it useless to anyone else without rework. Cost should be reported to NASA as the equipment is being manufactured. The straight-line method for estimating accrued costs, or the use of supplemental information obtained from the vendor, are acceptable methods used to calculate the cost accrual amount.
<i>Leases</i>	Reported to NASA using a proration over the life of the lease.
<i>Travel</i>	Reported to NASA as costs are incurred.
<i>Subcontracts &amp; Other Direct Costs</i>	Actual and estimated costs reported by prime contractors shall include subcontractors' incurred costs for the same accounting period. Where subcontract costs are material, they should be separately identified on NF533 reports. The prime contractor shall include in the total cost of each subdivision of work the accrued cost (including fee, if any) of related subcontractor effort. Subcontractors should, therefore, be required to report cost to the prime contractor, using the accrual method of accounting. If the G&A and fee reported by a subcontractor are at the total subcontractor level, these costs must be allocated to specific sub- divisions

	of work. Data submitted by the subcontractor should be structured similar to the prime contractor's NF533 to enable the prime contractor to properly report to NASA. For Firm Fixed Price subcontracts with a contract value greater than \$500,000, the prime contractor is required to document the methodology used to generate the sub-contractor costs reported and provide this information to the NASA Contracting Officer and Center Deputy Chief Financial Officer of Finance.
<i>Unfilled Orders</i>	Reported as the difference between the cumulative cost incurred to date and amounts obligated to suppliers and subcontractors.
<i>Fee</i>	Fee should be reported on the NF533 following the "Total Cost" line. Award fee must be reported by the following categories: Base Fee, Fee Earned, Interim Fee, Provisional Fee, Potential Additional Fee, and Total Fee. If any of the above fee categories do not pertain, they should not be included in the NF533.
<i>Prompt Payment Discounts</i>	Cumulative cost reported to NASA should be the full incurred cost. The prompt payment discount amount taken should be reported as a separate line item on the NF533 below the cumulative cost amounts for the contract.

### **Common NF533 Data Elements**

The following NF533 data elements shall be included, for each NF533M Reporting Category Element of Cost, above:

<b>Data Element Name</b>	<b>Description</b>
<i>Prior Month Actual Cost (7a)</i>	Prior month actual cost incurred
<i>Prior Month Actual HR/WYE (7a)</i>	Prior month actual hours/WYE incurred
<i>Prior Month Plan Cost (7b)</i>	Prior month planned cost
<i>Prior Month Plan HR/WYE (7b)</i>	Prior month planned hours/WYE
<i>Cumulative (Cum) ITD Actual Cost (7c)</i>	Contract inception to date (ITD) actual through prior month actual cost
<i>Cum ITD Plan Cost (7d)</i>	Contract ITD planned cost
<i>Cum to date GFY Actual Cost and HR/WYE (7e)</i>	Actual cumulative cost and hours/WYE for the current Government Fiscal Year (GFY) through prior month actual cost
<i>Cum to date GFY Plan Cost and HR/WYE (7f)</i>	Planned cumulative cost and hours/WYE for the current GFY through prior month plan
<i>Current Month Estimated Cost (8a)</i>	Cost estimate for the current month

<i>Current Month Estimated HR/WYE (8a)</i>	Hours/WYE estimate for the current month
<i>Current Month+1 Estimated Cost (8b)</i>	Cost estimate for next month (current +1)
<i>Current Month+1 Estimated HR/WYE (8b)</i>	Hours/WYE estimate for next month (current +1)
<i>Balance of Contract Cost and HR/WYE (8c)</i>	Balance of contract cost and HR/WYE for the remaining estimate to complete (ETC)
<i>Cumulative GFY EAC Cost and HR/WYE (8d)</i>	Estimated cost and HR/WYE for the entire GFY
<i>Cumulative GFY Authorized Cost and HR/WYE (8e)</i>	Total cumulative cost for approved task order value for current GFY
<i>Final Contract EAC (9a)</i>	Contractor estimate for the total estimate to complete entire scope of contract
<i>Final Contract Value (9b)</i>	Cum contract value based upon all contract modifications
<i>Unfilled Orders Outstanding (10)</i>	Unfilled orders outstanding at the end of the reporting period

A Reporting Category (RC) correlates to the task order level reported on the NF533M. Each RC can have lower level Category Line Item Numbers (CLINs) or subtasks, containing detailed cost elements that add up to a RC, and some can even have sub-CLINs or work packages. The RC levels will need to be reported in the formats requested in Appendix B. A separate report is required for each NF533M: 1) Contract Summary, 2) Task Level, and 3) Subtask level. Work package level data should be available upon request. The Contractor is required to coordinate with the NASA Lead Budget Analyst assigned to the contract in order to establish and maintain the Reporting Categories, CLINs, and sub-CLINs at the level used to comply with this data requirement.

**Overhead and award fee costs should be allocated to tasks, subtasks, and work packages in the task and lower level reports, using a methodology coordinated with the NASA Lead Budget Analyst.**

Column 7b, 7d, and 7f of the NF533M represent the negotiated legally binding baseline plan for the contract plus all authorized changes. There may not be a relationship between the estimates provided in columns 8 of the NF533M to columns 7.

Short and long-term cost estimates, which include all data entered in columns 8 and 9a on the NF533M and NF533Q reports, shall be based on the most current and reliable information available.

Uncompensated overtime hours worked should be reported on NF533 reports as a separate line item or in the footnotes.

Prior period cost adjustments shall be reported in column 7a and 7c of NF533M and column 7a of the NF533Q as soon as identified with a footnote discussing the reasons for and amounts of the adjustments and time period the adjustment relates to, delineated by government fiscal year, if affecting more than one fiscal year.

### **Personal Property & Equipment Reporting**

For all Personal Property & Equipment, purchased or fabricated, the contractor must obtain:

1. Prior approval by the Contracting Officer (CO) or their delegated Property Administrator (PA)
2. The NASA Capitalization or Expense determination from the NASA Finance Property office.

These must be obtained prior to cost being incurred for the property acquisition/fabrication. This will help ensure appropriate 533 reporting for items identified as capital. The capitalization/expense determination governs the contractor cost reporting requirements associated with the acquisition.

For all Personal Property & Equipment, purchased or fabricated, determined by NASA to be Capital, the contractor cost reporting structure to NASA shall:

1. Report the costs of each capital asset (i.e., each individual end item deliverable) as a separate reporting category on the NF 533 or other required cost reporting format.
2. Maintain a reporting structure that allows for the contractor accumulation and reporting of cost separately for each identified capital asset (i.e., each individual end item deliverable).

Capital property is defined by NASA as personal property and equipment, acquired or fabricated, that NASA will have title to and that meets all of the following criteria:

1. Has a total acquisition value equal to, or greater than, \$100,000
2. Has a useful life equal to, or greater than, 2 years (no prototypes, test articles, one time use items, etc.) and is not intended for sale in the course of normal operations
3. Has been acquired or constructed with the intention of being used, or available for use, by NASA
4. Has a planned alternative use (current or future) on another project with a separate and distinct research objective.

For all Personal Property & Equipment, purchased or fabricated, determined by NASA to be Expense, the contractor is not required to report costs at the detail asset level i.e., as a separate reporting category on the NF 533 or other required cost reporting format.

The Center Finance Property Office makes the capitalization/expense determination based on information provided by the NASA Project Manager.

The Center finance property office acquires the information from the NASA Project Manager using the Form NF1739 Alternative Future Use Questionnaire (AFUQ) which is required for each asset valued at, or greater than, \$100k. The Center finance property office may utilize a supplemental questionnaire and/or additional communication with the project manager, or their associates, to ensure adequate information is obtained to make the appropriate accounting treatment determination i.e., to Capitalize or Expense the asset.

**NF533 Due Dates**

The due dates for the NF533M and NF533Q reports are outlined in Chapter 3 of NPR 9501.2E. The following is a summary of the NF533 due date requirements:

<b>NF533 Report</b>	<b>Due Date</b>
<i>NF533M</i>	Due no later than the 12 <sup>th</sup> calendar day of the month, unless the 12 <sup>th</sup> calendar day falls on a weekend or holiday, then the NF533M will be due the next working day.
<i>NF533Q</i>	Due no later than the 15 <sup>th</sup> calendar day of the month preceding the quarter being reported.

The due dates reflect the date the NF533 reports are received by personnel on the distribution list, not the date the reports are generated or mailed by the contractor. It is critical that the NF533 reports are submitted in a timely manner to ensure adequate time for NASA to analyze and record the cost into the NASA accounting system.

An initial NF533 report is required in the NF533Q format to be used as a baseline for the life of the contract. The initial (baseline) NF533Q report shall be submitted by the contractor within 30 days after authorization to proceed has been granted. The initial report shall reflect the original contract value detailed by negotiated reporting categories and shall be the original contract baseline plan. In addition to the initial (baseline) report, monthly NF533 reporting shall begin no later than 30 days after the incurrence of cost.

**NF533 Final Submission Upon Contract Completion**

Monthly NF533 reporting is no longer required once the contract is physically complete, provided the final cost report includes actual cost only (no estimates or forecasts). The contractor must continue to submit monthly NF533 reports as long as estimates for the following period are included. If the final cost of a contract changes after the submission of the "final" contractor cost report, the contractor must submit a revised NF533 report in the month the cost change is recognized.

**Electronic NF533 Flat File Requirement**

(will only be submitted if requested during the course of the contract)

If requested by NASA, the contractor shall submit a Flat File NF533M electronically by the same due date. The data shall be submitted via email using the Government prescribed flat file format (if requested, an example of the Agency Defined File Format layout details will be provided by NASA).

**NF533 Report Distribution**

- LF6 Cost Accounting (1 electronic copy. If electronic copy does not have a .pdf file signature, a signed hardcopy is required)
- BH Contracting Officer (1 hardcopy, 1 electronic copy)
- L\* Budget/Program Analysts (electronic copies are required)
- SA Directorate Office (electronic copies as required)
- SA2 Division Office Technical Manager (electronic copies and required)
- SA4 Division Office Technical Manager (electronic copies and required)
- SD Division Office Technical Manager (electronic copies and required)
- SF Division Office Technical Manager (electronic copies and required)
- SK Division Office Technical Manager (electronic copies and required)
- E\* Division Office Technical Manager (electronic copies and required)
- Other Division Office Technical Manager (electronic copies and required)

Access to a server with the Excel NF533 file is preferred to e-mail electronic copies. If a server is not available, a more detailed report distribution list will be provided to the contractor by the Lead Budget Analyst.

**NF533 Supplemental Reporting**

Supplemental reporting requirements will be submitted during the course of the contract in accordance with direction in *Appendix C*.





# APPENDIX B. Contract Required NF533M Format and Supplemental Attachments

MONTHLY CONTRACTOR FINANCIAL MANAGEMENT REPORT (533M)														2. Report Month Ending Number of Operating Days
To: National Aeronautics & Space Administration Lyndon B. Johnson Space Center Attn: Contracting Officer										3. Contract Value		a. Cost		b. Fee
From: Name of Contractor Address of Contractor		1. Description of Contract Type: Scope of Work: HHPC Contract Number: Latest Amendment:						Authorized Contract Representative:				4. Funding Limitation	5. Billing	
6. Reporting Category	Prior Month		Cumulative				8. Estimated Cost/Hours			GFY Cumulative		9. Estimated Final		10. Unfilled Orders
Element of Cost	Actual	Plan	Actual	Plan	GFY Actual	GFY Plan	Current	Current +1	Balance of Contract	GFY EAC	GFY Auth	Contract EAC	Contract Value	Unfilled
	7a	7b	7c	7d	7e	7f	8a	8b	8c	8d	8e	9a	9b	10
Prime Labor Hours														SEE REPORT REPORT
Base Hours														
Overtime Hours														
Indirect Labor Hours														
Total Prime Labor Hours														
Partner Labor Hours														
Base Hours														
Overtime Hours														
Indirect Labor Hours														
Total Partner Labor Hours														
Total Labor Hours														
On-site WYEs														
Off-site WYEs														
Total Work Year Equivalents (WYEs)														
Total Prime Labor Dollars														
Total Partner Labor Dollars														
Total Labor Dollars														
Materials/Equipment														
Subcontracts														
Facilities														
Travel														
ODC - Misc.														
Phase In														
Prior period Adjustment (Explained below)														
Total Direct Cost														
Award Fee														
Total Cost Plus Fee														
Cost Per WYE														
Vendor Discounts														
Total Uncompensated Overtime (UO) Hours														

**TASK Level Supplemental Required Report**

TO	Element of Cost	Prior Mo Actual	Prior Mo Plan	Cum Actual	Cum Plan	GFY Actual	GFY Plan	Current Est	Current+1 Est	Balance of Contract	GFY EAC	GFY Auth	Contract EAC	Contract Value
X.X.X	Prime Labor Hrs													
X.X.X	Partner Labor Hrs													
X.X.X	Total Labor Hrs													
X.X.X	Total WYEs (Direct & Indirect)													
X.X.X	Prime Labor \$													
X.X.X	Partner Labor \$													
X.X.X	Total Labor \$													
X.X.X	Materials/Equipment													
X.X.X	Subcontracts													
X.X.X	Facilities													
X.X.X	Travel													
X.X.X	ODC - Misc.													
X.X.X	Award Fee													
X.X.X	Overhead													
X.X.X	Total Cost Plus Fee													

**SubTASK Level Supplemental Required Report**

Sub-TO Description	Sub-TO	Element of Cost	Prior Mo Actual	Prior Mo Plan	Cum Actual	Cum Plan	GFY Actual	GFY Plan	Current Est	Current+1 Est	Balance of Contract	GFY EAC	GFY Auth	Contract EAC	Contract Value
Subtask Title	X.X.X	Prime Labor Hrs													
Subtask Title	X.X.X	Partner Labor Hrs													
Subtask Title	X.X.X	Total Labor Hrs													
Subtask Title	X.X.X	Total WYEs (Direct & Indirect)													
Subtask Title	X.X.X	Prime Labor \$													
Subtask Title	X.X.X	Partner Labor \$													
Subtask Title	X.X.X	Total Labor \$													
Subtask Title	X.X.X	Materials/Equipment													
Subtask Title	X.X.X	Subcontracts													
Subtask Title	X.X.X	Facilities													
Subtask Title	X.X.X	Travel													
Subtask Title	X.X.X	ODC - Misc.													
Subtask Title	X.X.X	Award Fee													
Subtask Title	X.X.X	Overhead													
Subtask Title	X.X.X	Total Cost Plus Fee													

## **APPENDIX C. Required Supplemental Reporting**

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**Annual Accounting Calendar:** The contractor's accounting calendar for the contract period of performance shall be provided in electronic format to the LS budget analyst and LF6 Cost Accountant within 10 business days after contract award. An annual GFY accounting calendar shall be provided in electronic format to the LS resource analyst and LF6 Cost Accountant before the beginning of each Government Fiscal Year.

**Contractor Variance Report:** The contractor shall submit variance reports along with the NF533M when variance described below meets or exceeds +/- 5% at the 1) Summary NF533 level, 2) each task level, and 3) each subtask level. A variance report should include detailed information to substantiate the explanation.

Column 7A current month actuals compared to 8A previous month estimate

**Monthly Unfilled Orders:** The contractor shall submit a report in conjunction with the delivery of the monthly NF533M if there are *Unfilled Orders Outstanding (10)*. The report shall be broken down by reporting category and include the item description, the originally reported delivery date and costs, updated delivery date and costs, justifications for delays of greater than 30 days, and justifications for changes in costs greater than 5%. The following format shall be used for this report.

A	B	C	D	E	F	G	H
Rept. Category	Item	Original Estimated Delivery Date	Adjusted Estimated Delivery Date	Justification for delays greater than 30 days	Original Estimated Costs	Adjusted Estimated Costs	Justification for cost changes greater than 5%

**Annual Economic Impact Assessment:** The contractor shall submit answers to annual economic impact questions as requested by the LS budget analyst. Sample questions are:

- 1) What was the on-board total headcount for this contract as of September 30<sup>th</sup>? Of those on-board, how many worked in a) the local Clear Lake area, b) Texas outside of the Clear Lake area, and c) New Mexico.
- 2) What was the approximate dollar value of goods and services (including labor) purchased during the prior GFY? Of those dollars, what is the value in a) the local Clear Lake area, b) Texas outside of the Clear Lake area, and c) New Mexico.

**Other:** Other information may be requested as needed, for example travel cost detail by trip, or WYE impacts of budget reductions.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No. (Procurement completes)</b>
Data Management Plan	07/12/2012	BP-02	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
To provide a description of the Contractor's Data Management Organization approach and processes.		<input type="checkbox"/> Technical	
		<input checked="" type="checkbox"/> Administrative	
		<input type="checkbox"/> SR&QA	
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> Government Electronics and Information Technology Association (GEIA) HB 859 Implementation Guide for Data Management</p> <p><b>SCOPE:</b> The Data Management Plan describes the contractor's overall implementation of the data management requirements specified in the contract as integrated by the prime contractor and subcontractors and as planned for each phase of contracted activity.</p> <p><b>B. CONTENT:</b> The Data Management Plan shall contain the following sections:</p> <p><u>Data Management</u> - This section shall define the scope and depth of the Contractor's efforts including management, organization, planning, and the relationship of the Data Management program to the Contractor's other administrative and technical organizations. The plan shall specify the Contractor's management policies and identify, by specific reference, standard practices and detailed work instructions to be used in implementing the Data Management program. The plan shall include the following elements: management organization, control procedures, storage and retrieval procedures, subcontractor control procedures, and special restrictions. The plan shall include a preliminary data submittal schedule for fulfilling submittal of data in the specified quantities, specific media (electronic, paper, other), and due dates required.</p> <p><u>Document Development</u> -This section shall define the procedures, policies, and formats used to produce, and distribute document contract deliverables. The section shall include specifics on document metadata and numbering schema, and shall reference the contractors' documentation that is used to define internal layout and format requirements, and specific document setup practices that ensure appropriate hard copy and/or electronic output.</p> <p><b>C. FORMAT:</b> The Contractor's format is acceptable. The Data Management Plan shall be delivered in native format and be compatible with the JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b> See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b> Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No.</b> (Procurement completes)
Flight Products Configuration Management Plan	07/12/2012	BP-03	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
The DRD describes the Contractor’s plan to control the Configuration of hardware and/or software during development, production, certification, and deployment of both qualification and flight hardware within the contractor’s facilities, subcontractor’s facilities, and those of NASA at JSC.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
NASA-STD-0005 Configuration Management Requirements JPR 1281.8 Product Identification and Traceability MIL-STD-973 Configuration Management		SW-04 Software Code RV-08 Engineering Drawings and Model Files TD-03 Critical Design Review Data Package	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>ANSI/EIA 649 standard Configuration Managements                  NASA-STD-0005 Configuration Management Requirements                  EA-WI-027 Configuration Management Requirements                  SA-WI-14 Project Management of Flight Hardware Development                  JSC-28330 SLSD Configuration Control Management Plan                  JSC-63926 Configuration Management Plan for Flight Products                  JPR 8500.4 JSC Engineering Drawing System                  SSP 41170 ISS Configuration Management (For ISS Deliverables)                  SSP 30695 Acceptance Data Package (ADP) Requirements Specification</p> <p><b>SCOPE:</b></p> <p>The plan shall describe the Contractor’s Management approach and planned implementation methods for maintaining configuration control of qualification and flight hardware and software during the design, development, production, certification, verification, and deployment within its facilities, its subcontractor's facilities, and facilities at NASA/JSC. It defines to the Government how the contractor will maintain records, documentation, drawings, and reports necessary for NASA, to assure that Configuration Management (CM) is maintained throughout the life of the flight product.</p> <p><b>B. CONTENT:</b></p> <p>The Flight Products CM plan shall address, as a minimum the following:</p> <p><b>1.0 Management Organization</b> – this section shall describe and graphically portray the Contractor’s organization with emphasis on the CM activities, and shall include:</p> <ol style="list-style-type: none"> <li>The purpose, scope, and specific applicability of the CMP to the products or services.</li> <li>Identification of the Contractor’s CM organization, responsibilities, and relationships to the Contractor’s organization.</li> <li>Responsibility and authority for CM of all participating groups, and organizations including their role in production, configuration control boards, and technical reviews.</li> <li>Interfaces between contractor's CM organization and NASA, subcontractors, and other contractor's/contracts.</li> <li>Training plans</li> <li>Process for conducting reviews (e.g. SRR, PDR, CDR, SAR, etc.)</li> <li>Plan for providing NASA with access (electronic or otherwise) to all configuration management and engineering data.</li> </ol> <p><b>2.0 Configuration Identification</b> - this section shall describe the contractor’s processes for Configuration Identification:</p> <ol style="list-style-type: none"> <li>Selection of Configuration Items (CIs) (Hardware, Computer Software Configuration Item (CSCI's), and firmware)</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- b. Establishment of the functional allocated, and product baselines for hardware and software, and definition of the configuration documentation required for each.
- c. Engineering release and correlation to products.
- d. Identification of design responsibility. (use of cage code)
- e. Assignment and application of configuration identifiers including: document numbers, nomenclature, serial numbers, and part numbers to hardware, lot codes, software, and firmware identifiers.
- f. Part marking, including marking to identify discrepant items and marking to identify flight like items that are not qualified for flight use.

**3.0 Configuration Control** - this section shall describe the sequence of events and milestones for implementation of CM during the contract phase in with major milestones and events including as a minimum:

- a. Establishment of internal change process for development, approval, and execution of change control to product baselines.
- b. Establishment of internal configuration and contractual baselines.
- c. Establishment of configuration control boards and processes and how they interface and relate to the HHPD boards and panels.
- d. Identification of processes to document changes

**4.0 Configuration Status Accounting (CSA)** - this section shall describe the Contractor's processes for CSA::

- a. Hardware and Software CSA processes and provisions for reports and/or access to CSA data.
- b. Methods for collecting, recording, processing and maintaining data necessary to provide contractual status accounting information via reports and/or data base access.
- c. 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 from baselined documentation.
  - vi. Effectivity and installation status of configuration changes to all CIs.
- d. Methods of access to information in status accounting information systems and/or frequency of reporting and distribution.

**5.0 Configuration Verification/Audits** - this section shall describe the contractor's processes for Configuration Verification::

- a. Processes, plans, documentation, and schedules for internal CM audits.
- b. Format for reporting results of in-process configuration audits.
- c. Methods used by the contractor to ensure its subcontractor(s) compliance with Configuration Management requirements.

## **FORMAT:**

The Contractor's format is acceptable. The Flight Products Configuration Management Plan shall be delivered in native format, and shall be compatible with the JSC standard software loads.

## **6.0 MAINTENANCE:**

See Data Requirements list.

