

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE 01	PAGE OF PAGES 1 84
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2. AMENDMENT/MODIFICATION NO. 4	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO. N/A	5. PROJECT NO. (If applicable)
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6. ISSUED BY CODE	PS33-MGK	7. ADMINISTERED BY (If other than Item 6) CODE	PS33-MGK
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Procurement Office
George C. Marshall Space Flight Center
National Aeronautics and Space Administration
Marshall Space Flight Center, AL 35812

Edgar F. Sanchez
256-544-0175
Edgar.F.Sanchez@nasa.gov
AUTOMATED INVOICE PAYMENT INFORMATION: (256) 544-5566

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and Zip Code) Hernandez Engineering, In. 17625 EL Camino Real, Suite 300 Houston, TX 77058	(x)	9A. AMENDMENT OF SOLICITATION NO.
		9B. DATED (SEE ITEM 11)
	X	10A. MODIFICATION OF CONTRACT/ORDER NO. NNM07AA74C
		10B. DATED (SEE ITEM 13) 01/12/07

CODE	100289	CAGE CODE	2Y303
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11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS
 The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.
 Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
 (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or
 (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(a)
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority). FAR 43.103(a)(3) and mutual agreement of the parties.

E. IMPORTANT: Contractor is not, is required to sign this document and return 3 copies to the issuing office.

	Maximum Quantity (ref. Clause B-1 Table B-1)			Task Order Cumulation (ref. Clause B.2, Table B-2)			Total Funding Allotted		
	Total Potential Estimated	Total Potential Award Fee	Total Potential Contract Value	Estimated Cost	Estimated Award Fee	Total Task Order Values			
	Previous	(b)(4)		\$ 66,943,044	\$0	\$0		\$0	\$8,888,785
	This Mod			\$0	\$0	\$0		\$0	\$0
New Total			\$ 66,943,044	\$0	\$0	\$0	\$8,888,785		

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Edgar F. Sanchez Contracting Officer
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15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED
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The purposes of this modification are to: a) execute a no cost change by revising the Performance Work Statement (PWS) to add the Position Risk Designation deliverable verbiage that was left in out in error when the contract was awarded and b) incorporate the Position Risk Designation deliverable into the Data Procurement Document . These revisions are in compliance with the Homeland Security Presidential Directive (HSPD-12) provisions already contained in the current contract. Therefore, the contract is modified in the following particulars:

- A. Under Section J, Attachment 1, make the following modifications:
Under subparagraph 2.0 (Management), at the end of the paragraph include the following sentence: “The contractor shall provide a Position Risk Designation for Non-NASA Employee (s) in accordance DRD 1107MA-012.”
- B. Under Section J, Attachment 2, delete the baseline “Data Procurement Document 1107-MA Basic” in its entirety and replace it with “DPD 1107 Revision-A” to reflect the inclusion of “DRD 1107MA-012”, entitled; “Position Risk Designation for Non-NASA Employee.”
- C. In consideration of the modifications(s) agreed herein as complete equitable adjustment for the Contractor’s “proposal(s) for adjustment,” the Contractor hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving the giving rise to the proposal(s) for adjustment.”
- D. The modifications made in A and B above is reflected in total on the change page(s) enclosed herein. In order to reflect the change(s) made, the page(s) listed below are hereby deleted from, or added to, Contract: NNM07AA74C. A vertical change bar is included in the right margin in the specific area of change.

Page(s) Deleted
Attachment 1, Pg. J-1-3
Attachment 2/Entirety

Page(s) Added
Attachment 1, Pg. J-1-3
Attachment 2/Entirety

- E. Except as provided herein, there are no other changes to Contract NNM07AA74C.

CONTRACT NNM07AA74C

This Performance Work Statement as set forth is unclassified: however, some Contractor personnel may require access to classified documents; therefore, the Contractor must possess or be able to acquire a Facility Security Clearance. Security clearance, for those persons required to have such, will be obtained in accordance with the MSFC Security Procedural Requirements, MPR 1600.1 and the Industrial Security Manual for Safeguarding Classified Information, DOD Manual 5220.22. Contractor personnel working at MSFC must comply with pertinent MSFC security regulations and the requirements of Homeland Security Presidential Directive (HSPD) No. 12.

2.0

MANAGEMENT

The Contractor shall provide administrative and technical program management for effective direction and control of this contract. The Contractor's plan and approach for providing such management shall be documented in a Management Plan which will be prepared in accordance with DRD 1107MA-001. The Contractor shall provide and use management information systems which provide a means for monitoring and measuring performance and which encompass planning, scheduling, progress reporting, and completion of tasks or projects. This shall include an automated task management system for life cycle management of task orders. The contractor shall provide an Organizational Conflict of Interest (OCI) Plan in accordance with DRD 1107MA-006. Monthly Financial Management Reports shall be provided in accordance with DRD 1107MA-008. Bi-weekly notes shall be submitted in accordance with DRD 1107MA-009. A Badged Employee and Remote IT User shall be submitted in accordance with DRD 1107MA-010. The contractor shall provide Management Status Review (MSR) Input in accordance with DRD 1107MA-005. The contractor shall provide a Make or Buy Plan in accordance with DRD 1107MA-011. The contractor shall determine the data restriction that applies to each data deliverable and mark or transmit the data restriction in accordance with section 2.3.3 of the Data Procurement Document. The contractor shall provide a Position Risk Designation for Non-NASA Employee(s) in accordance with DRD 1107MA-012.

2.1

Project Management

The Contractor shall provide planning, coordination, and surveillance of overall activities to assure disciplined performance of work and timely application of the resources necessary for completion of all tasks described in this Performance Work Statement.

The contractor shall perform the activities associated with this PWS in accordance with the Marshall Management System (MMS) requirements and the Safety and Mission Assurance (S&MA) Directorate's Organizational Instructions.

DATA PROCUREMENT DOC.
NO. ISSUE
1107 **Revision A**

NNM07AA74C

CONTRACT/RFP

EXHIBIT NUMBER

J-2

ATTACHMENT NUMBER

Safety and Mission Assurance Services

PROJECT/SYSTEM

DATA PROCUREMENT DOCUMENT

Hernandez Engineering, Inc.

CONTRACTOR

July 12, 2007

DATE

National Aeronautics and
Space Administration

National Aeronautics and Space Administration					DATA PROCUREMENT DOC.	
DOCUMENT CHANGE LOG					NO. ISSUE	
					1107 Revision A	
INCORPORATED REVISIONS OUTSTANDING REVISIONS				AS OF: 07-12-07		SUPERSEDING: 02-01-07
				PAGE:		
AUTHORITY	PORTION AFFECTED - PAGE NO./NO.				REMARKS	
	INTRO	SGR	DRL	DRD		
Contract Mod 4				X	Added the following DRD: 1107MA-012, Position Risk Designation for Non-NASA Employee	

National Aeronautics and Space Administration			DATA PROCUREMENT DOC.		
PAGE REVISION LOG			NO.	ISSUE	
NOTE: The current revision is denoted by a vertical line in the outer margin adjacent to the affected text.			AS OF:	SUPERSEDING:	PAGE:
			07-12-07	02-01-07	
INSERT LATEST REVISED PAGES.			DISCARD SUPERSEDED PAGES.		
ITEM	PAGE	STATUS	ITEM	PAGE	STATUS
DPD	ALL	Revision A			

1.0 INTRODUCTION

1.1 Scope: Subject to the Rights in Data clause, this Data Procurement Document (DPD) sets forth the data requirements in each Data Requirements Description (DRD) and shall govern that data required by the DPD for the contract. The contractor shall furnish data defined by the DRD's listed on the Data Requirements List (DRL) by category of data, attached hereto, and made a part of this DPD. Such data shall be prepared, maintained, and delivered to NASA in accordance with the requirements set forth within this DPD. In cases where data requirements are covered by a Federal Acquisition Regulation (FAR) or NASA FAR Supplement (NFS) clause, that clause shall take precedence over the DPD, consistent with clause FAR 52.215-8.

1.2 DPD Description: This DPD consists of a Document Change Log, a Page Revision Log, an Introduction, a Statement of General Requirements, DPD maintenance procedures, a DRL, and the DRD's.

1.2.1 General Requirements: The general requirements, as specified in paragraph 2.0 of this DPD, prescribe those requirements applicable to the preparation, maintenance, and delivery of data that are better defined in aggregate than in the individual DRD's.

1.2.2 Data Requirements List (DRL): Throughout the performance of the contract, the DRL provides a listing by data category of the data requirements of the DPD.

1.2.3 Data Requirements Descriptions (DRD's)

1.2.3.1 Each data requirement listed on the DRL is given complete definition by a DRD. The DRD prescribes content, format, maintenance instructions, and submittal requirements.

1.2.3.2 For the purpose of classification and control, DRD's of this DPD are grouped into the following broad functional data categories:

<u>CATEGORY SYMBOL</u>	<u>DESCRIPTION</u>
CD	Contractual Data
LS	Logistics Support
MA	Management
SA	Safety

1.2.3.3 The symbols representing these data categories form part of the prefix of the DRD identification number. The first numerical characters reflect the DPD number.

1.2.3.4 To facilitate the usage and maintenance of the DPD, the DRD's have been sectionalized in accordance with the above data categories.

1.2.3.5 The DRD's are filed by data category and are in alpha-numeric sequence as listed on the DRL page (or pages) that precedes the DRD's.

1.2.4 Document Change Log (DCL) and Page Revision Log (PRL): The Document Change Log chronologically records all revision actions that pertain to the DPD. The Page

Revision Log describes the current revision status of each page of the DPD and thus, at all times, provides its exact configuration.

- 1.2.5 DPD Maintenance Procedures: Maintenance procedures define the detailed methods to be employed in maintaining the DPD. Detailed maintenance procedures are specified in paragraph 3.0 of this DPD.

1.3 Data Types for Contractual Efforts: The types of data and their contractually applicable requirements for approval and delivery are:

<u>TYPE</u>	<u>DESCRIPTION</u>
1*	All issues and interim changes to those issues require written approval from the requiring organization before formal release for use or implementation.
2*	NASA reserves a time-limited right to disapprove in writing any issues and interim changes to those issues. The contractor shall submit the required data to NASA for review not less than 45 calendar days** prior to its release for use. The contractor shall clearly identify the release target date in the “submitted for review” transmittal***. If the data is unacceptable, NASA will notify the contractor within 45 calendar days** from the date of submission, regardless of the intended release date***. The contractor shall resubmit the information for reevaluation if disapproved. The submittal is considered approved if the contractor does not receive disapproval or an extension request from NASA within 45 calendar days**.
3	These data shall be delivered by the contractor as required by the contract and do not require NASA approval. However, to be a satisfactory delivery, the data shall satisfy all applicable contractual requirements and be submitted on time.
4	These data are produced or used during performance of the contract and are retained by the contractor. They shall be delivered only when NASA requests in writing and shall be delivered in accordance with the instructions in the request. The contractor shall maintain a list of these data and shall furnish copies of the list to NASA when requested to do so.
5	These data are incidental to contract performance and are retained by the contractor in those cases where contracting parties have agreed that formal delivery is not required. However, the Contracting Officer or the Contracting Officer’s Representative shall have access to and can inspect this data at its location in the contractor’s or subcontractor’s facilities, or in an electronic database accessible to the Government
*	Note: Type 1 and Type 2 data may be placed under NASA configuration management control when designated by NASA. CM control requires the contractor to submit Type 1 and Type 2 data updates through Engineering Change Proposals (ECPs).
**	Note: This time limit may be tailored for individual DPD’s to meet the requirements of the procuring activity.
***	Note: If the contractor does not identify a release target date or if the intended release date is shorter than 45 calendar days from the date of submission, the 45 calendar days review cycle stands (or the tailored Type 2 time limitation for the specific procurement).

2.0 STATEMENT OF GENERAL REQUIREMENTS

2.1 Applicable/Reference Documents: Documents included as applicable documents in this DPD are the issue specified in the Statement of Work, and form a part of the DPD to the extent specified herein. Applicable documents listed in Item 15.2 of a DRD are applicable only to the preparation of the deliverable documentation described by that DRD.

References to documents other than applicable documents in the data requirements of this DPD may sometimes be utilized, and shall be indicated in 13. Remarks of the DRD. These do not constitute a contractual obligation on the contractor. They are to be used only as a possible example or to provide related information to assist the contractor in developing a response to that particular data requirement.

2.2 Subcontractor Data Requirements

- 2.2.1 The contractor shall specify to subcontractors and vendors, if any, the availability source of all data required for the satisfactory accomplishment of their contracts. The contractor shall validate these requirements for documents when appropriate; where the requirement concerns other contractor data, the contractor shall provide his subcontractor or vendor with the necessary documents. All such requests shall be accomplished under the auspices of the contractor.
- 2.2.2 Reference to subcontractor data in the contractor's responses is permissible, providing the references are adequate and include such identification elements as title, number, revision, etc., and a copy of the referenced data is supplied with the response document at time of delivery to NASA.

2.3 Data Distribution, Format, Data Restriction Marking, and Transmittal

- 2.3.1 Distribution: Distribution of required documentation shall be in quantities determined by the Contracting Officer. Recipient names and email (if applicable) addresses shall be noted on a separate distribution list to be furnished by the Contracting Officer. The Contracting Officer's letter may include other information pertinent to delivery of data, as required.
- 2.3.2 Format
- 2.3.2.1 Electronic Format: Electronic submission of data deliverables is preferred. Electronic deliverables shall be printable. Data deliverables shall be delivered to NASA in the format specified below unless a specific format is required by a DRD. Data submittals shall consist of a single Adobe Acrobat PDF file and the native format electronic file(s). The preferred native formats include Microsoft Word, Excel, PowerPoint or CAD drawing plot file, as appropriate. Where a single native format file is not possible, multiple files may be integrated into a single ZIP file for submission. The organization of the contents of the integrated ZIP file shall be made readily apparent to the reader, and each file within the integrated product shall be clearly identifiable and traceable within the organization of the integrated product. If files are fragmented, file names shall be labeled logically and contiguously, and the files shall be easily reassembled or merged (e.g. 1 filename, 2 filename, 2a filename, etc.). The software versions shall be confirmed prior to submittals.
- 2.3.2.2 Hardcopy Format: In addition to the electronic submittal, one hardcopy package of specific data deliverables shall be delivered to the NASA Contracting Officer for the Government contract file. This requirement is indicated in Item 15.4, Format of each DRD. The hardcopy package shall consist of the contractor's Transmittal Memo and one copy of the data deliverable.

2.3.3 Data Restriction Marking

2.3.3.1 Data Restriction Determination and Marking Requirements: The contractor shall determine the data restriction that applies to each data deliverable and mark the data restriction on the data coversheet, or indicate the data restriction in the data transmittal package if the data format precludes identification of data restriction directly in the data. The contractor shall make a determination for each individual data deliverable item, and shall not apply a default or blanket data restriction marking to all data deliverables (e.g., “data may be export restricted”). If NASA does not agree with the contractor applied data restriction, the NASA Contracting Officer shall return the data to the contractor, cancel the markings, or ignore the markings consistent with the procedures set forth in the “data rights” clause(s) contained in the contract.

2.3.3.2 Data Restriction Categories and Marking Statements: The contractor shall consider the following data restriction categories, as a minimum, and utilize specified marking statements.

If data delivered under this contract is subject to the International Traffic in Arms Regulations (ITAR), the data shall contain an “ITAR Notice” as follows:

International Traffic in Arms Regulations (ITAR) Notice

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120-130, and is export controlled. It shall not be transferred to foreign nationals in the U.S. or abroad, without specific approval of a knowledgeable NASA

If data delivered under this contract is subject to the Export Administration Regulations (EAR), the data shall contain the “EAR Notice” as follows:

Export Administration Regulations (EAR) Notice

This document contains information within the purview of the Export Administration Regulations (EAR), 15 CFR 730-774, and is export controlled. It may not be transferred to foreign nationals in the U.S. or abroad without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license

If the contract contains FAR 52.227-14 *Alternate II*, the “Limited Rights Notice” may be applicable to data (other than computer software) delivered under this contract.

If the contract contains FAR 52.227-14 *Alternate III*, the “Restricted Rights Notice” may be applicable to computer software delivered under this contract.

If the contract contains FAR 52.227-20, the “SBIR Rights Notice” may be applicable to SBIR data delivered under this contract.

In accordance with the applicable data clause (e.g., FAR 52.227-14(c) or FAR 52.227-20(c)), the contractor may be able to assert a copyright claim in data delivered under this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government.

2.3.4 Transmittal

2.3.4.1 Data shall be transmitted to NASA by email, CD or DVD, hardcopy, or other mechanism agreed to by the Contracting Officer, COTR, and Project representatives who are responsible to receive, index, and store the data deliverables.

2.3.4.2 If email is used to transmit data deliverables, the email size shall be 10 Megabytes or less to ensure receipt by the NASA email servers. Encrypted email format shall be used to transmit data which has been judged sensitive by the contractor (e.g., export controlled, limited rights data, SBIR, restricted computer software, copyrighted, etc.).

2.3.4.3 Data Transmittal Package: Each data transmittal package shall include:

- a. Transmittal memorandum that specifies the meta-data below for each data transmittal:
 1. Contract number.
 2. Data Requirements Description (DRD) number.
 3. DRD data type (specified in Item 3 on the DRD).
 4. Submission date or milestone being satisfied.
 5. Document number and revision.
 6. Document title.
 7. File names of all files being delivered; file naming convention shall clearly identify the document being delivered.
 8. Distribution (as defined by the Contracting Officer's letter).
 9. Requested response date.
 10. Contractor assigned data restriction (export controlled, limited rights data, SBIR, restricted computer software, copyrighted, etc.) if not marked on data.
 11. NASA Records Retention Schedule (NRRS) number, if applicable. (See NPR 1441.1, NASA Records Retention Schedules)
- b. Printable electronic files or hardcopy data.

2.3.5 Use of the MSFC Documentation Repository: If Program/Project requires the contractor to transmit data directly to the Repository, Marshall Policy Directive (MPD) 2210.1 specifies the requirements for utilizing the Documentation Repository. Electronic data deliverables should be transmitted directly to the Repository via a secure web page, available at <https://webpub.nis.nasa.gov/submittal/index.html>. Computer-Aided Design (CAD) drawings shall be submitted in the original native vector, Hewlett-Packard Graphic Language (HPGL) and raster image formats.

2.4 Printing: All printing, duplicating, or binding shall be in accordance with NFS 1852.208-81, Restrictions on Printing and Duplicating. Printing of formal reports and Type 1 and 2 data in book format shall be in accordance with the following general specifications:

- a. Method of reproduction – offset/xerography.
- b. Finished size – 8 1/2" X 11".
- c. Paper – 20-pound opaque bond.
- d. Cover – Litho cover stock.
- e. Pages shall be printed on both sides; blank pages shall be avoided when possible.
- f. Oversize pages shall be avoided when possible, but if necessary shall be folded to 8 1/2" X 11".

- g. Binding shall be the most economical method commensurate with the size of the report and its intended use.
- 2.5 Contractor's Internal Documents: The contractor's internal documents shall be used to meet the data requirements of this DPD unless a specific format is required by the applicable DRD.
- 2.6 Document Identification: Type 1 and 2 documents published by the contractor and submitted in response to the data requirements of this DPD shall be identified within an organized identification numbering system prescribed to NASA by the contractor and, if applicable, as approved by NASA. For all data types, the document number, change legend, date, and title constitute the minimum identification of the specific document and shall appear on the cover and title page. The contract number shall also appear on the cover and title page as separate markings. The originator and organization shall be included on the title page. The document number, change legend, and date shall appear on each page of the document. In the front matter of each document, identify the DPD number and applicable DRD number(s) required for document preparation. Successive issues or revisions of documents shall be identified in the same manner as the basic issue and shall have appropriate change identification. Drawings and ECP's are excluded from the marking provisions of this paragraph. All Type 1 documentation, excluding configuration management requirements, shall be marked "PRELIMINARY PENDING NASA APPROVAL," and once approved shall be reissued with "APPROVED BY NASA" and the date and approval authority annotated on the cover.
- 2.7 Reference to Other Documents and Data Deliverables in Data Submittals: All referenced documents shall be made readily available to the cognizant NASA organization upon request. The contractor should make sure that the references are available to NASA in a manner which does not incur delays in the use of the response document. Reference may be made, within one data submittal, to other data submittals delivered in response to this DPD in those cases where the data required by one DRD may have been delivered by the contractor in response to another DRD. The reference to previously-submitted data shall include the applicable DRD number, data submittal version date, and location within the referenced document.
- 2.8 Maintenance of Type 1 Document Submittals
- 2.8.1 Revisions of Type 1 documentation may be accomplished either by individual page revision or by a complete reissue of the document identified in accordance with requirements of 2.7 above, with the exception of drawings (which shall be revised in accordance with contract configuration management requirements).
- 2.8.2 Individual page revisions shall be made as deemed necessary by the contractor or as directed by the Contracting Officer.
- 2.8.3 A Type 1 document shall be completely reissued when, in the opinion of the contractor and/or NASA, the document has been revised to the extent that it is unusable in its present state, or when directed by the Contracting Officer. When complete reissues are made, the entire contents of the document shall be brought up to date and shall incorporate revised

pages. All revisions shall be recorded. A revision log shall identify complete reissues except for periodic reports and documents which are complete within themselves as final.

- 2.8.4 Changes of a minor nature to correct obvious typing errors, misspelled words, etc., shall only be made when a technical change is made, unless the accuracy of the document is affected.
- 2.8.5 All revised pages shall be identified by a revision symbol and a new date. Each document shall contain a log of revised pages that identify the revision status of each page with the revision symbol. This list shall follow the table of contents in each document. The line or lines revised on a given page shall be designated by the use of vertical line in the margin of the page, and the change authority shall be indicated adjacent to the change.

2.8.6 Contractor Type 1 documents shall not be submitted containing pen and ink markups which correct, add to, or change the text, unless schedule problems exist and approval is obtained in writing from the Contracting Officer. Such markups, however, shall not exceed 20 percent of the page content and shall be acceptable provided that the reproduced copies are legible. In addition, hand-drawn schematics, block diagrams, data curves, and similar charts may be used in original reports in lieu of formally prepared art work, as long as legibility of copies is not impaired. Acceptability shall be determined by the Contracting Officer.

3.0 DPD MAINTENANCE PROCEDURES

3.1 NASA-Initiated Change: New and/or revised data requirements shall be incorporated by contract modification to which the new or revised portion of the DPD shall be appended. The contractor shall notify the Contracting Officer in the event a deliverable data requirement is imposed and is not covered by a DRD, or when a DRD is changed by a contract modification and for which no revision to DPD is appended. In such cases, the contractor shall submit the requested changes to NASA for approval. See paragraph 3.3.1 for change procedures.

3.2 Contractor-Initiated Change: Contractor-proposed data requirements, or proposed changes to existing requirements shall be submitted to NASA for approval.

3.3 DPD Change Procedures

3.3.1 Changes to a contractual issue of this DPD shall be identified by NASA on the Document Change Log and Page Revision Log. The actual revised material on the DPD page shall be identified by placing a heavy vertical line in the right-hand margin extending the entire length of the change. In addition, the numerical control number of the contractual direction authorizing the change shall be placed adjacent to the vertical revision line. These revision identifiers shall be used to reflect the current revision only; any previous symbols on a page shall be deleted by the current revision.

3.3.2 The date of the contractual direction paper, e.g., Change Order, Supplemental Agreement, or Contracting Officer's letter shall be entered under the "Status" column of the Page Revision Log adjacent to the affected page or DRD number, and in the "as of" block. The date that was in the "as of" block shall be entered in the "Superseding" block.

3.3.3 The Document Change Log entitled "Incorporated Revisions" shall be changed to indicate the number, portions affected, and associated Supplemental Agreement number, if applicable.

3.3.4 The Document Change Log entitled "Outstanding Revisions" is changed periodically to indicate outstanding Change Orders and Contracting Officer notification letters.

3.4 DPD Reissues

3.4.1 When conditions warrant, the DPD shall be reissued by NASA and shall supersede the existing DPD in its entirety. Reissues shall be issued by contractual direction.

- 3.4.2 All revision symbols (vertical lines and contractual direction control numbers) shall be removed from all pages; revision dates shall remain in the Date Revised block on DRD's that have been revised. The issue symbol, which shall commence with "A" and progress through "Z," shall be entered in the DPD identification block of each DRD page of the DPD.

Safety and Mission Assurance Services
Data Requirements List

<u>DRD</u>	<u>DATA TYPE</u>	<u>TITLE</u>	<u>OPR</u>
CD - Contract Data 1107CD-001	2	Information Technology Security Plans	IS10
LS - Logistics Support 1107LS-001	2	Government Property Management Plan	AS41
MA - Management			
1107MA-001	1	Management Plan	QD01
1107MA-002	2	Evaluation and Assessment Reports	QD01
1107MA-003	2	MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents	QD01
1107MA-004	2	Problem Assessment Center (PAC) Operations Plan	QD01
1107MA-005	2	Management Status Review (MSR) Input	QD01
1107MA-006	2	Organizational Conflict of Interest (OCI) Avoidance Plan	PS33
1107MA-007	3	Contractor Employee Clearance Document	AS50
1107MA-008	3	Financial Management Report (533M and 533Q)	CS40
1107MA-009	3	Bi-weekly Notes	QD01
1107MA-010	3	Badged Employee and Remote IT User List	AS50
1107MA-011	3	Make or Buy Plan	QD01
1107MA-012	3	Position Risk Designation for Non-NASA Employee(s)	AS50
SA - Safety			
1107SA-001	1	Personnel Training and Certification Plan	QD40
1107SA-002	2	Safety, Health, and Environmental (SHE) Plan	QD50/AS10
1107SA-003	3	Mishap and Safety Statistics Reports	QD50

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107CD-001**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Information Technology Security Plans
7. **DESCRIPTION/USE:** To document information technology security risk management and safeguards for protection of unclassified NASA electronic information and data processed by Federal general support computer systems and major software applications.
8. **OPR:** IS10 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 45 days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:** The information technology security plans shall be consistent with and further detail the approach contained in the offeror's proposal or sealed bid that resulted in the award of this contract and in compliance with the requirements stated in NFS 1852.204-76. Reference is made to NPR 2810.1, *Security of Information Technology* and NFS 1804.470-3, *Security plan for unclassified Federal Information Technology systems*.
14. **INTERRELATIONSHIP:** PWS paragraph 7.6
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** Information Technology Security Plans shall document the safeguards necessary to ensure sufficient availability, integrity, and confidentiality of that information accessed or managed within the systems and/or applications, based on the contractor's assessment of risks.
 - 15.2 **APPLICABLE DOCUMENTS:**

NFS 1852.204-76	<i>Security Requirements for Unclassified Information Technology Resources</i>
NIST SP 800-18	<i>Guide for Developing Security Plans for Information Technology Systems</i>
 - 15.3 **CONTENTS:** The Information Technology Security Plan shall meet the requirements of NFS 1852.204-76. The plan shall describe the contractor's processes for implementing information security including personnel background screening, personnel awareness and training, information protection, and security incident response.

Additionally, a separate system-level Information Technology System Security Plan shall be prepared for each Federal general support computer system or major software application managed by the contractor and/or subcontractor personnel in the performance of this contract. The Information Technology System Security Plan(s) shall meet the requirements of NIST

SP 800-18.

- 15.4 **FORMAT**: Contractor format for the Information Technology Security Plan is acceptable as long as the guidance described in NFS 1852.204-76 is followed. The Information Technology System Security Plan format shall be per NIST SP 800-18.
- 15.5 **MAINTENANCE**: Changes shall be incorporated by change page or complete reissue.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107LS-001**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Government Property Management Plan
7. **DESCRIPTION/USE:** To describe the method of controlling and managing Government property.
8. **OPR:** AS41 9. **DM:** QD01
10. **DISTRIBUTION:** Cognizant property administrator
11. **INITIAL SUBMISSION:** Preliminary three months after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Final one year after ATP, revise as required
13. **REMARKS:** This document shall be the official contract requirements document for the control and identification of all Government property.
14. **INTERRELATIONSHIP:** PWS paragraph 2.2
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Government Property Management Plan defines the contractor's methods of care, accounting, and control of Government property.
- 15.2 **APPLICABLE DOCUMENTS**

FAR	<i>Federal Acquisition Regulation, Part 45</i>
NPR 5100.4B	<i>Federal Acquisition Regulation Supplement, (NASA/FAR Supplement) Part 18-45 and latest revisions thereto</i>
- 15.3 **CONTENTS:** This plan shall satisfy the requirements of the documents listed in 15.2, and the contract. This plan shall consist of those procedures which constitute the contractor's property management system and shall include the following categories:

a. Property management.	i. Reports.
b. Acquisition.	j. Consumption.
c. Receiving.	k. Utilization.
d. Identification.	l. Maintenance.
e. Records.	m. Subcontractor control.
f. Movement.	n. Disposition.
g. Storage.	o. Contract close-out.
h. Physical inventories.	
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** 1107MA-001
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Management Plan
7. **DESCRIPTION/USE:** To provide a description of the contractor's overall management system and organization for accomplishing the requirements set forth in the contract.
8. **OPR:** QD01 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 30 days after Authority to Proceed (ATP).
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 2.0
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Management Plan shall describe the contractor's concept plans, practice, and approach for accomplishing the requirements set forth in the contract, i.e., managing and controlling Task Order Requests (TORs), Task Order Plans (TOPs), Task Orders (TOs) and TO sub-elements, and management interfaces. The plan shall be in such detail as necessary to convey the contractor's internal procedures.
 - 15.2 **APPLICABLE DOCUMENTS:** None
 - 15.3 **CONTENTS:** The Management Plan shall include:
 - a. Description of the project tasks to be accomplished and an outline of methods by which the contractor proposes to accomplish each task down to the Level II WBS task level.
 - b. Description of management concepts, plans, project management and task/control systems, organizational approach, approach to quality, and communication channels between the contractor and the Government. This shall include descriptions, flow charts, schedules, and other documentation necessary to give a comprehensive plan of organization and accomplishment.
 - 15.4 **FORMAT:** Contractor format is acceptable.
 - 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

DATA REQUIREMENTS DESCRIPTION (DRD)

- | | | |
|-------------------------|-------------------|--------------------------------------|
| 1. DPD NO.: 1107 | ISSUE: Revision A | 2. DRD NO.: 1107MA-002 |
| 3. DATA TYPE: 2 | | 4. DATE REVISED: |
| | | 5. PAGE: 1/1 |
6. **TITLE:** Evaluation and Assessment Reports
7. **DESCRIPTION/USE:** Provide the S&MA Directorate with the information required to accomplish its mission in support of MSFC Programs and Projects.
8. **OPR:** QD01 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** As required
12. **SUBMISSION FREQUENCY:** If requested, for each document evaluated and each milestone review.
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 11.2
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Evaluation and Assessment Reports shall be for various types of reviews for comment, analyses and evaluations required by the Statement of Work.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Evaluation and Assessment Reports shall review comments, analyses and evaluations of various types of documents for the purpose of determining adequacy and compliance with requirements. Such as: NASA Handbooks, MSFC requirements documents, Level II requirements documents, contractor or Government drawings, specifications, FMEA's, CIL's, Hazard Analyses, Quality Plans and Procedures, Safety Plans, Test Plans and Procedures, Software, ECP/ECR/SCR's, OMI/OMRSD's, and other documents applicable to MSFC Programs and Projects.
- The contractor shall detail deficiencies and make recommendations for approval, disapproval, and required changes. The contractor shall also provide trip reports.
- 15.4 **FORMAT:** Contractor format is acceptable as long as it fulfills the needs of the task managers.
- 15.5 **MAINTENANCE:** None required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-003**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1

6. **TITLE:** MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents

7. **DESCRIPTION/USE:** Provide the S&MA Directorate with the plans, procedures, briefing materials and other documents required in accomplishment of SRM&QA activities.

8. **OPR:** QD01 9. **DM:** QD01

10. **DISTRIBUTION:** Per Contracting Officer's letter

11. **INITIAL SUBMISSION:** As required

12. **SUBMISSION FREQUENCY:** As required and requested by the S&MA Directorate.

13. **REMARKS:** **Reference is made to NASA and MSFC Directives and Standards as applicable.**

14. **INTERRELATIONSHIP:** PWS paragraph 11.1

15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents shall be various types of MSFC SRM&QA plans, procedures and requirements documents.

 - 15.2 **APPLICABLE DOCUMENTS:** None

 - 15.3 **CONTENTS:** The MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents shall be prepared for MSFC S&MA approval and use the various types of plans, procedures, and other documentation for MSFC in-house SRM&QA activities. Examples are quality plans and procedures, verification analyses, safety analyses, FMEA's, CIL's, reliability and maintainability analyses and assessments, and other types of documents detailed in the Statement of Work. They shall also have the capability of preparing charts (viewgraphs) and writing documents such as training plans and SRM&QA management plans. The documents shall be prepared in accordance with NASA or MSFC Directives and standards associated with the preparation of the different documents requested.

 - 15.4 **FORMAT:** The contractor shall use the format established by the directives governing the preparation of the specific documents, otherwise contractor format will be acceptable.

 - 15.5 **MAINTENANCE:** Maintained current by page revision or complete reissue to reflect all approved changes.

DATA REQUIREMENTS DESCRIPTION (DRD)

- | | | |
|-------------------------|-------------------|--------------------------------------|
| 1. DPD NO.: 1107 | ISSUE: Revision A | 2. DRD NO.: 1107MA-004 |
| 3. DATA TYPE: 2 | | 4. DATE REVISED: |
| | | 5. PAGE: 1/1 |
6. **TITLE:** Problem Assessment Center (PAC) Operations Plan
7. **DESCRIPTION/USE:** Update the PAC Operations plan.
8. **OPR:** QD01 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Sixty (60) days after Authority to Proceed (ATP).
12. **SUBMISSION FREQUENCY:** Revisions as required.
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 5.5.1
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Problem Assessment Center (PAC) Operations Plan identifies the organization, implementation and control of the PAC. The plan shall also identify the periodic reports the PAC will issue to fulfill customer needs.
- 15.2 **APPLICABLE DOCUMENTS:**
- NSTS 08126** *Space Shuttle Problem Reporting and Corrective Action System Requirements*
- SSP 30223** *International Space Station Program Problem Reporting and Corrective Action System Requirements*
- XXX** **CLV PRACA documents when baselined**
- 15.3 **CONTENTS:** The PAC Operations Plan shall provide identification of the disciplines, controls and interfaces necessary to implement operation of the PAC, and shall satisfy the requirements of the documents listed in 15.2.
- 15.4 **FORMAT:** The format of the plan shall permit accommodation of special requirements of new projects via appendices. Generally, the order of tasks shall be in accordance with paragraph 5.5 of the PWS.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue. The Plan shall be reviewed at least once each year to identify necessary changes.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-005**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Management Status Review (MSR) Input
7. **DESCRIPTION/USE:** To provide data for the assessment of contract progress by task order (TO). To provide visibility to the contractor and MSFC Management of actual and potential problems and their progress toward meeting the requirements of the contract
8. **OPR:** QD01 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** First MSR after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Monthly thereafter. The report shall be submitted at the MSR.
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraphs 2.0 and 2.7
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Management Status Review (MSR) Input provides a comprehensive status on all active TOs and include the necessary information to assess status and identify problems that need resolution for accomplishment of the contract tasks.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Management Status Review (MSR) Input shall include:
 - a. Review of work accomplished, including quantitative description, during the reporting period.
 - b. Discussion of non-routine tasks planned for the next reporting period.
 - c. **Indication of any problems, which may impede performance or impact performance, schedule or cost.**
 - d. **Schedule with milestones.**
 - e. Labor hours expended by labor category showing overtime hours separately.
 - f. Costs expended (by cost element) versus negotiated cost and TO/TO sub-element funding received.
 - g. Cost detail should be delineated in terms of those government unique project numbers (UPN) funding each TO/TO sub-element.
 - h. Any other information that may assist the technical evaluators in evaluating the technical and administrative program; such as innovative processes, cost-reduction initiatives, etc.
- 15.4 **FORMAT:** Contractor format similar to government MSR charts is acceptable, hard copy charts with electronic presentation media is strongly encouraged.

15.5 **MAINTENANCE**: None required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-012**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Organizational Conflict of Interest (OCI) Avoidance Plan
7. **DESCRIPTION/USE:** To demonstrate to the Government that the Contractor, when using subject matter experts, will mitigate organizational conflicts of interest and ensure that the contractor provides unbiased, impartial advice and adequately protects sensitive, proprietary data belonging to other contractors.
8. **OPR:** PS33 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 5 working days following Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Update as required
13. **REMARKS:** Reference is made to Contract Clauses H.2, H.3, H.14, and K.3; NFS Part 1809.505-4, "*Obtaining Access to Sensitive Information;*" NFS Part 1837.203-70, "*Providing Contractors Access to Sensitive Information;*" NFS Part 1837.203-71, "*Release of Contractor's Sensitive Information;*" NFS Part 1852.237-72, "*Access to Sensitive Information;*" and NFS 1852.237-73, "*Release of Sensitive Information.*"
14. **INTERRELATIONSHIP:** PWS paragraph 2.0
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Organizational Conflict of Interest Avoidance Plan demonstrates that no organizational conflict of interest exists or that any such potential conflicts have been adequately avoided or mitigated when using subject matter experts connected to any prime contractor or subcontractor performing design, development, and/or delivery of space flight hardware, software, mission integration services or other critical systems related to MSFC.
 - 15.2 **APPLICABLE DOCUMENTS:** None
 - 15.3. **CONTENTS:** The Organizational Conflict of Interest Avoidance Plan shall include the following:
 - a. Organizational conflicts of interest pertaining to impaired objectivity associated with the use of subject matter experts shall either:
 1. Warrant that the individuals have no conflicting business relationships as defined in Clauses H.2, H.3, and K.3 in the solicitation, or
 2. Describe all business relationships that might create a conflict with the performance work statement in this order by demonstrating:
 - (a) That the management reporting chains between this order and the work performed by the technical subject matter experts for the conflicting business relationship are separated from each other.

- (b) That the subject matter experts when performing this order are physically separated from the portion of the company performing the work for the conflicting business relationships.

DRD Continuation Sheet

TITLE: Organizational Conflict of Interest (OCI) Avoidance Plan

DRD NO.: 1107MA-006

DATA TYPE: 2

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- (c) That each subject matter expert performing this order signs an express, binding, written agreement setting forth all responsibilities and duties to avoid organizational conflicts of interest and to protect sensitive data provided under this order.
 - (d) That techniques are in place to ensure that the contractor shall not favor the conflicting business relationships and will avoid the appearance of conflicts of interest.
- b. With regard to access to nonpublic information by the subject matter experts, the avoidance plan shall contain a plan to safeguard all proprietary/sensitive data the contractor receives. This plan shall include:
1. A provision that subject matter experts shall not disclose the proprietary/sensitive data relating to this order.
 2. A provision that subject matter experts only shall use the proprietary/sensitive data relating to this order.
 3. A provision that information, whether in hard copy or on electronic media, shall be marked, handled, stored, and destroyed in order to preclude an unauthorized disclosure of information.
 4. A provision that information technology shall be protected to prevent unauthorized disclosure of information.
 5. A provision that employees performing the effort must sign an express binding written agreement clearly agreeing to protect sensitive data.
 6. A requirement that subcontractors have appropriate OCI avoidance procedures in place for the use of subject matter experts.
 7. A requirement for periodic self-audits, the results of which shall be made available to the Government.
 8. Initial and periodic refresher OCI training for the contractor and subject matter experts working on the order.
 9. A Description of organizational and employee sanctions for violation of the OCI order clause or OCI Avoidance Plan provisions.
 10. Provisions on record keeping requirements regarding OCI (e.g., training, written agreements). The contractor shall make these records available to and cooperate with any neutral third party the Government assigns to review adherence to their OCI mitigation plan.
 11. A provision requiring the contractor to report any real, apparent, or potential conflict of interest that may arise to the Contracting Officer.
 12. A provision requiring the contractor to update the OCI Avoidance Plan for the subject matter experts upon occurrence of any event that will cause a change to the plan.

15.4 **FORMAT**: Contractor format is acceptable.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

- | | |
|-------------------------|-------------------------------|
| 1. DPD NO.: 1107 | 2. DRD NO.: 1107MA-007 |
| 3. DATA TYPE: 3 | 4. DATE REVISED: |
| | 5. PAGE: 1/1 |
6. **TITLE:** Contractor Employee Clearance Document
7. **DESCRIPTION/USE:** To ensure that badged contractor employees no longer requiring Center access properly clear all accounts upon termination of employment.
8. **OPR:** AS50 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Immediately upon termination of employment.
12. **SUBMISSION FREQUENCY:** As required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 11.3
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Contractor Employee Clearance Document provides verification that all badged employees have properly cleared all accounts upon termination of employment.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Contractor Employee Clearance Document shall contain all the information required by MSFC Form 383-1.
- 15.4 **FORMAT:** MSFC Form 383-1, "Contractor Employee Clearance Document".
- 15.5 **MAINTENANCE:** None required

Modified Cost Performance Report (M/CPR) shall be submitted as an attachment to the 533M/533Q Report.

A backup report shall be provided that identifies the following fields: Task Order (TO), TO/sub-element, reporting category, PR number, WBS, cost center, fund, current month actuals, cumulative actuals, funding received, variance next month's estimate and monthly actuals at the individual project/program level.

DRD Continuation Sheet

TITLE: Financial Management Report (533M and 533Q)

DRD NO.: **1107MA-008**

DATA TYPE: 3

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

15.4 **FORMAT:** Contractor internal automated printout reports may be substituted for 533M/533Q forms (with NASA Contracting Officer's approval) provided that the contractor report contains all of the data elements required by NASA Forms 533M and 533Q. Electronic submission of contractor data is strongly encouraged (reference NPR 9501.2, paragraph 3.7).

15.5 **MAINTENANCE:** None required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-010**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Badged Employee and Remote IT User Listing
7. **DESCRIPTION/USE:** To assist NASA in conducting contractor floor checks and to determine if the employees meet the minimum background investigation requirements.
8. **OPR:** AS50 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** No later than 10 working days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Update quarterly or as personnel change occurs. If deemed necessary by the Contracting Officer, the contractor shall submit the list at times other than stated.
13. **REMARKS:** Reference is made to Federal Acquisition Regulation (FAR) Clause, FAR 52.215-2, *Audit and Records--Negotiations* (June 1999), NPR 1600.1, *NASA Security Program Procedural Requirements*, and Homeland Security Policy Directive 12.
14. **INTERRELATIONSHIP:** PWS paragraph 2.0
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Badged Employee and Remote IT User Listing shall provide NASA with a list of all MSFC badged contractor employees, as well as, any contractor remote IT users who will have access to the MSFC IT system.
 - 15.2 **APPLICABLE DOCUMENTS:** None
 - 15.3 **CONTENTS:** The Badged Employee and Remote IT User Listing shall include the following information for each employee: employee's full name (first and middle names must be birth names), Social Security Number (SSN), date of birth, place of birth, duty position, duty location (building/room number), shift assignment, and supervisor's name. Additionally, if applicable, the type of security background check already completed [National Agency Check – Local Agency Checks and Credit Check (NACLIC) or Single Scope Background Investigation (SSBI)] and the date it was completed.
 - 15.4 **FORMAT:** Contractor format using Excel Spreadsheet is acceptable.
 - 15.5 **MAINTENANCE:** None required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-011**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Make or Buy Plan
7. **DESCRIPTION/USE:** To outline and define those end items to be manufactured (make) or procured (buy).
8. **OPR:** QD01 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** With proposal
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:** Reference is made to FAR 15.407-2, *Make or Buy Programs*
14. **INTERRELATIONSHIP:** PWS paragraph 2.0
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Make or Buy Plan establishes the content, format, and maintenance requirements for a “make or buy” plan of important components or subsystems.
 - 15.2 **APPLICABLE DOCUMENTS:**
NFS 1852.215-78 *Make or Buy Program Requirements*
 - 15.3 **CONTENTS:** The Make or Buy Plan shall contain the following in accordance with NFS 1852.215-78:
 - a. Description of each major item or work effort.
 - b. Categorization of each major item or work effort as “must make”, “must buy”, or “can either make or buy.”
 - c. For each item or work effort categorized as “can either make or buy”, a proposed either to “make” or “buy”.
 - d. Reasons for categorizing items and work effort as “must make” or “must buy” and proposing to “make” or “buy” those categorized as “can either make or buy”. The reasons must include the consideration given to the applicable evaluation factors described in the solicitation and be in sufficient detail to permit the Contracting Officer to evaluate the categorization and proposal.
 - e. Designation of the offerer’s plant or division proposed to make each item or perform each work effort and a statement as to whether the existing or proposed new facility is in or near a labor surplus area.
 - f. Identification of proposed subcontractors, if known, and their location and size status.
 - g. Any recommendation to defer make-or-buy decisions when categorization of some items or work efforts is impracticable at the time of submission.