## **7.0 DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Export Control Plan	07/12/2012	BP-04	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To document the Contractor’s planned approach for Export Control		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NPR 2190.1 NASA Export Control Program NFS 1852.225-70 “Export Licenses,”		BP-05 Export Control Audit Results	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>JWI 2190.1A, JSC/Export Control Plan</p> <p><b>SCOPE:</b></p> <p>The Contractor shall prepare and submit an Export Control Plan to describe the Contractor’s planned approach for accomplishing contract functions, while strictly adhering to export laws, regulations, and directives. The plan shall describe all Export Control activities related to the performance of contract requirements in accordance with JWI 2190.1A, JSC/Export Compliance.</p> <p><b>B. CONTENT:</b></p> <p>The Export Control Plan shall address Contractor processes that will provide for Export Control compliance for hardware, technical data, and software developed, or used under the HHP contract.</p> <p><b>C. FORMAT:</b></p> <p>The Contractor’s format is acceptable. The Export Control Plan shall be delivered in native format, and be compatible with the JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No.</b> (Procurement completes)
Export Control Audit Results	07/12/2012	BP-05	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
To provide insight into the Contractor’s Export Control processes.		<input checked="" type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
NFS 1852.225-70 “Export Licenses”		BP-04 Export Control Plan	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p>The Contractor shall prepare the deliverables as follows:</p> <p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>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 to NASA through the contractor. Prior to audit completion, inclusion on the audit process through informal statuses to the JSC/Export Services Team, or the JSC Export Administrator is optional, and might prove useful in the success of this effort.</p> <p><b>B. CONTENT:</b></p> <p>a. Define your current audit processes</p> <p>b. Document the export control processes audited and audit findings</p> <p>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 nonconformance has been completed.</p> <p><b>C. FORMAT:</b></p> <p>The Contractor’s format is acceptable. The Export Control Audit Results report shall be delivered in native format, and be compatible with the JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No. (Procurement completes)</b>
Patent Rights Retention	07/12/2012	BP-06	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
Identification of any subject inventions including: Information on patent applications and related filings.		<input checked="" type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
NFS Clause 18-52.227-11 “Patent Rights-Retention by the Contractor (Short Form)”			
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>Inventions by the Contractor as part of their performance on this Government Contract.</p> <p><b>B. CONTENT:</b></p> <ol style="list-style-type: none"> <li>1. A listing every twelve (12) months of all subject inventions required to be disclosed during the period.</li> <li>2. A final report prior to close-out, of the contract listing of all subject inventions or certifying that there were none.</li> <li>3. Upon request, the filing date, serial number, and title, a copy of the patent application, patent number, and issue date for any subject invention, in any country in, which the contractor has applied for patents.</li> </ol> <p><b>C. FORMAT:</b></p> <p>The electronic or paper version of NASA form 1679, Disclosure of Invention and New Technology (Including Software) submitted to disclose subject Invention.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No.</b> (Procurement completes)
Reports Required for Logistics	07/12/2012	BP-07	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
These reports are required to determine the effectiveness of the Property Management System and as indicators of the volume of logistics activity. These reports will be forwarded to NASA Headquarters.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
		BP-08 Contractor Held Property Reporting	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p><b>SCOPE:</b></p> <p>The following reports are required to be prepared when on-site storage of \$75, 000, for programs stock in one location.</p> <p><b>B. CONTENT:</b></p> <p>1. Data Input for NASA Form 1324, Semi-Annual Report of Personnel Property Management Operations.</p> <p>This semi-annual report defines the following line item data elements, of March 15 and September 15 of each year:</p> <ul style="list-style-type: none"> <li>a. Material Inventory Status</li> <li>b. Material Inventory Activity</li> <li>c. Material Acquisition Activity</li> <li>d. Material Receiving Activity</li> <li>e. Logistics Personnel Resources Report</li> </ul> <p><u>Reference:</u> NPR 4100, NASA Materials Inventory Management Manual  <u>Due Dates:</u> March 25 and September 25</p> <p>2. Data Input for NASA FMD 1489, Semi-Annual Analysis of fixed inventory Assets</p> <ul style="list-style-type: none"> <li>a. This semi-annual report defines the following monetary data elements as of March 15 and September 15 of each year.</li> <li>b. Starting Price: Price of Receipts, Price of Issues, Ending Price</li> </ul> <p><i>Note: This will be reported by each Object Class Code stocked in the storeroom. Separate reports are required for Stores, Programs and Standby stock (see the JSC Stocks Stock Catalog prefaces for a detailed explanation of these codes).</i></p> <ul style="list-style-type: none"> <li>c. Reference: NPR 4100, NASA Materials Inventory Management Manual, Due Dates: March 25 and September 25</li> <li>d. Forms for Data Input are available through JB3/Contract Property Management Branch web page  <a href="http://www6.jsc.nasa.gov/ja/jb/jb3.cfm">http://www6.jsc.nasa.gov/ja/jb/jb3.cfm</a></li> </ul> <p>3. NASA Form 1619, Physical Inventory of Materials Annual Report:</p> <p>This annual report identifies the sampling inventory actions completed by the Contractor. This report contains the following data by Object Class Code (see the JSC Stores Stock Catalog preface for a detailed explanation of these codes.)</p> <ul style="list-style-type: none"> <li>a. Line items and dollar value of items inventoried.</li> <li>b. Number of line items with variance.</li> <li>c. Dollar value of discrepant items, including overage, shortage, and gross discrepancies.</li> </ul>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- d. Identify whether inventory items are stores, program, or standby stock, and also identify the staff hours and dollar value expended in accomplishing and reconciling the inventory.
- e. A brief explanation of cause, of discrepancies, and actions to minimize the chance for recurrence. Due Date: September 25

Note: All of the above are to treat Contractor- Acquired Material (CAM) and Government Furnished Material as one lot.

4. Quarterly Report of Contractor-Acquired material (CAM): This report will consist of two transfer documents (DD Form 1149) that identify material purchased, and received by the Contractor for on-site use. The two documents will be differentiated as follows:
  - a. Items bought for direct consumption on site.
  - b. Items issued to storeroom(s) that will impact the dollar value of assets on hand.

The DD Form 1149 will be transferring accountability of these assets to NASA and will be accompanied by requisitions, issue documents, engineering work orders (if flight material destined for a bond room), or any other similar form approved for use by the JSC Property Administrator. The DD Form 1149 shall identify total number of line items and total value.

Due Date: 15 working days after the end of the Quarter/Fiscal Year.

5. Annual Report of Exchange/Sale:
  - a. As defined by the NASA Property Administrator
  - b. Transaction submitted 15 days after the end of each Government Fiscal Year.

## **C. FORMAT:**

See Section B.2(d).

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

## **F. FORMAT:**

## **G. MAINTENANCE:**

See Data Requirements list.

## **H. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No.</b> (Procurement completes)
Contractor-Held Property Reporting	07/12/2012	BP-08	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
Report NASA/Property in the custody of Contractors on both a Monthly and Annual basis.		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<b>A. APPLICABLE DOCUMENTS: NONE</b>			
<b>SCOPE:</b>			
<b>B. CONTENT:</b>			
<p>The due date for the Monthly Property Financial Reporting submission is the 21st day, after the close of the month, beginning at the first month, after the contract start. The first monthly submission will be for the month of June 2013. Example due dates for the monthly submission are as follows:</p> <ol style="list-style-type: none"> <li>1. August 21, for the month ending July 31</li> <li>2. September 21, for the month ending August 31</li> <li>3. October 21, for the month ending September 30</li> </ol> <p>The due date for Annual Property Reporting via NASA Form 1018 is November 30. All reports shall be submitted electronically.</p> <p><u>Data Preparation Information:</u></p> <ol style="list-style-type: none"> <li>1. Monthly Property Financial Reports are required to be submitted using the format located at the URL referenced in the paragraph below. Monthly Financial Reports will be submitted in accordance with PIC 04-12.</li> <li>2. Annual Property NF 1018 reports shall be submitted using the NF 1018 Electronic Submission System (NESS). The NF1018 report provides annual summary-level property management, and financial data on Government Furnished and Contractor-acquired NASA property.</li> <li>3. The NF1018 shall be completed in accordance with NASA FAR Supplement Subpart 1845.7101 and any supplemental guidance provided by the Contracting Officer.</li> </ol> <p><u>Monthly Property Financial Reports:</u></p> <ol style="list-style-type: none"> <li>1. Monthly property financial reports are required with item level supporting data. This data shall be submitted for all items with an acquisition cost of \$100,000 or more, in the Contractor's and its subcontractors' possession, in the following classifications: Real property, plant equipment, special test equipment, special tooling, and agency peculiar property. Monthly reporting is not required for property in the above classifications with an acquisition cost under \$100,000. Monthly data shall also be submitted for items of any acquisition cost, in the classifications of materials and contract work-in-process (WIP). Itemized monthly data is required for materials and WIP line items of \$100,000 and over. Summary monthly data is required for materials and WIP line items under \$100,000. The monthly reports shall be electronically submitted using the Contractor-Held Asset Tracking System (CHATS) using the format described in the CHATS user's manual. The following is the CHATS web-site:  <a href="http://nasachats.gsfc.nasa.gov/">(http://nasachats.gsfc.nasa.gov/)</a></li> <li>2. Acquisition costs shall be developed using actual costs to the greatest extent possible, especially costs directly related to</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

fabrication such as labor and materials. Supporting documentation shall be maintained and available for all amounts reported; including any amounts developed using estimating techniques.

3. All Adjustments shall be thoroughly explained and directly related to a specific fiscal year. If the fiscal year cannot be determined, the default shall be the previous fiscal year.
4. The Work Breakdown Structures shall NOT be provided for all Contractor acquired property (CAP), WIP, and any new materials acquired.

## NF 1018 Reports:

1. Contractors shall report all NASA-owned property in US dollars, regardless of location.
2. Negative reports are required.
3. This reporting shall be completed in accordance with the NASA FAR Supplement (NFS) Subpart 1845.7101 and any supplemental guidance provided by the Contracting Officer.

## **C. FORMAT:**

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

- a. Distribution shall be in accordance with the DRL. The monthly reports shall be electronically submitted using the Contractor-Held Asset Tracking System (CHATS) (<http://nasachats.gsfc.nasa.gov/>) using the format described in the CHATS user's manual.
- b. NASA Form (NF) 1018 reports shall be submitted using the NF 1018 Electronic Submission System (NESS) (<http://ness.gsfc.nasa.gov/>).

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No.</b> (Procurement completes)
Government Property Management Plan	07/12/2012	BP-09	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
To describe the method of administering and Controlling Government personal property.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
Clause 52.245.1 Government Property		BP-08 Contractor Held Property Reporting	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>Federal Acquisition Regulation (FAR) 52.245-1. NASA FAR Supplement (NFS) Part 1845</p> <p><b>SCOPE:</b></p> <p>The Government Property Management Plan defines the Contractor’s use, maintenance, repair, protection, and preservation of Government personal property. It shall describe the Contractor’s approach to receiving, handling, stocking, maintaining, protecting, and issuing Government property. The Plan should include interaction and Department Office responsibilities. The delegated Property Administrator will request detailed procedures after contract start date.</p> <p><b>B. CONTENT:</b></p> <p>This plan shall reference those policies and procedures, which constitute the Contractor’s Property Management Manual and shall include at a minimum the following categories:</p> <ol style="list-style-type: none"> <li>1. Property Management</li> <li>2. Acquisition of Property</li> <li>3. Receipt of Government Property           <ol style="list-style-type: none"> <li>a. Receiving</li> <li>b. Identification</li> </ol> </li> <li>4. Records of Government Property</li> <li>5. Physical Inventory</li> <li>6. Subcontractor Control</li> <li>7. Reports</li> <li>8. Relief of Stewardship           <ol style="list-style-type: none"> <li>a. Consumed/Loss, Theft, Damage, Destruction</li> <li>b. Delivered</li> <li>c. Contractor Inventory Disposal</li> <li>d. Abandonment of Government Property</li> </ol> </li> <li>9. Utilizing Government Property           <ol style="list-style-type: none"> <li>a. Utilization</li> <li>b. Consumption</li> <li>c. Movement</li> <li>d. Storage</li> </ol> </li> <li>10. Maintenance</li> <li>11. Property Closeout</li> <li>12. Reconcile Contractor Records with NASA Financial Property Records</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## 13. JSC-Unique Considerations

### **C. FORMAT:**

The Contractor's format is acceptable. The Government Property Management Plan shall be delivered in native format, and be compatible with the JSC standard software loads.

### **D. MAINTENANCE:**

See Data Requirements list.

### **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<b>1. DRD Title</b>	<b>2. Date of current version</b>	<b>3. DRL Line Item No.</b>	<b>RFP/Contract No.</b> (Procurement completes)
Procurement Data Package	07/12/2012	BP-10	NNJ13HA02C
<b>4. Use</b> ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		<b>5. DRD Category:</b> ( <i>check one</i> )	
Provides requirements for delivery to NASA of information on specific items and supporting documentation related to resource/cost information to be used for re-procurement activities.		<input type="checkbox"/> Technical	
		<input checked="" type="checkbox"/> Administrative	
		<input type="checkbox"/> SR&QA	
<b>6. References</b> ( <i>Optional</i> )		<b>7. Interrelationships</b> ( <i>e.g., with other DRDs</i> )	
<b>8. Preparation Information</b> ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>Provides requirements for delivery to NASA of information on specific items, and supporting documentation related to resource and cost information to be used for reprocurement activities.</p> <p><b>B. CONTENT:</b></p> <p>A data package shall be submitted containing the following resource and cost information:</p> <ol style="list-style-type: none"> <li>1. Labor Resources:           <ol style="list-style-type: none"> <li>a. List of all direct labor skills by labor category, segregated by current Statement of Work (SOW) section.</li> <li>b. 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.</li> <li>c. Current average straight time labor rates for all skills by labor category, mapped by standard labor categories of the original RFP, or the standard labor categories defined in the follow-on RFP, if they differ from the original RFP and when these wages were last adjusted for escalation. Also, indicate whether any adjustments are projected to be made prior to the contract expiration.</li> <li>d. Number of Full Time Equivalents (FTEs) for each labor category currently on contract, mapped by standard labor category of the original RFP, or the standard labor categories defined in the follow-on RFP, if they differ from the original RFP, segregated by current SOW Section (1 FTE is defined as the work of a full time equivalent per year).</li> <li>e. Seniority level of all skills on the current contract.</li> </ol> </li> <li>2. Non-Labor Resources:           <ol style="list-style-type: none"> <li>a. Provide total non-labor cost incurred for most recent 12 months, separated by type of expense to include categories for travel and training.</li> </ol> </li> </ol> <p><b>C. FORMAT:</b></p> <p>The Contractor's format is acceptable. The Procurement Data Package shall be delivered in native format, and be compatible with the JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Quality Plan	07/12/2012	SMA-01	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The quality Plan is used to document the specific details of the Contractor’s Quality Management System (QMS) related to off-site specific product or process.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
See “Reference Documents” under item 8 below.		RV-10 Flight Products Verification and Validation Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. SCOPE:</b> A contract specific Quality Plan shall be prepared which identifies activities performed off-site of JSC to ensure quality products and services. The Quality Plan shall be in accordance with SAE AS9100C, Quality Management Systems-Requirements for Aviation, Space and Defense Organizations.</p> <p><b>B. CONTENT:</b> The Quality Plan shall address each element of the SAE AS9100 “Quality Management Systems - Requirements for Aviation, Space and Defense Organizations” in enough detail to describe how requirements will be implemented for this contract.</p> <p><b>C. FORMAT:</b> The Quality Plan format shall match the elements of SAE AS9100 and shall also address supplements contained in Sections C and E of the contract. The plan shall be delivered electronically to the Design Data Management System (DDMS) in native format and be compatible with standard JSC office software loads.</p> <p><b>D. MAINTENANCE:</b> See Data Requirements List (DRL).</p> <p><b>E. DISTRIBUTION:</b> Distribution shall be in accordance with the DRL.</p> <p><b>F. APPLICABLE DOCUMENTS:</b> SAE AS9100C: Quality Management Systems-Requirements for Aviation, Space and Defense Organizations</p>			

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1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Electrical, Electronic, and Electromechanical (EEE) Parts Control Plan	07/12/2012	SMA-02	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To define and document the Contractor's requirements, system and implementation plan for controlling the selection, acquisition, traceability, testing, handling, packaging, storage and application of EEE parts for flight and critical ground support equipment.		<input checked="" type="checkbox"/>	Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
1. GEIA-HB-0005-1, Program Management/Systems Engineering Guidelines for Managing the Transition to Lead-Free Electronics 2. GEIA-HB-0005-2, Technical Guidelines for Aerospace and High Performance Electronic Systems Containing Lead-Free Solder and Finishes. 3. NASA Tin and Other Metal Whisker Web-site: <a href="http://nepp.nasa.gov/whisker">http://nepp.nasa.gov/whisker</a>		SMA-07 GIDEP and NASA Advisory Problem Data Sharing and Utilization Program Documentation and Reporting	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. SCOPE:</b>          This DRD establishes the requirements for content, format, and maintenance of the EEE Parts Plan, which is used for controlling risk and enhancing reliability of EEE Parts used in flight and critical ground support equipment. The Contractor's plan shall implement NPD 8730.2, NASA Parts Policy, Attachment A: <i>Criteria to Mitigate Risks Associated with Lead-Free Solder and Surface Finishes</i> and use Attachment B: <i>Counterfeit Parts Control Plan Contents</i> as guidance for development of a control plan for the avoidance, detection, mitigation, disposition, control and reporting of counterfeit EEE parts.</p> <p><b>B. CONTENT:</b>          The contractor shall document, in an EEE Parts Control Plan, the features discussed below as a minimum. The plan shall demonstrate that the contractor has the technical expertise, documentation system and defined management roles and responsibilities to assure adequate implementation.</p> <ol style="list-style-type: none"> <li>1. Parts Selection: The EEE Parts Control Plan shall describe a concurrent engineering process, integrated with hardware design, in which parts, materials, and packaging technology are selected for use based on their intended use considering, but not limited to, performance, environment, criticality, and mission lifetime requirements. (Information and guidance concerning parts selection is provided on the NASA Parts Selection List (NPSL), <a href="http://nepp.nasa.gov">http://nepp.nasa.gov</a>). The plan shall identify parts that are considered standard and how other (nonstandard) parts will be evaluated and approved as flight controlled.</li> <li>2. Controlling Specifications: The EEE Parts Control Plan shall describe how parts shall be controlled by specifications that delineate as a minimum:             <ol style="list-style-type: none"> <li>a. Complete identification of the part</li> <li>b. Physical, environmental, and performance specifications</li> <li>c. Reliability requirements, including inspections and tests for qualification, acceptance, and lot sampling.</li> <li>d. Special handling, packaging, and storage requirements</li> <li>e. Documentation, data retention, and submittal requirements</li> </ol> </li> <li>3. Part Qualification:             <ol style="list-style-type: none"> <li>a. Parts shall be qualified to the requirements of the controlling specification. Part qualification shall demonstrate that the part meets its ratings, and that the manufacturer is using materials, processes, design, and quality controls that will produce a consistent, reliable, high quality device that is deemed suitable for the intended application.</li> <li>b. Where adequate qualification data are not available, the plan shall describe the process of qualification testing to demonstrate that the parts/meets its ratings.</li> <li>c. Parts shall be re-qualified in the event of manufacturer process changes, or when a new "lot" of qualified parts are procured and it cannot be documented that the parts manufacturer has not changed the materials, processes, equipment, or facility used to manufacture the part.</li> <li>d. The plan shall address how the contractor will maintain the documentation to support the "qualified status" of parts and the respective suppliers.</li> </ol> </li> <li>4. Design Configuration Acceptability and Control: The plan shall address how the selected parts for a design are reviewed for application and environmental suitability, how the parts quality and reliability will meet the operational performance requirements, and if the parts are being used within the specific device ratings (including the NASA de-rating policy). The selection</li> </ol>			

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process, technical acceptability of devices, and application documentation and review results shall be available to NASA to support hardware design reviews, certification, acceptance reviews, problem resolutions, and ground and flight operations. Key elements are as-designed-parts lists, application stress analyses (including radiation effects), and nonstandard parts acceptability assessments.

5. **Parts Procurement:** The plan shall address how the contractor will select, qualify, control, and monitor parts manufactures. The plan shall address the contractor's source inspections, receiving inspection (including destructive physical analysis), and pure tin purchasing controls (tin whisker growth mitigation), counterfeit parts control plan, and stocking and handling procedures prior to and during assembly. These procedures shall address how the contractor will mitigate the procurement and any subsequent installation of parts or "lots" of parts subject obsolescence and to conditions identified in GIDEP ALERTs or NASA Advisories. This section of the plan shall ensure that the selection and use of the parts will not have an "obsolescence" issue to the greatest extent possible.
6. **Radiation Effects:** The parts Control Plan shall include the following requirements:
  - a. It shall be shown by test or analysis that Single Event Upset (SEU) and/or total dose radiation effects will not cause EEE parts to fail or malfunction in such a manner as to cause a safety hazard or loss of a mission.
  - b. EEE parts that are used to control a hazard, or subsystem that control a hazard, shall be immune to the SEU and total dose radiation environment to which they will be exposed.
7. **Commercial Off-The-Shelf (COTS) hardware:** The plan shall address the use of COTS hardware for which insufficient parts information is available. In these cases, parts used in COTS hardware may be qualified by environmental and accelerated life testing of a complete COTS assembly.
8. **Documentation:** The plan shall define the contractor's electronic (preferred) or paper documentation system, data supporting milestones and design reviews, and NASA's access to the parts electronic data base and files.

## **C. FORMAT:**

The data shall be entered into the Design Data Management System. The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format and be compatible with standard JSC office software loads and standard engineering software.

## **D. MAINTENANCE:**

See Data Requirements List (DRL).

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

## **F. APPLICABLE DOCUMENTS:**

1. NPD 8730.2: NASA Parts Policy
2. NPR 7120.5 (Para 4.5): NASA Program and Project Management Processes and Requirements
3. JPR 8730.1: Electrostatic Discharge Control Requirements for the Protection of Electronic Components and Assemblies
4. JSC 61360: Engineering Directorate Certified Parts Approval Process
5. SSP 30312: Electrical, Electronic, and Electromechanical (EEE) and Mechanical Parts Management and Implementation Plan for the International Space Station (ISS) Program
6. GEIA-STD-0005-1: Performance Standard for High Performance Electronic Systems Containing Lead-Free Solder
7. GEIA-STD-0005-2: Standard for Mitigating the Effects of Tin Whiskers in Aerospace and High Performance Electronics
8. SAE AS5553: Counterfeit Electronics Parts, Avoidance, Detection, Mitigation, and Disposition

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(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Safety and Health Plan	07/12/2012	SMA-03	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Establishes Safety and Health Compliance Plan for Contractors providing support to JSC Organizations.		<input type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
<ul style="list-style-type: none"> <li>OSHA CSP 03-01-003, Voluntary Protection Program (VPP): Policies and Procedures Manual</li> <li>JSC 17773, Instructions for Preparation of Hazard Analysis for JSC Ground Operations JPR 1700.1 JSC Safety and Health Handbook</li> </ul>		SMA-04 Safety and Health Program Self Evaluation SMA-05, Lessons Learned Program Plan and Lessones Learned	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. CONTENT:</b>            Provides the Contractor's Safety and Health Plan. Review the plan annually or as directed by the CO and update as needed. The plan shall be updated to meet OSHA, JSC, and VPP requirements. Provide a copy of the updated plan with the changes highlighted to the distribution noted in the Distribution Requirements List (DRL) at the start of each contract year. If no changes are required after the annual review, notify the individuals in the distribution list in writing to that affect.</p> <p><b>B. FORMAT:</b></p> <ol style="list-style-type: none"> <li>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 Chief, JSC Occupational Health Officer, and the NASA Contracting Officer. Other signatures may be required at the discretion of the Government.</li> <li>Table of Contents. See content below.</li> <li>Body of Plan - Contractor's format is acceptable but should be aligned with the elements of the content below.</li> <li>When preparing its plan, the Contractor is expected to review all the items below and tailor its plan accordingly. Tailoring is the process of identifying those items that must be performed to assure the safety of the contractor's employees while performing work on the contract. The contractor is part of a larger program- the NASA safety program -which has other contracted employees, civil servants, and other third parties that must be protected from any hazard in the workplace wherever they arise. This includes the following:               <ol style="list-style-type: none"> <li>Hazards associated with work done on contractual tasks.</li> <li>Hazards that arise from non-contractual operations in the vicinity of contractor's workers.</li> <li>Hazards that arise from contractual operations which may affect the safety and health of individuals and assets outside this contract.</li> </ol> </li> <li>The plan shall 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.</li> <li>The plan must cover the prime contractor and all subcontractors.</li> </ol> <p style="text-align: center;"><b><u>BODY OF PLAN DETAILS:</u></b></p> <p><b>1. MANAGEMENT LEADERSHIP AND EMPLOYEE PARTICIPATION</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>1.2 Goals and Objectives. Describe the approach to the following:               <ol style="list-style-type: none"> <li>1.2.1 Specific annual safety and health goals and objectives to be met.</li> <li>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 rate (DART).</li> </ol> </li> </ol>			

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- 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 shall 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 provided by letter to the JSC Safety and Test Operations Division, mail code NS2, with copies to the Contracting Officer and the Contracting Officer’s Technical Representative (COTR). 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 the approach to safety and health program evaluation. The program evaluation consists of:
  - 1.8.1 [RESERVED.]
  - 1.8.2 Annual Self Evaluation Report. An annual, written, self-evaluation report that shall be delivered to the Safety and Test

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Operations Division, mail code NS, the Occupational Health Officer, mail code SD33, the Contracting Officer and the COTR. 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 shall acknowledge the following as standing requests from the Government to be handled as described below.
  - 1.9.1 Roster of Terminated Employees. Identify personnel terminated by the Contractor. Send hard copies to the JSC Occupational Health Officer, Contracting Officer, and the COTR 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. One (1) copy of each MSDS shall be sent upon receipt of the material for use on NASA property to the JSC Central MSDS Repository, mail code SD33, 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 a quarterly inventory report of all hazardous materials it has located on Government property, 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”. The call for this inventory and instructions for delivery will be issued by the JSC Human Health and Performance Contract 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 & 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 readily 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 shall 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”. The contractor shall identify any electronic systems it creates to house or make available contractor websites used to publish or distribute its safety and health program information. Access by NASA safety, health, environmental, and emergency planning professionals and their representatives shall routinely be available

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on a read only basis. 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 shall 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 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 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 shall 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 the 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 Human Health and Performance Contract contractor, mail code SD33, 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 shall 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" 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. Address facilities, systems/subsystems, operations, processes, materials (including waste), and specific tasks or jobs. Analyses and report formats shall be in accordance with JSC 17773, "Preparing of Hazard Analyses for JSC Ground Operations." Job hazard analyses for offices shall utilize the office safety checklist found at <http://www6.jsc.nasa.gov/safety/checklists/>. Recommended changes to the checklist may be sent to the Safety & Test Operations Division, mail code NS, for consideration.
  - 2.3.4 Survey Results. The Contractors safety plan shall 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 safety plan shall describe the contractor's approach to notify NASA

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and other parties external to the contract work of identified hazards and subsequent analyses and controls.