DRD Continuation Sheet

TITLE: Make or Buy Plan

DRD NO.: **1107MA-011**

DATA TYPE: 3

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

Note: The information required from a contractor in a make-or-buy plan shall be confined to those major items or work efforts that normally would require company management review of the make-or-buy decision because they are complex, costly, needed in large quantities, or require additional facilities to produce. Raw materials, commercial items, and off-the-shelf items shall not be included, unless their potential impact on contract cost or schedule is critical. Normally, make-or-buy programs should not include items or work efforts estimated to cost less than 1 percent of the total estimated contract price of any minimum dollar set by the agency.

15.4 **FORMAT**: Contractor format is acceptable. The plan shall be sub-divided to categorize each item by subsystem, major components, assemblies, subassemblies, and parts to be processed or manufactured.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-012**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1

6. **TITLE:** Position Risk Designation for Non-NASA Employee(s)

7. **DESCRIPTION/USE:** To ensure that contractor employees are screened to an appropriate risk determination in accordance with NPR 1600.1, *NASA Security Program Procedural Requirements*, Chapter 4.

8. **OPR:** AS50 9. **DM:** QD01

10. **DISTRIBUTION:** The copy of the spreadsheet shall be submitted to Protective Services at the following address: Protective Services; Attn: Ms. Deborah Swafford; Building 4200, Room 222; MSFC, AL 35812 or deborah.g.swafford@nasa.gov.

11. **INITIAL SUBMISSION:** No later than 10 working days after Authority to Proceed (ATP)

12. **SUBMISSION FREQUENCY:** Update as personnel or position changes occur

13. **REMARKS:** Information shall be marked appropriately as subject to the Privacy Act of 1974 (Privacy Act Information [PAI]). The spreadsheet shall be used for all new hires and any current employees who have not previously submitted the required data on NASA Form 1760. All new hires must be noted as such on the spreadsheet.

14. **INTERRELATIONSHIP:** PWS paragraph 2.0

15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Position Risk Designation for Non-NASA Employee provides information necessary to determine the type of investigation required and how closely an individual is screened for a position.

 - 15.2 **APPLICABLE DOCUMENTS:**
NPR 1600.1 *NASA Security Program Procedural Requirements*

 - 15.3 **CONTENTS:** The Position Risk Designation for Non-NASA Employee shall contain the following information for each employee: Social Security Number (SSN), Last Name, First name, Middle Suffix, Date of Birth, City of Birth, County of Birth, State of Birth, Country of Birth, E-mail address, Telephone Number, Mission Essential Infrastructure (MEI) Required, Personnel Reliability Program (PRP) Required and Remote IT Access Only.

 - 15.4 **FORMAT:** The Spreadsheet shall be provided in Microsoft Excel electronically via CD, delivered directly to Protective Services, or Encrypted Email (no other means of transmittal will be accepted).

15.5 MAINTENANCE: None required

1. General.
 - (a) Program description.
 - (b) Program administration.
 - (c) Certification duration.
 - (d) Definitions.

DRD Continuation Sheet

TITLE: Personnel Training and Certification Plan

DRD NO.: 1107SA-001

DATA TYPE: 1

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- (e) Job description summaries.
- (f) Task assignments per job description.
- (g) Skills required per job description.
- 2. Certification requirements/skills.
 - (a) Education.
 - (b) Experience/work history.
 - (c) Specialized training.
 - (d) Physical condition/attitude.
- 3. Certification process.
 - (a) Supervision responsibilities.
 - (b) Certifying authority.
 - (c) Formal/informal examination.
 - (d) Proficiency demonstration.
- 4. Certification documentation.
- b. Specific skills requiring training and proficiency shall include:
 - 1. Schematic and drawing comprehension.
 - 2. Test and launch operations.
- c. Specific skills requiring certification and proficiency shall include:
 - 1. Solid propellant inspection *.
 - 2. Confined space *.
 - 3. Welding inspection and nondestructive evaluation (NDE).
 - 4. Program Critical Hardware (PCH) *.
 - 5. Lifting Equipment Training Certified Examiner.
 - 6. Propellant and Explosive Handler *.
 - 7. Risk Management Course Instructors (NASA Headquarters provided training, travel required).

* Training provided by the Government at MSFC.

15.4 **FORMAT**: Contractor format is acceptable.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107SA-002**
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/3
6. **TITLE:** Safety, Health, and Environmental (SHE) Plan
7. **DESCRIPTION/USE:** To provide the contractor and the Government a baseline document for planning, management, control, and implementation of the contractor's industrial/occupational safety, health, and environmental program in accordance with NFS 1852.223-73.
8. **OPR:** AS10/QD50 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** Preliminary with proposal
12. **SUBMISSION FREQUENCY:** Ten days after Authority to Proceed (ATP); update as required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** NFS 1852.223-70, *Safety and Health*; NFS 1852.223-73, *Safety and Health Plan*; FAR 52.223-10, *Waste Reduction Program*. DRD 1107SA-003, *Mishap and Safety Statistics Report*. PWS paragraph 2.3.
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Safety, Health, and Environmental Plan describes the contractor's method of implementing occupational safety, health, and environmental standards over the duration of the contract.
- 15.2 **APPLICABLE DOCUMENTS:** Compliance with the following Occupational Safety and Health Standards and applicable requirements shall be specified in the plan (if applicable to the scope of this contract).

29 CFR 1910	<i>Department of Labor; Occupational Safety and Health Administration Standards for General Industry</i>
29 CFR 1926	<i>Department of Labor; Occupational Safety and Health Administration Standards for Construction Industry</i>
40 CFR	<i>Protection of the Environment</i>
ANSI Standards applicable to the scope of this contract	
<i>ASME Boiler and Pressure Vessel Code</i>	
MPR 1040.3	<i>MSFC Emergency Plan</i>
MPR 1840.3	<i>MSFC Hazardous Chemicals in Laboratories Protection Program</i>
MPR 1840.1	<i>MSFC Confined Space Entries</i>
MPD 1860.2	<i>MSFC Radiation Safety Program</i>
MPR 1810.1	<i>MSFC Occupational Medicine</i>
MPD 1840.3	<i>MSFC Respiratory Protection Program</i>
MPD 1840.2	<i>MSFC Hearing Conservation Program</i>
MPD 1840.1	<i>MSFC Environmental Health Program</i>

MPR 1840.2	<i>MSFC Hazard Communication Program</i>
MPD 1860.1	<i>Laser Safety</i>
MPR 1800.1	<i>Bloodborne Pathogens</i>
MWI 3410.1	<i>Personnel Certification Program</i>
MPR 8715.1	<i>Marshall Safety, Health and Environmental (SHE) Program</i>

DRD Continuation Sheet

TITLE: Safety, Health, and Environmental (SHE) Plan

DRD NO.: 1107SA-002

DATA TYPE: 2

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15. **DATA PREPARATION INFORMATION (CONTINUED):**

MPD 8900.1 *Medical Operations Responsibilities for Human Space Flight Programs*
(NOTE: This document only applies to Space Station contracts)

NFPA Standards *National Fire Codes*

NPR 8715.3 *NASA Safety Manual*

NASA-STD-8719.11 *Safety Standard for Fire Protection*

15.3 **CONTENTS:** The Safety, Health, and Environmental Plan shall describe the manner in which the contractor implements the requirements of the applicable documents as they pertain to the specific statement of work tasks to be performed and updated when necessary. The Safety, Health and Environmental Plan shall clearly state if the contracted effort contain potentially hazardous or non-hazardous operations and fully address the following applicable topics:

a. Management leadership and employee involvement:

1. Statement of management policy and commitment to provide for the safety and health of personnel (i.e., employees, customers, and public) and property, and compliance with EPA, OSHA and NASA requirements.
2. Description of procedures for insuring management and employees are held accountable for implementing their task in a safe and healthful manner through motivational techniques, disciplinary program, or other innovative techniques.
3. Descriptions of safety, health, environmental awareness and motivation programs that, include documented safety meetings and safety awareness training for employees. (Onsite Safety meeting statistics shall be documented in the Supervisors Safety Web page:
http://msfcsma3.msfc.nasa.gov/dbwebs/apps/sswp/SSWP_login.taf)
4. Method of program evaluation that, identify the methods and frequency for internal evaluation of the safety, health, and environmental program.
5. Method to ensure the Flowdown of safety responsibilities between all company levels and subcontractors, when applicable.
6. Identification by title the individual who will be responsible for the implementation of the SHE program elements.
7. Method to ensure compliance with MPR 8715.1, when work will be performed onsite at MSFC.

b. System and worksite analysis:

1. Methods of hazard identification, e.g., hazard analysis, safety assessment, change analysis, risk assessment and employee identified concerns.
2. Descriptions of OSHA programs that require documented programs (e.g., Respiratory Protection, Hazard Communication, Confined Space, and Lockout/Tagout, etc. Include the interrelationships with the MSFC programs.) (Note: Only programs applicable to the contracted effort need to be addressed.)
3. Requirements for formal worksite safety inspections as required by OSHA, to including schedule and documentation requirements. Onsite OSHA inspections are performed by NASA.
4. Requirements for documented supervisors' safety visits. Onsite safety visits shall be

performed once per month per supervisor and documented in the Supervisors Safety Web page.

DRD Continuation Sheet

TITLE: Safety, Health, and Environmental (SHE) Plan

DRD NO.: 1107SA-002

DATA TYPE: 2

PAGE: 3/3

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- c. Hazard prevention and control:
 1. Methods to identify potentially hazardous operations and generate plans, procedures, and other working documents which clearly identify the hazardous situations and the necessary cautions taken to mitigate the hazard; an annual review of the plans and procedures; and, MSFC Safety Department concurrence for onsite hazardous procedures. A list of identified potentially hazardous operations will be provided in the SHE plan.
 2. Method of ensuring controls over the procurement, storage, issuance, and use of hazardous substances and procedures for recycling and disposal of hazardous waste in accordance with MPR 8500.1.
 3. Method of ensuring a documented emergency management program. Include a list of emergency points of contact. (Note: Onsite contractors may use MPR 1040.3.)
 4. Method of investigating all mishaps and close calls to determine root cause, including an outline of reporting requirements. (Reference DRD 1107SA-003, *Mishap and Safety Statistics Report*).
 5. Method for providing safety, health, and environmental services applicable to the contracted effort such as hazardous waste disposal, industrial hygiene monitoring, emergency medical support, hearing conservation program, and hazard communication. (These services can be provided by MSFC for onsite work.)
 6. Method for employees to suspend work where safety or environmental conditions warrant such action.
- d. Safety and health training:
 1. Method for training each employee to recognize hazards, avoid accidents, know the hazards specific to their job, and understand the disciplinary program.
 2. Method for training and certification of personnel performing potentially hazardous operations. Identify the job categories under the contracted effort that require certification in accordance with MWI 3410.1, "Personnel Certification Program". Personnel Certification for onsite identified job categories shall be tracked in the MSFC Certification Database (CERTRAK) in accordance with MWI 3410.1. (NOTE: offsite contracts shall list the job categories under the contracted effort that require OSHA documented training and certification.)
- e. Environmental compliance - Provisions for compliance with environmental laws and regulations by: reporting hazardous and toxic substance use; implementing and reporting green procurements in accordance with MWI 8540.2; reducing, reusing, and recycling of hazardous and toxic substances prior to disposal; minimizing stormwater pollution; ensuring equipment and processes permitted by applicable laws; and disposing of solid and liquid materials as permitted by applicable laws.

15.4 **FORMAT**: Contractor format is acceptable.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107SA-003**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Mishap and Safety Statistics Reports
7. **DESCRIPTION/USE:** To provide reporting of metrics, mishaps, close calls, and serious non-occupational injuries or illnesses.
8. **OPR:** QD50 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:**
 - a. Safety Statistics (e.g., contract number, subcontractors, NAIC codes, number of employees, number of supervisors, hours worked, etc.): submitted on MSFC Form 4371 by the 10th of each month following Authority to Proceed (ATP).
 - b. Mishaps, Close Calls, and serious non-occupational injuries or illnesses
 1. Type A or B mishaps, high visibility mishaps or close calls, and onsite Type C lost time injury or illness: Immediate telephone notification to the Contracting Officer, and Industrial Safety (256-544-0046 or 4-HELP, Safety Option) so that Center Director notifies the NASA Administrator within 24 hours of occurrence or awareness. Include location and time of incident, number of fatalities, number hospitalized, type of damage, estimated cost, brief description, and contact person and phone number.
 2. Non-occupational fatality or serious injury occurring onsite or to an onsite contractor employee: Notification to Contracting Officer and S&MA so that Center Director notifies the NASA Administrator within 24 hour of occurrence or awareness. (Offsite non-occupational injury or illness notification is at the discretion of the family.)
 3. a. All Onsite MSFC mishaps and close calls: (**applicable to onsite contractors only**): NASA Initial Safety Incident Report within 4 hours of occurrence or awareness on MSFC Form 4370 or equivalent either by telephone 256-544-4357 (4-HELP); Safety Option or electronically by Quick Incident. Report at https://msfcsma3.msfc.nasa.gov/s&ma_01/mishap/index.htm.
 - b. Offsite Mishaps and Close Calls Type C and below: Initial notification by next MSFC 4371.
 4. All Mishaps (Type A, B, C, Incidents and Close Calls): Mishap Report NASA Form 1627 or electron update of NASA Incident Reporting Information System (IRIS) record within 6 calendar days of Mishap.
 5. Type A, B, and Close Calls with high Type A or B potential: Mishap Board Report after completion of investigation.
 6. All Mishaps: Monthly Follow-up Corrective Action Plan/Status as required until closed.
12. **SUBMISSION FREQUENCY:**
 - a. MSFC Form 4370 or electronic equivalent - Each occurrence of a mishap except as identified in section 11.b.

- b. NASA Form 1627 or electronic equivalent - Each occurrence of a mishap. Corrective action status reports are due every 30 days until the final report is submitted.
- c. MSFC Form 4371 - By the 10th of each month.
- d. Mishap Board Report – Each occurrence of a Type A or B mishap, or as directed by Center management.

13. **REMARKS:**

14. **INTERRELATIONSHIP:** DRD 1107SA-002, *Safety, Health, and Environmental (SHE) Plan*. PWS paragraph 2.3

DRD Continuation Sheet

TITLE: Mishap and Safety Statistics Reports

DRD NO.: **1107SA-003**

DATA TYPE: 3

PAGE: 2/2

15. **DATA PREPARATION INFORMATION:**

15.1 **SCOPE:** The Mishap and Safety Statistics Reports document all mishaps and close calls as required in NPR 8621.1.

15.2 **APPLICABLE DOCUMENTS:**

NPR 8621.1 NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping

MWI 8621.1 Close Call and Mishap Reporting and Investigation Program

15.3 **CONTENTS:** The Mishap and Safety Statistics Reports shall contain the information required by NPR 8621.1 and MWI 8621.1. The contractor shall use the forms listed in 15.4 to report mishaps and related information required to produce the safety metrics.

15.4 **FORMAT:** The following formats or electronic equivalent shall be submitted:

- a. MSFC Form 4370, "MSFC Flash Mishap Report."
- b. NASA Form 1627, "NASA Mishap Report."
- c. MSFC Form 4371, "MSFC Contractor Accident and Safety Statistics."
- d. Mishap Board Report using the format provided in NPR 8621.1.

15.5 **MAINTENANCE:** None required

SECTION J

ATTACHMENT J-1

PERFORMANCE WORK STATEMENTMSFC SAFETY & MISSION ASSURANCE SERVICES

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ATTACHMENT J-1**PERFORMANCE WORK STATEMENT**1.0 **SCOPE**

MSFC S&MA is strongly committed to Safety, Teamwork, Integrity and Mission Success. This allows for the establishment of a highly skilled, diverse, and motivated workforce committed to safety. Working in a creative and productive environment in support of cutting-edge systems and technology development, the Center employs unique and innovative management techniques to improve safety of the public, the astronauts and pilots, the NASA workforce and high-value equipment and property. The Safety and Mission Assurance Directorate is committed as a part of MSFC, to preventing human injury and ensuring the safety of all operations and products leading to mission success. The S&MA Service Contractor shall fully support these endeavors and demonstrate the same commitment to safety and mission success.

The Contractor shall provide the necessary management, personnel, equipment, and supplies (not otherwise provided by the Government) required to provide services associated with the planning, implementation, and assessment of System Safety Engineering, Industrial Safety, Reliability and Maintainability Engineering, S&MA Management Information, Quality Assurance/Engineering, Project Assurance, Risk Management, Independent Assessment, Documentation and Report Support elements for the Marshall Space Flight Center Safety and Mission Assurance Directorate. The services tasks associated with each of these elements are elaborated in this Performance Work Statement (PWS).

The Contractor shall perform surveillance of assigned MSFC in-house and contracted design, development, manufacturing, and testing activities, for both hardware and software, to assess compliance with NASA MSFC Safety, Reliability, Maintainability, and Quality Assurance (SRM&QA) policies, requirements, and controls. The Contractor shall assure that management assessment information is provided in a timely manner to the MSFC S&MA Directorate to support the decision-making process regarding open problems, hazards, and risks pertaining to accomplishing MSFC's mission. This will include operation and maintenance of the S&MA Management Information Processes. The tasks described in this Performance Work Statement shall be performed principally in the MSFC locale; however, occasional travel to contractor facilities, NASA Headquarters, and other NASA installations may be required. Also, a few positions may be located at production/launch facilities in MSFC Resident Management Offices.

This Performance Work Statement as set forth is unclassified: however, some Contractor personnel may require access to classified documents; therefore, the Contractor must possess or be able to acquire a Facility Security Clearance. Security clearance, for those persons required to have such, will be obtained in accordance with the MSFC Security Procedural Requirements, MPR 1600.1 and the Industrial Security Manual for Safeguarding Classified Information, DOD Manual 5220.22. Contractor personnel working at MSFC must comply with pertinent MSFC security regulations and the requirements of Homeland Security Presidential Directive (HSPD) No. 12.

2.0 MANAGEMENT

The Contractor shall provide administrative and technical program management for effective direction and control of this contract. The Contractor's plan and approach for providing such management shall be documented in a Management Plan which will be prepared in accordance with DRD 1107MA-001. The Contractor shall provide and use management information systems which provide a means for monitoring and measuring performance and which encompass planning, scheduling, progress reporting, and completion of tasks or projects. This shall include an automated task management system for life cycle management of task orders. The contractor shall provide an Organizational Conflict of Interest (OCI) Plan in accordance with DRD 1107MA-006. Monthly Financial Management Reports shall be provided in accordance with DRD 1107MA-008. Bi-weekly notes shall be submitted in accordance with DRD 1107MA-009. A Badged Employee and Remote IT User shall be submitted in accordance with DRD 1107MA-010. The contractor shall provide Management Status Review (MSR) Input in accordance with DRD 1107MA-005. The contractor shall provide a Make or Buy Plan in accordance with DRD 1107MA-011. The contractor shall determine the data restriction that applies to each data deliverable and mark or transmit the data restriction in accordance with section 2.3.3 of the Data Procurement Document. The contractor shall provide a Position Risk Designation for Non-NASA Employee(s) in accordance with DRD 1107MA-012.

2.1 Project Management

The Contractor shall provide planning, coordination, and surveillance of overall activities to assure disciplined performance of work and timely application of the resources necessary for completion of all tasks described in this Performance Work Statement.

The contractor shall perform the activities associated with this PWS in accordance with the Marshall Management System (MMS) requirements and the Safety and Mission Assurance (S&MA) Directorate's Organizational Instructions.

2.2 Property Management

The Contractor shall comply with:

MWI 4520.1	Receiving
MWI 4220.1	Space Utilization, Communications Furniture, Relocation, and Special Event Services
MWI 4200.1	Equipment Control
MWI 4300.1	Disposal Turn-Ins/Reutilization Screening
MWI 4500.1	Program Stock, Storage, and Retail Store Operations
MWI 4520.2	Use of the Procurement Discrepancy Tracking System (PDTS)
MPR 4000.2	Property Management
FAR Part 45	Government Property
NFS Part 1845	Government Property

The Contractor shall implement an inventory control system for all controlled property and equipment. The Contractor shall prepare and maintain a report identifying and listing all equipment, tools, etc., provided by the Government for use by the contractor in the performance of contracted effort, and for which the contractor has been given physical custody. The Government Property Management Plan report shall be prepared and maintained in accordance with DRD 1107LS-001.

2.3 Occupational Safety and Health

The contractor shall establish and implement a safety, health, and environmental program that incorporates the following elements as applicable to the work performed under this contract documented in the Safety, Health, and Environmental (SHE) Plan required by DRD 1107SA-002.

- a. Management leadership and employee involvement.
- b. System and worksite analysis.
- c. Hazard prevention and control.
- d. Safety and health training.
- e. Environmental compliance.

Mishaps shall be reported to the MSFC S&MA Directorate in accordance with DRD 1107SA-003, Mishaps and Safety Statistics Reports.

2.4 Working Group Support, Information Exchange, and Support for Implementation of New or Revised Requirements

The Contractor shall provide the following support for each of the nine elements stated in Paragraph 1.0:

- a. Participate in working groups and communicate effectively in the local MSFC area (either at a workstation or remotely).
- b. Information sharing or exchange with NASA Headquarters, other NASA Centers, and MSFC element contractors.
- c. Review of and preparation of comments for drafts of new requirements documents or proposed revisions to existing requirements documents.
- d. Participation in MSFC S&MA efforts to have MSFC Project Offices and their associated contractors implement new or revised requirements.

2.5 Personnel Training and Certification

The Contractor shall determine which positions on this contract require training as specified in MPR 3410.1, "Training", and certification as specified in MWI 3410.1, "Personnel Certification Program" and NPR 8715.3, "NASA Safety Manual" and applicable codes for welding, inspection, and Nondestructive Evaluation (NDE) of structural and pressure pipe welding. The contractor shall prepare, implement and maintain a Personnel Training and Certification Plan for each training and certification requirement identified in accordance with DRD 1107SA-001.

2.6 Developing and Maintaining Expertise in Safety and Mission Assurance Disciplines

The Contractor shall implement and maintain a program for developing and maintaining the expertise of its employees in safety and mission assurance disciplines including, but not limited to, industrial safety, systems safety, reliability, maintainability, quality assurance, and risk management. When practical, the Contractor shall partner with MSFC Civil Service employees by participating in S&MA Civil Service sponsored professional development activities such as periodic discipline expertise meetings and providing support to S&MA Civil Service discipline experts in the planning and implementation of their training and mentoring roles. The Contractor shall also develop, implement, schedule, and conduct specialized professional development training (in compliance with MPR 3410.1) when directed by S&MA and at their own discretion.

2.7 Automated Electronic Task Order Management

The Contractor shall establish, implement, and maintain an automated electronic task management system required to plan, organize, direct, and control contract activities. To this end, the Contractor shall provide the Government with access to the automated task management system, in accordance with the procedures in Clause H.3 and H.4, and the process depicted in Attachment J-10, in a manner that is consistent and compatible with Center information technology standards and be 508 compliant, pursuant to The Rehabilitation Act Amendment of 1973, as amended in 1998, Section 508, 29 U.S.C. 794(d) (<http://www.section508.gov/>). The automated task management system shall be an interactive system to be used by the government and the contractor. The automated task management system may be hosted on the contractor's server. The automated system shall allow for the electronic routing and approval of TOs and sub-elements. In addition, the Contractor's automated task management system shall track the status of TOs and sub-elements, as applicable, from planning to completion and record projected and actual resources data for each. This data shall be reported by those unique project numbers (UPN) that fund each TO and sub-elements. This data shall be presented in Management Status Review (MSR) Input that status each TO and sub-element on a monthly basis in accordance with DRD 1107MA-005. The Contractor shall provide Bi-Weekly Notes in accordance with DRD 1107MA-009. Overall reporting shall be compatible with the Contractor's organizational structure and the established PWS.

The Contractor's automated electronic task management system shall be an integrated system that allows insight and management of the day-to-day requirements at the Task Order Request (TOR), Task Order (TO) and sub-element levels. The Contractor's automated electronic task management system shall have the capability of tracking actual cost back to the contractor's Financial Management Reporting (533 Reports) at all levels down to the TO sub-element and project funding level.

The Contractor's automated electronic task management system shall provide a numbering system that provides traceability of tasks through their lifetime, electronic notification to the CO, COTR, TO initiator, Contract Task Order Performance Monitor (CTO PM), and Contractor of the task's status, approval tracking, revision tracking, traceability to PWS level 4, delineation of inactive and active tasks, period of performance for the task, and negotiated estimated cost. The system shall be capable of allowing the CTO PM, COTR and CO the ability to approve each TO prior to beginning the task, and approve the services provided by the TO prior to being closed in the system.

TORs defining specific assignments within the broad scope of the PWS will be prepared by TO Initiators, as services are needed. Specific information to be contained in the automated electronic task management system for the TORs shall include the following: an TOR number allowing traceability to a minimum of PWS Level 4, TO Initiator, task order description or objectives, travel requirements (if any), materials (if any), deliverables and milestone dates, benefiting program(s), and special instructions.

The Contractor will respond to the TOR with a Task Order Plan (TOP). Once approved the TOP will become a Task Order (TO). Information to be contained in the automated electronic task management system for the TOs shall include the following: contract identity, TO number which corresponds with the TOR number previously assigned, TO initiator, Contractor TO lead, TO description or objectives, technical approach for performing the task which includes required input data, guidelines, and assumptions, skills required, special tools required, identification of subcontractor(s) (if any) performing or contributing, resource plan for workforce and cost, schedule showing milestones, and deliverables, special considerations to include recruiting issues, safety concerns, etc., that may affect performance, and risk associated with TO performance as related to cost, technical, and schedule. Management Status Review (MSR) Input that status each TO and sub-element on a monthly basis in accordance with DRD 1107MA-005 shall be a standard output of the electronic task management system.

A sub-element is a lower level definition of work within a TO. Each sub-element will have a brief description of the scope and a cost estimate associated with it. Tracking of funding, cost, and Work Year Equivalents (WYE's) shall be provided at the sub-element level. At the sub-element level, the automated electronic task management system shall provide visibility to funding provided by the customer and track the cost associated with the funding.

The automated electronic task management system shall be capable of providing a Cost Summary Report, in spreadsheet format, that contains, for each organization (Directorate/ Department/Lab or Office), the following information for each evaluation period: TO number, TO title, negotiated cost, estimated cost without fee, and fee bearing negotiated cost. Additionally, the Cost Summary Report shall roll up each PWS Level 4 element information into an overall contract performance summary containing the following information for each evaluation period: organization, task title, summation of TOs for each PWS element Level 4, negotiated cost, and estimated cost. The Task Order Management system shall be

capable of collecting and presenting in an organized format (to include but not limited to MS Word and PowerPoint), the performance data from all contract monitors for COTR/Alternate COTR review and use/edit at or near the end of each rating period in a secure mode (Government only access). This information will support recommendations to the Performance Evaluation Board (PEB) for either Award Fee or Award Term periods earned during the evaluated performance period.

3.0 SYSTEMS SAFETY ENGINEERING PROGRAMS

- 3.1 The contractor shall develop and utilize any S&MA specific tools (as specified in PWS 7.0) needed to assure that all applicable system safety requirements (e.g., Agency, Center, Program/Project, etc.) are identified for MSFC programs and projects. These should include, but not be limited to fault tree analysis, logic trees, risk definition and mitigation analyses, hazard analysis and trending/data search.
- 3.2 The contractor shall assess program or project documentation (e.g., Contractor PWS, Data Requirements Documents, System Requirements Document, Contract End Item (CEI), Requirements Verification Compliance (RVC), procedures) to assure that all applicable safety requirements are addressed.
- 3.3 The contractor shall perform and assess trade studies relative to design, development, operation, or mission events to assure compliance with safety requirements and to assure safety risks are adequately identified, characterized, and mitigated.
 - 3.3.1 The contractor shall perform and/or assess the elements of 3.3 for in-house design and development projects.
 - 3.3.2 The contractor shall assess the elements of 3.3 for out-of-house design and development projects.
- 3.4 The contractor shall prepare and/or assess Safety Plans to assure compliance with applicable Agency, Center and Program safety requirements. Assess Project Plans to assure that safety is properly considered.
 - 3.4.1 The contractor shall perform and/or assess the elements of 3.4 for in-house design and development projects.
 - 3.4.2 The contractor shall assess the elements of 3.4 for out-of-house design and development projects.
- 3.5 The Contractor shall perform and/or assess hazard analyses to assure that: (a) all hazards are identified and the associated risks properly characterized; (b) hazard controls satisfy applicable safety requirements and adequately mitigate safety risks; (c) safety verification requirements are clearly identified and adequate,

including the clear definition of verification pass/fail criteria; and (d) the safety verification status is properly maintained in a closed loop accounting system.

- 3.5.1 The contractor shall perform and/or assess the elements of 3.5 for in-house design and development projects.
- 3.5.2 The contractor shall assess the elements of 3.5 for out-of-house design and development projects.
- 3.6 The contractor shall assess and support development of program or project verification plans and verification requirements (e.g., Verification Plans, Requirements Verification Compliance (RVC) documents) to assure safety verification requirements are properly included.
 - 3.6.1 The contractor shall assess test and operating procedures to assure compliance with safety controls and safety verification requirements.
 - 3.6.2 The contractor shall assess or generate safety verification compliance data to assure it clearly demonstrates compliance with the safety verification requirements and parent safety requirement.
- 3.7 The contractor shall participate in (including making presentations as required) milestone reviews, safety reviews and readiness reviews to assure compliance with applicable safety requirements. This includes evaluation of documentation and data for technical interchange meetings, design milestone reviews [e.g., Preliminary Requirements Review (PRR), Preliminary Design Review (PDR), Critical Design Review (CDR), Design Certification Review (DCR)], safety reviews, and readiness reviews [e.g., Pre-Ship Review, Flight Readiness Review (FRR), Preflight Assessment (PFA), Safety and Mission Assurance Readiness Review (SMARR)] to assure compliance with applicable safety requirements and consideration of safety risks.
- 3.8 The contractor shall assess proposed changes, deviations, and waivers to project documentation to assure compliance with safety requirements. This includes evaluation of the impacts to safety analyses and the effects on program or project risk.
- 3.9 The contractor shall provide systems safety expertise for program and project Boards such as Configuration Control Boards, Problem Review Boards, Discipline Control Boards, Program Control Boards, Material Review Boards, etc.
- 3.10 The contractor shall identify any adverse safety trends and promptly notify MSFC S&MA.

- 3.11 The contractor shall provide real-time safety assessments during launch countdowns and missions.

- 3.12 The contractor shall perform safety assessments of any issues which involve one or more of the following:
- a. Operation or performance outside the expected performance range of parameters or which has not previously been experienced.
 - b. Discrepancies or nonconformances which affect:
 - Configuration
 - Certification
 - Mission success
 - Safety critical functions
 - Weight in excess of two pounds (equivalent performances to orbit)
 - c. Adverse problem trends
 - d. Discrepancies or nonconformances which the operator determines requires design element analysis or assistance for resolution.
 - e. Unexplained anomalies or events.
 - f. Limit hardware life.
 - g. Restrict hardware or software use.
 - h. Affect hazard control.
 - i. Affect flight or ground operation procedures that are controlled by the Government.
 - j. Change software or hardware configurations that are controlled by the Government.
 - k. Allow use of hardware that does not meet performance specifications, exceeds certification limits, or surpasses time, age, cycle life limits (waivers/exceptions).
 - l. Affect critical hardware manufacture or repair processes.
- 3.13 The contractor shall provide support to the Marshall Safety Engineering Review Panel (MSERP) and to other panels [i.e., CLV (Crew Launch Vehicle) Safety Review Panel (CLVSRP, etc.)]. Support shall include but not be limited to documentation distribution and review, board establishment and communication, executive secretary function, meeting action item tracking, records retention, and independent “Checklist Reviews” of Safety Compliance Data Packages.
- 3.14 The contractor shall develop and maintain metrics regarding the safety performance of MSFC programs and projects.
- 3.15 The contractor shall participate in periodic, recurring technical issues meetings to discuss and resolve safety issues.

4.0 INDUSTRIAL SAFETY PROGRAM

- 4.1 The contractor shall annually conduct OSHA safety compliance inspections in accordance with 29 CFR 1960 of all local MSFC owned or occupied facilities.
- 4.1.1 The contractor shall semi-annually conduct safety compliance inspections of operations considered potentially hazardous. This includes, but is not limited to research and development test facilities, laboratories, industrial facilities and equipment.
- 4.1.2 The contractor shall verify/sample at least 30 percent of the annual facility inspection findings and associated closure rationale during the last quarter of the calendar year.
- 4.2 The contractor shall conduct weekly OSHA safety compliance inspections in accordance with 29 CFR 1960 of MSFC construction sites { 100% of Construction of Facilities (CoF) construction sites and 50% of other construction sites [e.g., Indefinite Delivery Indefinite Quantity (IDIQ), Blanket Purchase Agreement (BPA), etc.]}. This also includes inspections during normal non-duty hours and weekends when requested.
- 4.3 The contractor shall support final acceptance inspections of newly constructed or modified facilities.
- 4.4 The contractor shall annually perform facility fire alarm testing and building evacuation drills on all MSFC facilities with more than 10 occupants.
- 4.5 The contractor shall perform and evaluate hazard analyses and safety assessments using NASA approved state-of-the-art techniques for MSFC ground-based activities, equipment, and facilities.
- 4.6 The contractor shall perform safety engineering evaluations to ensure compliance with applicable codes and MSFC safety program requirements for preliminary engineering studies, feasibility studies, facility and equipment drawings and specifications.
- 4.7 The contractor shall review and evaluate MSFC potentially hazardous operation procedures and plans to assure compliance with applicable safety requirements and monitor the operation, when requested, to ensure safe operation.
- 4.8 The contractor shall participate in the Operational Readiness Inspections (ORI), Test Readiness Reviews (TRR), and other similar safety reviews to assess and evaluate the safety of potentially hazardous facilities and operations.

- 4.9 The contractor shall perform quantity distance calculations for explosives siting issues using methods of the NASA Explosives Safety Standard and other applicable standards as directed.
- 4.10 The contractor shall provide support to evaluate and monitor the storage, handling, and use of explosive, propellant, and pyrotechnic material and devices.
- 4.11 The contractor shall provide support to the MSFC Pressure Systems Manager in assuring compliance with NASA, ASME, ASTM, and applicable pressure system specifications and requirements for pressure systems containing cryogenic liquids/gases (e.g., Nitrogen, Hydrogen, Oxygen, etc.) and pressure systems containing other type liquids/gases when requested.
- 4.12 The contractor shall review program critical hardware (PCH) handling and transportation plans and procedures and monitor the transportation of the PCH.
- 4.13 The contractor shall provide support in developing, utilizing, and maintaining electronic databases (as specified in PWS 7.0), needed to support the MSFC Safety, Health, and Environmental (SHE) program. These include, but are not limited to the following safety tracking systems:
 - 4.13.1 CERTRAK – Certification tracking for personnel performing hazardous operations
 - 4.13.2 SCRS – Safety Concerns Reporting System
 - 4.13.3 SHETrak – Safety, Health and Environmental tracking for facility inspection findings
 - 4.13.4 Safety Search – database providing ability to search SHE related items
 - 4.13.5 Mishap Reporting – database for mishap and incident reports
 - 4.13.6 Safety Bulletins – database listing safety bulletins
 - 4.13.7 Hazard Analysis – database tracking hazard analysis status
 - 4.13.8 Building Managers list – database listing current building managers
 - 4.13.9 ORI/TRR Tracking System – database tracking ORI/TRR status
 - 4.13.10 Certified lifting equipment for PCH – database listing current PCH certified lifting equipment
 - 4.13.11 SSWP – Supervisor Safety Web Page
 - 4.13.12 Contractor Database – database listing current MSFC contractors
 - 4.13.13 RiskSafe – software used to assist in conducting hazard analysis
 - 4.13.14 IHOPS – Inventory of Hazardous Operations
 - 4.13.15 Design Reviews – database tracking design review comments
 - 4.13.16 Any other systems needed to track and analyze industrial safety information.

NOTE: These electronic database tools are to be made available to MSFC S&MA personnel upon request. Training and updates shall be provided upon request.

- 4.14 The contractor shall provide support in the review of new or revised NASA and MSFC safety related documents.

- 4.15 The contractor shall provide support at briefings requiring MSFC Safety support (e.g., pre-construction, pre-move, pre-test, etc.) to inform and assure personnel involved in the activity are aware and knowledgeable of the MSFC safety regulations and requirements.
- 4.16 The contractor shall monitor the implementation of any new and revised NASA, MSFC, OSHA, NFPA or any other applicable document related to safety (e.g., Standard for Lifting Devices and Equipment, Fall Protection, Lockout/Tagout, etc.).
- 4.17 The contractor shall monitor the testing of safety related and fire protection systems (e.g., fire alarms, sprinkler, carbon dioxide, wet chemical, fire hydrants, standpipes, oxygen deficiency monitor, emergency showers/eyewashes, etc.).
- 4.18 The contractor shall provide support for mishap investigations including any required follow-up to safety technical issues.
- 4.19 The contractor shall provide proficiency testing for MSFC lifting equipment operators (e.g., cranes, forklifts, aerial lifts, etc.).
- 4.20 The contractor shall issue safety permits (e.g., Hot Work Permits, Energized Electrical Equipment Permits, etc.).
- 4.21 The contractor shall provide support to assist during internal self-assessments, audits or surveys, and assessments, audits or surveys performed by a third party or other outside agency of the MSFC safety program.
- 4.22 The contractor shall provide support in preparing, presenting, and/or distributing information relating to MSFC safety activities.
- 4.23 The contractor shall provide administrative and technical secretary support for the MSFC SHE Committee.
- 4.24 The contractor shall participate in the development and implementation of OSHA compliance training subjects in accordance with 29 CFR 1960, 29 CFR 1910 and 29 CFR 1926 (e.g., Collateral Duty, Supervisor Safety Visits, Building Manager, Lifting Devices, Personnel Protective Equipment (PPE), etc.), and provide this safety training to MSFC employees, when requested.

5.0 RELIABILITY AND MAINTAINABILITY ENGINEERING

5.1 Systems Analysis

- 5.1.1 The contractor shall prepare, evaluate and assure reliability and maintainability plans for MSFC program and project designs are consistent with MSFC S&MA and project management direction. Support the development and assessment of FMEA/CIL's and their groundrules.
- 5.1.1.1 The contractor shall prepare, evaluate and assure the elements of 5.1.1 for in-house design and development projects.
- 5.1.1.2 The contractor shall evaluate and assure the elements of 5.1.1 for out-of-house design and development projects.
- 5.1.1.3 The contractor shall support the development of FMEA/CIL's in 5.1.1 for in-house design and development projects.
- 5.1.1.4 The contractor shall support the assessment of FMEA/CIL's in 5.1.1 for out-of-house design and development projects.
- 5.1.2 The contractor shall evaluate changes, out-of-family conditions, material reviews, and deviations for impact to FMEA's and CIL's.
- 5.1.3 The contractor shall evaluate project documents related to reliability and maintainability to assure consistency and adequacy with overall project requirements.
- 5.1.4 The contractor shall evaluate OMRSD's and implementing OMI's to assure that reliability and maintainability requirements are adequately addressed and implemented.
- 5.1.5 The contractor shall participate in project milestone reviews (PRR's, SRR's, PDR's, CDR's, DCR'S, FRR's, etc.) for the purpose of evaluating the incorporation of reliability and maintainability requirements throughout the life cycle of a project (e.g., design, development, production, testing, and operations).
- 5.1.6 The contractor shall prepare reliability assessments, using reliability data bases, for each mission, vehicle, and other equipment in support of preflight assessment reviews and flight readiness milestone reviews.
- 5.1.7 The contractor shall perform design trade studies, evaluate contractor prepared trade studies, and provide reliability and maintainability assessments.
- 5.1.8 The contractor shall evaluate hardware and software contractor provided reliability and maintainability analyses, to verify the validity of the analyses and assure that the analyses have been performed in accordance with requirements.

- 5.1.9 The contractor shall perform planned and ad hoc numerical reliability and maintainability analyses using appropriate analytical methods and models without necessarily receiving detailed technical guidance from MSFC. The analytical methods may include, but not be limited to, classical probability density functions, reliability and maintainability models, Monte Carlo simulation models, probabilistic risk analysis, etc.
- 5.1.10 The contractor shall develop and/or evaluate FMEA's and CIL's for compliance with requirements.
- 5.1.11 The contractor shall develop and utilize any tools (as specified in PWS 7.0) needed to assure that all applicable reliability and maintainability requirements are identified for MSFC programs and projects. These should include, but not be limited to FMEA/CIL information analysis, reliability trending and assessments, maintainability trending and assessments, and any other systems needed to analyze reliability and maintainability information. The analytical results of these tools should be provided to MSFC S&MA personnel with appropriate recommendations.
- 5.2 Probabilistic Risk Assessment (PRA)
- 5.2.1 The contractor shall prepare probabilistic risk assessment plans for MSFC managed programs and projects.
- 5.2.2 The contractor shall develop and/or provide tools (as specified in PWS 7.0) and techniques to perform probabilistic risk analysis.
- 5.2.3 The contractor shall perform probabilistic risk analysis, assessments and mitigation for MSFC managed programs and projects. The contractor shall be able to perform PRAs as required on future MSFC programs and projects. Specific tasking will include, but not be limited to reliability engineering tasks related to the Exploration Systems Mission Directorate programs and projects, and NASA Headquarters initiative to develop an overall Shuttle Program Risk Model. This will include data collection related to MSFC elements (Space Shuttle Main Engine, Solid Rocket Booster, Reusable Solid Rocket Motor, and External Tank), risk model selection and risk analysis of these elements, utilization of the selected risk model(s) to be integrated into the overall Shuttle Program Model, simulation of risk scenarios using available software packages, and an overall report on the data, methods/models, and results.

5.3 Hardware/Software Assessments

5.3.1 The contractor shall evaluate in-house and out-of-house contractor methods for identification and control of limited life items. Verify, through assessments, that sufficient remaining life of equipment is available for accomplishing the mission objectives. Verify that life limits of common hardware are consistent.

5.3.2 The contractor shall evaluate engineering and programmatic changes such as ECR's, ECP's, Deviations, Waivers, PCP's and SCN's for reliability and maintainability impact.

5.3.3 The contractor shall evaluate in-house and out-of-house contractor provided FMEA analyses of software design to assure software properly responds to critical failure modes as identified by the FMEA/CIL documents (i.e., fault detection, isolation, switching, etc.).

5.4 ALERT Program Maintenance

5.4.1 The Contractor shall receive ALERT's and shall enter them into the ALERT database.

5.4.2 The Contractor shall also distribute ALERTS to MSFC actionees for review and disposition, track the status of the reviews by project, enter the results of the reviews in the ALERT database, and transmit the results of the reviews to the organizations identified in MWI 1280.5, MSFC Alert Processing.

5.4.3 The Contractor shall ensure that the ALERT data is available real-time to users, shall track the status of Alerts and assure that actionees provide timely closures and shall evaluate ALERTS closure rationale.

5.4.4 The contractor shall generate or assist in the generation of ALERT's (primarily for in-house programs and projects) as warranted.

5.5 Problem Assessment Center (PAC)

The Contractor shall operate the MSFC PAC in strict compliance with the MSFC PAC Operations Plan (see paragraph 5.5.1) and supplementary guidance provided by the COTR. In executing this task, the Contractor shall process incoming problem reports, coordinate the activities of the MSFC Problem Assessment System(PAS) (which provides the process by which MSFC project management and technical organizations review and close problem reports), provide official MSFC problem report data to authorized organizations and personnel, and operate and maintain (i.e., keep data current) the MSFC PRACA database.

5.5.1 Problem Assessment Center Operations Plan

The Contractor shall maintain and implement the Operations Plan for the MSFC PAC in accordance with DRD 1107MA-004, Problem Assessment Center (PAC) Operation Plan. The plan shall describe, in detail, the PAC activities necessary to fulfill the problem reporting requirements (from initiation of project problem reporting through project termination) for any MSFC managed projects for which problem reporting is required. The plan shall also identify the periodic reports the PAC will issue to fulfill customer needs.