- 2.4 Inspections. The data includes assignments, procedures, and frequency for regular inspection and evaluation of work areas for hazards and accountability for implementation of corrective measures. The Contractor shall 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 shall be documented in safety program evaluations or the monthly Accident/Incident Summary reports at the contractor's discretion. Inspections will identify:
- Discrepancies between observed conditions and current requirements.
  - New (not previously identified) or modified hazards.
  - Use of JSC's Hazard Abatement Tracking System to manage hazards onsite at JSC (see paragraph 3.12 below).
  - Use of JSC's Building Inspection Tracking System to record performance of building inspections.
- 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 (also called Close Calls). Identification of methods to encourage employees to report hazardous conditions (e.g., close calls) and participate in the analysis/abatement. The Contractor shall 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 Contingency Plan. The Contractor shall 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" to assure reporting and investigation of mishaps and the corrective actions implemented to prevent recurrence. This plan shall address mishaps that occur on Government property, Contractor property, or third party property. The plan shall address use of the quick incident reports found at 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 the Contractor. It shall emphasize timely notification to NASA, including specific NASA program or project notification requirements; preliminary and formal investigation procedures; exercise of jurisdiction over a mishap investigation involving NASA and other contractor personnel (Government investigation takes precedence over any contractor investigation); 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 plan shall specifically address:
- Procedures for immediate action to be taken with regard to fires, hazardous or toxic material releases, and other emergencies, including notification of the JSC Emergency Operations Center (EOC) (JSC, Ellington Field, and Sonny Carter Training Facility at 3-3333; offsite at 281-483-3333). Contact the EOC for guidance when a Type 'A' or 'B' mishap occurs in the course of performing work on a NASA contract, in whole or in part. For Type 'C' property damage mishaps, call the JSC Safety Hotline at 281-483-7500 and await instructions.
  - Immediate notification of the NASA Safety & Test Operations Division, the Contracting Officer, and the COTR in the advent of a type 'A' or 'B' mishap or 'C', property damage mishap and all Close Calls with equivalent potential so NASA may take custody of the mishap scene and initiate its investigation as soon as it is safe.
  - For Type C injuries and all lower level mishaps, the Contractor shall perform its own investigation and submit a report to NASA in accordance with the requirements of JPR 1700.1.
  - When a NASA investigation is required, witnesses shall 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.
  - The Contractor shall deliver to NASA mishap reports which shall include the data specified in NPR 8621.1 for the level of mishap. Details regarding NASA approval and endorsements as specified in NPR 8621.1 shall be included in the approved Safety and Health Plan.

**NOTE:** The NASA Form (NF) 1627 is available only from the web page at <http://jschandbook.jsc.nasa.gov/> and is being used until JSC Safety & Test Operations Division has implemented a replacement form to be used for all JSC and WSTF mishaps.

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(Based on JSC –STD-123. See work page for instructions.)

- 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 shall describe the methods 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 10<sup>th</sup> days of the month following each month reported. The report shall be delivered electronically to the JSC Safety and Test Operations Division, the CO, the COTR, and to the [JSC-Safety-Report-Submittals@mail.nasa.gov](mailto:JSC-Safety-Report-Submittals@mail.nasa.gov) inbox.
  - b. Log of Occupational Injuries/Illnesses (OSHA Logs)
    - i. For each establishment on and off NASA property that performs work on this contract, the Contractor shall deliver 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 delivered 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. Describe the approach for implementing Chapter 3.5 of JPR 1700.1. If a Contractor provided system is used to document and track such hazards, the system shall be readily available and accessible to JSC safety, health, environmental, and emergency planning personnel and their representatives on a read only basis. Describe the approach for communication of such data.
- 3.2 Appropriate Controls. Describe the approach to consideration and selection of controls. Discuss use of hazard reduction precedence sequence (see JPR 1700.1). Describe the approach to identify and accept residual risk. Describe the approach for implementing controls including verifying their effectiveness. Discuss the scope of coverage (hazardous chemicals, equipment, energies, etc.). Discuss the need for coordination with safety, health, and emergency authorities at JSC.
- 3.3 Hazardous Operations and Processes. Establish methods for notifying 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.
- 3.3.1 List of Hazardous Operations. 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 shall be provided as part of the plan for review and approval. The Contractor shall collaborate with the JSC Safety & Test Operations Division to identify operations and processes to be considered hazardous. The JSC Safety and Test Operations Division will have the final authority.
- 3.3.2 Procedures. Before hazardous operations or processes commence, the Contractor shall ensure approved, written procedures, with particular emphasis on identifying the job safety steps, are present and being utilized. Upon request, the Contractor shall provide to NASA data necessary to verify compliance.
- 3.3.3 Hazards Outside of Contract Scope. Should operations or processes that may have safety or health implications outside of contract operations (e.g., pose threats to non-contract personnel or assets) be identified, the Contractor shall notify such circumstances to the JSC Safety and Test Operations Division and the Occupational Health Officer who will provide additional instructions for further NASA management review and approval.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- 3.4 Written Procedures. Identification of methods to assure that relevant hazardous situations and proper controls are identified in documentation (e.g. 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 shall 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. Describe the approach for identifying facilities, operations and/or tasks where hazardous operations permits are 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. Describe the approach to ensure compliance with the JSC Asbestos Control Program per JPR 1700.1.
- 3.7 Operations Involving Exposures to Toxic or Unhealthful Materials. Describe the approach to ensure operations involving exposure to toxic or unhealthful materials are evaluated by the JSC Occupational Health Office prior to implementation 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 responsibilities for maintaining facilities baseline documentation in accordance with JSC requirements. The Contractor shall 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 the approach to preventive maintenance. Describe scope, frequency, and supporting rationale for the 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. Describe the 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. Describe the system for correcting and tracking safety, health, and environmental hazards with particular emphasis on integration with JSC's Hazard Abatement process (found on line at <http://www6.jsc.nasa.gov/safety/hazard/process/default.asp>). (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. Describe the approach to communicate unsafe conditions and approved countermeasures to Contractor employees. Discuss the 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 the approach for interim and final abatement of hazards, including submittal of data to the JSC Hazard Abatement and Tracking System (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 the approach to posting such plans using JSC Form 1240, "JSC Notice of Safety or Health and Action Plan", or equivalent. Discuss the compatibility of any Contractor provided system with JSC's role of facility managers in abatement planning, implementation, and verification.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- 3.13 Disciplinary System. Describe the system for ensuring safety and health discipline (including subcontractors). Describe the approach to modifying personnel behaviors when personnel are exhibiting discrepant safety and health performance.
- 3.14 Emergency Preparedness. Discuss the 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 the 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

The Safety and Health training program shall address the following:

- 4.1 The 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 The 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 The approach to training personnel in the proper use and care of personal protective equipment (PPE).
- 4.4 How training will be tailored towards specific audiences (management, supervisors, and employees) and topics (safety orientation for new hires, specific training for certain tasks or operations).
- 4.5 The 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 The utilization of JSC safety and health training resources (such as asbestos worker training/certification, hazard communication, confined space entry, lockout/tag out, etc.) as appropriate with particular emphasis on programs designed for the multiple employer work environment on NASA property. Prior to training Contractor personnel in any regulatory mandated training, an agreement will be secured with JSC Safety & Test Operations Division and the Occupational Health Officer in the Space Medicine Division. This agreement will ensure that safety and health training resources available from NASA are utilized where appropriate.
- 4.7 The approach to making all training materials and training records available to NASA, and other Federal, state, and local agencies for their review upon request.

### **OTHER DELIVERABLES:**

The requirements for this plan as detailed in the instructions on plan content above 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. The reports and deliverables include the following (along with paragraph references):

- 1.5.2 Company Physician/Occupational Injury/illness case manager – at contract start and as revised.
- 1.5.3 Building Fire Wardens (Roster)
- 1.5.4 Designated Safety Official
- 1.8.2 Annual Safety and Health Self Evaluation Report
- 1.9.1 Roster of Terminated Employees
- 1.9.2 Material Safety Data Sheets (MSDS)
- 1.9.3 Hazardous Materials Inventory
- 2.2 Industrial Hygiene data that is obtained by the contractor from non-JSC services.
- 2.3 Inventory of Hazardous Operations
- 2.3.3 Job Hazard Analysis for Offices including recommended revisions
- 2.4.d Inspection results entered in Building Inspection Tracking System (BITS)
- 2.4.2 Monthly Metrics Report – inspection finding and corrective actions
- 2.4.2 Hazard Abatement Tracking System – for hazards open more than 30 days.
- 2.6 Employee Reports of Hazards (Close calls) forwarded to JSC close call tracking system.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- 2.7.1 Mishap reporting and Lessons Learned.
- 2.7.2.a JSC Form 288, “Accident/Incident Statistics”
- 2.7.2.b Log of Occupational Injuries/Illnesses (OSHA Logs)
- 3.1, 3.12 Hazards recorded in JSC Hazard Abatement Tracking System.
- 3.12.2 Interim and Final Abatement Plans.

## **C. MAINTENANCE:**

Revisions are made on the DDMS.

## **D. DISTRIBUTION:**

Distribution shall be in accordance with the Data Requirements List.

## **E. APPLICABLE DOCUMENTS:**

1. OSHA CSP 03-01-003, Voluntary Protection Program (VPP): Policies and Procedures Manual
2. JSC 17773, Instructions for Preparation of Hazard Analysis for JSC Ground Operations
3. JPR 1700.1 JSC Safety and Health Handbook

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Safety and Health Program Self Evaluation	07/12/2012	SMA-04	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Self evaluation of Contractor’s Safety and Health Program Performance.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
JPR 1700.1, JSC Safety and Health Handbook		SMA-03 Safety and Health Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p><b>B. CONTENT:</b></p> <p>The Contractor shall conduct an annual self-evaluation of its safety and health program as required by its safety and health plan.</p> <p>2. Information required:</p> <p>2.a. 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.</p> <p>2.b. Safety and health concerns and resolutions relating to JSC operations which may have been identified during the report period.</p> <p>2.c. Unresolved safety and health concerns relating to JSC operations which the Contractor feels merit attention of JSC safety and health management.</p> <p>2.d. The goals and objectives of the Contractor safety and health program for the next report period.</p> <p>2.e. 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.</p> <p>2.f. 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.</p> <p>Report due September 30<sup>th</sup> of each year.</p> <p><b>C. FORMAT:</b></p> <p>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.</p> <p>Data shall be submitted to the Engineering Directorate Design Data Management System (DDMS) in native format compatible with the JSC standard software load.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **D. MAINTENANCE:**

Revisions are made on the DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Lessons Learned Program Plan and Lessons Learned	07/12/12	SMA-05	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Establishes Process for obtaining Lessons Learned from Contractor for possible publication in JSC Lessons Learned Database and NASA Lessons Learned Information System (LLIS) <small>***The Office of Primary Responsibility for this DRD is the JSC Knowledge Management Office in the Safety and Mission Assurance Directorate</small>		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
1. JPR 2310.1, "JSC Organizational Learning Program", Section 4, "Lessons Learned Process" 2. NPR 7120.5C, "NASA Program and Project Management Processes and Requirements" 3. NPR 7120.6, "Lessons Learned Process" 4. NPR 8621.1, NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping".3, "NASA 5. NPR 8715.3, "NASA Safety Manual		SMA-03 Safety and Health Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<b>A. CONTENT:</b> A. Lessons Learned Program Plan: The contractor shall develop and implement a lessons learned program plan consistent with the areas defined in the SOW and/or the WBS. The lessons learned program plan shall include: <ol style="list-style-type: none"> <li>Lessons learned program structure and management responsibility for lessons learned.</li> <li>Lessons Learned advocacy throughout the contracted effort.</li> <li>Approach to selection, review, and validation of lessons learned using contract and government assets.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.)</li> </ol> B. Access to the JSC Lessons Learned Database and the NASA Lessons Learned Information System: <ol style="list-style-type: none"> <li>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 database is accessible at <a href="https://lldb.jsc.nasa.gov/index.cfm?&amp;CFID=635927&amp;CFTOKEN=72741895">https://lldb.jsc.nasa.gov/index.cfm?&amp;CFID=635927&amp;CFTOKEN=72741895</a></li> <li>To obtain access to the NASA Lessons Learned Information System, go to <a href="http://llis.nasa.gov/">http://llis.nasa.gov/</a> and follow instructions.</li> </ol> C. 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.                 D. Frequency of submission for lessons learned: As follows (in order of decreasing Government preference): <ol style="list-style-type: none"> <li>Data entry to the JSC LLDB or NASA LLIS within 30 days of a triggering event.</li> <li>Within 30 days of a program milestone, mishap investigation, or hazard or other engineering analysis /evaluation is completed.</li> <li>30 days prior to end of contract evaluation period, or 45 days prior to end of contract, whichever is applicable.</li> </ol> E. Distribution of Lessons: <ol style="list-style-type: none"> <li>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</li> </ol>			

JSC Form 2341 (Rev October 19, 2011) (MS Word 2007) (Previous editions are obsolete.)

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

directly if the contractor is outside the JSC domain or firewall.

2. Contracting Officer's Technical Representative (COTR).

## F. 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 the Government prior to publication of lesson).

## G. Definitions: Refer to NASA LLIS at <http://llis.nasa.gov> and JPR 2310.1 for definitions of terms used

## H. 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.

## B. FORMAT:

## C. MAINTENANCE:

## D. DISTRIBUTION:

Distribution shall be in accordance with the DRL.

## E. APPLICABLE DOCUMENTS:

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Problem Reporting and Corrective Action (PRACA) for the JSC Government Furnished Equipment (GFE) and Flight Products	07/12/2012	SMA-06	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To report problems and to document their subsequent resolution and approval.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-20 Non-Conformance Record TD-21 Flight Products Failure Analysis Report	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. SCOPE:</b>          Non-conformances requiring JSC/GFE PRACA reporting are defined in JSC 28035. PRACA reporting is limited to flight equipment and software, equipment that is representative of flight equipment and software (flight-like) and critical ground support equipment and software. PRACA requirements are also applicable to subcontractors that provide these products.</p> <p><b>B. CONTENT:</b></p> <p>1) The following data is mandatory for the initial reporting of a problem. The initial report shall be transmitted to the JSC PRACA Center within 2 business days after isolation to a configuration item, but no later than 10 business days after occurrence/detection.</p> <ul style="list-style-type: none"> <li>a) PRACA Number [a unique tracking number assigned to the PRACA report]</li> <li>b) Non-conformance Number [a unique local nonconformance number]</li> <li>c) Detect Date [The date (mm/dd/yyyy) non-conformance occurred or was detected]</li> <li>d) Location [The location where the non-conforming item was at, at the time of occurrence/detection]</li> <li>e) Program [The affected NASA program]</li> <li>f) Project Office [The responsible NASA Project Office (EVA, FCE, Life Sciences, and Other_____)]</li> <li>g) Contact [The technical point of contact, organization, and phone number]</li> <li>h) Report Date [Date the PRACA report was initiated]</li> <li>i) Detected During [The specific test or operation performed when the non-conformance occurred]</li> <li>j) Title [A brief, but descriptive title for the problem]</li> <li>k) Description [A narrative description of the problem including the observed event(s) as well as the expected event(s).]</li> <li>l) Identification of the Configuration Item by:             <ul style="list-style-type: none"> <li>i. Part name</li> <li>ii. Part number</li> <li>iii. Serial number, lot number, or version</li> <li>iv. Manufacturer's name</li> <li>v. Manufacturer's Contractor and Government Entity (CAGE) code</li> </ul> </li> </ul> <p>2) The following data shall be provided when it becomes known (with the exceptions noted). This data shall be provided as updates to the initial PRACA report. This data is mandatory for the closure of the report.</p> <ul style="list-style-type: none"> <li>a) The end item or product (if not the configuration item), specific subassemblies, and the nonconforming article shall be identified:             <ul style="list-style-type: none"> <li>i. Part name</li> <li>ii. Part number</li> <li>iii. Serial number, lot number, or version</li> <li>iv. Manufacturer's name</li> <li>v. Manufacturer's CAGE code</li> </ul> </li> <li>b) FMEA No. [Failure Mode and Effects Analyses number]</li> <li>c) FMEA Criticality [This data is required within 10 calendar days of opening the problem report]</li> </ul>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- d) FMEA/CIL Impact [yes or no, is the FMEA/CIL retention rationale impacted by the occurrence of this problem?]
  - e) Out-of-Family Problem [yes or no, based on the definitions of In-Family and Out-of-Family in JSC 28035]
  - f) Fracture Critical [yes or no, is the material involved fracture critical?]
  - g) ECD [Estimated Completion Date for submitting a final closure of the problem. This data is required within 30 calendar days of opening the problem report.]
  - h) Process Escape [yes or no, per the definition of process escape in JSC 28035]
- 3) The following data shall be provided to close the report:
- a) Final report [A final report documenting the specific information required for closure per JSC 28035, i.e. final closure with corrective action (this is preferred) or final closure without corrective action (explanation)]
  - b) Approval signatures
  - c) Date Approved
- C. MAINTENANCE:**  
See Data Requirements List (DRL).
- D. DISTRIBUTION:**  
Distribution shall be in accordance with the DRL.
- E. APPLICABLE DOCUMENTS:**
- a. JSC 28035, Program Problem Reporting and Corrective Action (PRACA) Requirements for the Johnson Space Center/Government Furnished Equipment (GFE).
  - b. SSP 30234, Failure Modes and Effects Analysis and Critical Items Requirements List for Space Station.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Government-Industry Data Exchange Program (GIDEP) and NASA Advisory Problem Data Sharing and Utilization Program Documentation and Reporting	07/12/2012	SMA-07	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This DRD provides the minimum information to be incorporated into the Contractor's and sub tier contractor implementation procedures and contractual data reporting requirements necessary to participate in the GIDEP and NASA Advisory Problem Data Sharing and Utilization Program.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		SOW Section 1.2.3 TD-20 Non-Conformance Record	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <ul style="list-style-type: none"> <li>• NPR 8735.1, "Procedure for Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program and NASA Advisories"</li> <li>• SO300-BT-PRO-010, GIDEP Operations Manual and Policy</li> <li>• SO300-BU-GYD-010, GIDEP Requirements Manual</li> </ul> <p><b>B. CONTENT:</b></p> <p>The Contractor shall review and respond to all GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories issued from the JSC/NASA-Advisory/GIDEP Status Tracking System to determine if they affect the Contractor's products or services provided to NASA. If it is determined there is an impact, the Contractor shall take action to eliminate or mitigate any negative effects to an acceptable level. The Contractor shall generate the appropriate failure experience data report(s) (i.e. GIDEP ALERT, GIDEP SAFE-ALERT, GIDEP Problem Advisory, or NASA Advisory) whenever systemic failed or nonconforming items, available to other buyers, are discovered during the course of this contract.</p> <p>The Contractor shall establish and implement procedures to comply with the SOW requirements to register with, and participate in the GIDEP in accordance with NPR 8735.1. At a minimum, these procedures shall address:</p> <ol style="list-style-type: none"> <li>a. The Contractor and sub-tier implementation procedures that include sufficient detail to ensure the Contractor understands the importance of the task, management responsibilities, technical expertise required to identify and resolve impacts, "special problem" information sensitivity, and documentation necessary to comply with GIDEP and NASA policies. Special controls shall be implemented to ensure confidentiality of problem reports involving criminal investigations.</li> <li>b. Preparation and submittal of GIDEP documents in accordance with SO300-BT-PRO-010.</li> <li>c. Preparation and submittal of NASA Advisories using JSC Form (JF) 1159, JSC/NASA Advisory. Initiation of JF 1159 shall be through the JSC/NASA-Advisory/GIDEP Coordinator at <a href="mailto:jsc-jscadvco@nasa.gov">jsc-jscadvco@nasa.gov</a>. Release of NASA Advisories shall be pre-coordinated with the JSC/NASA-Advisory/GIDEP Coordinator and comply with the contents required to complete JF 1159 to accurately report the problem and conditions.</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- d. Task management, control, and tracking status.
- e. Methodology that will be used to (1) distribute and thoroughly assess the GIDEP and NASA Advisory for impacts to assets pertaining to this contract and (2) ensure impacts noted are promptly reported, tracked and, upon direction from the Contracting Officer (CO) or Contracting Officer Technical Representative (COTR), corrected. Disposition assessments and status shall be entered into the JSC/NASA Advisory GIDEP Documents Status and Tracking System maintained by the JSC/NASA-Advisory GIDEP Coordinator and shall be made in a timely manner to support Certificate of Flight Readiness Reviews and other milestones associated with space-flight activities.
- f. Tracking and reporting financial data to justify and substantiate any reported “cost impacts” in accordance with GIDEP policies.
- g. Logistical tracking, tagging, segregation, and retention of suspect parts or material in the custody of the Contractor pending final disposition instructions from the CO or the COTR with concurrence from the JSC/NASA-Advisory GIDEP Coordinator.
- h. Identification of the Contractor’s representative(s), Point of Contact for this activity, who shall interface with the JSC/ NASA-Advisory GIDEP Coordinator.

## **C. FORMAT:**

Contractor format is acceptable with the provision that GIDEP forms/documentation shall be used in accordance with GIDEP policies and JF 1159 shall be used to report NASA Advisories.

## **D. MAINTENANCE:**

Changes to the Contractor’s procedures shall require approval by the Contracting Officer with concurrence from the JSC NASA-Advisory/GIDEP Coordinator.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Project Schedule	07/12/2012	RV-01	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Provide schedule information to NASA, so that interdependent program activities can be planned and critical milestones monitored.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		MGMT-03 Contract Management Plan RV-02 Regular Status Report/Summary Review	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The schedule shall serve as the basis for communications between the Contractor and NASA concerning essential schedules. The detail breakdown in the schedule depends on the type of products and services requested, and will be defined in the Task/Delivery Order (TDO).</p> <p><b>B. CONTENT:</b></p> <p>Project schedules shall be prepared using the Critical Path Method and include a graphical representation to illustrate order and interdependence of activities and sequence of work based upon the Work Breakdown Structure in the TDO. Each activity shall include start and finish dates. The complexity shall match the nature of the products being provided. The portion of the schedule completed shall be identified. As a minimum the following detail is required:</p> <ol style="list-style-type: none"> <li>1. Key Milestones (e.g., requirements reviews, design reviews, test readiness reviews, critical activity completion dates)</li> <li>2. Key product deliveries including delivery and return from remote facilities</li> <li>3. Key design activity</li> <li>4. Key manufacturing activity, test activity, and significant events</li> <li>5. Assembly time</li> <li>6. Major external project milestones not controlled by the contractor and their relationship to the project</li> </ol> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The schedule shall be delivered in native format, and be compatible with Microsoft Project software.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Regular Status Report/Summary Review	07/12/2012	RV-02	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Provide information on the Contractor's technical, quality, financial, and delivery-to-schedule progress.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		RV-01 Project Schedule	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Regular Status Report shall contain information on the contractor's technical, quality, cost, and deliver-to-schedule performance related to the work defined in a Task/Delivery Order (TDO). A review shall be held with NASA to discuss the highlights. The frequency of submittal of the Regular Status Report shall be monthly, or as defined in the TDO.</p> <p><b>B. CONTENT:</b></p> <p>The contents of the report shall address all the products and services defined in the TDOs held by the contractor that are still active. The structure of the report shall be selected by the contractor and agreed upon by the COTR, or their designated representative. The following shall be addressed in the report:</p> <p>A. <u>Cost Performance Summary (Performance Based):</u></p> <ol style="list-style-type: none"> <li>1. Project Actual-To-Date Cost &amp; Projected Total Cost - Last Period</li> <li>2. Project Actual-To-Date Cost &amp; Projected Total Cost - This Period</li> <li>3. Projected Total Cost Addition Due to Approved Changes</li> <li>4. Graphics Of Initial Cost Projection, Initial Cost Projection + Approved Changes Projection, Full Cost Projection</li> <li>5. Variance not due to approved change and description of cause</li> </ol> <p>B. <u>Resource Performance Summary (Level-Of-Effort):</u></p> <ol style="list-style-type: none"> <li>1. For the WBS reporting level requested in the TDO, the following summary is to be provided by standard labor category. Graphic of the initial planned manpower for each WBS item for the TDO, with current planned manpower, with approved changes for the project, actual manpower expended to date, and percentage of the WBS task completed.</li> <li>2. Technical &amp; Quality Performance Status:                     <ol style="list-style-type: none"> <li>a. Nominal Technical/Quality Performance Achieved</li> <li>b. Better than Nominal Technical/Quality Performance Achieved</li> <li>c. Nominal Technical/Quality Performance not Achieved</li> <li>d. Action to be taken, to resolve unachieved Nominal Performance</li> <li>e. Notice of potential failure to meet future Nominal Performance, identification of causes, along with recommendations as appropriate.</li> <li>f. Other Technical and Quality Subjects particular to the project</li> </ol> </li> </ol> <p>C. <u>Product Production and Schedule Status:</u></p> <ol style="list-style-type: none"> <li>1. Overall Schedule Status</li> <li>2. Completed Products and Schedule – Projected in Last Monthly Period</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

3. Completed Products and Schedule - Actual This Period
4. Projected Next Month's Products, and Schedule Completion
5. Change from last month due to Approved Changes
6. Variance not due to approved change, and description of cause

D. Variance Deployed Hardware Status:

1. Open Anomalies Status (all formal reporting status)
2. Corrective Actions Status
3. Lessons Learned

E. Management:

1. Corrective Actions Taken This Period
2. Organization
3. Efficiencies Implementation
4. Impacts of External Dependencies

F. Summary Review:

1. The Summary Review shall be a presentation that contains the highlights of the report. The COTR or designee, and the contractor shall agree upon the contents of the review. The Summary Review shall not address the contents of Section C above.

G. Minutes during the Summary Review shall be taken, and submitted with the Status Report.

H. Additional content as identified in the TDO.

**C. FORMAT:**

The report shall be provided in a business report style with a report body font size that does not exceed 12. The Summary Review shall be a viewgraph presentation compatible with Microsoft Power Point. The electronic data shall be delivered in native format, and be compatible with the JSC standard office software loads, and standard engineering software.