5.5.2 Problem Report Processing

The Contractor will receive problem reports (i.e., initial reports, updates, and recommended closures) directly from hardware/software contractors and in-house hardware/software developers via mail, courier, facsimile machine, or direct electronic transfer (i.e., the hardware/software contractor's computer furnishes problem report data directly to the MSFC PRACA database). The Contractor shall review the incoming problem reports for accuracy, clarity, and completeness. The Contractor shall complete the problem report data fields designated for completion by the PAC and the Design Center. For problem reports submitted by hardware/software contractors who do not use the MSFC PRACA problem report format, the Contractor shall prepare an MSFC PRACA problem report form. The Contractor shall screen the incoming problem reports to identify system level problems when requested by the associated project. The Contractor shall maintain a complete record of each problem report submitted to the PAC.

5.5.3 Reviewing Problem Reports

The Contractor shall review the data for all coded fields as well as all text fields provided by the hardware/software contractor or in-house hardware/software developer. This review shall address technical sufficiency as well as editorial acceptability. When a problem report is inaccurate, unclear, or incomplete, the Contractor shall contact the responsible hardware/software contractor or in-house hardware/software developer by the most expeditious means and request correction, clarification, or supplementary information as warranted by the situation. Supplementary information may consist of backup technical data such as Engineering Change Request (ECR) documents, procedures, specifications, drawings, etc. The contractor shall perform trending analysis for each problem report received and provide results and recommendations for potential corrective action (Section 5.5.11).

5.5.4 Problem Report Records

For each incoming problem report, the Contractor shall enter the required problem report data in the MSFC PRACA database unless that data is electronically transmitted directly to the MSFC PRACA database by the hardware/software contractor. The Contractor shall maintain a record of each problem report in the MSFC PRACA database. The Contractor shall also maintain a hardcopy file containing those problem reports and their associated backup information provided by the hardware/software contractor in hardcopy form.

5.5.5 Coordinate the MSFC Problem Assessment System (PAS)

The Contractor shall coordinate the review and disposition of problem reports by the appropriate MSFC project management and technical assignees, record the actions of the assignees, and prepare and route non-concurrence letters when directed by the authorized assignees. The Contractor will coordinate the MSFC review of system level problems and record the results of the review.

5.5.6 MSFC Review and Disposition

Upon receiving either initial problem reports or recommended closures from the hardware/software contractors or in-house hardware/software developers, the Contractor shall expeditiously distribute copies of those problem reports, including backup information, to the appropriate assignees in the MSFC project offices, and the MSFC Safety and Mission Assurance Directorate. The Contractor shall be responsible for maintaining current knowledge of the identities of the assignees for each project for which the PAC processes problem reports. The Contractor shall track the status of the review and disposition of each problem report and, when requested, shall assist assignees in obtaining additional information from hardware/software contractors.

5.5.7 Problem Review Board (PRB) Meetings

When a formal Problem Review Board (PRB) meeting is called, the Contractor shall prepare a proposed list of problem reports for review, schedule the meeting, prepare an agenda, and coordinate it with the hardware/software contractor or in-house hardware/software developer, provide advanced notice to the participants, assure that the necessary support arrangements (i.e., meeting room reserved, telephone conference arranged, etc.) have been made, and provide problem report information packages to the MSFC assignees. In addition, the contractor shall provide an assessment of each problem report including related history, trends, thoroughness of report, and overall adequacy of investigation and recurrence controls. During the meeting, the Contractor shall administer the meeting, record and report status of action items assigned by the PRB, and record the PRB's disposition of the problem reports considered. Following the meeting, the

Contractor shall monitor the status of action items, update the MSFC PRACA database and hardcopy files, and prepare, secure approval for, and distribute the minutes of the meeting.

5.5.8 MSFC Review of System Level Problems

The Contractor shall monitor the Space Shuttle Level II Program Compliance Assurance Status System (PCASS) database to identify newly entered system level problems pertaining to the Orbiter. The Contractor shall provide these reports to the appropriate MSFC assignees and obtain their responses which will be recorded in a dedicated file and provided to the appropriate JSC organization. The contractor shall establish and operate a process for identifying, reviewing, documenting and distributing system level problems and review responses associated with future programs/projects (i.e., Exploration Systems, etc.).

5.5.9 Official MSFC Problem Report Data

The Contractor shall provide official MSFC problem report data and, if requested, basic engineering assessments of the data or answers to questions regarding the data for the following:

- a. Project office sponsored flight readiness reviews as well as S&MA Directorate sponsored readiness reviews (e.g., CoFR, preflight assessments (PFA), SMARRs).
- b. Daily electronic updates for upper level program problem report databases (e.g., Level II PCASS).
- c. Notification to the appropriate organization (e.g., JSC) of newly reported system level problems submitted by MSFC project hardware/software contractors.
- d. Requests from NASA MSFC Civil Service organizations.
- e. Requests from the Huntsville Operations Support Center (HOSC) during mission support operations.
- f. Requests from other organizations upon direction from the COTR.

5.5.10 Support for the Huntsville Operations Support Center (HOSC)

The Contractor will station assessment engineers at the Problem Assessment Center (PAC) during Simulations, Flight Readiness Firings (FRF), Count Down Demonstration Tests (CDDT), and mission launches (beginning with tanking at approximately T-7 hours and continuing regularly or intermittently through completion of payload missions for which there are PAC maintained databases). At the PAC, the assessment engineers will respond to requests from the HOSC for

problem information contained in the MSFC PRACA database. These requests will require extraction of problem data, structured queries of the database to produce information about groups of problems, and assessment and basic engineering analysis by assessment engineers to answer specific questions. The Contractor will notify the appropriate Program/Project S&MA representative if open problems are received which require disposition prior to launch. If necessary, the Contractor will support a PRB meeting as described in 5.5.7.5.5.11

Problem Trending The Contractor shall conduct ongoing statistical analyses and engineering assessments of problem trends. Problem trends may be prepared for any MSFC Project for which problem reporting is performed (i.e., Payloads, Space Shuttle elements, CLV and CLV Elements, etc.) if warranted or requested. Resulting trend data/analysis is presented to the appropriate MSFC S&MA representative. Contractor format is acceptable.

5.6 PRACA (Problem Reporting and Corrective Action)

THE CONTRACTOR SHALL PREPARE PRACA METHODOLOGY DOCUMENTS FOR MSFC MANAGED PROGRAMS AND PROJECTS AND EVALUATE PRACA DOCUMENTS SUBMITTED BY CONTRACTORS. THE CONTRACTOR SHALL ASSURE THAT PRACA REQUIREMENTS ARE CONSISTENT WITH MSFC S&MA AND PROJECT MANAGEMENT DIRECTION.

6.0 QUALITY ASSURANCE

6.1 Systems

6.1.1 The Contractor shall prepare, evaluate and, provide assessments of in-house and contracted quality related contractual documentation (e.g., Hardware and Software Quality Assurance (QA) Plans) including implementation instructions and procedures for MSFC QA policies and directives.

6.1.2 The Contractor shall perform periodic reviews and assessments of in-house and contracted QA instructions for compliance with NASA policy, Marshall Management System (MMS), Safety and Mission Assurance (S&MA) Directorate Organizational Instructions.

6.1.3 The Contractor shall provide Quality Engineering (QE) expertise for the preparation, evaluation, and assessment of in-house and contractual documentation relative to processes (e.g., electrical, electronic, materials, and non-destructive evaluation) encountered during the manufacturing, inspection, and test phases of projects.

6.1.4 The Contractor shall provide expertise to support the continued ISO 9000-2000/AS9100 registration at MSFC including, but not limited to, training of

MSFC employees on ISO 9000-2000/AS9100, implementation plan maintenance, procedure preparation, progress monitoring, and internal audit support. The Contractor shall give advice/consultation on matters pertaining to interpretation of the ISO 9000-2000/AS9100 standard (to individual organizations as well as the MSFC Management Representative and the Implementation/Maintenance team). The Contractor shall support the MMS team. The Contractor shall assist in external and internal Audits/Surveillances and Corrective Action follow-up. The contractor shall participate in and support Document Control Board activity for review, evaluation, and disposition of S&MA controlled documents. This activity includes the review of Organizational Instructions (OI) and related external documents under review by Center Document Control Boards (DCB's).

- 6.1.5 The contractor shall participate in MSFC program, contractor, supplier, or other Government milestone reviews (e.g., SMARR's, PRR's, SRR's, PDR's, CDR's, DCR's, FRR's, TRR's) to evaluate the incorporation of quality assurance and certification requirements in decisions affecting design, safety, production, testing, and operation.
- 6.1.6 The contractor shall develop and utilize any tools (as specified in PWS 7.0) needed to assure that all applicable quality assurance requirements are identified for MSFC programs and projects. These should include, but not be limited to quality information analysis (including workmanship standards, specifications, procedures and documentation quality control), quality data trending and assessments, and as built configuration databases.
- 6.2 Process and Product Assurance
- 6.2.1 The contractor shall prepare and evaluate workmanship against the technical standard, specifications, procedures, and control documentation for in-house and contracted processes and purchases, utilizing the Procurement Discrepancy Tracking System (PDTS) as appropriate, used throughout all phases of the hardware and software development cycle.
- 6.2.2 The contractor shall prepare and evaluate in-house inspection criteria for safety critical hardware/software characteristics and other requested characteristics. They shall also evaluate and provide written assessments on other MSFC contractor or Government Agency inspection criteria and the implementation of these inspections.
- 6.2.3 The contractor shall provide Engineering Change Proposal (ECP) support to S&MA Configuration Control Board (CCB) members. The support provided shall consist of logging, tracking, and distributing ECP's for S&MA review, response integration, and presenting the integrated assessments to CCB's. The Contractor shall also provide support as change package engineers (CPE) as assigned.

- 6.2.4 The contractor shall provide the expertise to evaluate in-house and contractual waivers and deviations for compliance with stated QA, certification requirements, standards, and policies.
- 6.2.5 The contractor shall provide QE expertise to ensure the inspectability of in-house designs by performing drawing and procurement documentation review. The contract will recommend the quality requirements for procurements as required.
- 6.2.6 The contractor shall provide the expertise to perform and evaluate trade studies relative to design, fabrication, inspection, testing, and operations.
- 6.2.7 The Contractor shall prepare, evaluate, and maintain guidelines, checklists, and plans to be used in support of S&MA participation in audits of MSFC internal organizations, MSFC vendors and suppliers, and other Government Agencies and NASA Engineering and Quality Audits (NEQA). The Contractor shall maintain a status of all S&MA action items resulting from audits to ensure compliance with MSFC S&MA policies and procedures. The Contractor shall provide support to S&MA, auditors, and auditees by assisting in scheduling audits, tracking and follow-up of findings, and preparation and distribution of final reports. The Contractor shall maintain a system for retention of quality records associated with audits.
- 6.2.8 The Contractor shall evaluate test results versus verification requirements including the disposition of test anomalies and discrepancies for adequacy. The Contractor shall maintain the necessary certification records, files, and hardware certification status to meet project and S&MA needs.
- 6.2.9 The contractor shall provide Quality Assurance expertise (including but not limited to hardware evaluation) in support of S&MA inspection and MSFC testing activities including initial surveillance to final acceptance as required.
- 6.2.10 The contractor shall participate in postflight assessment [i.e., SRB (Solid Rocket Booster), RSRM (Reusable Solid Rocket Motor), CLV hardware, etc.], as requested. Prepare assessment reports and presentations. Evaluate observations for determination of items that warrant formal problem reports.
- 6.3 Problem Analysis
- 6.3.1 The contractor shall, as required, advise MRB members and recommend corrective action to improve product quality. The contractor shall also participate in the construction of trending charts and analyses on MSFC contractor and in-house efforts, and shall provide recommendations to S&MA engineers and managers on adverse MSFC contractor and in-house trends.
- 6.3.2 The contractor shall participate in problem and failure investigations to determine root cause and recommend corrective action.

6.3.3 The contractor shall administer the MSFC Corrective/Preventive Action System. It shall be operated in compliance with MWI 1280.3, Corrective/Preventive Action Notification System; MPR 1280.4, MSFC Corrective Action System; and attendant MSFC work instructions. The contractor shall screen incoming potential recurrence control action requests (RCAR's); record and track problem and preventive action status; coordinate MSFC review and disposition of RCAR's; provide official MSFC report data to authorized organizations and personnel; perform trending on related potential and screened RCAR's by failure mode and cause; and operate and maintain the MSFC CAS database. The contractor will provide support for maintaining associated Safety and Mission Assurance (S&MA) organizational instructions current with MSFC procedures and requirements.

6.4 Personnel Certification Administration
The contractor shall support the administration of the MSFC Personnel Certification Program in compliance with MWI 3410.1, Personnel Certification Program. The contractor shall maintain a database system to record personnel certifications for MSFC and on-site contractor personnel. As required, the contractor shall screen certification packages for compliance with procedures and coordinate the review of the packages with the applicable MSFC Certifying Officer.

6.5 Software Assurance (SA)
Support the establishment, implementation, and maintenance of applicable, NASA, Government approved Industry Standards, or DoD, SA requirements, and implementing these requirements on MSFC managed in-house and contracted software development programs. Support shall include, when applicable, the following. Preparing, evaluating, and providing assessments of MSFC managed in-house and contracted program/project SA Plans and software engineering change documentation (e.g. ECRs, ECPs, SPRs, TDRs). Evaluating and providing assessments of program/project software products (e.g. Software Development Plans, Software Requirements Specifications, Software Test Plans) and of applicable NASA/MSFC policies and guidelines (NPDs, NPGs, MPDs, MPG, etc.). Participating in and providing assessment during program/project milestone reviews (e.g. PDR, CDR, TRR). Supporting audit planning and tracking of findings associated with the S&MA evaluation of MSFC managed software development process through SA internal audits (e.g. Software Development Folder Audits, Software Configuration Management Audits, Software Requirements Traceability Audits, Peer Review Audits). Performing software quality assurance test activities during the appropriate software development life cycle phase. The contractor shall prepare and participate in SA related training. The contractor shall support in the collection of SA metrics. The contractor shall prepare, evaluate, and provide assessment associated with the NASA Initiative for Software Assurance and with S&MA/SA documentation for

the implementation of the Space Exploration Initiative (SEI) Capability Maturity Model Integration (CMMI) (e.g. SA OIs).

7.0 S&MA MANAGEMENT INFORMATION

- 7.1 The contractor shall provide support for the management of all S&MA Management Information tools, including databases, applications, processes, hardware and software throughout the lifecycle, including planning, acquisition, development, documentation, operation and disposal (See Attachment J-4). The Contractor shall also manage resulting S&MA data and provide a virtual focal point for the presentation of refined, integrated S&MA data and administer the S&MA delegated agency data, including annual forecasts, midyear updates, and monthly data reduction. (This support shall not conflict with the responsibilities of the Center IT Services contractor.)
- 7.2 The contractor shall support the preparation and/or maintenance of S&MA management information documents including Organizational Issuances (OIs).
- 7.3 The contractor shall using accepted and proven methodologies, assess S&MA's information needs for the present and future. Investigate alternatives for identified S&MA needs. Evaluate and recommend S&MA requirements for new system enhancements or capabilities. Present S&MA management with precise descriptions and recommendations on system alternatives and improvements.
- 7.4 The contractor shall perform structured system design activities for in-house development work and for work performed by outside contractors, and make management recommendations to S&MA. MSFC S&MA will provide overview and retain final decision-making authority over all design and development activities. Assure conformance of all S&MA Management Information system development activities to governing policies and best practices.
- 7.5 The contractor shall ensure that all system requirements are met. If not provided by S&MA, the contractor shall generate complete documentation for each system. This documentation shall include, but not be limited to, requirements definition, design definition, code documentation, users guides for operations personnel as well as end users, implementation plans and operations plans. Assure that all internal reviews and on-site coordination activities are completed. Provide user support functions for S&MA Management Information including training and real-time help for supported programs and processes.
- 7.6 The contractor shall provide computer security risk assessments of all S&MA databases and data applications in accordance with MPR 2810.1, "Security of Information Technology". The contractor shall prepare an Information Technology Security Plan that documents how the contractor and subcontractor personnel will utilize, in a secure manner commensurate with sensitivity of the

information involved, those Federal computer systems and software applications managed by others. The contractor shall prepare a system-level Information Technology System Security Plan for each Federal general support computer system and major software application managed by contractor and subcontractor personnel in the performance of the contract. The security plan(s) shall be based on an assessment of risks and document the safeguards necessary to ensure sufficient electronic information availability, integrity, and confidentiality as required by NPR 2810.1. The contractor shall prepare the Information Technology Security Plan(s) in accordance with DRD 1107CD-001. The contractor shall provide, review and revise information technology security plans per requirements. Coordinate information technology security-related initiatives for contract personnel.

8.0 PROJECT ASSURANCE SERVICES

Project Assurance Services shall be provided to all S&MA supported programs/projects.

8.1 S&MA Project Team Participation

8.1.1 The contractor shall coordinate the contractor S&MA activities with the S&MA project team leads to assure the proper execution of the S&MA project requirements.

8.1.2 The contractor shall serve as expert advisor on SRM&QA topics for project team meetings, technical interchange meetings, problem investigation and resolution efforts, and other routine project meetings.

8.1.3 The contractor shall participate in milestone reviews, data reviews, and safety reviews.

8.1.4 The contractor shall provide assessments of flight readiness in support of the S&MA input to the SMARR's and the Certificate of Flight Readiness for the MSFC Shuttle elements, CEV and CLV Elements, MSFC Payloads, Flight Projects and future programs/projects, upon request. This includes, but is not limited to, technical issues resolution and status of S&MA flight critical documentation (COQ's, FMEA/CIL, Hazards, etc.)

8.1.5 The contractor shall track action items and issues resulting from above team meetings, milestone reviews and flight readiness activities, and recommend disposition to S&MA project team leader.

8.2 S&MA Readiness Review Center

The contractor shall operate the MSFC S&MA Readiness Review Center for each S&MA Readiness Review (SMARR), SMARR Tag-up and L-2 SMARR Tag-up

including dry runs for ET/SRB Mate Reviews, Orbiter Rollout Reviews and reviews established for future programs. This task includes scheduling, data collection, preparation and distribution of MSFC S&MA presentation materials, and data exchange with JSC, KSC, and NASA HQ. In addition, serves as a member of the NASA SMARR Data Coordinators Working Group.

8.3 NASA Engineering and Safety Center (NESC) and Technical Authority (Formally Independent Technical Authority) Support

The Contractor shall provide as required the necessary administrative and technical support to S&MA to assure disciplined performance of work and timely application of the resources necessary for completion of all assigned NESC and Technical Authority tasks. NESC and Technical Authority tasks will include, but are not limited to the following:

- a. Developing and maintaining the MSFC S&MA NESC Significant Problem Reports.
- b. Supporting NESC trending activities.
- c. Supporting the NESC and Technical Authority telecoms and meetings (including preparing supporting materials).
- d. Providing technical support to NESC assessments and Technical Authority activities.

9.0 INDEPENDENT ASSURANCE TASKS

The contractor shall use senior staff and Technical Experts to perform independent assurance tasks in support of Independent Assurance (IA). Assessments will be requested by the MSFC S&MA Organization. IA tasks will include, but are not limited to the following:

- a. Track Project/Program operations and make recommendations of potential IA topics to S&MA.
- b. Develop and maintain IA assessment work plans.
- c. Perform assessments in accordance with approved assessment plans. Coordinate with appropriate IA team members, other organizations conducting related assessments, and program/project offices while researching issues. Report significant issues or concerns developed by the assessment immediately to the MSFC IA Manager.

- d. Develop report of analysis, observations, findings and recommendations. This will include incorporation of any Program/Project responses to the IA observations. Present this report to the MSFC IA Manager for approval.
- e. Brief observations, findings and recommendations to MSFC IA Manager, appropriate S&MA Managers and appropriate Program/Project personnel.
- f. Coordinate and perform follow-up on closure of report observations and any assigned actions as required.
- g. Participate in MSFC led and Headquarters led Programmatic Audits and Reviews, and S&MA Readiness Reviews.

Performance of all tasking will be in accordance with OI QD-PA-006, MSFC S&MA IA Implementation Plan.

10.0 RISK MANAGEMENT

- 10.1 The Contractor shall provide expertise to support the preparation, evaluation, and assessment of in-house and contractual program and project risk management plans. The contractor shall develop tools (as specified in PWS 7.0) and techniques, as necessary, to facilitate the identification/tracking/mitigation of risks and issues that may potentially negatively impact a project or program.
- 10.2 The Contractor shall provide recommendations and advice to S&MA engineers and managers relative to risk mitigation actions to minimize or eliminate risks.
- 10.3 The Contractor's risk management experts shall complete the NASA HQ supplied training and become certified as Continuous Risk Management Course instructors. Once certified, the instructors shall present Continuous Risk Management courses and workshops to MSFC employees (planned a minimum six times a year).

11.0 DOCUMENTATION AND REPORT SUPPORT

- 11.1 The contractor shall provide support in the development of plans, procedures, briefing material and other documents required in the accomplishment of MSFC S&MA activities in accordance with DRD 1107MA-003, MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents.
- 11.2 The contractor shall provide support to the S&MA Directorate with evaluations and assessments of documentation to accomplish its mission in support of MSFC Programs and Projects. These reports shall be in accordance with DRD 1107MA-002, Evaluation and Assessment Reports.

- 11.3 The contractor shall provide Employee Reporting List and Contractor Employee Clearance Document in accordance with DRD 1107MA-007.

SECTION J

ATTACHMENT J-1

PERFORMANCE WORK STATEMENTMSFC SAFETY & MISSION ASSURANCE SERVICES

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ATTACHMENT J-1**PERFORMANCE WORK STATEMENT**1.0 SCOPE

MSFC S&MA is strongly committed to Safety, Teamwork, Integrity and Mission Success. This allows for the establishment of a highly skilled, diverse, and motivated workforce committed to safety. Working in a creative and productive environment in support of cutting-edge systems and technology development, the Center employs unique and innovative management techniques to improve safety of the public, the astronauts and pilots, the NASA workforce and high-value equipment and property. The Safety and Mission Assurance Directorate is committed as a part of MSFC, to preventing human injury and ensuring the safety of all operations and products leading to mission success. The S&MA Service Contractor shall fully support these endeavors and demonstrate the same commitment to safety and mission success.