**D. MAINTENANCE:**

See Data Requirements list.

**E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Project Technical Requirements Specification (PTRS)	03/01/2012	RV-03	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The PTRS defines the requirements of the HHPD, HHPD customers, Engineering Directorate, and the S&MA organization for flight products.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 "Project Management of GFE Flight Projects"		RV-07 End Item Specification	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The PTRS contains the performance, functional, environmental, interface, criticality, maintainability, safety, and human rating requirements for the flight products. This is the formal agreement between the HHPD and Engineering Directorate and their customer(s). The Contractor shall provide all or a part of the engineering effort required to produce this record. The Contractor shall survey the multiple sources of flight product requirements, and define those that are essential for mission success.</p> <p><b>B. CONTENT:</b></p> <p>The PTRS shall define the minimum technical requirements, and any constraints for the flight products that apply to performance, design, operation, interoperability, reliability, maintainability and transportability. The minimum set of technical requirements shall include all functional requirements that will be used as a measure of mission performance success. A general outline of the content in a PTRS is contained in EA-WI-023 and EA-WI-025. The PTRS is the source of requirements used to develop the detailed design requirements that will be contained in the Product Specification.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Engineering Directorate Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The format for the PTRS is also described in EA-WI-023. The PTRS shall be delivered in native format, and be compatible with the JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. This data shall be maintained in the DDMS when changes are required. This document is updated as required during the requirements definition phase. A version is presented at the Systems Requirements Review (SRR). An additional version is presented at the Preliminary Design Review. This final version is to be updated as a result of the review, and signatures obtained from the HHPD and Engineering Directorate.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Project Requirements and Verification Documentation	07/12/2012	RV-04	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This document is delivered instead of the Flight Hardware Project Technical Requirements Specification and the Flight Hardware Verification and Validation Plan when the Flight Products requested are simple in nature or present little risk to the crew or NASA assets.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 "Project Management of GFE Flight Products" JSC 28484 "Program Requirements Document For Johnson Space Center Non-Critical Government Furnished Equipment"		RV-03 Project Technical Requirements Specification, RV-10 Flight Products Verification and Validation Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This document defines a limited set of requirements for the flight products and the verification approach when the products are determined to not have a critical function.</p> <p><b>B. CONTENT:</b></p> <p>This document will contain the functionality of the separate Project Technical Requirements Specification, Verification and Validation Plan. The contents will depend on the nature of the Task/Delivery Order but will include all or some of the content described for the PRVD contained in EA-WI-023.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with the standard JSC office software loads and standard engineering software.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Certification and Acceptance Requirements Document	07/12/2012	RV-05	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To record the joint JSC and flight product provider agreed upon requirements to be used for acceptance and certification of flight products.		<input type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-06 Certification Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The CARD (Certification and Acceptance Requirements Document) is a two-part document. Part one addresses hardware and, if applicable, installed software definition, verification requirements, and acceptance and certification environmental requirements. These verification requirements apply to both the design certification and the acceptance testing of flight hardware. The CARD combines the end item specification, and certification plan documents into one document. Part two is the associated Requirements Verification Matrix. The CARD is submitted for approval in the Critical Design Review time frame. Once the CARD is approved, it shall be placed under configuration control. The Requirements Verification Matrix is then used to verify, and document the hardware compliance to the established requirements. A copy of the Requirements Verification Matrix, with the column "Verification Documentation" listing the appropriate documentation (e.g. test document number, analysis document number, technical memo number, etc.), shall be completed and submitted as part of the Government Certification Acceptance Request (GCAR)/Certification Package.</p> <p><b>B. CONTENT:</b></p> <p><b>Part One:</b></p> <p>a. Foreword - This includes, but not limited to, the company or organization preparing the CARD, for whom the CARD is prepared (e.g. NASA Johnson Space Center), the contract number, project sub-task order number, and any other pertinent information.</p> <p>b. Abstract - Define the high-level scope of the CARD, as it relates to testing, analyses, inspections, etc.</p> <p>c. Table of Contents.</p> <p>d. Tables - List of tables (e.g. Requirements Verification Matrix) and the associated page numbers.</p> <p>e. Figures - List of figures and the associated page number.</p> <p>f. Acronyms - List the applicable acronyms and their explanation</p> <p>g. Introduction - Discuss the purpose of the CARD and a description of the hardware. Include specific part numbers and dash numbers for the hardware being covered by the CARD. If available, include a line drawing of the hardware. All operational constraints for use of the hardware will be listed and explained in this section.</p> <p>h. Applicable Documents - List the documents which apply to the hardware (e.g. Program level documents, interface control documents, Safety and Mission Assurance documents, etc.).</p> <p>i. Requirements - List the functional and performance requirements, both general and unique, for the hardware. Also, list any exceptions to existing requirements.</p> <p>j. Verification:</p> <p>1. Certification Approach - Give a brief explanation of the approach to be used for certification. This shall include, but not limited to: The Certification Rationale, describing the certification methods (e.g. assessment, analysis, test, similarity). The Certification Plan, describing the sequence of test activity, use of the Verification Matrix, the use of test</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

procedures, the documenting of test failures and non-compliances, etc.

2. Acceptance Approach. Give a brief explanation of the approach to be used for acceptance. This shall include, but is not limited to: The requirement for acceptance testing of parts, components, assemblies, receiving tests, etc.; the requirement for Environmental Testing; the requirement for Pre-Delivery Acceptance (PDA) testing; and the requirement for Pre-Installation Acceptance (PIA) testing.

## **Part Two:**

This section is the Requirements Verification Matrix, in table format. This matrix shall list, but not limited to, the following information:

- a. Name and part number of the hardware
- b. The requirements
- c. Exceptions to the requirements
- d. The verification method (e.g. assessment, analysis, test, or similarity)
- e. The test procedure codes (e.g. FC-Fit Check, LT-Load Test, PDA, PIA, TT-Thermal Test, etc.)
- f. A comment block for special comments or explanations

## **C. FORMAT:**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The data shall be delivered in native format, and be compatible with Microsoft Word.

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Interface Control Document (ICD)	07/12/2012	RV-06	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This document defines the requirements for the interfaces between the flight products and vehicle interfaces required to make the products fully functional.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 "Project Management of GFE Flight Projects"		TD-01 System Requirements Review (SRR) Data Package TD-02 Preliminary Design Review Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Interface Control Document (ICD) is the formal definition of the technical interfaces between products, other systems, and/or payloads and other program products. The ICD shall fully describe the quality characteristics of the interface so that the product is fully functional upon integration.</p> <p><b>B. CONTENT:</b></p> <p>The document is a complete description of the interface requirements and interface design details necessary to assure that the product is functional when integrated. It addresses the engineering design parameters associated with mechanical, biological, chemical, electrical, fluid, electronic, human factors, and software design.</p> <p><b>C. FORMAT:</b></p> <p>Depending on the nature of the flight product, multiple ICDs using different formats may be required. The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with JSC standard office software loads, and standard engineering software.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. Initial version at the Preliminary Design Review, update as required through the appropriate Flight Product configuration control processes. An up-to-date revision is required at Critical Design Reviews and a final revision is required at flight product acceptance. All revisions shall be made in the DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
End Item Specification	07/12/2012	RV-07	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The Product Specification or End Item Specification (EIS) defines the engineering requirements for the design, manufacture, and test of the flight product.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 "Project Management of GFE Flight Projects"		RV-03 Project Technical Requirements Specification	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Product Specification or End Item Specification (EIS) defines the engineering requirements to be used that capture all NASA Programs, S&amp;MA organization, and NASA Engineering requirements, and translates them into requirements for the product. The EIS shall define all technical requirements, and all constraints for the flight products (including payload) that apply to the safety, performance, design, operation, interoperability, reliability, maintainability, verifiability, and transportability of the flight products. Also, it provides technical metrics for the acceptability of the flight product.</p> <p><b>B. CONTENT:</b></p> <p>The Flight Products Specification contains the performance, functional, environmental, interface, maintainability, reliability and safety requirements for the flight product. All requirements contained in the Project Technical Requirements Specification are addressed, along with the detailed design constraints, requirements associated with the verification and validation approaches, and other requirements that are needed in order to meet the program level requirements.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with the JSC standard office software loads, and standard engineering software.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. Update of this document will be required frequently throughout all phases of the project. It is initially approved by NASA at the Preliminary Design Review (PDR). It may be modified after the PDR through Contractors and NASA approval. The maintenance shall be performed in DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Engineering Drawings and Model Files	07/12/2012	RV-08	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To provide the design data used to analyze, manufacture, install, verify, operate, modify, and maintain the products delivered under this contract.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NASA-STD-0005 NASA Configuration Management Standard EA-WI-027 Configuration Management for Government Furnished Equipment		TD-03 Critical Design Review (CDR) Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>JPR 8500.4 Engineering Drawing Systems Manual</p> <p><b>SCOPE:</b></p> <p>This DRD establishes the requirements for content, format, control, and maintenance of drawings and associated model files prepared by the Contractor and/or obtained from subcontractors, or vendors for all products designed under this contract.</p> <p><b>B. CONTENT:</b></p> <p>The Contractor shall have the ability to submit and receive CAD generated engineering drawings including solid models, electrical/electronic schematics, software code, and printed circuit board layouts. The Contractor shall understand and participate as required in the review process that NASA follows in order to approve flight product drawings. Release of drawings through the Engineering Drawing Release System (EDRS) is considered a part of the Engineering Drawings delivery. All drawing native files, defining the as built configuration, shall be submitted with the flight products for acceptance by NASA and approval of the DD250.</p> <p><b>C. Performance:</b></p> <p>Performance Standard- Drawings are complete and are approved through the NASA process, after the contractor approvals have been obtained.</p> <p>Acceptable performance: less than 10% of the drawings require modifications and re-submittal because they were inconsistent with JPR 8500.4.</p> <p><b>D. Format:</b></p> <p>All drawings shall be submitted to NASA in electronic format, with native model files to the Design Data Management System (DDMS) unless otherwise addressed in the Task/Delivery Order (TDO). The format is defined by an outline or template associated with this data that is documented in JPR 8500.4 or contained in the DDMS. The format may be varied to match the specific nature of the products being provided. Solid models shall be submitted in ProEngineer. The TDO may request an alternative format. Electrical/electronic schematics and printed circuit board layouts shall be transferred in electronic format compatible with ORCAD or Altium. The format of the drawing, shall comply with the guidelines in JPR 8500.4. Manufacturing processes shall be referenced to the appropriate specifications or industry standard (e.g. ASME, ANSI). When a contractor standard that is not available at the JSC is referenced, the full standard or process shall be provided as part of the drawing package. COTS products shall be identified by the vendor's part number, cage code (if available) and manufacturer's name and address. The parts list shall be submitted electronically in native format that is compatible with Microsoft Excel. Design Change Notices shall be submitted in native format compatible with Microsoft Word.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **E. MAINTENANCE:**

See Data Requirements list. Updated as required prior to Critical Design Reviews (CDRs). All updates are submitted for approval by the appropriate configuration control board, prior to obtaining authorization after the CDR. Updates shall be maintained in DDMS.

## **F. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Projects Authorization to Proceed Record	07/12/2012	RV-09	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Record the completion of a major design review and authorizes the Contractor to proceed to the next milestone.		<input checked="" type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
		<input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 "Project Management of GFE Flight Projects"			
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This document provides a record that both NASA and the Contractor agree there are no major issues preventing completion of a design review milestone (Preliminary Design Reviews and Critical Design Reviews). It authorizes the Contractor to proceed to the next milestone. The Task/Delivery Order may define additional project specific milestones that require this approval.</p> <p><b>B. CONTENT:</b></p> <p>This document will contain the following information as a minimum:</p> <ol style="list-style-type: none"> <li>1. Subject - Authorization to Proceed</li> <li>2. Date subject document initiated</li> <li>3. Name of completed milestone</li> <li>4. Date of formal review</li> <li>5. Open items and expected completion dates (Minor Items).</li> <li>6. Example statement: "All major aspects of the xxx Design Review have been completed. Only minor open-items remain and these items will not affect cost, and schedule if resolved per the Open Item list. This document, once approved, authorizes the contractor to proceed to the next milestone."</li> <li>7. Necessary approval signatures will be identified in Task/Delivery Order to include:             <ol style="list-style-type: none"> <li>a. Applicable Contractor Representatives</li> <li>b. NASA Safety and Mission Assurance representatives</li> <li>c. NASA Engineering representatives</li> </ol> </li> </ol> <p><b>C. FORMAT:</b></p> <p>The Contractor's format is acceptable. The software used to develop this document shall be compatible with Microsoft Word. The record shall be submitted to the Design Data Management System (DDMS) for routing and approvals.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. The record will be retained in the DDMS for future reference. Revisions to this record are not expected.</p> <p><b>E. DISTRIBUTION:</b> Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Products Verification and Validation Plan	07/12/2012	RV-10	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This plan defines the approach to verifying and validating that the flight products met the design requirements.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 Project Management of GFE Flight Projects EA-WI-025 GFE Flight Project Software and Firmware Development SA-WI-014 GFE Flight Hardware Development		RV-03 Project Technical Requirements Specification RV-07 End Item Specification SW-01 Flight Software Requirements Specification	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<b>A. APPLICABLE DOCUMENTS: NONE</b>  <b>SCOPE:</b>  The Verification and Validation Document (V&VD) - Plan and Results (hereafter referred to as the V&VD) defines the plan for and documents the results of the Verification and Validation (V&V) activities for the GFE Flight Project. These activities confirm that the GFE flight items comply with their specifications, function properly, and are ready for use. This V&VD includes the V&V of functional capabilities and subsystem performance through analyses using non-real-time tools, tests using real-time test facilities, inspection as it applies to the manufacturing processes used in hardware fabrication, and software generation, and demonstration as it applies to human factors, serviceability, accessibility, and transportability of system features.  <b>B. CONTENT:</b>  EA-WI-023 contains a definition of the objectives of the V&V Plan, and gives the generic content for the NASA to NASA System Level V&V Plan. The Contractor shall produce this plan tailored to the type and scale of work described in the Task/Delivery Order.  The Contractor should follow the V&VD annotated outline (template) as referenced in EA-WI-023. The web-site outline is located at: <a href="http://ea.jsc.nasa.gov/eawebfiles/gfe/wipm/v&amp;vd_outline.doc">http://ea.jsc.nasa.gov/eawebfiles/gfe/wipm/v&amp;vd_outline.doc</a> . A simplified version of the outline is shown below:			
<ol style="list-style-type: none"> <li>1. GFE Description:             <ol style="list-style-type: none"> <li>a. Requirements Flow down</li> <li>b. Architecture</li> <li>c. End Item Architectures</li> <li>d. System X Ground Support Equipment</li> <li>e. Other Architecture Descriptions</li> </ol> </li> <li>2. Verification and Validation Process:             <ol style="list-style-type: none"> <li>a. Verification Methods</li> <li>b. Validation Methods</li> <li>c. Certification Process</li> <li>d. Acceptance Testing</li> </ol> </li> <li>3. Verification and Validation Implementation:             <ol style="list-style-type: none"> <li>a. Verification &amp; Validation Flow</li> <li>b. Test Articles</li> <li>c. Support Equipment</li> <li>d. Facilities</li> </ol> </li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

4. End Item Verification and Validation
  - a. Developmental/Engineering Unit Evaluations
  - b. Verification Activities
  - c. Validation Activities
  - d. Acceptance Testing

Appendices C (Verification Matrix) and D (Validation Matrix) of the V&VD include a “Results” column for documenting the objective evidence (results) of verification activities performed during the Flight Production and Certification Phase. The first base-line of the V&VD is finalized at the CDR to establish the plan for V&V, and all columns of the appendices are completed except the “Results” column (i.e., results are To Be Supplied (TBS). During the Flight Production and Certification Phase, the planned V&V activities are performed and the “Results” column is documented (including TPS number, waiver, memo, or report, etc. as appropriate). The V&VD, with the “Results” column documented, is released with the appropriate revision number and change record information. This revised release of the V&VD, with associated “Results” documentation attached, form a part of the Certification Data Package.

## **C. FORMAT:**

A template for the V&V Plan is contained in EA-WI-023. The template associated with this data can be accessed in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with JSC standard office software loads and standard engineering software.

## **D. MAINTENANCE:**

See Data Requirements list. The initial plan is provided at the PDR and requires NASA approval. Updates of this document will be required frequently throughout all phases of the project. At the CDR a fully developed V&V Plan is submitted and requires NASA’s approval. The maintenance shall be performed on DDMS, Per EA-WI-023 and Task/Delivery Order.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Products Qualification Plan	07/12/2012	RV-11	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The Qualification Plan formally presents the approach to qualifying the first unit delivery of flight products.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 Project Management of GFE Flight Projects EA-WI-025 GFE Flight Project Software and Firmware Development		RV-10 Flight Products Verification and Validation Plan RV-12 Flight Products Qualification Test Procedures BP-03 Configuration Management Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Qualification Plan documents the approach to qualifying flight products. It describes in detail how the processes of testing, analysis, demonstration, and inspection shall be used to certify that contracted requirements have been met.</p> <p><b>B. CONTENT:</b></p> <p>The Qualification Plan defines how the flight products are qualified to meet the design requirements that have applied to the flight product. Analysis, Test, Inspection, Demonstration, a combination of methods, or other methods may be used. The Qualification Plan addresses those engineering design aspects that need to be verified on the first delivery item in order to verify that a requirement has been met. This is typically performed on dedicated qualification products.</p> <p><b>C. FORMAT:</b></p> <p>Qualification Plan (DRD) does not have a specific format. The format will vary to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with the JSC standard office software loads and standard engineering software. The report shall be submitted to the Design Data Management System (DDMS).</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. This document is maintained throughout the life of the project after the initial submittal at the CDR. Revisions to the plan may be required every time there is a change to the configuration of the flight product. Revisions shall be made within the JSC DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Products Qualification Test Procedures	07/12/2012	RV-12	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To define all procedures and success criteria for testing new flight products or modified flight products, and to verify that the qualification unit meets design requirements.		<input checked="" type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
<input type="checkbox"/> SR&QA			
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		RV-10 Flight Products Verification and Validation Plan RV-07 End Item Specification RV-14 Flight Products Qualification Report SW-01 Flight Product Software Requirements Specification	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<b>A. APPLICABLE DOCUMENTS:</b>			
JWI 8730.6 Task Performance Sheet (TPS)			
<b>SCOPE:</b>			
To document the detailed procedures used to test flight products.			
<b>B. CONTENT:</b>			
The procedures shall contain the following:			
<ol style="list-style-type: none"> <li>1. Identification of the specific End Item being tested</li> <li>2. Detailed description of the test objective</li> <li>3. Description of all relevant test equipment and facility configuration</li> <li>4. Full set of procedures</li> <li>5. Criteria for passing or failing each test</li> <li>6. Specification of the tolerances on all operational parameters with go, no-go criteria</li> <li>7. Initial Settings for all Controls, Power Supply Voltages, etc.</li> <li>8. Safety hardware that is mandatory to be verified operational prior to testing, with reference to procedures used</li> </ol>			
<b>C. FORMAT:</b>			
The format is defined by an outline or template associated with this data on the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. A Task Performance Sheet shall be used to document and control the detailed instructions needed to perform the procedure. The electronic data shall be delivered in native format, and be compatible with the JSC standard office software loads and standard engineering software.			
<b>D. MAINTENANCE:</b>			
See Data Requirements list.			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Products Acceptance Test Procedures	07/12/2012	RV-13	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To define all procedures and success criteria for testing of all flight hardware and the qualification unit in order to verify that each unit meets the expected engineering performance.		<input checked="" type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
<input type="checkbox"/> SR&QA			
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
JWI 8730.6 “Task Performance Sheet (TPS)”		RV-10 Flight Products Verification and Validation Plan RV-07 End Item Specification SW-01 Software Requirements Specification TD-04 Acceptance Data Package (ADP)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Acceptance Test Procedures document the detailed procedures used to test flight products. Complete procedures are required for acceptance of each Flight Product.</p> <p><b>B. CONTENT:</b></p> <p>The procedures shall contain the following:</p> <ol style="list-style-type: none"> <li>1. Identification and configuration of the specific Flight Product being tested</li> <li>2. Detailed description of the test objective</li> <li>3. Description of all relevant test equipment and facility used</li> <li>4. Full set of procedures</li> <li>5. Criteria for passing or failing the test</li> <li>6. Specification of the tolerances on all operational parameters with go and no-go criteria</li> <li>7. Initial Settings for all Controls, Power Supply Voltages, etc.</li> <li>8. Safety hardware that is mandatory to be verified as operational prior to testing, with reference to the procedures used</li> </ol> <p><b>C. FORMAT:</b></p> <p>The Acceptance Test Procedure will have no formal format. It documents the detailed instructions needed to write detailed procedures on a Task Performance Sheet (TPS). This data shall be delivered to the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with the JSC standard office software loads and standard engineering software.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. The record is maintained throughout the life of the products. The data will be retained in the DDMS for reference.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Product Qualification Report	07/12/2012	RV-14	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Records the results of the qualification process. This record is used to complete a portion of the overall verification of the flight product. It is modified through the life of the flight products as configuration changes are made that require additional qualification or repeated qualification.		<input checked="" type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
<input type="checkbox"/> SR&QA			
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-023 "Project Management of GFE Flight Products" EA-WI-025 GFE Flight Project Software and Firmware Development		RV-10 Flight Products Verification and Validation Plan RV-11 Qualification Plan TD-15 EEE Parts List and Analysis Report RV-12 Flight Hardware Qualification Test Procedures	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			

**A. APPLICABLE DOCUMENTS: NONE**

**SCOPE:**

This report records the results of qualification testing, analysis, inspections, and demonstrations used to verify the design and performance of flight products. This report addresses all objectives defined in the Qualification Plan.

**B. CONTENT:**

The Qualification Report contains all records used to verify that the flight products met all the requirements that were allocated to the qualification process in the Verification and Validation Plan. It contains the qualification test results, the analysis results, analytical models necessary to produce the analysis, record of the results of demonstrations, and results of inspections that are performed initially when hardware is first delivered.

**C. FORMAT:**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The data shall be delivered in native format compatible with standard JSC software loads.

**D. MAINTENANCE:**

See Data Requirements list. The Qualification Report is updated every time a configuration change is made that would have affected the qualification process had it been a part of the original design. Additional qualification testing, analysis, inspection and demonstration will be required. A change record is maintained as part of the document. All updates and change records shall be maintained in DDMS.

**E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Requirements	07/12/2012	SW-01	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Documents the functional, performance, and interface requirements that are to be met by the software flight products.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-025 GFE Flight Project Software and Firmware Development NPR 7150.2 NASA Software Engineering Requirements		SW-02 Software Development Plan RV-03 Project Technical Requirements Specification RV-06 Interface Control Document	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This specification documents the functional, performance, and interface requirements for software used in flight products, and establish a requirement baseline prior to detailed design and production. This document also serves as the record for requirements changes throughout the life cycle of the project. Software requirements are defined from the Project Technical Requirements Specification (PTRS), the End Item Specification, the Certification and Acceptance Requirements Document, and the Interface Control Document.</p> <p><b>B. CONTENT:</b></p> <p>This specification defines the detailed functional, performance and interface requirements and implementation constraints for the software required to command, control, or monitor flight products. This specification will maintain a trace from the PTRS to the Software Requirements Specification (SRS). Unique identifiers will be used to designate safety-critical software requirements.</p> <p><b>C. FORMAT:</b></p> <p>The template of the SRS described in EA-WI-025 shall be used. This template is retained in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with the JSC standard office software loads and standard engineering software.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. The first submittal of the SRS is at the Preliminary Design Review and is approved by NASA. The document is updated as changes are approved throughout all phases of the project. A version is reviewed again at Critical Design Review and approved again by NASA. This data shall be maintained in the DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Development Plan	07/12/2012	SW-02	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The Software Development Plan defines the contractor's approach to software acquisition, development, certification, assurance, verification, and delivery.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-018, Use of Off-the-Shelf Software in Flight Projects Work Instruction (cont in # 8).			
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><u>References:</u></p> <ul style="list-style-type: none"> <li>a. EA-WI-025 GFE Flight Project Software and Firmware Development</li> <li>b. EA-WI-027 Configuration Management, Engineering Directorate</li> <li>c. NPR 7150.2 NASA Software Engineering Requirements</li> <li>d. NASA-STD-8739.8 Software Assurance Standard</li> </ul> <p><b>SCOPE:</b></p> <p>The Software Development Plan documents the Contractor's planned approach to software acquisition, development, assurance, certification, verification, delivery, and operational utilization. It describes the software management approach, and the implementation of quality assurance throughout the effort. It defines how the project will meet the NPR 7150.2 development requirements.</p> <p><b>B. CONTENT:</b></p> <p>The plan shall address the approach for controlling the configuration of the software after the Critical Design Review (CDR), and shall be compatible with Engineering's Configuration Management processes defined in EA-WI-027. It shall address the compatibility of the Contractor's products with the products required by NASA that are described in the Software Development Plan (SDP) outline provided in EA-WI-025. The plan shall describe the Contractor's use of Off-The-Self (OTS) software, which is compatible with Engineering process EA-WI-018</p> <p><b>C. FORMAT:</b></p> <p>A template for the Software Development Plan is described in EA-WI-025. The template associated with this data is contained in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. The Software Development Plan is maintained in the DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Design Documents	07/12/2012	SW-03	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The purpose of the Software Design Document is to describe the design of the software and firmware that implements the software requirements.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-025 GFE Flight Project Software and Firmware Development EA-WI-018 Use of Off-the Shelf Software in Flight Projects		TD-02 PDR Data Package SW-01 Software Requirements Specification TD-03 CDR Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This document describes the design of the software in sufficient detail that could be understood and modified by another knowledgeable programmer other than the developer. The Software Design Document defines the “how” of the software requirements. This document describes the rationale for the selected design.</p> <p><b>B. CONTENT:</b></p> <ul style="list-style-type: none"> <li>a. Software structure</li> <li>b. Module definitions, functions, and operations</li> <li>c. Algorithms</li> <li>d. High-level interface descriptions</li> <li>e. Threads of control</li> <li>f. Decomposition into compilation and code units</li> <li>g. Design of the Interfaces</li> <li>h. Consideration given to the changes that may be required during flight operation by non-programmers</li> <li>i. Mapping between the logical or functional design of the software, and its detailed design units</li> </ul> <p><b>C. FORMAT:</b></p> <p>A template for this data is presented in EA-WI-025. This template is retained in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. Per EA-WI-025 and Task/Delivery Order. As used throughout this document, the term software refers to both software and firmware.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Code	07/12/2012	SW-04	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Record the lines of code in developed software, or the set up files and data for commercial software.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-027 Configuration Management Requirements EA-WI-025 GFE Flight Project Software and Firmware Development		SW-03 Flight Products Software Design Document	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>Software, like hardware, is an essential element of flight product performance. This data records all information necessary to produce the software. (See EA-WI-025)</p> <p><b>B. CONTENT:</b></p> <p>Software code includes all source code files, header files, make file/build scripts, data files, and software components such as software modules (functions, classes, objects, CSUs, etc.), execution processes (processes, threads, rate groups, modes, etc.), or other data items (structures, shared memory pools, etc.) necessary to compile, build and run a properly working program.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with the operating system and platform that it operates on. Native Format is ASCII test file except for the case where a data file needs to be in binary format, in order to comply with industry standards (JPEG, MPEG, etc.).</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. Software code shall be placed under configuration control at the CDR, after delivery to the JSC Design Data Management System (DDMS). Throughout the life of a project, it can be expected that software will undergo multiple configuration changes. These changes shall be made within the DDMS system.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Assurance Plan	07/12/2012	SW-05	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Software assurance planning is used to document the software activities to be performed during the life cycle phases.		<input type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-06 Certification Data Package (CDP) SMA-06 Problem Reporting and Corrective Action (PRACA)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>NPR 7150.2, NASA Software Engineering Requirements  NASA-STD-2202-93, Software Formal Inspections  NASA-STD-8719.13, Software Safety  NASA-STD-8739.8, Software Assurance</p> <p><b>SCOPE:</b></p> <p>Software Assurance includes: Quality Assurance, Quality Engineering, Verification and Validation, Non-conformance Reporting and Corrective Action, Safety Assurance, Software Reliability and Security Assurance. Software Assurance activities are conducted during the software development life cycle. The phases of the software development life cycle are:</p> <ol style="list-style-type: none"> <li>Concept and Initiation Phase</li> <li>Requirements Phase</li> <li>Design Phase</li> <li>Implementation Phase</li> <li>Integration and Test Phase</li> <li>Acceptance and Delivery Phase</li> <li>Operations/Maintenance Phase</li> </ol> <p><u>Definitions:</u></p> <p>Software Quality Assurance applies to all software developed for NASA, including:</p> <ol style="list-style-type: none"> <li>Deliverable software,</li> <li>Software included as part of deliverable hardware (including firmware),</li> <li>Non-deliverable software (Commercially available or user-developed) used for development, fabrication, manufacturing process control, testing, or acceptance of deliverable software or hardware (test and acceptance software, software design, test, and analysis tools; compilers, etc.)</li> <li>Commercially available (COTS), reused, or Government Furnished Software (GFS)</li> </ol> <p><b>B. CONTENT:</b></p> <p>The Contractor shall provide a Software Assurance Plan in accordance NASA-STD-8739.8, Section 6.3. The Software Assurance Plan shall identify the software assurance approval authority responsible for the establishment, and composition of all software baselines, and any changes to the baseline.</p> <p><b>C. FORMAT:</b></p> <p>The Contractor's format. Deliver data in the Engineering Directorate Design Data Management System (DDMS) in native format</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

compatible with JSC standard software loads.

## **D. MAINTENANCE:**

See Data Requirements list. Review annually at a minimum. Any updates shall be maintained in DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Test Description	07/12/2012	SW-06	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To describe the test preparations, test cases, and test procedures to be used to perform qualification testing of a Computer Software Configuration Item (CSCI) or a software system or subsystem.		<input checked="" type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
<input checked="" type="checkbox"/> SR&QA			
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NPR 7150.2 “NASA Software Engineering Requirements,” Section 5.2.6, and EA-WI-025 “GFE Flight Project Software and Firmware Development.”		TD-02 Preliminary Design Review (PDR) Data Package RV-10 Flight Products Verification and Validation Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<b>A. APPLICABLE DOCUMENTS: NONE</b>			
<b>SCOPE:</b>			
The Software Test Description describes the test preparations, test cases, and test procedures to be used to perform qualification testing of a CSCI or a software system or subsystem.			
<b>B. CONTENT:</b>			
In accordance with the NPR 7150.2 NASA Software Engineering Requirements, the Software Test Description shall include:			
a. Test preparations, including hardware and software			
b. Test procedures, including:			
1. Test identifier			
2. System or CSCI requirements addressed by the test case			
3. Prerequisite conditions			
4. Test input			
5. Instructions for conducting procedure			
6. Expected test results, including criteria for evaluating results, and assumptions and constraints			
7. Test pass/fail criteria			
8. Requirements traceability			
9. Identification of test configuration			
<b>C. FORMAT:</b>			
The format and content of the SRS described in EA-WI-025 shall be provided unless specified otherwise in the DO. The Contractor's format shall be approved by the Task/Delivery Order Manager. The product shall be in a Microsoft Office compatible format.			
<b>D. MAINTENANCE:</b>			
See Data Requirements list. Per EA-WI-025 and Task/Delivery Order.			
<b>E. DISTRIBUTION:</b>			
Distribution shall be in accordance with the DRL.			

# **JSC DATA REQUIREMENTS DESCRIPTION (DRD)**

(Based on JSC –STD-123. See work page for instructions.)

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# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Software Test Plan	07/12/2012	SW-07	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To develop, record, and assess plans for conducting computer software component level testing, software integration testing, software qualification testing, and system qualification testing of a software system.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NPR 7150.2 “NASA Software Engineering Requirements,” EA-WI-025 “GFE Flight Project Software and Firmware Development”		TD-02 Preliminary Design Review (PDR) Data Package RV-10 Flight Products Verification and Validation Plan	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The Software Test Plan describes the plans for software component level testing, software integration testing, software qualification testing, and system qualification testing of software systems. The plan describes the software test environment to be used for testing, identifies the tests to be performed, and provides schedules for environment, development, and test activities. The plan provides an overview of software testing, test schedules, and test management procedures.</p> <p><b>B. CONTENT:</b></p> <p>In accordance with the NPR 7150.2 NASA Software Engineering Requirements, the Software Test Plan shall include:</p> <ol style="list-style-type: none"> <li>1. Test levels</li> <li>2. Test types (e.g., unit testing, software integration testing, systems integration testing, end-to-end testing, acceptance testing, and regression testing)</li> <li>3. Test classes</li> <li>4. General test conditions</li> <li>5. Test progression</li> <li>6. Data recording, reduction, and analysis</li> <li>7. Test coverage (breadth and depth) or other methods for ensuring sufficiency of testing</li> <li>8. Planned tests, including items and their identifiers</li> <li>9. Test schedules</li> <li>10. Requirements traceability (or verification matrix), showing bi-directional traceability to requirements and design</li> <li>11. Qualification testing environment, site, personnel, and participating organizations</li> <li>12. Identification of testing requirements that drive software design decisions, e.g., special system level timing requirements/checkpoint restart</li> </ol> <p><b>C. FORMAT:</b></p> <p>The format and content of the SRS described in EA-WI-025 shall be provided unless specified otherwise in the DO. The Contractor's format shall be approved by the Task/Delivery Order Manager. The product shall be in a Microsoft Office compatible format.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. Per EA-WI-025 and Task/Delivery Order.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Version Description Document (Software and /or Firmware)	07/12/2012	SW-08	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To identify and describe a software version consisting of one or more CSCIs (including any open source software). The description is used to release, track, and control software versions.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
None		TD-04 Acceptance Data Package (ADP) TD-06 Certification Data Package (CDP)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>NPR 7150.2 “NASA Software Engineering Requirements” EA-WI-025 “GFE Flight Project Software and Firmware Development”</p> <p><b>SCOPE:</b></p> <p>The Version Description Document identifies and describes a software version consisting of one or more CSCIs (including any open source software). The description is used to release, track, and control software versions.</p> <p><b>B. CONTENT:</b></p> <p>Per EA-WI-025 and Version Description Document (VDD) template</p> <p><b>C. FORMAT:</b></p> <p>The format and content of the VDD described in EA-WI-025 shall be provided unless specified otherwise in the DO. The product shall be in a Microsoft Office compatible format.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. Per EA-WI-025 and Task/Delivery Order.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title Flight Products Systems Requirements Review (SRR) Data Package	2. Date of current version 07/12/2012	3. DRL Line Item No. TD-01	RFP/Contract No. (Procurement completes) NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) This data package provides objective evidence that a complete set of requirements have been identified.		5. DRD Category: ( <i>check one</i> ) <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> ) EA-WI-023 "Project Management of GFE Flight Projects"		7. Interrelationships ( <i>e.g., with other DRDs</i> ) Other DRDs (see block 8)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> ) <b>A. APPLICABLE DOCUMENTS:</b>  JSC-STD-8080 JSC Design and Procedural Standards  <b>SCOPE:</b>  This design review establishes the requirements from the Engineering Directorate's customer organization, the Engineering Directorate, the S&MA Directorate, and supporting organizations for the flight products. The review scope includes: hardware, software, and associated ground support equipment. This data package provides the NASA review team evidence that the essential requirements needed for flight hardware performance success have been identified.  <b>B. CONTENT:</b>  A SRR Data Package includes up-to-date engineering information defined by other DRDs listed below, SRR specific data, other data defined in the Task/Delivery Order, and a presentation package used for the SRR review. The presentation materials shall include the following:  1. Product (system, component, payload) description, major elements, expected performance 2. Project Deliverables 3. Constraints and Guidelines 4. Top Level Qualification Approach 5. Validation & Verification process 6. Specific material requested in the Task/Delivery Order  The following latest versions of these documents are to be provided:  1. Interface Control Documents (DRD-RV-06) 2. Software Development Plan (DRD-SW-02) 3. Project Technical Requirements Specification (DRD-RV-03)  <b>C. PERFORMANCE:</b>  <u>Acceptable Schedule Performance:</u> Acceptable schedule performance is defined as delivery of complete data products for distribution in the DDMS 2 weeks prior to the review. The data shall be approved by contractor designated personnel prior to delivery.  <u>Unacceptable Schedule Performance:</u> The data products are delivered late or are sufficiently incomplete as to cause a delay in the Requirements Review.  <u>Acceptable Content Performance:</u> The data package contains products that are accepted by the government with only minor			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

modifications required. Minor modification means that all issues with the content controllable by the contractor can be resolved within 1 month of the review.

Unacceptable Content Performance: One or more major issue has occurred that is attributed to the contractor. The issue(s) are so significant that a delta SRR is required by the Review Chairperson.

## **D. FORMAT:**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.

## **E. MAINTENANCE:**

See Data Requirements list. The SRR Data Package is updated by adding the copy of the Review Item Dispositions (RIDs). The package shall be retained for the Project as a quality record of the SRR in the JSC DDMS. Modifications to deliverables required by approved RIDs shall be made when appropriate to do so for each of the documents. The updated documents are not considered a part of the SRR package.

## **F. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title Preliminary Design Review (PDR) Data Package	2. Date of current version 07/12/2012	3. DRL Line Item No. TD-02	RFP/Contract No. (Procurement completes) NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) This data package contains the early engineering, safety, quality and project documentation to be reviewed by the NASA customer and their designated support in order to assure that the Contractor's intended products meet the requirements for safety, cost, performance, and schedule.		5. DRD Category: ( <i>check one</i> ) <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> ) EA-WI-023 "Project Management of GFE Flight Products"		7. Interrelationships ( <i>e.g., with other DRDs</i> ) Other DRDs (see block 8)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> ) <b>A. APPLICABLE DOCUMENTS: NONE</b>  <b>SCOPE:</b>  The contractor is required to develop engineering data and to deliver the products required for the Preliminary Design Review data package described by EA-WI-023 and defined by the content below:  <b>B. CONTENT:</b>  a. End Item Specification DRD RV-07 b. Interface Control Documents DRD RV-06 c. Preliminary Engineering Drawings (Represents 10% of all drawings that would be required.) d. Software Requirements Specification DRD SW-01 e. Software Design Document DRD SW-03 f. Phase I Risk Assessment Executive Summary Report (RAESR) and supporting safety documentation DRD TD-19 g. Flight Products Verification and Validation Plan DRD RV-10 (Project Requirement and Verification Document for non-critical products RV-04) h. Preliminary EEE Parts List and Analysis DRD TD-15 i. Flight Products Workmanship Specifications List DRD TD-14 j. Contractor unique Workmanship Specifications k. Summary of Waivers/Deviations Requested or approved waivers l. Engineering Analysis DRD TD-08 m. Summary PDR Presentation (See EA-WI-023 for sample content) n. Change Requests for Cost Efficiency o. Project Cost Projection (to submit for NASA only review) p. Other data specified in the Task/Delivery Order q. PDR minutes  <b>C. PERFORMANCE</b>  Acceptable Content Performance: The data package contains products that are accepted by the government with only minor modifications required. Minor modification means that all issues with the content controllable by the contractor can be resolved within 1 month of the review.  Unacceptable Content Performance: One or more major issue has occurred that is attributed to the contractor. The issue(s) are so significant that a delta PDR is required by the Review Chairperson.  Acceptable Schedule Performance: Acceptable schedule performance is defined as delivery of complete data products for distribution in the DDMS 2 weeks prior to the review. The data shall be approved by contractor designated personnel prior to delivery.			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Unacceptable Schedule Performance: Unacceptable performance is defined as failure to deliver products for distribution 2 weeks prior to the review or distribution of significantly incomplete products that require delay in the PDR review.

## **D. FORMAT**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format, and be compatible with JSC standard office software.

The Project Cost Projection shall be provided to the Contracting Officer Technical Representative (COTR) or designee in a native format that is compatible with JSC standard office software. The Project Cost Projection shall be additionally submitted on permanent CD.

## **E. MAINTENANCE:**

See Data Requirements list. The PDR Data Package is a one time delivery. The PDR package shall be appended by the minutes and RIDs from this review and any additional data submitted during the review. Modifications to drawings or documents as a result of the RIDs are not considered a part of the PDR Data Package. The RIDs serves as documentation of the agreements made during the review. A complete copy of the PDR Data Package shall be maintained as a project quality record in the DDMS for the life of the product.

## **F. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Product Critical Design Review (CDR) Data Package	07/12/2012	TD-03	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This data package contains the mature engineering, safety, quality and project documentation to be reviewed by the NASA customer and their designated support in order to assure that the contractor's intended products meet the requirements for safety, cost, performance and schedule.		<input checked="" type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
Ref: EA-WI-023 "Project Management of GFE Flight Projects"		Other DRDs (see block 8)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<b>A. APPLICABLE DOCUMENTS: NONE</b>			
<b>SCOPE:</b>			
Deliver the products required for a Critical Design Review (CDR) data package as described in EA-WI-023. Content that is not required will be defined in the Task/Delivery Order.			
<b>B. CONTENT:</b>			
a. Summary of the PDR Review Items Disposition that had actions to be completed by or prior to the CDR.			
b. End-Item Specification, DRD RV-07			
c. Interface Control Documents, DRD RV-06			
d. Engineering Drawings, DRD RV-08 (90% of final drawings)			
e. Software Design Document, DRD SW-03			
f. Phase II Risk Assessment Executive Summary Report (RAESR) and supporting safety documentation, DRD TD-19			
g. Flight Products Verification and Validation Plan, DRD RV-10 (Project Requirement and Verification Document for non-critical GFE)			
h. EEE Parts List and Analysis Report, DRD TD-15			
i. TD-16 Space Station Hardware FMEA and CIL			
j. Limited Life Items List, DRD TD-05			
k. Flight Products Workmanship Specifications List, DRD TD-14			
l. Contractor unique Workmanship Specifications			
m. Summary of Waivers/Deviations Requested			
n. Engineering Analysis, DRD TD-08			
o. Plan for the User's Guide			
p. Summary Presentation (See EA-WI-023 for content)			
q. CDR Minutes			
<b>C. PERFORMANCE</b>			
Acceptable Content Performance: The data package contains products that are accepted by the government with only minor modifications required. Minor modification means that all issues with the content controllable by the contractor can be resolved within 1 month of the review.			
Unacceptable Content Performance: One or more major issue has occurred that is attributed to the contractor. The issue(s) are so significant that a delta CDR is required by the Review Chairperson.			
Acceptable Schedule Performance: Acceptable schedule performance is defined as delivery of complete data products for distribution in the DDMS 2 weeks prior to the review. The data shall be approved by contractor designated personnel prior to delivery.			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Unacceptable Schedule Performance: Unacceptable performance is defined as failure to deliver products for distribution 2 weeks prior to the review or distribution of significantly incomplete products that require delay in the CDR review.

## **D. FORMAT:**

The format of each data deliverable above that is a DRD is to be delivered in the format specified in that DRD. The format of the summary presentation and the other data shall be defined by the Contractor after consideration of the content for this presentation described in EA-WI-023. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format. The native file shall be compatible with the JSC standard office software (e.g., Microsoft's Power Point or Microsoft's Word.)

## **E. MAINTENANCE:**

See Data Requirements list. The CDR Data Package is a one-time delivery. The package shall be appended by the Review Items created during this review.

## **F. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<p>1. DRD Title</p> <p>Acceptance Data Package (ADP)</p>	<p>2. Date of current version</p> <p>07/12/2012</p>	<p>3. DRL Line Item No.</p> <p>TD-04</p>	<p>RFP/Contract No. (Procurement completes)</p> <p>NNJ13HA02C</p>
<p>4. Use (<i>Define need for, intended use of, and/or anticipated results of data</i>)</p> <p>The ADP is a collection of documents that define the current status of flight products at the time of acceptance by NASA technical and quality representatives. The ADP contains a complete record of data deliverables that show that the product meets the engineering, and quality requirements for flight.</p>		<p>5. DRD Category: (<i>check one</i>)</p> <p><input checked="" type="checkbox"/> Technical</p> <p><input type="checkbox"/> Administrative</p> <p><input checked="" type="checkbox"/> SR&amp;QA</p>	
<p>6. References (<i>Optional</i>)</p> <p>EA-WI-023 Project Management of GFE Flight Projects</p> <p>EA-WI-025 GFE Flight Project Software and Firmware Development</p>		<p>7. Interrelationships (<i>e.g., with other DRDs</i>)</p> <p>TD-07 Flight Product User's Guide</p> <p>TD-05 Limited Life Items List</p> <p>TD09 Flight Products Verification and Validation Report</p>	
<p>8. Preparation Information (<i>Include complete instructions for document preparation</i>)</p> <p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>SSP 30695 Acceptance Data Package (ADP) Requirements Specifications</p> <p><b>SCOPE:</b></p> <p>The ADP is the collection of documentation that provides information that established a complete status of the certified and verified deliverable flight products or support products for flight products as described in EA-WI-023 and EA-WI-025. It provides documentation of the "as-built" configuration. An ADP shall be submitted with shipment/transfer of each flight hardware/software product.</p> <p><b>B. CONTENT:</b></p> <p>The information required in a specific ADP is dependent on the nature of the products to be provided. The need for, and the content of the ADP shall be determined by the review team at the PDR or shall be specified at the start of a project. Items which may be contained in the ADP are given below.</p> <ol style="list-style-type: none"> <li>a. Description of product defining all functions and current approved design specifications</li> <li>b. Waivers/deviations</li> <li>c. Unexplained Anomalies</li> <li>d. List of Shortages</li> <li>e. Unplanned/Deferred Work</li> <li>f. Pre-planned Assigned Work</li> <li>g. Product Historical Log/notes/comments</li> <li>h. Identification -As-Designed List, As-Built List</li> <li>i. Operating Life Time/Operational Cycle</li> <li>j. Age-Sensitive/Time-Action Items or Limited Life Items</li> <li>k. Non-Standard Calibration Record</li> <li>l. Repair Limitations</li> <li>m. Pressure Vessel Data, including pressure cycle data (if certification limited)</li> <li>n. Non-Flight Hardware Temporary Installation (e.g. caps for shipping which are removed before flight)</li> <li>o. Materials Safety Data Sheets</li> <li>p. Engineering Drawing Model Files (e.g., assembly level drawings)</li> <li>q. Software Model Files /Firmware Version Description Files (see EA-WI-025)</li> <li>r. Special instructions to maintain safety and functionality of the GFE during storage, handling, maintenance and disposal</li> <li>s. Certifications and references to supporting records including qualification test procedures, certification analysis, vendor data, justifications for variances from vendor specifications, certification inspections procedures for all design requirements and acceptance requirements. (Include all numbers such as acceptance test procedures (ATP) numbers and ATP report numbers)             <ol style="list-style-type: none"> <li>1) A specific section shall address Energy Storage Products. A Log of all devices with corresponding references to</li> </ol> </li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

certification records shall accompany the copies of certifications.

- 2) A specific section shall address Hazardous chemicals and materials. A log of hazardous chemical and materials with corresponding references to certification records shall accompany the copies of the certifications.
- t. Users Guide or Systems Operating Manual for products
- u. Prepared Form DD 250 for first time delivery or copy of DD250 that was already approved. NASA accepts that the products and supporting information that is provided. This is the record that the contracted obligation for the flight products was accepted by the COTR. Signing the DD250 transfers responsibility from the Contractor to NASA. A copy of the signed DD250 is provided to the Contractor for their records
- v. DD 1149 for second and subsequent deliveries of products that NASA already owns
- w. Vendor Specification, Maintenance, and User Documentation for all primarily COTS or modified COTS items used
- x. Revision sheet for listing updates to the document.

## **C. FORMAT:**

The format depends on the program being supported. For the International Space Station (ISS), the Contractor shall be consistent with SSP 30695. The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.

## **D. MAINTENANCE:**

See Data Requirements list. The data package is maintained throughout the life of the product as additional product data is generated in order to retain a record of the current status. This quality record is retained in the DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title Limited Life Items List	2. Date of current version 07/12/2012	3. DRL Line Item No. TD-05	RFP/Contract No. (Procurement completes) NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) This data will provide the necessary information and definitions to consistently and clearly identify limited life components to maintain flight products in a use ready condition. This information permits operations, logistics, and maintenance organizations, to plan for the timely removal and replacement of hardware identified with limited life, so as to ensure continuation of proper operation.		5. DRD Category: ( <i>check one</i> ) <input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> ) SSP 30234, Failure Modes and Effects Analysis and Critical Items Requirements List for Space Station		7. Interrelationships ( <i>e.g., with other DRDs</i> ) TD-03 Flight Product Critical Design Review (CDR) Data Package TD-04 Acceptance Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> ) <b>A. APPLICABLE DOCUMENTS: NONE</b>  <b>SCOPE:</b>  Limited life includes limited shelf life, limited operating life, time-action control sensitive (including maintenance activities), or a combination of these.  <b>B. CONTENT:</b>  At a minimum, the following data shall be provided:  A. Deliverable items:  1. Name 2. Part Number 3. Serial number 4. Contractor and Government Entity (CAGE) codes (all parts) 5. Life limiting parameter, material, or function (including analyses) 6. Restrictions or limitations on refurbishments 7. Mean Time Between Failures (MTBF) (only for items identified as criticality 1, 1R, or 2 per SSP 30234) 8. MTBF units (e.g. hours)  B. For deliverable items that are, or contain, operating time/cycle sensitive items, this additional data shall be provided:  1. Time/cycle item part name 2. Time/cycle item part number 3. Time/cycle item part serial number 4. Time/cycle item part CAGE codes (all parts) 5. Specification requirement (allowable time/cycles) 6. Remaining time/cycles from point of delivery  C. For deliverable items which are, or contain, age-sensitive/time-action items, these additional data shall be provided:  1. Age-sensitive/time-action item part number 2. Age-sensitive/time-action item part serial/lot number 3. Age-sensitive/time-action item part CAGE codes (all parts) 4. Age-sensitive/time-action item part birth date			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

5. Age-sensitive/time-action item part expiration date (action due date)
6. Type of action required (i.e., replace, service, inspect, etc.)
7. Last operation and/or servicing date (time-action items only)
8. Next operation and/or servicing date (time-action items only)

## **C. FORMAT:**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The data shall be delivered in native format, and be compatible with Microsoft Word.