The Contractor shall provide the necessary management, personnel, equipment, and supplies (not otherwise provided by the Government) required to provide services associated with the planning, implementation, and assessment of System Safety Engineering, Industrial Safety, Reliability and Maintainability Engineering, S&MA Management Information, Quality Assurance/Engineering, Project Assurance, Risk Management, Independent Assessment, Documentation and Report Support elements for the Marshall Space Flight Center Safety and Mission Assurance Directorate. The services tasks associated with each of these elements are elaborated in this Performance Work Statement (PWS).

The Contractor shall perform surveillance of assigned MSFC in-house and contracted design, development, manufacturing, and testing activities, for both hardware and software, to assess compliance with NASA MSFC Safety, Reliability, Maintainability, and Quality Assurance (SRM&QA) policies, requirements, and controls. The Contractor shall assure that management assessment information is provided in a timely manner to the MSFC S&MA Directorate to support the decision-making process regarding open problems, hazards, and risks pertaining to accomplishing MSFC's mission. This will include operation and maintenance of the S&MA Management Information Processes. The tasks described in this Performance Work Statement shall be performed principally in the MSFC locale; however, occasional travel to contractor facilities, NASA Headquarters, and other NASA installations may be required. Also, a few positions may be located at production/launch facilities in MSFC Resident Management Offices.

This Performance Work Statement as set forth is unclassified: however, some Contractor personnel may require access to classified documents; therefore, the Contractor must possess or be able to acquire a Facility Security Clearance. Security clearance, for those persons required to have such, will be obtained in accordance with the MSFC Security Procedural Requirements, MPR 1600.1 and the Industrial Security Manual for Safeguarding Classified Information, DOD Manual 5220.22. Contractor personnel working at MSFC must comply with pertinent MSFC security regulations and the requirements of Homeland Security Presidential Directive (HSPD) No. 12.

2.0 MANAGEMENT

The Contractor shall provide administrative and technical program management for effective direction and control of this contract. The Contractor's plan and approach for providing such management shall be documented in a Management Plan which will be prepared in accordance with DRD 1107MA-001. The Contractor shall provide and use management information systems which provide a means for monitoring and measuring performance and which encompass planning, scheduling, progress reporting, and completion of tasks or projects. This shall include an automated task management system for life cycle management of task orders. The contractor shall provide an Organizational Conflict of Interest (OCI) Plan in accordance with DRD 1107MA-006. Monthly Financial Management Reports shall be provided in accordance with DRD 1107MA-008. Bi-weekly notes shall be submitted in accordance with DRD 1107MA-009. A Badged Employee and Remote IT User shall be submitted in accordance with DRD 1107MA-010. The contractor shall provide Management Status Review (MSR) Input in accordance with DRD 1107MA-005. The contractor shall provide a Make or Buy Plan in accordance with DRD 1107MA-011. The contractor shall determine the data restriction that applies to each data deliverable and mark or transmit the data restriction in accordance with section 2.3.3 of the Data Procurement Document. The contractor shall provide a Position Risk Designation for Non-NASA Employee(s) in accordance with DRD 1107MA-012.

2.1 Project Management

The Contractor shall provide planning, coordination, and surveillance of overall activities to assure disciplined performance of work and timely application of the resources necessary for completion of all tasks described in this Performance Work Statement.

The contractor shall perform the activities associated with this PWS in accordance with the Marshall Management System (MMS) requirements and the Safety and Mission Assurance (S&MA) Directorate's Organizational Instructions.

2.2 Property Management

The Contractor shall comply with:

MWI 4520.1	Receiving
MWI 4220.1	Space Utilization, Communications Furniture, Relocation, and Special Event Services
MWI 4200.1	Equipment Control
MWI 4300.1	Disposal Turn-Ins/Reutilization Screening
MWI 4500.1	Program Stock, Storage, and Retail Store Operations
MWI 4520.2	Use of the Procurement Discrepancy Tracking System (PDTS)
MPR 4000.2	Property Management
FAR Part 45	Government Property
NFS Part 1845	Government Property

The Contractor shall implement an inventory control system for all controlled property and equipment. The Contractor shall prepare and maintain a report identifying and listing all equipment, tools, etc., provided by the Government for use by the contractor in the performance of contracted effort, and for which the contractor has been given physical custody. The Government Property Management Plan report shall be prepared and maintained in accordance with DRD 1107LS-001.

2.3 Occupational Safety and Health

The contractor shall establish and implement a safety, health, and environmental program that incorporates the following elements as applicable to the work performed under this contract documented in the Safety, Health, and Environmental (SHE) Plan required by DRD 1107SA-002.

- a. Management leadership and employee involvement.
- b. System and worksite analysis.
- c. Hazard prevention and control.
- d. Safety and health training.
- e. Environmental compliance.

Mishaps shall be reported to the MSFC S&MA Directorate in accordance with DRD 1107SA-003, Mishaps and Safety Statistics Reports.

2.4 Working Group Support, Information Exchange, and Support for Implementation of New or Revised Requirements

The Contractor shall provide the following support for each of the nine elements stated in Paragraph 1.0:

- a. Participate in working groups and communicate effectively in the local MSFC area (either at a workstation or remotely).
- b. Information sharing or exchange with NASA Headquarters, other NASA Centers, and MSFC element contractors.
- c. Review of and preparation of comments for drafts of new requirements documents or proposed revisions to existing requirements documents.
- d. Participation in MSFC S&MA efforts to have MSFC Project Offices and their associated contractors implement new or revised requirements.

2.5 Personnel Training and Certification

The Contractor shall determine which positions on this contract require training as specified in MPR 3410.1, "Training", and certification as specified in MWI 3410.1, "Personnel Certification Program" and NPR 8715.3, "NASA Safety Manual" and applicable codes for welding, inspection, and Nondestructive Evaluation (NDE) of structural and pressure pipe welding. The contractor shall prepare, implement and maintain a Personnel Training and Certification Plan for each training and certification requirement identified in accordance with DRD 1107SA-001.

2.6 Developing and Maintaining Expertise in Safety and Mission Assurance Disciplines

The Contractor shall implement and maintain a program for developing and maintaining the expertise of its employees in safety and mission assurance disciplines including, but not limited to, industrial safety, systems safety, reliability, maintainability, quality assurance, and risk management. When practical, the Contractor shall partner with MSFC Civil Service employees by participating in S&MA Civil Service sponsored professional development activities such as periodic discipline expertise meetings and providing support to S&MA Civil Service discipline experts in the planning and implementation of their training and mentoring roles. The Contractor shall also develop, implement, schedule, and conduct specialized professional development training (in compliance with MPR 3410.1) when directed by S&MA and at their own discretion.

2.7 Automated Electronic Task Order Management

The Contractor shall establish, implement, and maintain an automated electronic task management system required to plan, organize, direct, and control contract activities. To this end, the Contractor shall provide the Government with access to the automated task management system, in accordance with the procedures in Clause H.3 and H.4, and the process depicted in Attachment J-10, in a manner that is consistent and compatible with Center information technology standards and be 508 compliant, pursuant to The Rehabilitation Act Amendment of 1973, as amended in 1998, Section 508, 29 U.S.C. 794(d) (<http://www.section508.gov/>). The automated task management system shall be an interactive system to be used by the government and the contractor. The automated task management system may be hosted on the contractor's server. The automated system shall allow for the electronic routing and approval of TOs and sub-elements. In addition, the Contractor's automated task management system shall track the status of TOs and sub-elements, as applicable, from planning to completion and record projected and actual resources data for each. This data shall be reported by those unique project numbers (UPN) that fund each TO and sub-elements. This data shall be presented in Management Status Review (MSR) Input that status each TO and sub-element on a monthly basis in accordance with DRD 1107MA-005. The Contractor shall provide Bi-Weekly Notes in accordance with DRD 1107MA-009. Overall reporting shall be compatible with the Contractor's organizational structure and the established PWS.

The Contractor's automated electronic task management system shall be an integrated system that allows insight and management of the day-to-day requirements at the Task Order Request (TOR), Task Order (TO) and sub-element levels. The Contractor's automated electronic task management system shall have the capability of tracking actual cost back to the contractor's Financial Management Reporting (533 Reports) at all levels down to the TO sub-element and project funding level.

The Contractor's automated electronic task management system shall provide a numbering system that provides traceability of tasks through their lifetime, electronic notification to the CO, COTR, TO initiator, Contract Task Order Performance Monitor (CTO PM), and Contractor of the task's status, approval tracking, revision tracking, traceability to PWS level 4, delineation of inactive and active tasks, period of performance for the task, and negotiated estimated cost. The system shall be capable of allowing the CTO PM, COTR and CO the ability to approve each TO prior to beginning the task, and approve the services provided by the TO prior to being closed in the system.

TORs defining specific assignments within the broad scope of the PWS will be prepared by TO Initiators, as services are needed. Specific information to be contained in the automated electronic task management system for the TORs shall include the following: an TOR number allowing traceability to a minimum of PWS Level 4, TO Initiator, task order description or objectives, travel requirements (if any), materials (if any), deliverables and milestone dates, benefiting program(s), and special instructions.

The Contractor will respond to the TOR with a Task Order Plan (TOP). Once approved the TOP will become a Task Order (TO). Information to be contained in the automated electronic task management system for the TOs shall include the following: contract identity, TO number which corresponds with the TOR number previously assigned, TO initiator, Contractor TO lead, TO description or objectives, technical approach for performing the task which includes required input data, guidelines, and assumptions, skills required, special tools required, identification of subcontractor(s) (if any) performing or contributing, resource plan for workforce and cost, schedule showing milestones, and deliverables, special considerations to include recruiting issues, safety concerns, etc., that may affect performance, and risk associated with TO performance as related to cost, technical, and schedule. Management Status Review (MSR) Input that status each TO and sub-element on a monthly basis in accordance with DRD 1107MA-005 shall be a standard output of the electronic task management system.

A sub-element is a lower level definition of work within a TO. Each sub-element will have a brief description of the scope and a cost estimate associated with it. Tracking of funding, cost, and Work Year Equivalents (WYE's) shall be provided at the sub-element level. At the sub-element level, the automated electronic task management system shall provide visibility to funding provided by the customer and track the cost associated with the funding.

The automated electronic task management system shall be capable of providing a Cost Summary Report, in spreadsheet format, that contains, for each organization (Directorate/ Department/Lab or Office), the following information for each evaluation period: TO number, TO title, negotiated cost, estimated cost without fee, and fee bearing negotiated cost. Additionally, the Cost Summary Report shall roll up each PWS Level 4 element information into an overall contract performance summary containing the following information for each evaluation period: organization, task title, summation of TOs for each PWS element Level 4, negotiated cost, and estimated cost. The Task Order Management system shall be

capable of collecting and presenting in an organized format (to include but not limited to MS Word and PowerPoint), the performance data from all contract monitors for COTR/Alternate COTR review and use/edit at or near the end of each rating period in a secure mode (Government only access). This information will support recommendations to the Performance Evaluation Board (PEB) for either Award Fee or Award Term periods earned during the evaluated performance period.

3.0 SYSTEMS SAFETY ENGINEERING PROGRAMS

- 3.1 The contractor shall develop and utilize any S&MA specific tools (as specified in PWS 7.0) needed to assure that all applicable system safety requirements (e.g., Agency, Center, Program/Project, etc.) are identified for MSFC programs and projects. These should include, but not be limited to fault tree analysis, logic trees, risk definition and mitigation analyses, hazard analysis and trending/data search.
- 3.2 The contractor shall assess program or project documentation (e.g., Contractor PWS, Data Requirements Documents, System Requirements Document, Contract End Item (CEI), Requirements Verification Compliance (RVC), procedures) to assure that all applicable safety requirements are addressed.
- 3.3 The contractor shall perform and assess trade studies relative to design, development, operation, or mission events to assure compliance with safety requirements and to assure safety risks are adequately identified, characterized, and mitigated.
 - 3.3.1 The contractor shall perform and/or assess the elements of 3.3 for in-house design and development projects.
 - 3.3.2 The contractor shall assess the elements of 3.3 for out-of-house design and development projects.
- 3.4 The contractor shall prepare and/or assess Safety Plans to assure compliance with applicable Agency, Center and Program safety requirements. Assess Project Plans to assure that safety is properly considered.
 - 3.4.1 The contractor shall perform and/or assess the elements of 3.4 for in-house design and development projects.
 - 3.4.2 The contractor shall assess the elements of 3.4 for out-of-house design and development projects.
- 3.5 The Contractor shall perform and/or assess hazard analyses to assure that: (a) all hazards are identified and the associated risks properly characterized; (b) hazard controls satisfy applicable safety requirements and adequately mitigate safety risks; (c) safety verification requirements are clearly identified and adequate,

including the clear definition of verification pass/fail criteria; and (d) the safety verification status is properly maintained in a closed loop accounting system.

- 3.5.1 The contractor shall perform and/or assess the elements of 3.5 for in-house design and development projects.
- 3.5.2 The contractor shall assess the elements of 3.5 for out-of-house design and development projects.
- 3.6 The contractor shall assess and support development of program or project verification plans and verification requirements (e.g., Verification Plans, Requirements Verification Compliance (RVC) documents) to assure safety verification requirements are properly included.
 - 3.6.1 The contractor shall assess test and operating procedures to assure compliance with safety controls and safety verification requirements.
 - 3.6.2 The contractor shall assess or generate safety verification compliance data to assure it clearly demonstrates compliance with the safety verification requirements and parent safety requirement.
- 3.7 The contractor shall participate in (including making presentations as required) milestone reviews, safety reviews and readiness reviews to assure compliance with applicable safety requirements. This includes evaluation of documentation and data for technical interchange meetings, design milestone reviews [e.g., Preliminary Requirements Review (PRR), Preliminary Design Review (PDR), Critical Design Review (CDR), Design Certification Review (DCR)], safety reviews, and readiness reviews [e.g., Pre-Ship Review, Flight Readiness Review (FRR), Preflight Assessment (PFA), Safety and Mission Assurance Readiness Review (SMARR)] to assure compliance with applicable safety requirements and consideration of safety risks.
- 3.8 The contractor shall assess proposed changes, deviations, and waivers to project documentation to assure compliance with safety requirements. This includes evaluation of the impacts to safety analyses and the effects on program or project risk.
- 3.9 The contractor shall provide systems safety expertise for program and project Boards such as Configuration Control Boards, Problem Review Boards, Discipline Control Boards, Program Control Boards, Material Review Boards, etc.
- 3.10 The contractor shall identify any adverse safety trends and promptly notify MSFC S&MA.

- 3.11 The contractor shall provide real-time safety assessments during launch countdowns and missions.

- 3.12 The contractor shall perform safety assessments of any issues which involve one or more of the following:
- a. Operation or performance outside the expected performance range of parameters or which has not previously been experienced.
 - b. Discrepancies or nonconformances which affect:
 - Configuration
 - Certification
 - Mission success
 - Safety critical functions
 - Weight in excess of two pounds (equivalent performances to orbit)
 - c. Adverse problem trends
 - d. Discrepancies or nonconformances which the operator determines requires design element analysis or assistance for resolution.
 - e. Unexplained anomalies or events.
 - f. Limit hardware life.
 - g. Restrict hardware or software use.
 - h. Affect hazard control.
 - i. Affect flight or ground operation procedures that are controlled by the Government.
 - j. Change software or hardware configurations that are controlled by the Government.
 - k. Allow use of hardware that does not meet performance specifications, exceeds certification limits, or surpasses time, age, cycle life limits (waivers/exceptions).
 - l. Affect critical hardware manufacture or repair processes.
- 3.13 The contractor shall provide support to the Marshall Safety Engineering Review Panel (MSERP) and to other panels [i.e., CLV (Crew Launch Vehicle) Safety Review Panel (CLVSRP, etc.)]. Support shall include but not be limited to documentation distribution and review, board establishment and communication, executive secretary function, meeting action item tracking, records retention, and independent “Checklist Reviews” of Safety Compliance Data Packages.
- 3.14 The contractor shall develop and maintain metrics regarding the safety performance of MSFC programs and projects.
- 3.15 The contractor shall participate in periodic, recurring technical issues meetings to discuss and resolve safety issues.

4.0 INDUSTRIAL SAFETY PROGRAM

- 4.1 The contractor shall annually conduct OSHA safety compliance inspections in accordance with 29 CFR 1960 of all local MSFC owned or occupied facilities.
- 4.1.1 The contractor shall semi-annually conduct safety compliance inspections of operations considered potentially hazardous. This includes, but is not limited to research and development test facilities, laboratories, industrial facilities and equipment.
- 4.1.2 The contractor shall verify/sample at least 30 percent of the annual facility inspection findings and associated closure rationale during the last quarter of the calendar year.
- 4.2 The contractor shall conduct weekly OSHA safety compliance inspections in accordance with 29 CFR 1960 of MSFC construction sites { 100% of Construction of Facilities (CoF) construction sites and 50% of other construction sites [e.g., Indefinite Delivery Indefinite Quantity (IDIQ), Blanket Purchase Agreement (BPA), etc.]}. This also includes inspections during normal non-duty hours and weekends when requested.
- 4.3 The contractor shall support final acceptance inspections of newly constructed or modified facilities.
- 4.4 The contractor shall annually perform facility fire alarm testing and building evacuation drills on all MSFC facilities with more than 10 occupants.
- 4.5 The contractor shall perform and evaluate hazard analyses and safety assessments using NASA approved state-of-the-art techniques for MSFC ground-based activities, equipment, and facilities.
- 4.6 The contractor shall perform safety engineering evaluations to ensure compliance with applicable codes and MSFC safety program requirements for preliminary engineering studies, feasibility studies, facility and equipment drawings and specifications.
- 4.7 The contractor shall review and evaluate MSFC potentially hazardous operation procedures and plans to assure compliance with applicable safety requirements and monitor the operation, when requested, to ensure safe operation.
- 4.8 The contractor shall participate in the Operational Readiness Inspections (ORI), Test Readiness Reviews (TRR), and other similar safety reviews to assess and evaluate the safety of potentially hazardous facilities and operations.

- 4.9 The contractor shall perform quantity distance calculations for explosives siting issues using methods of the NASA Explosives Safety Standard and other applicable standards as directed.
- 4.10 The contractor shall provide support to evaluate and monitor the storage, handling, and use of explosive, propellant, and pyrotechnic material and devices.
- 4.11 The contractor shall provide support to the MSFC Pressure Systems Manager in assuring compliance with NASA, ASME, ASTM, and applicable pressure system specifications and requirements for pressure systems containing cryogenic liquids/gases (e.g., Nitrogen, Hydrogen, Oxygen, etc.) and pressure systems containing other type liquids/gases when requested.
- 4.12 The contractor shall review program critical hardware (PCH) handling and transportation plans and procedures and monitor the transportation of the PCH.
- 4.13 The contractor shall provide support in developing, utilizing, and maintaining electronic databases (as specified in PWS 7.0), needed to support the MSFC Safety, Health, and Environmental (SHE) program. These include, but are not limited to the following safety tracking systems:
 - 4.13.1 CERTRAK – Certification tracking for personnel performing hazardous operations
 - 4.13.2 SCRS – Safety Concerns Reporting System
 - 4.13.3 SHETrak – Safety, Health and Environmental tracking for facility inspection findings
 - 4.13.4 Safety Search – database providing ability to search SHE related items
 - 4.13.5 Mishap Reporting – database for mishap and incident reports
 - 4.13.6 Safety Bulletins – database listing safety bulletins
 - 4.13.7 Hazard Analysis – database tracking hazard analysis status
 - 4.13.8 Building Managers list – database listing current building managers
 - 4.13.9 ORI/TRR Tracking System – database tracking ORI/TRR status
 - 4.13.10 Certified lifting equipment for PCH – database listing current PCH certified lifting equipment
 - 4.13.11 SSWP – Supervisor Safety Web Page
 - 4.13.12 Contractor Database – database listing current MSFC contractors
 - 4.13.13 RiskSafe – software used to assist in conducting hazard analysis
 - 4.13.14 IHOPS – Inventory of Hazardous Operations
 - 4.13.15 Design Reviews – database tracking design review comments
 - 4.13.16 Any other systems needed to track and analyze industrial safety information.

NOTE: These electronic database tools are to be made available to MSFC S&MA personnel upon request. Training and updates shall be provided upon request.

- 4.14 The contractor shall provide support in the review of new or revised NASA and MSFC safety related documents.

- 4.15 The contractor shall provide support at briefings requiring MSFC Safety support (e.g., pre-construction, pre-move, pre-test, etc.) to inform and assure personnel involved in the activity are aware and knowledgeable of the MSFC safety regulations and requirements.
- 4.16 The contractor shall monitor the implementation of any new and revised NASA, MSFC, OSHA, NFPA or any other applicable document related to safety (e.g., Standard for Lifting Devices and Equipment, Fall Protection, Lockout/Tagout, etc.).
- 4.17 The contractor shall monitor the testing of safety related and fire protection systems (e.g., fire alarms, sprinkler, carbon dioxide, wet chemical, fire hydrants, standpipes, oxygen deficiency monitor, emergency showers/eyewashes, etc.).
- 4.18 The contractor shall provide support for mishap investigations including any required follow-up to safety technical issues.
- 4.19 The contractor shall provide proficiency testing for MSFC lifting equipment operators (e.g., cranes, forklifts, aerial lifts, etc.).
- 4.20 The contractor shall issue safety permits (e.g., Hot Work Permits, Energized Electrical Equipment Permits, etc.).
- 4.21 The contractor shall provide support to assist during internal self-assessments, audits or surveys, and assessments, audits or surveys performed by a third party or other outside agency of the MSFC safety program.
- 4.22 The contractor shall provide support in preparing, presenting, and/or distributing information relating to MSFC safety activities.
- 4.23 The contractor shall provide administrative and technical secretary support for the MSFC SHE Committee.
- 4.24 The contractor shall participate in the development and implementation of OSHA compliance training subjects in accordance with 29 CFR 1960, 29 CFR 1910 and 29 CFR 1926 (e.g., Collateral Duty, Supervisor Safety Visits, Building Manager, Lifting Devices, Personnel Protective Equipment (PPE), etc.), and provide this safety training to MSFC employees, when requested.