## **D. MAINTENANCE:**

See Data Requirements list. Update as required. For multiple flight product deliveries, analyses are not required for deliveries subsequent to the initial delivery, unless there is a change. This data shall be maintained in the DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<p>1. DRD Title</p> <p>Certification Data Package</p>	<p>2. Date of current version</p> <p>07/12/2012</p>	<p>3. DRL Line Item No.</p> <p>TD-06</p>	<p>RFP/Contract No. (Procurement completes)</p> <p>NNJ13HA02C</p>
<p>4. Use (<i>Define need for, intended use of, and/or anticipated results of data</i>)</p> <p>To provide objective evidence to NASA that the flight product meets the requirements. The certification data package, when approved, is the NASA certification.</p>		<p>5. DRD Category: (<i>check one</i>)</p> <p><input checked="" type="checkbox"/> Technical</p> <p><input type="checkbox"/> Administrative</p> <p><input checked="" type="checkbox"/> SR&amp;QA</p>	
<p>6. References (<i>Optional</i>)</p>		<p>7. Interrelationships (<i>e.g., with other DRDs</i>)</p> <p>See DRDs identified in item 8 below</p>	
<p>8. Preparation Information (<i>Include complete instructions for document preparation</i>)</p> <p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>EA-WI-023 Project Management of GFE Flight Projects EA-WI-025 GFE Flight Project Software and Firmware Development</p> <p><b>SCOPE:</b></p> <p>The Certification Data Package contains all data needed to determine, that the item or product meets design and safety requirements.</p> <p><b>B. CONTENT:</b></p> <p>a. GCAR (JSC form 1296) (See JSC form 1296A for additional information and instructions) TD-13</p> <p>b. Flight Products Verification and Validation Plan with Verification Matrix RV-10</p> <p>c. Flight Products Verification and Validation Report TD-09 (includes the verification matrix with requirements mapped to verification data)</p> <p>1. Flight Products Qualification Report RV-14</p> <p>a. Engineering Analysis Reports TD-08. Stress, thermal, EEE Parts Stress/De-rating, structural, off-gassing, flammability, toxicological, others specific to the product.</p> <p>b. Qualification Test Reports TD-11</p> <p>c. Manufacturer’s Data used for a verification of hazard control</p> <p>d. Materials Certification</p> <p>e. Fracture Control Report and Materials Usage Agreement</p> <p>f. Certification Compliance Matrix, JSC-STD-8080 Compliance Matrix, and SSP 50021 Compliance Matrix</p> <p>2. Acceptance Report for Qualification Unit or first flight unit</p> <p>3. List of Approved Operational Controls</p> <p>4. Structural Integrity Verification Plan</p> <p>5. Verification Tracking Log (VTL)</p> <p>6. Inspections reports</p> <p>7. Demonstrations reports</p> <p>d. Risk Assessment Executive Summary Report (RAESR) (FMEA and hazard analysis) TD-19</p> <p>e. Waivers, deviations and NCRs</p> <p>f. Discrepancy Reports and Problem Closure Reports Relevant to Certification</p> <p>g. Limited Life Items List TD-05</p> <p>h. Engineering Drawings RV-08 (not required if drawings are available in DDMS)</p> <p>i. Current Project Technical Requirements Specification or Original PTRS with All Approved Changes that affect the content of</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

the PTRS RV-03

- j. Assessment of Criticality (JF1380)
- k. Software / Firmware Version Description Document (VDD) [see EA-WI-025]

## **C. FORMAT:**

The format of the items in this list, are defined by the forms defined in EA-WI-023, Table 7.5.3-1 or the associated DRD. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.

## **D. MAINTENANCE:**

See Data Requirements list. The data shall be maintained in the DDMS and shall be updated to incorporate certification data for configuration changes.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title Flight Product User’s Guide	2. Date of current version 07/12/2012	3. DRL Line Item No. TD-07	RFP/Contract No. (Procurement completes) NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) To provide all necessary information on how the flight product or ground support product is to be operated, serviced and maintained.		5. DRD Category: ( <i>check one</i> ) <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> ) EA-WI-023 "Project Management of GFE Flight Products" EA-WI-025 “GFE Flight Project Software and Firmware Development”		7. Interrelationships ( <i>e.g., with other DRDs</i> ) TD-04 Acceptance Data Package (ADP)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> ) <b>A. APPLICABLE DOCUMENTS: NONE</b>  <b>SCOPE:</b>  The User's Guide is a compilation of information that is required for the user to operate, service, and maintain the hardware and software, without assistance from the providing contractor.  <b>B. CONTENT:</b>  The guide shall define procedures that assure safe and efficient handling of the hardware and software. It shall identify hazards that may be encountered throughout the procedures, along with all controls for the hazard.  <b>C. FORMAT:</b>  The User’s Guide may contain text, graphics, video, or photographic content. The Contractor shall use the Contractor's formats for the written portions of the guide. Those portions of the guide that may be used by the flight crew shall have a flight crew representative assessment of the final product, and corrections made prior to final submittal. Electronic graphical procedures shall be provided in ProE format. A suggested format for software can be found in EA-WI-025 “GFE Flight Project Software and Firmware Development.” The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads and standard engineering software.  <b>D. MAINTENANCE:</b>  See Data Requirements list. The User's Guide shall be updated as required by configuration change to the products or the product interfaces. Flight crew experiences when using the guide and corrections of technical content may be some of the sources for updates. The User Guide shall be maintained on the DDMS.  <b>E. DISTRIBUTION:</b>  Distribution shall be in accordance with the DRL.			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title Engineering Analysis	2. Date of current version 07/12/2012	3. DRL Line Item No. TD-08	RFP/Contract No. (Procurement completes) NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) Engineering analysis is performed to provide design facts that are used as part of the 1 <sup>st</sup> item certification, certification of design changes, and certification of existing designs that are used beyond original certification limits. Analysis is relied upon to assure safety, predict performance, and to understand failures.		5. DRD Category: ( <i>check one</i> ) <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> ) EA-WI-023 "Project Management of GFE Flight Projects" EA-WI-025 "GFE Flight Project Software and Firmware Development"		7. Interrelationships ( <i>e.g., with other DRDs</i> ) TD-02 PDR Data Package TD-03 CDR Data Package TD-06 Certification Data Package TD-19 Risk Assessment Executive Summary (RAESR)	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> ) <b>A. APPLICABLE DOCUMENTS: NONE</b>  <b>SCOPE:</b>  Engineering analysis to be performed at all stages throughout a project as defined in EA-WI-023 and EA-WI-025. Analysis can be explicitly identified in a Task/Delivery Order or implicitly identified by requiring whole projects or phases of project as defined in the work instructions.  <b>B. CONTENT:</b>  Engineering analysis required for design, performance prediction, and off-nominal assessment will be required. Some types of analysis that are frequently required in complex flight products are: <ol style="list-style-type: none"> <li>1. Process Performance, and Control</li> <li>2. Stress and fracture control</li> <li>3. Thermal Stress Analysis</li> <li>4. Electromagnetic Effects</li> <li>5. EEE Parts Stress and de-rating</li> <li>6. Operational life</li> <li>7. Systems Integration and Off-Nominal Performance</li> <li>8. Stored Energy Impact and Isolation</li> <li>9. Materials Compatibility [off-gassing, corrosion, flammability, toxicity, performance, life]</li> <li>10. Software Classification Assessment, Form JF 1704</li> <li>11. Code Assessment and peer reviews</li> <li>12. Software Timing Analysis</li> <li>13. Safety [Hazard, Operability, Ground Handling]</li> <li>14. Failure Modes and Effects Analysis</li> <li>15. Failure Investigation Analysis</li> <li>16. Reliability Analysis</li> </ol> The analysis performed and report shall include a description of the assumptions made, sufficient technical details that analysis experts in the specific technical discipline can understand to determine the adequacy of the analysis, and a description of the system, both hardware and software.  <b>C. FORMAT:</b>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Format for reporting will be specified in the Task/Delivery Order. If a specific format is not requested, the contractor's format is to be used. The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads and standard engineering software. Analysis performed on flight products that are configuration controlled shall be referenced to the configuration of the product.

## **D. MAINTENANCE:**

See Data Requirements list. Analyses may need to be performed as a result of design changes or changes in the intended use of hardware or software. The need for revisions to analyses and amendments to analysis reports can be expected throughout the duration of the Task/Delivery Order. All revisions of analysis reports shall be maintained on the DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title Flight Products Verification and Validation Report	2. Date of current version 07/12/2012	3. DRL Line Item No. TD-09	RFP/Contract No. (Procurement completes) NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> ) Provides the Verification Matrix from the V&V Plan with links to the information that supports the requirements have been met. Provides a complete record of the detailed assessments from testing, analysis, demonstration, and inspection.		5. DRD Category: ( <i>check one</i> ) <input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> ) EA-WI-023 “Project Management of GFE Flight Projects” EA-WI-025 “GFE Flight Project Software and Firmware Development”		7. Interrelationships ( <i>e.g., with other DRDs</i> ) SW-03 Software Design Document SW-04 Software Code RV-08 Engineering Drawings and Model Files RV-10 Flight Product V&V Plan RV-14 Flight Products Qualification Report TD-04 Acceptance Data Package TD-06 Certification Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> ) <b>A. APPLICABLE DOCUMENTS: NONE</b>  <b>SCOPE:</b>  This report consists of all the Verification and Validation (V&V) data provided to confirm that the flight products comply with their specifications, function properly in the complete integrated environment with other actual flight hardware products, and are ready for use in flight.  <b>B. CONTENT:</b>  EA-WI-023 describes the broad objectives of the V&V Plan. This plan provides the detail for the four methods used to satisfy verification requirements: 1) inspection, 2) analysis, 3) demonstration, and 4) test, or a combination of these. The configuration of the products being verified and validated at the time of performance of the verification activity shall be recorded in this report. It includes the reference to the data record that demonstrates that the requirement has been met or includes the data if it has not been formally reported.  <b>C. FORMAT:</b>  Configuration of the flight products are documented using Engineering Drawings (DRD RV-08), Software Code (DRD SW-04) and Flight Software Design Documents (SW-03). Engineering Analysis uses the format defined in the Engineering Analysis DRD (TD-08). The V&V Report shall contain the Qualification Report (RV-14) and Acceptance Data Package (TD-04) for an example product. The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered in native format compatible with JSC standard office software loads and standard engineering software. The report shall be submitted to the Design Data Management System (DDMS).  <b>D. MAINTENANCE:</b>  See Data Requirements list. The initial report is provided at qualification or 1 <sup>st</sup> flight unit completion. The V&V report is completed at the Systems Acceptance Review. Maintenance of the report shall continue through the life of the product as configuration is changed or anomalies occur that require additional V&V activity. Maintenance shall be performed in the DDMS.  <b>E. DISTRIBUTION:</b>  Distribution shall be in accordance with the DRL.			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Space Station Reliability and Maintainability Predictions Report	07/12/2012	TD-10	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To status quantitative R&M characteristics of Space Station functions, capabilities, and equipment.		<input type="checkbox"/>	Technical
		<input type="checkbox"/>	Administrative
		<input checked="" type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-16 Space Station Hardware Failure Modes Effects and Analysis (FMEA) and Critical Items List	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>SSP 30234, Failure Modes and Effects Analysis and Critical Items Requirements List for Space Station.</p> <p><b>SCOPE:</b></p> <p>The report shall consist of the Reliability and Maintainability predictions for Space Station flight hardware for:</p> <ol style="list-style-type: none"> <li>Components failure rate data for end items.</li> <li>Mean Maintenance Crew hours per Year (MMCH/Y) predictions, for on-orbit maintainable equipment, as required</li> <li>Quantitative status of R&amp;M characteristics of Space Station functions, capabilities, equipment, and Failure Detection, Isolation, and Recovery (FDIR) assessment data.</li> </ol> <p><b>B. CONTENT:</b></p> <p>The report shall consist of three volumes, as follows. Each volume may be submitted and approved independently. The volumes may be further subdivided according to subsystem architecture and/or end items, as appropriate.</p> <p><u>Volume I:</u></p> <ol style="list-style-type: none"> <li>General and programmatic information.</li> <li>Top-level ground rules and assumptions used in performing the R&amp;M analyses.</li> </ol> <p><u>Volume II:</u></p> <ol style="list-style-type: none"> <li>R&amp;M source data in accordance with Table 1.</li> <li>Failure Detection Isolation and Recovery Assessment Information (see Table 2).</li> <li>Perform Preventative Maintenance Assessment per decision matrix (see Figure 1).</li> </ol> <p><u>Volume III:</u></p> <p>FMEA/CIL summary information per SSP 30234, including summary tables (index), list of critical items, and identification of incomplete design areas.</p> <p><b><u>NEED DATE or MILESTONE REQUIRING R&amp;M PREDICTIONS REPORTS SUPPORT:</u></b></p> <p>The R&amp;M Predictions Report data requirements applies to all flight hardware and must be assessable in the JSC Design Data Management System (DDMS) 7 days prior to the PDR or the CDR that covers the first flight deployment of the hardware. The data provided for the PDR may be preliminary data. If the initial submittal is preliminary data, final data must be provided to</p>			

JSC Form 2341 (Rev October 19, 2011) (MS Word 2007) (Previous editions are obsolete.)

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

support a subsequent CDR.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC -STD-123. See work page for instructions.)

D684-10061-01 Revision C

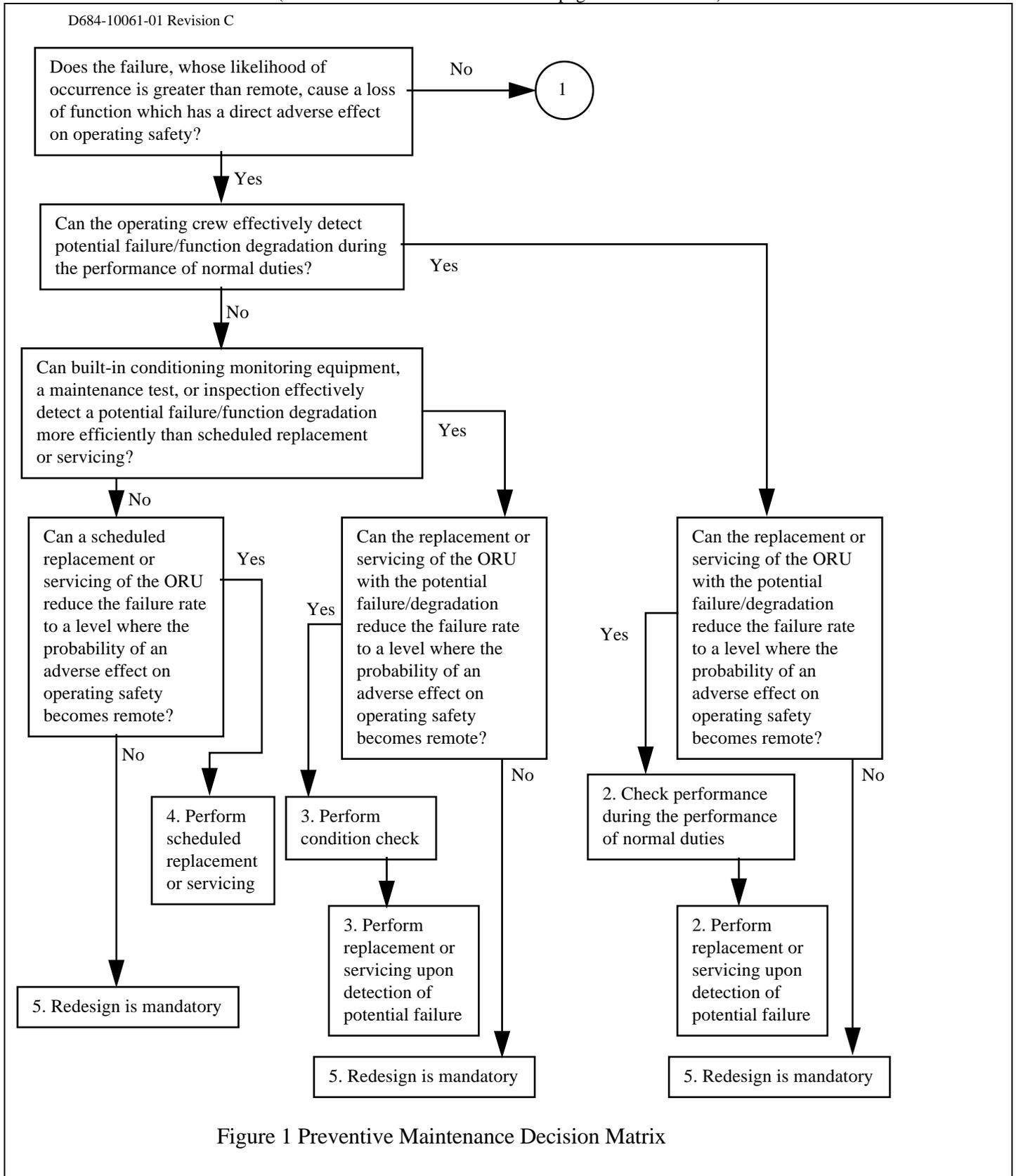


Figure 1 Preventive Maintenance Decision Matrix

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC -STD-123. See work page for instructions.)

D684-10061-01 Revision C

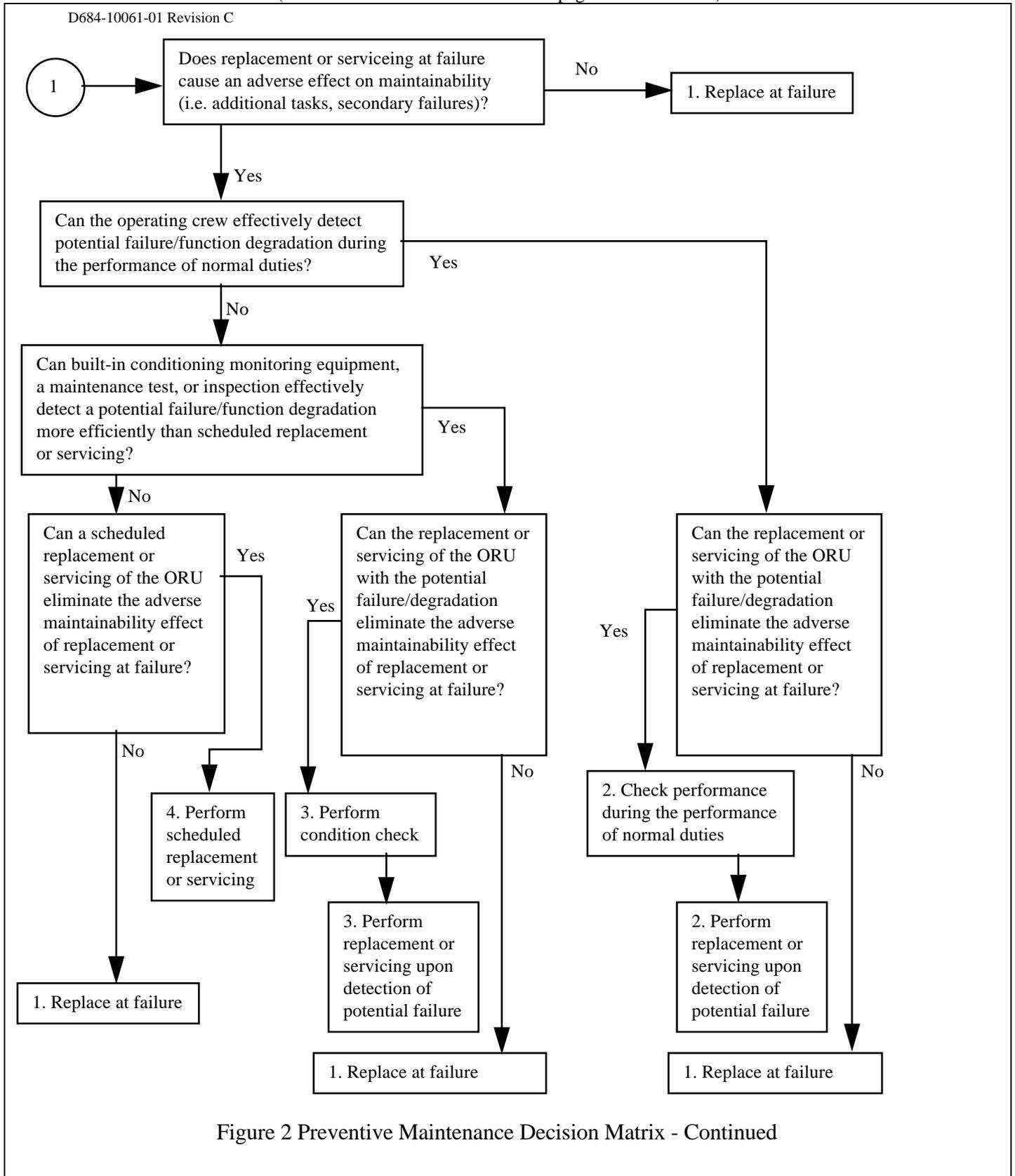


Figure 2 Preventive Maintenance Decision Matrix - Continued

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

TABLE 1: R&M SOURCE DATA FIELD DEFINITION TABLE

## DESCRIPTION:

- A. Item Name - R&M attributes shall be entered for each item which is to be maintained on-orbit. The Vehicle Master Data Base (VMDB) nomenclature shall be used for all R&M reporting. R&M is not responsible to develop the Item Name but shall use it as a reference for reporting R&M parameters.
- B. Drawing/Part Number - R&M attributes shall be referenced to the Drawing/Part number in the VMDB. R&M is not responsible to develop the Drawing/Part number but shall use it as a reference for reporting R&M parameters.
- F. Reliability Class - Reliability classification. The six reliability class codes are as follows:

## CODE DESCRIPTION:

- 1. Electronic - equipment that primarily contains digital or low power analog electronics. Moving parts are high power electrical equipment that normally constitutes less than 5% of the item failure rate in the classification. Electronic type will typically have a fairly high level of Built-In-Testing (BIT).
- 2. Electrical - equipment that performs electrical power distribution, power storage, signal distribution, and/or radio frequency radiation functions. Moving parts or low power electronics normally constitute less than 5% of the item failure rate in this classification. Electrical types will typically have a low level of BIT.
- 3. Electro-Mechanical - equipment that contains electrical/electronic and mechanical parts, including devices which use electrical power to produce mechanical motion, and devices which use mechanical motion to produce electrical power or signals. Electro - Mechanical items should contain more than 5% electrical/electronic and more than 5% mechanical parts by failure rate contribution in this classification.
- 4. Mechanical - equipment that primarily consists of moving parts, fluid handling equipment (including thermal systems), and or seals. High power electrical equipment or low power electronics normally constitute less than 5% of the failure rate in this classification.
- 5. Structural with Crew Contact - equipment that is primarily structural but encounters planned crew contact or provide equipment protection. This type specifically includes doors, covers, panels, hatches, micro meteoroid/debris shields, and thermal blankets.
- 6. Structural with no crew Contact - equipment that is load bearing. Moving parts, electronics, and electrical equipment normally constitute less than 5% of the failure rate in this classification. Structural items should not normally encounter planned crew contact.
- G. IVA/EVA/Robotics Code - The code which describes the level of robotic compatibility of the equipment. The codes are as follows:

## CODE DESCRIPTION:

- 0** - Equipment located in pressurized area.
- 1** - Equipment can be maintained only by the EVA crew member. No robotic support is required or intended.
- 2** - Equipment can be maintained using SPDM without EVA. Equipment is SPDM compatible. Compatibility consists of equipment to SPDM interface. EVA can provide maintenance support in a backup role.
- 3** - Equipment can be maintained using SSRMS without EVA. Equipment is SSRMS compatible. Compatibility consists of Equipment to SSRMS interface. Equipment must be equipped with SSRMS grapple fixture. EVA can provide maintenance support in a backup role.
- 4** - Equipment requires combined SPDM/EVA operations for maintenance.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

5 - Equipment requires EVA crew member to be positioned on SSRMS for access to the worksite. Equipment requires no robotic compatibility.

6 - Equipment requires the Mobile Servicing System/SSRMS for transportation to the EVA worksite. Dimensions or mass of equipment to be replaced, are not compatible with EVA/CETA translation. Equipment must be equipped with SSRMS grapple fixture.

J. MTBF - Mean Time Between Failures (“Hot” or “operating” MTBF). The estimated average time in hours between failures due to random effects under nominal operating conditions at the maintainable equipment level. Redundancy within the maintainable equipment item which is not necessary to meet failure tolerance requirements (e.g., component redundancy used for reducing maintenance demand) shall be modeled so as to improve the reported MTBF. Worst case estimates shall not be used. Failures of components that are used only during installation or removal (such as deployment motors and mechanisms) shall be excluded where maintenance would not be caused by the components failure. Failures of components that cause degradation of the equipment within the specified limit shall also be excluded. For complex items having components operating at different duty cycles, the operating MTBF may be adjusted to a duty cycle of 1.0. MTBF does not include failures due to Micrometeoroid/Orbital Debris (MM/OD).

K. Deleted

L. Wear out Life - Expected time to failure (in calendar years at the stated average duty cycles) due to wear-out, degradation, or fatigue conditions in the absence of random failures, for age or cycle life limited items. Wear out life should be used as an estimate of characteristic life (L Char) in the algorithms (Table 3). Best available data and engineering judgment should be used to estimate wear out life as the time when 63 percent of a population, would have failed due to wear-out/aging conditions alone. Minimum design life shall not be reported as the wear-out life. No life limit should be reported if the expected wear out life is 20 years or greater.

M. MTBPM - Removal/Replacement - Mean Time Between Preventive Maintenance for Removal & Replacement - The average time in calendar hours between all preventive maintenance (PM) replacements. Care should be given when determining if preventive maintenance replacements should be performed in place of waiting until maintenance is required due to gradual performance degradation and eventual wear-out (life limits).

N. MTBPM - Inspect/Service - Mean Time Between Preventive Maintenance for Inspection - The average time between PM inspections and/or servicing expressed in calendar hours. A single MTBPM - Inspect/Service parameter shall be developed for any equipment items requiring multiple servicing and/or inspection actions.

Q. CM IVA MTTR - Mean Time to Repair - Nominal elapsed IVA crew hours at the worksite. The MTTR includes remove, replace and fault detection time. Computed for zero-g using task standards. In situations where developer does not control elemental task time enter N/A as the task time.

R. Detection Percentage - Percentage of ORU failure modes detected by BIT or other diagnostic techniques.

## TABLE 2: FAILURE DETECTION DATA DEFINITION TABLE

### Description:

Function - Identify the function supported by the ORU.

ORU - Identify the ORU associated with the failure mode code.

Failure Mode Code - Reference the failure mode code for each ORU as identified in the FMEA.

Cat/Critical Hazard < 24 Hours (Y/N) - May a critical or catastrophic hazard occur in less than 24-hours as a result of the failure mode (Yes or No).

Detection - A/M/N - Specify whether Automatic, Manual or No detection is provided for the failure mode.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC -STD-123. See work page for instructions.)

Detection - Failure Signature Algorithms - Describe the algorithm (including sensor/system states) used to detect the failure mode.

Detection - SRS/LSAR Reference - Provided a reference to the SRS that documents automatic detection, and/or the LSAR that documents manual detection procedures.

Safe: A/M/N - Specify whether Automatic, Manual or No on-orbit safing is provided for the failure mode.

Safe: Algorithms - Describe the algorithm (including sensor/system states) used to safe a hazard that results from the failure mode.

Safe: SRS/LSAR Reference - Provided a reference to the SRS that documents automatic safing, and/or the LSAR that documents manual safing procedures.

**TABLE 3: R&M Source Data Format To Be Entered Into the ISS Program Vehicle Master Database (VMDB)**

<u>Input Col. #</u>	<u>Input Column Name</u>
---------------------	--------------------------

1	Part Number
2	Mfg. Cage Code
3	Maintainability Serial Number
4	Failure Mode Code
5	Maint. Item Name
6	Maint. Distrib. System Name
7	Maint. Subsystem Name
8	Maint. ORU Function
9	Maint. ORU Des.
10	Maint. Location
11	Maint. Quantity
12	Reliability Class Code
13	Robotics Code
14	Avg. Duty Cycle Prior AC
15	Avg. Duty Cycle After AC
16	MTBF Hot
17	MTBF Cold
18	MTBCF
19	Wear out Life Amount
20	MTBPM RR
21	MTBPM IS
22	CM EVA MTTR
23	CM EVA Crew Size
24	CM IVA MTTR
25	CM IVA Crew Size
26	CM EVR MTTR
27	PM RR EVA MTTR
28	PM RR EVA Crew Size
29	PM RR IVA MTTR
30	PM RR IVA Crew Size
31	PM RR EVR MTTR
32	PM IS EVA MTTR
33	PM IS EVA Crew Size
34	PM IS IVA MTTR
35	PM IS IVA Crew Size
36	PM IS EVR MTTR
37	Manifest Flight
38	Activation Flight

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

39	EVA RMAT Overhead Code
40	EVR RMAT Overhead Code
41	IVA RMAT Overhead Code
42	EVA Total Maint. Crew Time
43	IVA Total Maint. Crew Time
44	EVR Total Maint. Crew Time
45	Total Maint. Actions
46	Auto 24 Des.
47	Crit. Hazard 24 Hr. Des.
48	Criticality Code
49	Detection Automation Code
50	Detection Algorithm
51	Detection SRS LSAR Ref
52	Isolation Ambiguity Level Mnt.
53	Isolation Automation Code
54	Isolation Algorithm Mnt.
55	Isolation SRS LSAR Ref Mnt.
56	Isolation Automation Code Reco
57	Isolation Algorithm Reco
58	Isolation SRS LSAR Ref Reco
59	Recovery Automation Code
60	Recovery Algorithm
61	Recovery SRS LSAR Ref
62	Safe Automation Code
63	Safe Algorithm
64	Safe SRS LSAR Ref

## **C. FORMAT:**

See R&M Source Data field definitions in Table 1. R&M Source Data shall be submitted in an electronic table (see Table 3) compatible with Microsoft Word. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.

## **D. MAINTENANCE:**

See R&M Source Data field definitions in Table 1. Bi-annual, based on utilization of preventive maintenance updates. Updates shall be made in DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Test Report	07/12/2012	TD-11	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Creates record and results of test performed.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-024 General Operating Procedures for EA Testing Facilities		RV-10 Flight Product Verification and Validation Plan RV-14 Flight Product Qualification Report TD-04 Acceptance Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This report consists of test data analysis and results.</p> <p><b>B. CONTENT:</b></p> <p>Test report shall be provided and consistent with EA-WI-024 and include as a minimum:</p> <ol style="list-style-type: none"> <li>1. Customer name</li> <li>2. Customer organization</li> <li>3. Customer phone number</li> <li>4. Task Performance Sheet number</li> <li>5. Test objective</li> <li>6. Test article part numbers and serial numbers.</li> <li>7. Test date (consistent with EA-WI-024)</li> <li>8. Test assessment or analysis if required</li> <li>9. Test facility hardware configuration</li> <li>10. Test facility software configuration (if applicable)</li> <li>11. Test results</li> </ol> <p><b>C. FORMAT:</b></p> <p>The contractor's format is acceptable. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Delivery and Acceptance Report	07/12/2012	TD-12	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To provide a record of data delivered to non DDMS NASA systems.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This document serves as a formal record reflecting the Contractor’s generation and delivery of native format products within the NASA specific electronic environment (non-DDMS). The Delivery/Acceptance Report shall serve as the basis for Contractor communication with NASA documenting the contractual delivery of products required by the respective Task/Delivery Order. NASA approval of the Delivery/Acceptance Report constitutes NASA acceptance of the products.</p> <p><b>B. CONTENT:</b></p> <p>The Delivery/Acceptance Report shall include as a minimum the following:</p> <ol style="list-style-type: none"> <li>1. List of the products delivered to the NASA specific electronic environment</li> <li>2. Associated Task/Delivery Order number and title related to each delivered product</li> <li>3. Period of time being reported within the deliverable</li> </ol> <p><b>C. FORMAT:</b></p> <p>The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Government Certification Approval Request (GCAR)	07/12/2012	TD-13	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To establish the joint JSC and product provider agreed upon, requirements to be used for acceptance and certification of flight products.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-19, Risk Assessment Executive Summary Report (RAESR) TD-06 Certification Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The GCAR is a form that documents the certification information for a product and establishes formal approval of the successful completion of certification and acceptance.</p> <p><b>B. CONTENT:</b></p> <p>See the GCAR form JF 1296 and JF 1296A (instructions) for content.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by JF 1296. The format is available in the Design Data Management System (DDMS). The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. As required to capture changes to certification. This data shall be maintained in the DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Products Workmanship Specification List	07/12/2012	TD-14	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This document defines the list of workmanship specifications that the Contractor identifies to be used for the manufacturing of the flight, and associated ground support products.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
NASA Technical Standards Program, <a href="http://standards.nasa.gov">http://standards.nasa.gov</a>		TD-02 Preliminary Design Review (PDR) Data Package TD-03 Critical Design Review (CDR) Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This list contains all applicable workmanship specifications that are applied as fabrication requirements or software development requirements. This list establishes the lowest-level of requirements to be met in order to assure quality products are delivered for flight.</p> <p><b>B. CONTENT:</b></p> <p>This list is presented for NASA review and approval. Many workmanship specifications are identified by NASA, and if used, shall provide acceptable flight products. These may be standard industry specifications, military specifications, or NASA unique specifications. Use of alternate specifications requires review and approval for assurance that the Project requirements can be met. Alternate specifications and standards shall not include proprietary processes unless approved specifically by NASA.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The list shall be delivered in native format, and be compatible with Microsoft Excel.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. The initial submittal is at the PDR. This list can be modified in DDMS by the Contractor as required with NASA approval.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<p>1. DRD Title</p> <p>Electrical, Electronic, and Electromechanical (EEE) Parts List and Analysis Report</p>	<p>2. Date of current version</p> <p style="text-align: center;">07/12/2012</p>	<p>3. DRL Line Item No.</p> <p style="text-align: center;">TD-15</p>	<p>RFP/Contract No. (Procurement completes)</p> <p style="text-align: center;">NNJ13HA02C</p>
<p>4. Use (<i>Define need for, intended use of, and/or anticipated results of data</i>)</p> <p>Report to document the analysis used to verify that the selected electrical parts are not overstressed in worst case environments, operating conditions, and duty cycles.</p>		<p>5. DRD Category: (<i>check one</i>)</p> <p><input checked="" type="checkbox"/> Technical</p> <p><input type="checkbox"/> Administrative</p> <p><input type="checkbox"/> SR&amp;QA</p>	
<p>6. References (<i>Optional</i>)</p> <p>SSP 30312 Electrical, Electronic, and Electromechanical (EEE) and Mechanical Parts Management and Implementation Plan for the International Space Station (ISS) Program.</p>		<p>7. Interrelationships (<i>e.g., with other DRDs</i>)</p> <p>Other DRDs (see block 8)</p>	
<p>8. Preparation Information (<i>Include complete instructions for document preparation</i>)</p> <p><b>A. APPLICABLE DOCUMENTS: None</b></p> <p><b>SCOPE:</b></p> <p>The Contractor shall deliver an EEE parts list and all, or a part of the products required for EEE Parts Analysis. This report documents the analysis used to verify the appropriate de-rating and stress considerations of EEE parts selected to meet the full functional performance when used within a system operation under all environmental conditions, after worst case impacts of manufacturing, assembly, and handling processes. This analysis is also used for system reliability predictions and trends for operation problems.</p> <p><b>B. CONTENT:</b></p> <p>TD-02 Preliminary Design Review (PDR) Data Package          TD-03 Critical Design Review (CDR) Data Package          TD-04 Acceptance Data Package (ADP)          TD-06 Certification Data Package</p> <p>Analysis for all parts in the EEE Parts, As-Designed Parts List and the bill of materials associated with the complete product. After manufacture, the report shall be updated by including all changes identified in the EEE Parts, As-Built Parts List. This report shall include:</p> <ol style="list-style-type: none"> <li>1. Analysis of the worst case electrical, mechanical, and high and low temperature thermal stresses by parts from purchase through manufacturing to their use in the intended application.</li> <li>2. Data verifying that the analysis includes applicable de-rating requirements.</li> <li>3. Electrical drawing with input/output functions (signals, sources, loads and frequencies).</li> <li>4. Environmental and mechanical conditions placed on the hardware</li> <li>5. Analysis to define the environmental and mechanical conditions if required, because of the placement of the hardware relative to other influencing hardware.</li> <li>6. Tabulation of the worst-case stress ratios for the parameters contained in the programs parts de-rating requirements. The tabulation is referenced to designators on the drawings. It identifies the part number, parameters to be verified, device's parametric rating, parameter's worst case calculated induced stress level, specific application, and ratio of the calculated stress level to device rating for the parameter.</li> <li>7. A separate section that identifies any parts that were accepted for use that did not meet the defined de-rating requirements. The rationale for acceptance of their use and the NASA approval document reference shall be recorded here.</li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **C. FORMAT:**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.

## **D. MAINTENANCE:**

See Data Requirements list. This document is modified whenever the hardware configuration is changed sufficiently to require additional analysis. This data shall be maintained in the DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Space Station Hardware Failure Modes Effects and Analysis (FMEA) and Critical Items List (CIL)	07/12/2012	TD-16	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
The FMEA provides for identification of failure modes, effects, and critical items to support risk assessment, additional design action, safety analysis, hardware/software interface analyses, test planning, mission planning, preparation of mandatory inspection points, fault detection and isolation, maintainability analyses and planning, maintenance planning, and logistics planning. The CIL is used to identify critical items that require special risk assessments, and waivers to Program requirements.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
		6. References ( <i>Optional</i> )	
		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-03 Critical Design Review (CDR) Data Package TD-18 Space Station Hazard Reports TD-19 Risk Assessment Executive Summary Report TD-10 Space Station Reliability and Maintainability Predictions Report	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>SSP 30234 Failure Modes and Effects Analysis and Critical Items Requirements List for Space Station          SSP 50835 ISS Pressurized Volume Hardware Common Interface Requirements Document</p> <p><b>SCOPE:</b></p> <p>FMEA/CILs shall be documented for flight products, Ground Support Equipment (GSE), and flight support equipment (FSE).</p> <p><b>B. CONTENT:</b></p> <p>The flight hardware FMEA/CIL worksheets shall be prepared in accordance with SSP 30234. Information supporting the FMEA/CIL (summary tables, ground-rules and assumptions, reliability block diagrams, incomplete design areas) will be part of the Risk Assessment Executive Summary Report.</p> <p><u>Note:</u> This DRD also applies to GSE required to support the flight hardware.</p> <p><b>C. FORMAT:</b></p> <p>Product format is defined in Appendix A of SSP 30234. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC -STD-123. See work page for instructions.)

## Appendix A

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### FAILURE MODE EFFECTS ANALYSIS/CRITICAL ITEMS LIST

---

<b>FMEA NUMBER:</b>	<b>ORIGINATOR</b>	<b>PROJECT:</b>
<b>PART NAME:</b>	<b>LRUPART NUMBER:</b>	<b>QUANTITY:</b>
<b>PART NUMBER:</b>	<b>LRU/ORU PART NAME:</b>	<b>SYSTEM:</b>
<b>LSC CONTROL NO:</b>	<b>DRAWING/REF DESIGNATOR:</b>	<b>SUBSYSTEM:</b>
<b>ZONE/LOCATION:</b>	<b>EFFECTIVITY/AFFECT STAGE:</b>	

---

#### CRITICALITY:

CRITICAL ITEM?

CRITICALITY CATEGORY \_\_\_\_

#### REDUNDANCY SCREEN:

#### ORBITER/SPACE STATION

A -  
B -  
C -  
D.-

---

FUNCTION:

---

FAILURE MODE CODE:  
FAILURE MODE:

CAUSE:

FAILURE DETECTION:

---

REMAINING PATHS: EFFECT/ MISSION PHASE:

---

\_CORRECTIVE ACTION:

---

-FAILURE EFFECTS-

---

END ITEM/LRU/ORU/ASSEMBLY:

SUBSYSTEM/NEXT ASSEMBLY/INTERFACE:

SYSTEM/END ITEM/MISSION:

CREW/VEHICLE:

---

### FAILURE MODE EFFECTS ANALYSIS/CRITICAL ITEMS LIST

---

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC -STD-123. See work page for instructions.)

<b>FMEA NUMBER:</b>	<b>ORIGINATOR</b>	<b>PROJECT:</b>
<b>PART NAME:</b>	<b>LRUPART NUMBER:</b>	<b>QUANTITY:</b>
<b>PART NUMBER:</b>	<b>LRU/ORU PART NAME:</b>	<b>SYSTEM:</b>
<b>LSC CONTROL NO:</b>	<b>DRAWING/REF DESIGNATOR:</b>	<b>SUBSYSTEM:</b>
<b>ZONE/LOCATION:</b>	<b>EFFECTIVITY/AFFECT STAGE:</b>	
<b>HAZARD INFORMATION:</b>		

**HAZARD: YES** \_\_\_ **NO** \_\_\_

**HAZARD ORGANIZATION CODE:**

**HAZARD NUMBER:**

**TIME TO EFFECT:**

**TIME TO DETECT:**

**TIME TO CORRECT:**

**FAILURE DETECTION/FLIGHT:**

**REMARKS:**

## -RATIONALE FOR ACCEPTABILITY-

(A) **DESIGN:**

(B) **TEST:**

(C) **INSPECTION:**

(D) **FAILURE HISTORY:**

(E) **OPERATIONAL USE:**

(F) **MAINTAINABILITY:**

**PREPARED BY:**

**REVISION:**

**DATE:**

**WAIVER NUMBER**

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Space Station Payload Safety Data Package	07/12/2012	TD-17	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
This DRD defines the payload safety review process and data required to assist the ISS Payload Organizations in documenting compliance with the payload safety requirements		<input type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
		<input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-03 Critical Design Review (CDR) Data Package	
		TD-18 Space Station Hazard Reports	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>NSTS/ISS 13830 Payload Safety Review and Data Submittal Requirements.</p> <p><b>SCOPE:</b></p> <p>This DRD is applicable to ISS Payloads.</p> <p><b>B. CONTENT:</b></p> <p>The Contractor shall submit Safety Data Packages (Phases 0-III) and other supporting documentation as required by NSTS/ISS 13830.</p> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. This data shall be maintained in the DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Space Station Hazard Reports (HRs)	07/12/2012	TD-18	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
HR's are used to document the safety analyses performed on a system, subsystem, or operation. The HR is the output of the hazard analyses and is used to provide program management a summary of risk in terms of criticality, cause, control, and verification.		<input type="checkbox"/> Technical <input type="checkbox"/> Administrative <input checked="" type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
		TD-19 Risk Assessment Executive Summary Report (RAESR) TD-06 Certification Data Package TD-16 Space Station Hardware FMEA and CIL	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>SSP 30599, Safety Review Process                  SSP 50021, Safety Requirements Document                  SSP 50835, ISS Pressurized Volume Hardware Common Interface Requirements Document                  KNPR 8715.3, KSC Safety Practices Procedural Requirements, Chapter 20                  SSP 32928-103 Requirements for International Partner Cargo Transported on Russian Progress and Soyuz Vehicles II32928-103</p> <p><b>SCOPE:</b></p> <p>This requirement shall consist of flight and ground hazard reports and their supporting data.</p> <p><b>B. CONTENT:</b></p> <p>Hazard Reports shall include the documented results of the safety analysis which is performed to identify hazards and their causes. Identify specific safety requirements and non-conformances, specify control methods in the design, and identify verification activities per SSP 30599. Hazard Reports shall be submitted and reviewed using a phased approach per SSP 30599.</p> <p>The hazard reports will assess each flight product end item for all phases including, interfaces with all other equipment or end items. The provider shall assess on-orbit configurations changes of the flight product that may affect the safety of the Space Station and submit as applicable. A contract letter stating no impact is acceptable. The ground hazard reports assess ground operations for each flight product, support equipment interfacing with flight hardware, and the operations to process the flight product at KSC or other launch processing facilities.</p> <p><b>C. FORMAT:</b></p> <p>Appendix A of this DRD contains the unique format for hazard reports. Generic hazards are documented on JSC Form (JF) 1477.</p> <p>The Ground Safety Checklist (JF970) addresses hazards associated with launch processing. The ground safety checklist is used to determine if development of a detailed ground hazard analysis is required.</p> <p>For items launched on Russian vehicles, JF 907 is used to determine the cargo category. Category 2 items require unique hazard reports. Supporting data based on the requirements stated in RSC-ENERGIA document SSP 32928-103 and JF 906 are used as supporting data for JF 907. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. As required. Any updates shall be made in DDMS.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## E. DISTRIBUTION:

Distribution shall be in accordance with the DRL.

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Appendix A  
Unique Hazard Report Format

TEAM NAME  
International Space Station/Space Shuttle  
Hazard Report Number

---

1. HAZARD TITLE:

- a. Review Level: Phase
- b. Revision Date:
- c. Scope:

2. HAZARD CONDITION DESCRIPTION:

3. EFFECTS:

4. CAUSE SUMMARY

- 1. Title:
- 2. Title:
- 3. Title:

5. PROGRAM STAGE(S):

6. INTERFACES:

7. STATUS OF OPEN WORK: (PHASE III ONLY)

All verifications that are not complete at the Phase III level review shall be documented in a verification matrix to be identified in "status of open work" of the hazard report.

8. REMARKS:

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC -STD-123. See work page for instructions.)

## SUBMITTAL CONCURRENCE:

\_\_\_\_\_  
GFE Safety Engineer, (NAME)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Program Safety Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
JSC Project Manager

\_\_\_\_\_  
Date

## 11. APPROVAL:

\_\_\_\_\_  
Chairman, Safety and Mission Assurance  
Review Team (SMART)

Phase I \_\_\_\_\_  
Phase II \_\_\_\_\_  
Phase III \_\_\_\_\_

\_\_\_\_\_  
Date

Integrated Hazards (ONLY)

\_\_\_\_\_  
Chairman, Safety Review Panel (SRP)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Chairman, Safety Review Panel (SRP)

\_\_\_\_\_  
Date

For Phase III (ONLY)

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

\_\_\_\_\_  
NASA Manager, Space Station Program

\_\_\_\_\_  
Date

Hazard Report Number

Cause 1

1. HAZARD CAUSE DESCRIPTION:

SEVERITY:

LIKELIHOOD:

CLASSIFICATION:

2. CONTROL(S):

1. Control 1
2. Control 2

3. METHOD FOR VERIFICATION OF CONTROL(S):

1. Verification for Control 1
2. Verification for Control 2
- .
- .
- N. Verification for Control n

4. SAFETY REQUIREMENT(S):

Document:

Paragraph:

Title:

Document:

Paragraph:

Title:

5. MISSION PHASE(S):

- \_\_\_\_\_ Launch Processing
- \_\_\_\_\_ Launch
- \_\_\_\_\_ Rendezvous/Docking
- \_\_\_\_\_ Deployment
- \_\_\_\_\_ Orbital Assembly & Checkout
- \_\_\_\_\_ On-Orbit Operation
- \_\_\_\_\_ On-Orbit Maintenance
- \_\_\_\_\_ Return/Decommissioning

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

6. PROGRAM STAGE(S):
7. DETECTION AND WARNING METHOD(S):
8. CAUSE REMARKS/BACKGROUND:
9. FMEA/CIL REFERENCE:
10. POINT OF CONTACT:

**Name:**

**Telephone:**

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

<p>1. DRD Title</p> <p>Risk Assessment Executive Summary Report</p>	<p>2. Date of current version</p> <p>07/12/2012</p>	<p>3. DRL Line Item No.</p> <p>TD-19</p>	<p>RFP/Contract No. (Procurement completes)</p> <p>NNJ13HA02C</p>
<p>4. Use (<i>Define need for, intended use of, and/or anticipated results of data</i>)</p> <p>To provide management with a single report summarizing S&amp;MA risks.</p>		<p>5. DRD Category: (<i>check one</i>)</p> <p><input type="checkbox"/> Technical</p> <p><input type="checkbox"/> Administrative</p> <p><input checked="" type="checkbox"/> SR&amp;QA</p>	
<p>6. References (<i>Optional</i>)</p> <p>EA-WI-023 Project Management of GFE Flight Projects</p>		<p>7. Interrelationships (<i>e.g., with other DRDs</i>)</p> <p>TD-16 Space Station Failure Modes and Effects Analysis and Critical Items List</p> <p>TD-13 Government Certification and Approval Request (GCAR)</p> <p>TD-18 ISS Hazard Reports</p> <p>TD-08 Engineering Analysis</p> <p>TD-06 Certification Data Package</p>	
<p>8. Preparation Information (<i>Include complete instructions for document preparation</i>)</p> <p><b>A. APPLICABLE DOCUMENTS:</b></p> <p>SSP 30309, Safety Analysis Requirements Document</p> <p>SSP 50021, Space Station Safety Requirements</p> <p>SSP 30599, Safety Review Process</p> <p>SSP 30234, Failure Modes and Effects Analysis and Critical Items Requirements List for Space Station</p> <p><b>SCOPE:</b></p> <p>The Risk Assessment Executive Summary Report (RAESR) documents the results of the risk assessment performed for flight products and operations and provides management visibility of the total risk picture. The RAESR consists of four major sections:</p> <ol style="list-style-type: none"> <li>1. The system description</li> <li>2. The results of the Safety Analysis including operational safety</li> <li>3. The Failure Modes and Effects Analysis (FMEA)</li> <li>4. The Risk Reports which include the combination of Hazard Report and Critical Items List (CIL) data.</li> </ol> <p><b>B. CONTENT:</b></p> <p><u>Outline:</u></p> <ol style="list-style-type: none"> <li>i. Cover Page</li> <li>ii. Signature Page</li> <li>iii. Table of contents</li> </ol> <ol style="list-style-type: none"> <li>1.0 Introduction             <ol style="list-style-type: none"> <li>1.1 Purpose/Scope</li> <li>1.2 Background</li> <li>1.3 System Description</li> <li>1.4 Documentation                 <ol style="list-style-type: none"> <li>1.4.1 Safety Requirements Documents</li> <li>1.4.2 Reference Documents</li> </ol> </li> </ol> </li> </ol>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

2.0 Safety Analysis

2.1 Assumptions

2.2 System Safety Analysis

2.3 Operational Safety Analysis

3.0 Failure Modes and Effects Analysis

3.1 Ground Rules

3.2 Failure Modes and Effects Analysis Worksheets

4.0 Risk Summary

Appendix A

Risk Reports (HR/CIL combination)

Appendix B

Government Certification Approval Request (GCAR), JSC Form 1296

Appendix C

Definitions

## **C. FORMAT:**

The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.