5.0 RELIABILITY AND MAINTAINABILITY ENGINEERING

5.1 Systems Analysis

- 5.1.1 The contractor shall prepare, evaluate and assure reliability and maintainability plans for MSFC program and project designs are consistent with MSFC S&MA and project management direction. Support the development and assessment of FMEA/CIL's and their groundrules.
- 5.1.1.1 The contractor shall prepare, evaluate and assure the elements of 5.1.1 for in-house design and development projects.
- 5.1.1.2 The contractor shall evaluate and assure the elements of 5.1.1 for out-of-house design and development projects.
- 5.1.1.3 The contractor shall support the development of FMEA/CIL's in 5.1.1 for in-house design and development projects.
- 5.1.1.4 The contractor shall support the assessment of FMEA/CIL's in 5.1.1 for out-of-house design and development projects.
- 5.1.2 The contractor shall evaluate changes, out-of-family conditions, material reviews, and deviations for impact to FMEA's and CIL's.
- 5.1.3 The contractor shall evaluate project documents related to reliability and maintainability to assure consistency and adequacy with overall project requirements.
- 5.1.4 The contractor shall evaluate OMRSD's and implementing OMI's to assure that reliability and maintainability requirements are adequately addressed and implemented.
- 5.1.5 The contractor shall participate in project milestone reviews (PRR's, SRR's, PDR's, CDR's, DCR'S, FRR's, etc.) for the purpose of evaluating the incorporation of reliability and maintainability requirements throughout the life cycle of a project (e.g., design, development, production, testing, and operations).
- 5.1.6 The contractor shall prepare reliability assessments, using reliability data bases, for each mission, vehicle, and other equipment in support of preflight assessment reviews and flight readiness milestone reviews.
- 5.1.7 The contractor shall perform design trade studies, evaluate contractor prepared trade studies, and provide reliability and maintainability assessments.
- 5.1.8 The contractor shall evaluate hardware and software contractor provided reliability and maintainability analyses, to verify the validity of the analyses and assure that the analyses have been performed in accordance with requirements.

- 5.1.9 The contractor shall perform planned and ad hoc numerical reliability and maintainability analyses using appropriate analytical methods and models without necessarily receiving detailed technical guidance from MSFC. The analytical methods may include, but not be limited to, classical probability density functions, reliability and maintainability models, Monte Carlo simulation models, probabilistic risk analysis, etc.
- 5.1.10 The contractor shall develop and/or evaluate FMEA's and CIL's for compliance with requirements.
- 5.1.11 The contractor shall develop and utilize any tools (as specified in PWS 7.0) needed to assure that all applicable reliability and maintainability requirements are identified for MSFC programs and projects. These should include, but not be limited to FMEA/CIL information analysis, reliability trending and assessments, maintainability trending and assessments, and any other systems needed to analyze reliability and maintainability information. The analytical results of these tools should be provided to MSFC S&MA personnel with appropriate recommendations.
- 5.2 Probabilistic Risk Assessment (PRA)
- 5.2.1 The contractor shall prepare probabilistic risk assessment plans for MSFC managed programs and projects.
- 5.2.2 The contractor shall develop and/or provide tools (as specified in PWS 7.0) and techniques to perform probabilistic risk analysis.
- 5.2.3 The contractor shall perform probabilistic risk analysis, assessments and mitigation for MSFC managed programs and projects. The contractor shall be able to perform PRAs as required on future MSFC programs and projects. Specific tasking will include, but not be limited to reliability engineering tasks related to the Exploration Systems Mission Directorate programs and projects, and NASA Headquarters initiative to develop an overall Shuttle Program Risk Model. This will include data collection related to MSFC elements (Space Shuttle Main Engine, Solid Rocket Booster, Reusable Solid Rocket Motor, and External Tank), risk model selection and risk analysis of these elements, utilization of the selected risk model(s) to be integrated into the overall Shuttle Program Model, simulation of risk scenarios using available software packages, and an overall report on the data, methods/models, and results.

5.3 Hardware/Software Assessments

5.3.1 The contractor shall evaluate in-house and out-of-house contractor methods for identification and control of limited life items. Verify, through assessments, that sufficient remaining life of equipment is available for accomplishing the mission objectives. Verify that life limits of common hardware are consistent.

5.3.2 The contractor shall evaluate engineering and programmatic changes such as ECR's, ECP's, Deviations, Waivers, PCP's and SCN's for reliability and maintainability impact.

5.3.3 The contractor shall evaluate in-house and out-of-house contractor provided FMEA analyses of software design to assure software properly responds to critical failure modes as identified by the FMEA/CIL documents (i.e., fault detection, isolation, switching, etc.).

5.4 ALERT Program Maintenance

5.4.1 The Contractor shall receive ALERT's and shall enter them into the ALERT database.

5.4.2 The Contractor shall also distribute ALERTS to MSFC actionees for review and disposition, track the status of the reviews by project, enter the results of the reviews in the ALERT database, and transmit the results of the reviews to the organizations identified in MWI 1280.5, MSFC Alert Processing.

5.4.3 The Contractor shall ensure that the ALERT data is available real-time to users, shall track the status of Alerts and assure that actionees provide timely closures and shall evaluate ALERTS closure rationale.

5.4.4 The contractor shall generate or assist in the generation of ALERT's (primarily for in-house programs and projects) as warranted.

5.5 Problem Assessment Center (PAC)

The Contractor shall operate the MSFC PAC in strict compliance with the MSFC PAC Operations Plan (see paragraph 5.5.1) and supplementary guidance provided by the COTR. In executing this task, the Contractor shall process incoming problem reports, coordinate the activities of the MSFC Problem Assessment System(PAS) (which provides the process by which MSFC project management and technical organizations review and close problem reports), provide official MSFC problem report data to authorized organizations and personnel, and operate and maintain (i.e., keep data current) the MSFC PRACA database.

5.5.1 Problem Assessment Center Operations Plan

The Contractor shall maintain and implement the Operations Plan for the MSFC PAC in accordance with DRD 1107MA-004, Problem Assessment Center (PAC) Operation Plan. The plan shall describe, in detail, the PAC activities necessary to fulfill the problem reporting requirements (from initiation of project problem reporting through project termination) for any MSFC managed projects for which problem reporting is required. The plan shall also identify the periodic reports the PAC will issue to fulfill customer needs.

5.5.2 Problem Report Processing

The Contractor will receive problem reports (i.e., initial reports, updates, and recommended closures) directly from hardware/software contractors and in-house hardware/software developers via mail, courier, facsimile machine, or direct electronic transfer (i.e., the hardware/software contractor's computer furnishes problem report data directly to the MSFC PRACA database). The Contractor shall review the incoming problem reports for accuracy, clarity, and completeness. The Contractor shall complete the problem report data fields designated for completion by the PAC and the Design Center. For problem reports submitted by hardware/software contractors who do not use the MSFC PRACA problem report format, the Contractor shall prepare an MSFC PRACA problem report form. The Contractor shall screen the incoming problem reports to identify system level problems when requested by the associated project. The Contractor shall maintain a complete record of each problem report submitted to the PAC.

5.5.3 Reviewing Problem Reports

The Contractor shall review the data for all coded fields as well as all text fields provided by the hardware/software contractor or in-house hardware/software developer. This review shall address technical sufficiency as well as editorial acceptability. When a problem report is inaccurate, unclear, or incomplete, the Contractor shall contact the responsible hardware/software contractor or in-house hardware/software developer by the most expeditious means and request correction, clarification, or supplementary information as warranted by the situation. Supplementary information may consist of backup technical data such as Engineering Change Request (ECR) documents, procedures, specifications, drawings, etc. The contractor shall perform trending analysis for each problem report received and provide results and recommendations for potential corrective action (Section 5.5.11).

5.5.4 Problem Report Records

For each incoming problem report, the Contractor shall enter the required problem report data in the MSFC PRACA database unless that data is electronically transmitted directly to the MSFC PRACA database by the hardware/software contractor. The Contractor shall maintain a record of each problem report in the MSFC PRACA database. The Contractor shall also maintain a hardcopy file containing those problem reports and their associated backup information provided by the hardware/software contractor in hardcopy form.

5.5.5 Coordinate the MSFC Problem Assessment System (PAS)

The Contractor shall coordinate the review and disposition of problem reports by the appropriate MSFC project management and technical assignees, record the actions of the assignees, and prepare and route non-concurrence letters when directed by the authorized assignees. The Contractor will coordinate the MSFC review of system level problems and record the results of the review.

5.5.6 MSFC Review and Disposition

Upon receiving either initial problem reports or recommended closures from the hardware/software contractors or in-house hardware/software developers, the Contractor shall expeditiously distribute copies of those problem reports, including backup information, to the appropriate assignees in the MSFC project offices, and the MSFC Safety and Mission Assurance Directorate. The Contractor shall be responsible for maintaining current knowledge of the identities of the assignees for each project for which the PAC processes problem reports. The Contractor shall track the status of the review and disposition of each problem report and, when requested, shall assist assignees in obtaining additional information from hardware/software contractors.

5.5.7 Problem Review Board (PRB) Meetings

When a formal Problem Review Board (PRB) meeting is called, the Contractor shall prepare a proposed list of problem reports for review, schedule the meeting, prepare an agenda, and coordinate it with the hardware/software contractor or in-house hardware/software developer, provide advanced notice to the participants, assure that the necessary support arrangements (i.e., meeting room reserved, telephone conference arranged, etc.) have been made, and provide problem report information packages to the MSFC assignees. In addition, the contractor shall provide an assessment of each problem report including related history, trends, thoroughness of report, and overall adequacy of investigation and recurrence controls. During the meeting, the Contractor shall administer the meeting, record and report status of action items assigned by the PRB, and record the PRB's disposition of the problem reports considered. Following the meeting, the

Contractor shall monitor the status of action items, update the MSFC PRACA database and hardcopy files, and prepare, secure approval for, and distribute the minutes of the meeting.

5.5.8 MSFC Review of System Level Problems

The Contractor shall monitor the Space Shuttle Level II Program Compliance Assurance Status System (PCASS) database to identify newly entered system level problems pertaining to the Orbiter. The Contractor shall provide these reports to the appropriate MSFC assignees and obtain their responses which will be recorded in a dedicated file and provided to the appropriate JSC organization. The contractor shall establish and operate a process for identifying, reviewing, documenting and distributing system level problems and review responses associated with future programs/projects (i.e., Exploration Systems, etc.).

5.5.9 Official MSFC Problem Report Data

The Contractor shall provide official MSFC problem report data and, if requested, basic engineering assessments of the data or answers to questions regarding the data for the following:

- a. Project office sponsored flight readiness reviews as well as S&MA Directorate sponsored readiness reviews (e.g., CoFR, preflight assessments (PFA), SMARRs).
- b. Daily electronic updates for upper level program problem report databases (e.g., Level II PCASS).
- c. Notification to the appropriate organization (e.g., JSC) of newly reported system level problems submitted by MSFC project hardware/software contractors.
- d. Requests from NASA MSFC Civil Service organizations.
- e. Requests from the Huntsville Operations Support Center (HOSC) during mission support operations.
- f. Requests from other organizations upon direction from the COTR.

5.5.10 Support for the Huntsville Operations Support Center (HOSC)

The Contractor will station assessment engineers at the Problem Assessment Center (PAC) during Simulations, Flight Readiness Firings (FRF), Count Down Demonstration Tests (CDDT), and mission launches (beginning with tanking at approximately T-7 hours and continuing regularly or intermittently through completion of payload missions for which there are PAC maintained databases). At the PAC, the assessment engineers will respond to requests from the HOSC for

problem information contained in the MSFC PRACA database. These requests will require extraction of problem data, structured queries of the database to produce information about groups of problems, and assessment and basic engineering analysis by assessment engineers to answer specific questions. The Contractor will notify the appropriate Program/Project S&MA representative if open problems are received which require disposition prior to launch. If necessary, the Contractor will support a PRB meeting as described in 5.5.7.5.5.11

Problem Trending The Contractor shall conduct ongoing statistical analyses and engineering assessments of problem trends. Problem trends may be prepared for any MSFC Project for which problem reporting is performed (i.e., Payloads, Space Shuttle elements, CLV and CLV Elements, etc.) if warranted or requested. Resulting trend data/analysis is presented to the appropriate MSFC S&MA representative. Contractor format is acceptable.

5.6 PRACA (Problem Reporting and Corrective Action)

THE CONTRACTOR SHALL PREPARE PRACA METHODOLOGY DOCUMENTS FOR MSFC MANAGED PROGRAMS AND PROJECTS AND EVALUATE PRACA DOCUMENTS SUBMITTED BY CONTRACTORS. THE CONTRACTOR SHALL ASSURE THAT PRACA REQUIREMENTS ARE CONSISTENT WITH MSFC S&MA AND PROJECT MANAGEMENT DIRECTION.

6.0 QUALITY ASSURANCE

6.1 Systems

6.1.1 The Contractor shall prepare, evaluate and, provide assessments of in-house and contracted quality related contractual documentation (e.g., Hardware and Software Quality Assurance (QA) Plans) including implementation instructions and procedures for MSFC QA policies and directives.

6.1.2 The Contractor shall perform periodic reviews and assessments of in-house and contracted QA instructions for compliance with NASA policy, Marshall Management System (MMS), Safety and Mission Assurance (S&MA) Directorate Organizational Instructions.

6.1.3 The Contractor shall provide Quality Engineering (QE) expertise for the preparation, evaluation, and assessment of in-house and contractual documentation relative to processes (e.g., electrical, electronic, materials, and non-destructive evaluation) encountered during the manufacturing, inspection, and test phases of projects.

6.1.4 The Contractor shall provide expertise to support the continued ISO 9000-2000/AS9100 registration at MSFC including, but not limited to, training of

MSFC employees on ISO 9000-2000/AS9100, implementation plan maintenance, procedure preparation, progress monitoring, and internal audit support. The Contractor shall give advice/consultation on matters pertaining to interpretation of the ISO 9000-2000/AS9100 standard (to individual organizations as well as the MSFC Management Representative and the Implementation/Maintenance team). The Contractor shall support the MMS team. The Contractor shall assist in external and internal Audits/Surveillances and Corrective Action follow-up. The contractor shall participate in and support Document Control Board activity for review, evaluation, and disposition of S&MA controlled documents. This activity includes the review of Organizational Instructions (OI) and related external documents under review by Center Document Control Boards (DCB's).

- 6.1.5 The contractor shall participate in MSFC program, contractor, supplier, or other Government milestone reviews (e.g., SMARR's, PRR's, SRR's, PDR's, CDR's, DCR's, FRR's, TRR's) to evaluate the incorporation of quality assurance and certification requirements in decisions affecting design, safety, production, testing, and operation.
- 6.1.6 The contractor shall develop and utilize any tools (as specified in PWS 7.0) needed to assure that all applicable quality assurance requirements are identified for MSFC programs and projects. These should include, but not be limited to quality information analysis (including workmanship standards, specifications, procedures and documentation quality control), quality data trending and assessments, and as built configuration databases.
- 6.2 Process and Product Assurance
- 6.2.1 The contractor shall prepare and evaluate workmanship against the technical standard, specifications, procedures, and control documentation for in-house and contracted processes and purchases, utilizing the Procurement Discrepancy Tracking System (PDTS) as appropriate, used throughout all phases of the hardware and software development cycle.
- 6.2.2 The contractor shall prepare and evaluate in-house inspection criteria for safety critical hardware/software characteristics and other requested characteristics. They shall also evaluate and provide written assessments on other MSFC contractor or Government Agency inspection criteria and the implementation of these inspections.
- 6.2.3 The contractor shall provide Engineering Change Proposal (ECP) support to S&MA Configuration Control Board (CCB) members. The support provided shall consist of logging, tracking, and distributing ECP's for S&MA review, response integration, and presenting the integrated assessments to CCB's. The Contractor shall also provide support as change package engineers (CPE) as assigned.

- 6.2.4 The contractor shall provide the expertise to evaluate in-house and contractual waivers and deviations for compliance with stated QA, certification requirements, standards, and policies.
- 6.2.5 The contractor shall provide QE expertise to ensure the inspectability of in-house designs by performing drawing and procurement documentation review. The contract will recommend the quality requirements for procurements as required.
- 6.2.6 The contractor shall provide the expertise to perform and evaluate trade studies relative to design, fabrication, inspection, testing, and operations.
- 6.2.7 The Contractor shall prepare, evaluate, and maintain guidelines, checklists, and plans to be used in support of S&MA participation in audits of MSFC internal organizations, MSFC vendors and suppliers, and other Government Agencies and NASA Engineering and Quality Audits (NEQA). The Contractor shall maintain a status of all S&MA action items resulting from audits to ensure compliance with MSFC S&MA policies and procedures. The Contractor shall provide support to S&MA, auditors, and auditees by assisting in scheduling audits, tracking and follow-up of findings, and preparation and distribution of final reports. The Contractor shall maintain a system for retention of quality records associated with audits.
- 6.2.8 The Contractor shall evaluate test results versus verification requirements including the disposition of test anomalies and discrepancies for adequacy. The Contractor shall maintain the necessary certification records, files, and hardware certification status to meet project and S&MA needs.
- 6.2.9 The contractor shall provide Quality Assurance expertise (including but not limited to hardware evaluation) in support of S&MA inspection and MSFC testing activities including initial surveillance to final acceptance as required.
- 6.2.10 The contractor shall participate in postflight assessment [i.e., SRB (Solid Rocket Booster), RSRM (Reusable Solid Rocket Motor), CLV hardware, etc.], as requested. Prepare assessment reports and presentations. Evaluate observations for determination of items that warrant formal problem reports.
- 6.3 Problem Analysis
- 6.3.1 The contractor shall, as required, advise MRB members and recommend corrective action to improve product quality. The contractor shall also participate in the construction of trending charts and analyses on MSFC contractor and in-house efforts, and shall provide recommendations to S&MA engineers and managers on adverse MSFC contractor and in-house trends.
- 6.3.2 The contractor shall participate in problem and failure investigations to determine root cause and recommend corrective action.

6.3.3 The contractor shall administer the MSFC Corrective/Preventive Action System. It shall be operated in compliance with MWI 1280.3, Corrective/Preventive Action Notification System; MPR 1280.4, MSFC Corrective Action System; and attendant MSFC work instructions. The contractor shall screen incoming potential recurrence control action requests (RCAR's); record and track problem and preventive action status; coordinate MSFC review and disposition of RCAR's; provide official MSFC report data to authorized organizations and personnel; perform trending on related potential and screened RCAR's by failure mode and cause; and operate and maintain the MSFC CAS database. The contractor will provide support for maintaining associated Safety and Mission Assurance (S&MA) organizational instructions current with MSFC procedures and requirements.

6.4 Personnel Certification Administration
The contractor shall support the administration of the MSFC Personnel Certification Program in compliance with MWI 3410.1, Personnel Certification Program. The contractor shall maintain a database system to record personnel certifications for MSFC and on-site contractor personnel. As required, the contractor shall screen certification packages for compliance with procedures and coordinate the review of the packages with the applicable MSFC Certifying Officer.

6.5 Software Assurance (SA)
Support the establishment, implementation, and maintenance of applicable, NASA, Government approved Industry Standards, or DoD, SA requirements, and implementing these requirements on MSFC managed in-house and contracted software development programs. Support shall include, when applicable, the following. Preparing, evaluating, and providing assessments of MSFC managed in-house and contracted program/project SA Plans and software engineering change documentation (e.g. ECRs, ECPs, SPRs, TDRs). Evaluating and providing assessments of program/project software products (e.g. Software Development Plans, Software Requirements Specifications, Software Test Plans) and of applicable NASA/MSFC policies and guidelines (NPDs, NPGs, MPDs, MPG, etc.). Participating in and providing assessment during program/project milestone reviews (e.g. PDR, CDR, TRR). Supporting audit planning and tracking of findings associated with the S&MA evaluation of MSFC managed software development process through SA internal audits (e.g. Software Development Folder Audits, Software Configuration Management Audits, Software Requirements Traceability Audits, Peer Review Audits). Performing software quality assurance test activities during the appropriate software development life cycle phase. The contractor shall prepare and participate in SA related training. The contractor shall support in the collection of SA metrics. The contractor shall prepare, evaluate, and provide assessment associated with the NASA Initiative for Software Assurance and with S&MA/SA documentation for

the implementation of the Space Exploration Initiative (SEI) Capability Maturity Model Integration (CMMI) (e.g. SA OIs).

7.0 S&MA MANAGEMENT INFORMATION

- 7.1 The contractor shall provide support for the management of all S&MA Management Information tools, including databases, applications, processes, hardware and software throughout the lifecycle, including planning, acquisition, development, documentation, operation and disposal (See Attachment J-4). The Contractor shall also manage resulting S&MA data and provide a virtual focal point for the presentation of refined, integrated S&MA data and administer the S&MA delegated agency data, including annual forecasts, midyear updates, and monthly data reduction. (This support shall not conflict with the responsibilities of the Center IT Services contractor.)
- 7.2 The contractor shall support the preparation and/or maintenance of S&MA management information documents including Organizational Issuances (OIs).
- 7.3 The contractor shall using accepted and proven methodologies, assess S&MA's information needs for the present and future. Investigate alternatives for identified S&MA needs. Evaluate and recommend S&MA requirements for new system enhancements or capabilities. Present S&MA management with precise descriptions and recommendations on system alternatives and improvements.
- 7.4 The contractor shall perform structured system design activities for in-house development work and for work performed by outside contractors, and make management recommendations to S&MA. MSFC S&MA will provide overview and retain final decision-making authority over all design and development activities. Assure conformance of all S&MA Management Information system development activities to governing policies and best practices.
- 7.5 The contractor shall ensure that all system requirements are met. If not provided by S&MA, the contractor shall generate complete documentation for each system. This documentation shall include, but not be limited to, requirements definition, design definition, code documentation, users guides for operations personnel as well as end users, implementation plans and operations plans. Assure that all internal reviews and on-site coordination activities are completed. Provide user support functions for S&MA Management Information including training and real-time help for supported programs and processes.
- 7.6 The contractor shall provide computer security risk assessments of all S&MA databases and data applications in accordance with MPR 2810.1, "Security of Information Technology". The contractor shall prepare an Information Technology Security Plan that documents how the contractor and subcontractor personnel will utilize, in a secure manner commensurate with sensitivity of the

8.0 PROJECT ASSURANCE SERVICES

Project Assurance Services shall be provided to all S&MA supported programs/projects.