## **D. MAINTENANCE:**

See Data Requirements list. Update when changes are made to the system description, safety analysis, FMEA or risk reports. The data shall be maintained in DDMS.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Non-Conformance Record (NCR)	07/12/2012	TD-20	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To provide that all non-conformances identified at off-site facilities are appropriately identified, documented, and dispositioned in a consistent manner, and to assure that all the necessary data is included and available.		<input type="checkbox"/> Technical	
		<input type="checkbox"/> Administrative	
<input checked="" type="checkbox"/> SR&QA			
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
JPR 1281.13, Control of Non Conforming Product JPR 1281.8, Product Traceability and Identification		SMA-06 Problem Reporting and Corrective Action (PRACA) for JSC/Government Furnished Equipment	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<b>A. APPLICABLE DOCUMENTS: NONE</b>			
<b>SCOPE:</b>			
<p>At a minimum, this DRD is applicable to all items designated as or will be used in the fabrication or assembly of Class I, Class II, or Ground Support Equipment as defined in JPR 1281.8. It establishes the minimum data elements necessary to provide records of a closed loop system for the control of non-conforming products. Non-conformance reporting shall commence with the initial receipt of materials or articles for procurement, and continue through all subsequent phases of the program/project. A non-conformance is defined as failure of an item to meet a specified requirement.</p>			
<b>B. CONTENT:</b>			
The NCR shall contain the following data elements:			
1. A unique and traceable number			
2. Identification of the nonconforming article or material			
a. Nomenclature			
b. Part identification number			
c. Serial number/Lot number/Version			
d. Manufacturer's name or the Manufacturer's Contractor and Government Entity (CAGE) code (preferable)			
3. The date the non-conformance was discovered			
4. The name of the initiator of the non-conformance record			
5. A description of the non-conformance including a description of the required characteristics or specification			
6. The type of activity being conducted (e.g., fabrication, assembly, qualification test, system test, pre-delivery or pre-installation test, etc.). Reference must be made to applicable procedure numbers			
7. When appropriate, identification of the next higher assembly:			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

- a. Nomenclature
- b. Part identification number
- c. Manufacturer's name or the Manufacturer's CAGE code (preferable)

8. Disposition of the nonconforming article or material
9. The signatures of the personnel authorized to provide disposition
10. Verification that the prescribed disposition was acceptably completed
11. When applicable, a cross-reference to an associated PRACA report.

## **C. FORMAT:**

The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads. Note: For on site hardware and software processing, format shall be in accordance with the JSC Quality Management System

## **D. MAINTENANCE:**

See Data Requirements list.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Flight Products Failure Analysis Report	07/12/2012	TD-21	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
To provide and document the detailed data generated during the testing and analysis of defective hardware returned to the supplier.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
JSC 28035 Program Problem Reporting and Corrective Action (PRACA) Requirements for Johnson Space Center (JSC) Government Furnished Equipment (GFE)		SMA-06 Problem Reporting and Corrective Action for the GFE and Flight Products	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>The report documents the test and analyses conducted during an investigation of defective hardware returned to the supplier. The report identifies the root cause of the failure and records the Contractor's recommended corrective action required to prevent another occurrence of the same failure.</p> <p><b>B. CONTENT:</b></p> <p>The report shall contain the following information as a minimum:</p> <ol style="list-style-type: none"> <li>1. Description of when, where, and how the hardware failed along with supporting evidence.</li> <li>2. Documentation on how the hardware was transported to the vendor.</li> <li>3. Documentation of how the hardware was received and processed by the vendor.</li> <li>4. Documentation of tests performed, success criteria, and actual test results obtained in order to assess the failure.</li> <li>5. Documentation of the analysis performed and results obtained to assess the failure.</li> <li>6. Documentation on verification of the original certification data, and any discrepancies found.</li> <li>7. Method used to arrive at root cause of the failure.</li> <li>8. Rationale used to arrive at recommended corrective action.</li> <li>9. Plan for implementation and estimated cost of corrective action.</li> </ol> <p><b>C. FORMAT:</b></p> <p>The format is defined by an outline or template associated with this data in the Design Data Management System (DDMS). The format may be varied to match the specific nature of the products being provided. The electronic data shall be delivered to the Design Data Management System (DDMS) in native format compatible with JSC standard office software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list. The report is updated as required and maintained in DDMS.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line Item No.	RFP/Contract No. (Procurement completes)
Engineering Design Change Proposal	07/12/2012	TD-22	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of data</i> )		5. DRD Category: ( <i>check one</i> )	
Define the Contractor proposed changes to controlled NASA requirements or product configuration.		<input checked="" type="checkbox"/> Technical <input type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other DRDs</i> )	
EA-WI-027		TD-03 Critical Design (CDR) Review Data Package	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS: NONE</b></p> <p><b>SCOPE:</b></p> <p>This DRD provides a description of the minimum information required to be submitted to NASA when a change to NASA requirements is believed by the Contractor to save money, reduce risk, increase efficiency, improve performance, or improve safety.</p> <p><b>B. CONTENT:</b></p> <p>The Engineering Design Change Proposal (EDCP) shall contain the following data as a minimum:</p> <ol style="list-style-type: none"> <li>1. The Contractor EDCP number, date, and title</li> <li>2. Description of change including technical impacts, and technical impacts if not changed</li> <li>3. Justification for change</li> <li>4. Effectivity of the change specified in terms of deliverable subcontract products and affected serial number or version.</li> <li>5. Retrofit requirements and proposed incorporation/action when applicable.</li> <li>6. Data Requirements Documents Affected</li> <li>7. Estimate of cost impact</li> <li>8. Impact to Schedule</li> <li>9. Impacts to Safety</li> </ol> <p>It is acceptable for the Contractor to submit a change using the forms provided by the appropriate NASA change board.</p> <p><b>C. FORMAT:</b></p> <p>The Contractor's format shall be used unless a NASA configuration control board form is used. Changes to NASA controlled documentation shall be submitted with the current "From" text or drawing and the proposed "To" text or drawing.</p> <p><b>D. MAINTENANCE:</b></p> <p>See Data Requirements list.</p> <p><b>E. DISTRIBUTION:</b></p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Occupational Health Monthly, Quarterly, and Annual Work Achievement Reports	07/12/2012	OH-01	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To evaluate contractor performance and program effectiveness		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section <b>2.0</b>	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
A. APPLICABLE DOCUMENTS: NONE			
SCOPE:			
Report shall be prepared for each functional area to include the following: Narrative discussions in each area shall include, but not be limited to, topics such as achievements, accomplishments, issues, concerns, problems, anomalies, that the contractor deems worthy of documenting and conveying to the government.			
B. CONTENT:			
<b><u>WEEKLY AND MONTHLY OCCUPATIONAL HEALTH ACTIVITY REPORTS</u></b>			
<b>Industrial Hygiene and Asbestos Control</b>			
Narrative of activities (weekly and monthly)			
Numbers and types of samples collected, field measurements made, evaluations conducted (monthly)			
Numbers of Complaint responses and time of response (monthly)			
Numbers of Emergency responses and time of response and numbers of after hour call-outs (monthly)			
<b>Radiological Health</b>			
Narrative of activities (weekly and monthly)			
Numbers and types of samples collected, field measurements made, evaluations conducted (monthly)			
Numbers of dosimeters placed/collected (monthly)			
<b>Hazard Communication and Occupational Health Training</b>			
Narrative of activities (weekly and monthly)			
Numbers of Material Safety Data Sheets processed (monthly)			
Numbers and types of classes conducted, numbers of employees attending classes (monthly)			
Numbers of employees completing each type of Computer Based Training (monthly)			
Number of ergonomic evaluations and numbers of respirator fit tests (monthly)			
<b>Environmental Surveillance</b>			
Narrative of activities (weekly and monthly)			
Numbers and types of samples collected, field measurements made, evaluations conducted (monthly)			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Numbers of Complaint responses and type of complaint (monthly)

## **Environmental Health Laboratory**

Narrative of Activities( weekly and monthly)

Type and number of samples submitted (monthly)

Type and number of samples analyzed in-house by EHL staff (monthly)

Type and number of analyses and test results performed in-house by EHL staff (monthly)

Type and number of Quality Control samples analyzed by EHL staff (monthly)

Type and number of samples sent to other analytical laboratories (monthly)

Type and number of analyses and test results performed by other analytical laboratories (monthly)

Number of Analysts reports reviewed and number of Final reports issued (monthly)

## **WSTF Industrial Hygiene**

Narrative of Activities( weekly and monthly)

Numbers and types of samples collected, field measurements made, evaluations conducted (monthly)

## **MONTHLY, QUARTERLY, SEMI-ANNUAL, AND ANNUAL REPORTS**

Field Complaint Log Report (summary and resolution) (Monthly and Annual)

HATS Entries (type and number) (Monthly and Annual)

Food Safety Inspections (quarterly)

Sampling Strategy for Next FY (Annual)

Sampling Accomplishments for Prior FY (Annual)

Asbestos Ambient Monitoring Summary (Quarterly and Annual)

Annual Asbestos Exposure Assessment Summary Report

Annual OSHA Substance Specific Exposure Assessment Report

Annual Indoor Air Quality Investigation Summary Report

Annual Local Exhaust Ventilation Summary Report

Annual Noise Exposure Summary Report

Annual Workplace Hazard Inspection (WHI) Summary Report

Annual Chemical Alarm Summary Report

Annual Occupational Health Training Summary Report

Annual Ergonomic Summary Report

Annual Drinking Water Program Review Report

Radioactive Material Source Inventory (Semi-Annual)

Radiation Generator Inventory (Semi-Annual)

Laser Inventory (Annual)

Radiofrequency Radiation Emitter Inventory (Annual)

WSTF Food Safety Inspections (Quarterly)

EPFOL Assessment Reports (Quarterly)

WSTF Sampling Strategy for Next FY (Annual)

WSTF Sampling Accomplishments for Prior FY (Annual)

## **Annual Program Review Presentations**

Annual Sampling Strategy and Strategy for Coming Year

Asbestos Program

Indoor Air Quality Investigations

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Local Exhaust Ventilation and Chemical Alarm Programs  
Workplace Hazard Inspections  
Ionizing and Non-Ionizing Radiation Programs  
Ergonomic Evaluation Program  
Hazardous Materials Program  
Food Safety Program  
Complaints and Hazard Abatement Tracking Programs  
Drinking Water Program  
Environmental Surveillance Activities

## C. FORMAT:

These reports shall be delivered in native format and be compatible with JSC standard software loads.

## D. MAINTENANCE:

See frequency of report in item B above.

## E. DISTRIBUTION:

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Occupational Health Customer Satisfaction Surveys	07/12/2012	OH-02	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To measure the quality of Occupational Health services. Used for program planning and performance evaluation		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section <b>2.0</b>	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p>A. APPLICABLE DOCUMENTS: NONE</p> <p>SCOPE:</p> <p>Contractor shall develop and implement customer satisfaction surveys to determine the level of customer satisfaction with provided services.</p> <p>B. CONTENT:</p> <p>Surveys shall be developed for field occupational health and training activities, shall have numeric scoring and have additional space for written comments.</p> <p>C. FORMAT:</p> <p>Survey results and raw data shall be converted to PDF for review by NASA TM.</p> <p>D. MAINTENANCE:</p> <p>Monthly data shall be placed on secure web site within ten days of the beginning of the month.</p> <p>E. DISTRIBUTION:</p> <p>Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Occupational Health Standard Operating Procedures	07/12/2012	OH-03	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To assure that Standard Operating Procedures are available for training and reference		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section 2.0	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The contractor shall develop and maintain standard operating procedures (SOP) for all operations. Standard operating procedures shall conform to Contractor’s ISO program.</p> <p><b>B. CONTENT:</b></p> <p>Examples:</p> <ul style="list-style-type: none"> <li>Communication and Notification Procedures</li> <li>Emergency Response Procedures</li> <li>Calibration of Instruments</li> <li>Air Monitoring Procedures</li> <li>Environmental Health Laboratory Procedures</li> <li>Radioactive Material Handling Procedures</li> <li>Hazardous Waste Sampling Procedures</li> <li>Monitoring Well Sampling Procedures</li> <li>Drinking Water Sampling Procedures</li> <li>Ergonomic Field Evaluation and Follow Up</li> <li>Industrial Hygiene Field Investigation and Documentation</li> <li>Hazard assessment criteria and Complaint Procedures</li> <li>Asbestos Spill Response Procedures</li> <li>Work Place Health Inspections</li> <li>Hearing Conservation Program Processes and Procedures</li> </ul> <p><b>C. FORMAT:</b></p> <p>The current ISO version of each SOP will be submitted in electronic form (which can be altered) and include an all inclusive table of contents.</p> <p><b>D. MAINTENANCE:</b></p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

Revision required as SOPs change.

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Workplace Health Inspection Reports	07/12/2012	OH-04	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To provide the Johnson Space Center with a health and exposure status of the workplace, health and well being of employees, and compliance with written health program requirements.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section <b>2.0</b>	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>See item 4 above.</p> <p><b>B. CONTENT:</b></p> <p>In general reports shall contain but are not limited to:</p> <ul style="list-style-type: none"> <li>Description of operation, operators of the facility</li> <li>The status of the potential hazards in the facility</li> <li>Chemicals used in the facility and a statement of the exposure potential caused by the chemicals</li> <li>Summary and status of any exposure or environmental monitoring in the facility</li> <li>Status of any written health programs for the facility</li> <li>Health training and certification status of employees in the facility</li> <li>Overall results of the survey including the results of any field screening and the instruments used</li> <li>Recommendations</li> <li>Items entered into the JSC hazard abatement system</li> <li>Education activities performed</li> <li>Recommendations</li> <li>Follow up activities</li> </ul> <p><b>C. FORMAT:</b></p> <p>The reports shall be delivered in native format and be compatible with JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b></p> <p>Reports shall be provided to the Facility Manager within one month of inspection. An annual summary report of Workplace Health Inspections is due within the first quarter of the government fiscal year.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Annual Sampling Strategy, Exposure Monitoring, and Compliant Log Database	07/12/2012	OH-05	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
Health exposure data for use in analyzing, trending, planning		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section 2.0	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b> Contractor shall develop and maintain occupational health, environmental, and personnel exposure database. The contractor shall perform reviews, statistical analysis, and trending of the sampling activities on an annual basis.</p> <p><b>B. CONTENT:</b> Database, and related tools, shall include but is not limited to:</p> <ul style="list-style-type: none"> <li>Name of Chemical, Physical or Biological Stressor</li> <li>Annual Sampling Strategy</li> <li>Environmental, Exposure monitoring or investigation results (ability to sort by hazard or facility)</li> <li>Date collected</li> <li>Collection location</li> <li>Laboratory Location and Analysis Method</li> <li>Applicable Standards</li> <li>Statistical analysis tools</li> <li>Trending (as appropriate)</li> <li>Complaint Log (summary and resolution) (monthly deliverable in DRD-HHPC-OH-1)</li> </ul> <p><b>C. FORMAT:</b> Contractor format is acceptable but it must be compatible with JSC standard software loads.</p> <p><b>D. MAINTENANCE:</b> Information shall be kept current and periodically reviewed; any new data shall be entered into the database within 30 days.</p> <p><b>E. DISTRIBUTION:</b> Distribution shall be in accordance with the DRL.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Building and Facility Hazardous Material & Components Information	07/12/2012	OH-06	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To maintain information on, or database of, occupational health hazards and provide data for use in analyzing, trending, planning, and corrective actions.		<input type="checkbox"/> Technical <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other Contract SOW section 2.0</i> )	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>Contractor shall provide information to CSB on building and facility hazardous material and/or components. Contractor shall perform a review, statistical analysis, and trending of the findings on an annual basis.</p> <p><b>B. CONTENT:</b></p> <p>Information may be included in spreadsheets, databases, or related tools shall include but is not limited to:</p> <p>Asbestos including locations of identified asbestos containing materials (sortable by type or location), locations of removed asbestos containing materials, suspect “non-asbestos” containing materials, spill summaries, etc.</p> <p>Lead Based Paint                  Confined Spaces                  Lasers                  Ionizing and Non-ionizing radiation sources                  Cooling Towers - Legionella                  PCB’s                  Chemical Hygiene Laboratories (as defined by 29 CFR 1910.1450)                  Locations of other significant, quantity or toxicity, health hazards at the center.</p> <p><b>C. FORMAT:</b></p> <p>The contractor’s format is acceptable but must be compatible with JSC standard software loads. Configuration, control and field verification processes shall be developed to assure data integrity.</p> <p><b>MAINTENANCE:</b></p> <p>Data shall be updated within 30 days of receipt of new data.</p>			

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

## **D. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

# JSC DATA REQUIREMENTS DESCRIPTION (DRD)

(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
JSC Chemical Inventory and MSDS Database	07/12/2012	OH-07	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
To provide JSC with chemical names locations, inventory and use data to generate required state and federal reports		<input type="checkbox"/> Technical	
		<input checked="" type="checkbox"/> Administrative	
		<input type="checkbox"/> SR&QA	
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section <b>2.0</b>	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b> See item 4 above.</p> <p><b>B. CONTENT:</b></p> <p>(1) Hazardous Material Management Database - Contractor shall maintain and update a hazardous material management program and data base that allows JSC employees to electronically access and retrieve chemical inventory information at JSC facilities. At a minimum, chemical inventory information shall be available querying by a) Chemical Abstract System (CAS) number, chemical name, and common name, b) location, building and room number, c) inventory quantity d) peak quantity for the prior calendar year, e) actual or estimated quantity used annually The Contractor shall provide on-line instructions for users viewing information, updating chemical inventory information, and retrieving/downloading chemical inventory information.</p> <p>(2) Conduct JSC Chemical Inventory Updates - Conduct not less than quarterly, an updated JSC chemical inventory. Contractor shall conduct chemical inventory training annually prior to the annual center-wide inventory event. Training and instructions to NASA and other contractor personnel assisting with the inventory process shall be updated and revised annually to reflect improvements to the database and changes in the regulatory reporting requirements. Quality Assurance/Quality Control (QA/QC) shall be conducted on each year’s inventory information to assess the accuracy and completeness of the inventory. The Contractor shall assist in corrective action(s) to identified discrepancies for continuously improving the JSC chemical inventory.</p> <p>(3) MSDS Electronic Inventory - Contractor shall develop, maintain, and continuously update an electronic Material Safety Data Sheets (MSDS) Inventory that allows JSC employees to electronically access and retrieve MSDSs 24 hours/day, 365 days per year, querying by Chemical Abstract System (CAS) number, NASA JSC assigned number, chemical name, and common name.</p> <p>(4) The Contractor shall assist JSC in the development, preparation and filing of electronic and hardcopy report submittals that pertain to the quantities, use, and locations of hazardous chemicals at JSC, as required by local, state, and federal regulatory agencies</p> <p>(a) Texas Department of State Health Services (TDSHS), “Texas Tier Two” Report and filings to the TDSHS, Houston Fire Department, and Local Emergency Planning Committee(s) (LEPCs). Regulatory authority for</p>			

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this report: Texas Community Right-to-Know Acts (TCRAs), federal Emergency Planning and Community Right-to-Know Act (EPCRA), 40 (CFR) 302-304, 311, and 312. The filing deadline for each year's reports is March 1st. Forms and instructions are updated annually by TDSHS and sent out in January of each calendar year. Information and forms are available electronically from TDSHS at the following web address: [www.tdh.state.tx.us/ech/env/hazcom.htm](http://www.tdh.state.tx.us/ech/env/hazcom.htm)

(b) Environmental Protection Agency (EPA), Toxic (Chemical) Release Inventory (TRI) Form "R" Report and filings to the EPA Emergency Planning and Community Right to Know Act (EPCRA) Reporting Center, and the Texas Commission on Environmental Quality (TCEQ). Regulatory authority for this report:

EPA EPCRA, Title III, 40 CFR 313. The filing deadline for each year's reports is July 1st. Forms and instructions are updated annually by EPA, and sent out in the spring of each calendar year. Information and forms are available electronically from the EPA at the following web address: [www.epa.gov/opptintr/tri](http://www.epa.gov/opptintr/tri)

### **C. FORMAT:**

Contractor format is acceptable but it must be compatible with JSC standard software loads.

### **D. MAINTENANCE:**

Information shall be kept current and periodically reviewed; any new data shall be entered into the database within 30 days.

### **E. DISTRIBUTION:**

Distribution shall be in accordance with the DRL.

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(Based on JSC –STD-123. See work page for instructions.)

1. DRD Title	2. Date of current version	3. DRL Line	RFP/Contract No. (Procurement completes)
Occupational Health Database Management	07/12/2012	OH-08	NNJ13HA02C
4. Use ( <i>Define need for, intended use of, and/or anticipated results of</i> )		5. DRD Category: ( <i>check one</i> )	
Evaluation of overall Occupational Health program by maintenance and update of occupational health data bases		<input type="checkbox"/>	Technical
		<input checked="" type="checkbox"/>	Administrative
		<input type="checkbox"/>	SR&QA
6. References ( <i>Optional</i> )		7. Interrelationships ( <i>e.g., with other</i> )	
		Contract SOW section 2.0	
8. Preparation Information ( <i>Include complete instructions for document preparation</i> )			
<p><b>A. APPLICABLE DOCUMENTS:</b> NONE</p> <p><b>SCOPE:</b></p> <p>The contractor shall manage, maintain, and review all occupational health data bases as listed below. Statistical analysis shall be performed as appropriate and presented to the CSB. Data shall be continuously available to the CSB. Additional data bases, format and platform modifications may be proposed to the CSB.</p> <p><b>B. CONTENT:</b></p> <p>The following list describes the current suite of contractor managed databases. The contractor is expected to maintain the integrity of the data contained in these databases but may develop different database structures upon CSB notification and approval.</p> <p><b><u>Ergo Database (ERGO)</u></b></p> <p>ERGO automates the ergonomic evaluation, feedback, response and resolution process. After an ergonomic evaluation is conducted and the evaluator enters the details of an evaluation, the ERGO system then takes over management of the process, sending feedback questionnaires to evaluation subjects, gathering feedback and updating the status of a particular case. The system contacts the ergonomics administrator if there is continued dissatisfaction with ergonomics and even relays a list of subjects experiencing continued discomfort to the medical support staff at the clinic.</p> <p><b><u>Fit-Test Database (FIT)</u></b></p> <p>Third-party hardware/software system. Meets requirements imposed by OSHA’s Respiratory Protection Program by collecting and analyzing data, then recommending protective equipment required for specific tasks using hazardous materials.</p> <p><b><u>Hazardous Materials Inventory (HAZMAT)</u></b></p> <p>The hazardous materials inventory is a site-wide, open-access information system that allows the 10,000 plus contractors and civil servants at JSC to look up pertinent data on hazardous chemicals that are stored in locations where they may work or traverse. The information is maintained by a key group of data administrators that are given HAZMAT accounts to use in submitting hazardous substance addition and modification requests that are then approved or rejected by the HAZMAT coordinator. The HAZMAT coordinator utilizes the system to generate annual summary reports for local fire departments and emergency responders, the Environmental Protection Agency and several other environmental and occupational health and safety agencies.</p> <p><b><u>Hygiene Information System (HIS)</u></b></p> <p>An integrated database system designed to support the Occupational Health Services department. The goal of the system is to provide real-time health related information assimilated by employee or by work location.</p> <p><b><u>MEDGATE Industrial Hygiene management System (MEDGATE)</u></b></p>			

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An integrated database system designed to support the Occupational Health Services department. The goal of the system is to provide real-time health related information assimilated by employee or by work location.

## **Laboratory Information Management System (LIMS)**

A database system which supports the Environmental Health Laboratory division of the Occupational Health Services department. LIMS tracks and stores data the samples received in the laboratory through the stages of sample log in, assignment of pre-defined analytical "test plans", the actual analytical result values resulting from the tests and, when applicable, quality control information. The resulting "product" are finalized reports which are sent back to the appropriate requesting parties.

## **Material Safety Data Sheet Database (MSDS)**

The MSDS database is a site-wide, open-access information system that stores and serves up scanned material safety data sheets of hazardous products at JSC to all civil servants and contractors that have JSC intranet access. The material safety data sheets are managed by the MSDS coordinator who has special access to the database to upload MSDS scans and update records. The system is closely tied to the Hazardous Materials Inventory (HAZMAT) and provides the MSDS and ingredient information that is used by the HAZMAT system.

## **TSI Porta Count Respirator Fit Testing System and Database (Poratcount)**

The software used to operate the quantitative respirator fit testing system.

## **Metrosonics System Software (METR) or Quest System Software (Quest)**

The software used for downloading data from noise dosimeters used by Industrial Hygienist. This software also contains modules used in creating reports for Noise Exposure Evaluations.

## **On-line Computer Based Training (CBT)**

Site-wide intranet training application that allows JSC civil servants and contractors to create a profile, login and take computer based training courses in office and occupational ergonomics, blood borne pathogens and hazard communications. The application generates certificates for the user upon successful course completion that can be printed for the user's files. Test results are also stored in a database for generation of reports used by the training coordinator. The software used for downloading data from noise dosimeters used by Industrial Hygienist. This software also contains modules used in creating reports for Noise Exposure Evaluations.

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## **D. MAINTENANCE:**

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## **E. DISTRIBUTION:**

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