8.1 S&MA Project Team Participation

8.1.1 The contractor shall coordinate the contractor S&MA activities with the S&MA project team leads to assure the proper execution of the S&MA project requirements.

8.1.2 The contractor shall serve as expert advisor on SRM&QA topics for project team meetings, technical interchange meetings, problem investigation and resolution efforts, and other routine project meetings.

8.1.3 The contractor shall participate in milestone reviews, data reviews, and safety reviews.

8.1.4 The contractor shall provide assessments of flight readiness in support of the S&MA input to the SMARR's and the Certificate of Flight Readiness for the MSFC Shuttle elements, CEV and CLV Elements, MSFC Payloads, Flight Projects and future programs/projects, upon request. This includes, but is not limited to, technical issues resolution and status of S&MA flight critical documentation (COQ's, FMEA/CIL, Hazards, etc.)

8.1.5 The contractor shall track action items and issues resulting from above team meetings, milestone reviews and flight readiness activities, and recommend disposition to S&MA project team leader.

8.2 S&MA Readiness Review Center

The contractor shall operate the MSFC S&MA Readiness Review Center for each S&MA Readiness Review (SMARR), SMARR Tag-up and L-2 SMARR Tag-up

including dry runs for ET/SRB Mate Reviews, Orbiter Rollout Reviews and reviews established for future programs. This task includes scheduling, data collection, preparation and distribution of MSFC S&MA presentation materials, and data exchange with JSC, KSC, and NASA HQ. In addition, serves as a member of the NASA SMARR Data Coordinators Working Group.

8.3 NASA Engineering and Safety Center (NESC) and Technical Authority (Formally Independent Technical Authority) Support

The Contractor shall provide as required the necessary administrative and technical support to S&MA to assure disciplined performance of work and timely application of the resources necessary for completion of all assigned NESC and Technical Authority tasks. NESC and Technical Authority tasks will include, but are not limited to the following:

- a. Developing and maintaining the MSFC S&MA NESC Significant Problem Reports.
- b. Supporting NESC trending activities.
- c. Supporting the NESC and Technical Authority telecoms and meetings (including preparing supporting materials).
- d. Providing technical support to NESC assessments and Technical Authority activities.

9.0 INDEPENDENT ASSURANCE TASKS

The contractor shall use senior staff and Technical Experts to perform independent assurance tasks in support of Independent Assurance (IA). Assessments will be requested by the MSFC S&MA Organization. IA tasks will include, but are not limited to the following:

- a. Track Project/Program operations and make recommendations of potential IA topics to S&MA.
- b. Develop and maintain IA assessment work plans.
- c. Perform assessments in accordance with approved assessment plans. Coordinate with appropriate IA team members, other organizations conducting related assessments, and program/project offices while researching issues. Report significant issues or concerns developed by the assessment immediately to the MSFC IA Manager.

- d. Develop report of analysis, observations, findings and recommendations. This will include incorporation of any Program/Project responses to the IA observations. Present this report to the MSFC IA Manager for approval.
- e. Brief observations, findings and recommendations to MSFC IA Manager, appropriate S&MA Managers and appropriate Program/Project personnel.
- f. Coordinate and perform follow-up on closure of report observations and any assigned actions as required.
- g. Participate in MSFC led and Headquarters led Programmatic Audits and Reviews, and S&MA Readiness Reviews.

Performance of all tasking will be in accordance with OI QD-PA-006, MSFC S&MA IA Implementation Plan.

10.0 RISK MANAGEMENT

- 10.1 The Contractor shall provide expertise to support the preparation, evaluation, and assessment of in-house and contractual program and project risk management plans. The contractor shall develop tools (as specified in PWS 7.0) and techniques, as necessary, to facilitate the identification/tracking/mitigation of risks and issues that may potentially negatively impact a project or program.
- 10.2 The Contractor shall provide recommendations and advice to S&MA engineers and managers relative to risk mitigation actions to minimize or eliminate risks.
- 10.3 The Contractor's risk management experts shall complete the NASA HQ supplied training and become certified as Continuous Risk Management Course instructors. Once certified, the instructors shall present Continuous Risk Management courses and workshops to MSFC employees (planned a minimum six times a year).

11.0 DOCUMENTATION AND REPORT SUPPORT

- 11.1 The contractor shall provide support in the development of plans, procedures, briefing material and other documents required in the accomplishment of MSFC S&MA activities in accordance with DRD 1107MA-003, MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents.
- 11.2 The contractor shall provide support to the S&MA Directorate with evaluations and assessments of documentation to accomplish its mission in support of MSFC Programs and Projects. These reports shall be in accordance with DRD 1107MA-002, Evaluation and Assessment Reports.

- 11.3 The contractor shall provide Employee Reporting List and Contractor Employee Clearance Document in accordance with DRD 1107MA-007.

DATA PROCUREMENT DOC.
NO. ISSUE
1107 **Revision A**

NNM07AA74C

CONTRACT/RFP

EXHIBIT NUMBER

J-2

ATTACHMENT NUMBER

Safety and Mission Assurance Services

PROJECT/SYSTEM

DATA PROCUREMENT DOCUMENT

Hernandez Engineering, Inc.

CONTRACTOR

July 12, 2007

DATE

National Aeronautics and
Space Administration

National Aeronautics and Space Administration					DATA PROCUREMENT DOC.	
DOCUMENT CHANGE LOG					NO. ISSUE	
					1107 Revision A	
INCORPORATED REVISIONS OUTSTANDING REVISIONS				AS OF: 07-12-07		SUPERSEDING: 02-01-07
				PAGE:		
AUTHORITY	PORTION AFFECTED - PAGE NO./NO.				REMARKS	
	INTRO	SGR	DRL	DRD		
Contract Mod 4				X	Added the following DRD: 1107MA-012, Position Risk Designation for Non-NASA Employee	

National Aeronautics and Space Administration			DATA PROCUREMENT DOC.		
PAGE REVISION LOG			NO.	ISSUE	
NOTE: The current revision is denoted by a vertical line in the outer margin adjacent to the affected text.			AS OF:	SUPERSEDING:	PAGE:
			07-12-07	02-01-07	
INSERT LATEST REVISED PAGES.			DISCARD SUPERSEDED PAGES.		
ITEM	PAGE	STATUS	ITEM	PAGE	STATUS
DPD	ALL	Revision A			

1.0 INTRODUCTION

1.1 Scope: Subject to the Rights in Data clause, this Data Procurement Document (DPD) sets forth the data requirements in each Data Requirements Description (DRD) and shall govern that data required by the DPD for the contract. The contractor shall furnish data defined by the DRD's listed on the Data Requirements List (DRL) by category of data, attached hereto, and made a part of this DPD. Such data shall be prepared, maintained, and delivered to NASA in accordance with the requirements set forth within this DPD. In cases where data requirements are covered by a Federal Acquisition Regulation (FAR) or NASA FAR Supplement (NFS) clause, that clause shall take precedence over the DPD, consistent with clause FAR 52.215-8.

1.2 DPD Description: This DPD consists of a Document Change Log, a Page Revision Log, an Introduction, a Statement of General Requirements, DPD maintenance procedures, a DRL, and the DRD's.

1.2.1 General Requirements: The general requirements, as specified in paragraph 2.0 of this DPD, prescribe those requirements applicable to the preparation, maintenance, and delivery of data that are better defined in aggregate than in the individual DRD's.

1.2.2 Data Requirements List (DRL): Throughout the performance of the contract, the DRL provides a listing by data category of the data requirements of the DPD.

1.2.3 Data Requirements Descriptions (DRD's)

1.2.3.1 Each data requirement listed on the DRL is given complete definition by a DRD. The DRD prescribes content, format, maintenance instructions, and submittal requirements.

1.2.3.2 For the purpose of classification and control, DRD's of this DPD are grouped into the following broad functional data categories:

<u>CATEGORY SYMBOL</u>	<u>DESCRIPTION</u>
CD	Contractual Data
LS	Logistics Support
MA	Management
SA	Safety

1.2.3.3 The symbols representing these data categories form part of the prefix of the DRD identification number. The first numerical characters reflect the DPD number.

1.2.3.4 To facilitate the usage and maintenance of the DPD, the DRD's have been sectionalized in accordance with the above data categories.

1.2.3.5 The DRD's are filed by data category and are in alpha-numeric sequence as listed on the DRL page (or pages) that precedes the DRD's.

- 1.2.4 Document Change Log (DCL) and Page Revision Log (PRL): The Document Change Log chronologically records all revision actions that pertain to the DPD. The Page Revision Log describes the current revision status of each page of the DPD and thus, at all times, provides its exact configuration.
- 1.2.5 DPD Maintenance Procedures: Maintenance procedures define the detailed methods to be employed in maintaining the DPD. Detailed maintenance procedures are specified in paragraph 3.0 of this DPD.

1.3 Data Types for Contractual Efforts: The types of data and their contractually applicable requirements for approval and delivery are:

<u>TYPE</u>	<u>DESCRIPTION</u>
1*	All issues and interim changes to those issues require written approval from the requiring organization before formal release for use or implementation.
2*	NASA reserves a time-limited right to disapprove in writing any issues and interim changes to those issues. The contractor shall submit the required data to NASA for review not less than 45 calendar days** prior to its release for use. The contractor shall clearly identify the release target date in the “submitted for review” transmittal***. If the data is unacceptable, NASA will notify the contractor within 45 calendar days** from the date of submission, regardless of the intended release date***. The contractor shall resubmit the information for reevaluation if disapproved. The submittal is considered approved if the contractor does not receive disapproval or an extension request from NASA within 45 calendar days**.
3	These data shall be delivered by the contractor as required by the contract and do not require NASA approval. However, to be a satisfactory delivery, the data shall satisfy all applicable contractual requirements and be submitted on time.
4	These data are produced or used during performance of the contract and are retained by the contractor. They shall be delivered only when NASA requests in writing and shall be delivered in accordance with the instructions in the request. The contractor shall maintain a list of these data and shall furnish copies of the list to NASA when requested to do so.
5	These data are incidental to contract performance and are retained by the contractor in those cases where contracting parties have agreed that formal delivery is not required. However, the Contracting Officer or the Contracting Officer’s Representative shall have access to and can inspect this data at its location in the contractor’s or subcontractor’s facilities, or in an electronic database accessible to the Government
*	Note: Type 1 and Type 2 data may be placed under NASA configuration management control when designated by NASA. CM control requires the contractor to submit Type 1 and Type 2 data updates through Engineering Change Proposals (ECPs).
**	Note: This time limit may be tailored for individual DPD’s to meet the requirements of the procuring activity.

*** Note: If the contractor does not identify a release target date or if the intended release date is shorter than 45 calendar days from the date of submission, the 45 calendar days review cycle stands (or the tailored Type 2 time limitation for the specific procurement).

2.0 STATEMENT OF GENERAL REQUIREMENTS

2.1 Applicable/Reference Documents: Documents included as applicable documents in this DPD are the issue specified in the Statement of Work, and form a part of the DPD to the extent specified herein. Applicable documents listed in Item 15.2 of a DRD are applicable only to the preparation of the deliverable documentation described by that DRD.

References to documents other than applicable documents in the data requirements of this DPD may sometimes be utilized, and shall be indicated in 13. Remarks of the DRD. These do not constitute a contractual obligation on the contractor. They are to be used only as a possible example or to provide related information to assist the contractor in developing a response to that particular data requirement.

2.2 Subcontractor Data Requirements

2.2.1 The contractor shall specify to subcontractors and vendors, if any, the availability source of all data required for the satisfactory accomplishment of their contracts. The contractor shall validate these requirements for documents when appropriate; where the requirement concerns other contractor data, the contractor shall provide his subcontractor or vendor with the necessary documents. All such requests shall be accomplished under the auspices of the contractor.

2.2.2 Reference to subcontractor data in the contractor's responses is permissible, providing the references are adequate and include such identification elements as title, number, revision, etc., and a copy of the referenced data is supplied with the response document at time of delivery to NASA.

2.3 Data Distribution, Format, Data Restriction Marking, and Transmittal

2.3.1 Distribution: Distribution of required documentation shall be in quantities determined by the Contracting Officer. Recipient names and email (if applicable) addresses shall be noted on a separate distribution list to be furnished by the Contracting Officer. The Contracting Officer's letter may include other information pertinent to delivery of data, as required.

2.3.2 Format

2.3.2.1 Electronic Format: Electronic submission of data deliverables is preferred. Electronic deliverables shall be printable. Data deliverables shall be delivered to NASA in the format specified below unless a specific format is required by a DRD. Data submittals shall consist of a single Adobe Acrobat PDF file and the native format electronic file(s). The preferred native formats include Microsoft Word, Excel, PowerPoint or CAD drawing plot file, as appropriate. Where a single native format file is not possible, multiple files may be integrated into a single ZIP file for submission. The organization of the contents of the integrated ZIP file shall be made readily apparent to the reader, and each file within the integrated product shall be clearly identifiable and traceable within the organization of the integrated product. If files are fragmented, file names shall be labeled logically and contiguously, and the files shall be easily reassembled or merged (e.g. 1 filename, 2 filename, 2a filename, etc.). The software versions shall be confirmed prior to submittals.

2.3.2.2 Hardcopy Format: In addition to the electronic submittal, one hardcopy package of specific data deliverables shall be delivered to the NASA Contracting Officer for the

Government contract file. This requirement is indicated in Item 15.4, Format of each DRD. The hardcopy package shall consist of the contractor's Transmittal Memo and one copy of the data deliverable.

2.3.3 Data Restriction Marking

2.3.3.1 Data Restriction Determination and Marking Requirements: The contractor shall determine the data restriction that applies to each data deliverable and mark the data restriction on the data coversheet, or indicate the data restriction in the data transmittal package if the data format precludes identification of data restriction directly in the data. The contractor shall make a determination for each individual data deliverable item, and shall not apply a default or blanket data restriction marking to all data deliverables (e.g., “data may be export restricted”). If NASA does not agree with the contractor applied data restriction, the NASA Contracting Officer shall return the data to the contractor, cancel the markings, or ignore the markings consistent with the procedures set forth in the “data rights” clause(s) contained in the contract.

2.3.3.2 Data Restriction Categories and Marking Statements: The contractor shall consider the following data restriction categories, as a minimum, and utilize specified marking statements.

If data delivered under this contract is subject to the International Traffic in Arms Regulations (ITAR), the data shall contain an “ITAR Notice” as follows:

International Traffic in Arms Regulations (ITAR) Notice

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120-130, and is export controlled. It shall not be transferred to foreign nationals in the U.S. or abroad, without specific approval of a knowledgeable NASA

If data delivered under this contract is subject to the Export Administration Regulations (EAR), the data shall contain the “EAR Notice” as follows:

Export Administration Regulations (EAR) Notice

This document contains information within the purview of the Export Administration Regulations (EAR), 15 CFR 730-774, and is export controlled. It may not be transferred to foreign nationals in the U.S. or abroad without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license

If the contract contains FAR 52.227-14 *Alternate II*, the “Limited Rights Notice” may be applicable to data (other than computer software) delivered under this contract.

If the contract contains FAR 52.227-14 *Alternate III*, the “Restricted Rights Notice” may be applicable to computer software delivered under this contract.

If the contract contains FAR 52.227-20, the “SBIR Rights Notice” may be applicable to SBIR data delivered under this contract.

In accordance with the applicable data clause (e.g., FAR 52.227-14(c) or FAR 52.227-20(c)), the contractor may be able to assert a copyright claim in data delivered under this contract. When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government.

2.3.4 Transmittal

2.3.4.1 Data shall be transmitted to NASA by email, CD or DVD, hardcopy, or other mechanism agreed to by the Contracting Officer, COTR, and Project representatives who are responsible to receive, index, and store the data deliverables.

2.3.4.2 If email is used to transmit data deliverables, the email size shall be 10 Megabytes or less to ensure receipt by the NASA email servers. Encrypted email format shall be used to transmit data which has been judged sensitive by the contractor (e.g., export controlled, limited rights data, SBIR, restricted computer software, copyrighted, etc.).

2.3.4.3 Data Transmittal Package: Each data transmittal package shall include:

a. Transmittal memorandum that specifies the meta-data below for each data transmittal:

1. Contract number.
2. Data Requirements Description (DRD) number.
3. DRD data type (specified in Item 3 on the DRD).
4. Submission date or milestone being satisfied.
5. Document number and revision.
6. Document title.
7. File names of all files being delivered; file naming convention shall clearly identify the document being delivered.
8. Distribution (as defined by the Contracting Officer's letter).
9. Requested response date.
10. Contractor assigned data restriction (export controlled, limited rights data, SBIR, restricted computer software, copyrighted, etc.) if not marked on data.
11. NASA Records Retention Schedule (NRRS) number, if applicable. (See NPR 1441.1, NASA Records Retention Schedules)

b. Printable electronic files or hardcopy data.

2.3.5 Use of the MSFC Documentation Repository: If Program/Project requires the contractor to transmit data directly to the Repository, Marshall Policy Directive (MPD) 2210.1 specifies the requirements for utilizing the Documentation Repository. Electronic data deliverables should be transmitted directly to the Repository via a secure web page, available at <https://webpub.nis.nasa.gov/submittal/index.html>. Computer-Aided Design (CAD) drawings shall be submitted in the original native vector, Hewlett-Packard Graphic Language (HPGL) and raster image formats.

2.4 Printing: All printing, duplicating, or binding shall be in accordance with NFS 1852.208-81, Restrictions on Printing and Duplicating. Printing of formal reports and Type 1 and 2 data in book format shall be in accordance with the following general specifications:

- a. Method of reproduction – offset/xerography.
- b. Finished size – 8 1/2" X 11".
- c. Paper – 20-pound opaque bond.

- d. Cover – Litho cover stock.
 - e. Pages shall be printed on both sides; blank pages shall be avoided when possible.
 - f. Oversize pages shall be avoided when possible, but if necessary shall be folded to 8 1/2” X 11”.
 - g. Binding shall be the most economical method commensurate with the size of the report and its intended use.
- 2.5 Contractor’s Internal Documents: The contractor’s internal documents shall be used to meet the data requirements of this DPD unless a specific format is required by the applicable DRD.
- 2.6 Document Identification: Type 1 and 2 documents published by the contractor and submitted in response to the data requirements of this DPD shall be identified within an organized identification numbering system prescribed to NASA by the contractor and, if applicable, as approved by NASA. For all data types, the document number, change legend, date, and title constitute the minimum identification of the specific document and shall appear on the cover and title page. The contract number shall also appear on the cover and title page as separate markings. The originator and organization shall be included on the title page. The document number, change legend, and date shall appear on each page of the document. In the front matter of each document, identify the DPD number and applicable DRD number(s) required for document preparation. Successive issues or revisions of documents shall be identified in the same manner as the basic issue and shall have appropriate change identification. Drawings and ECP's are excluded from the marking provisions of this paragraph. All Type 1 documentation, excluding configuration management requirements, shall be marked “PRELIMINARY PENDING NASA APPROVAL,” and once approved shall be reissued with “APPROVED BY NASA” and the date and approval authority annotated on the cover.
- 2.7 Reference to Other Documents and Data Deliverables in Data Submittals: All referenced documents shall be made readily available to the cognizant NASA organization upon request. The contractor should make sure that the references are available to NASA in a manner which does not incur delays in the use of the response document. Reference may be made, within one data submittal, to other data submittals delivered in response to this DPD in those cases where the data required by one DRD may have been delivered by the contractor in response to another DRD. The reference to previously-submitted data shall include the applicable DRD number, data submittal version date, and location within the referenced document.
- 2.8 Maintenance of Type 1 Document Submittals
- 2.8.1 Revisions of Type 1 documentation may be accomplished either by individual page revision or by a complete reissue of the document identified in accordance with requirements of 2.7 above, with the exception of drawings (which shall be revised in accordance with contract configuration management requirements).

- 2.8.2 Individual page revisions shall be made as deemed necessary by the contractor or as directed by the Contracting Officer.
- 2.8.3 A Type 1 document shall be completely reissued when, in the opinion of the contractor and/or NASA, the document has been revised to the extent that it is unusable in its present state, or when directed by the Contracting Officer. When complete reissues are made, the entire contents of the document shall be brought up to date and shall incorporate revised pages. All revisions shall be recorded. A revision log shall identify complete reissues except for periodic reports and documents which are complete within themselves as final.
- 2.8.4 Changes of a minor nature to correct obvious typing errors, misspelled words, etc., shall only be made when a technical change is made, unless the accuracy of the document is affected.
- 2.8.5 All revised pages shall be identified by a revision symbol and a new date. Each document shall contain a log of revised pages that identify the revision status of each page with the revision symbol. This list shall follow the table of contents in each document. The line or lines revised on a given page shall be designated by the use of vertical line in the margin of the page, and the change authority shall be indicated adjacent to the change.

2.8.6 Contractor Type 1 documents shall not be submitted containing pen and ink markups which correct, add to, or change the text, unless schedule problems exist and approval is obtained in writing from the Contracting Officer. Such markups, however, shall not exceed 20 percent of the page content and shall be acceptable provided that the reproduced copies are legible. In addition, hand-drawn schematics, block diagrams, data curves, and similar charts may be used in original reports in lieu of formally prepared art work, as long as legibility of copies is not impaired. Acceptability shall be determined by the Contracting Officer.

3.0 DPD MAINTENANCE PROCEDURES

3.1 NASA-Initiated Change: New and/or revised data requirements shall be incorporated by contract modification to which the new or revised portion of the DPD shall be appended. The contractor shall notify the Contracting Officer in the event a deliverable data requirement is imposed and is not covered by a DRD, or when a DRD is changed by a contract modification and for which no revision to DPD is appended. In such cases, the contractor shall submit the requested changes to NASA for approval. See paragraph 3.3.1 for change procedures.

3.2 Contractor-Initiated Change: Contractor-proposed data requirements, or proposed changes to existing requirements shall be submitted to NASA for approval.

3.3 DPD Change Procedures

3.3.1 Changes to a contractual issue of this DPD shall be identified by NASA on the Document Change Log and Page Revision Log. The actual revised material on the DPD page shall be identified by placing a heavy vertical line in the right-hand margin extending the entire length of the change. In addition, the numerical control number of the contractual direction authorizing the change shall be placed adjacent to the vertical revision line. These revision identifiers shall be used to reflect the current revision only; any previous symbols on a page shall be deleted by the current revision.

3.3.2 The date of the contractual direction paper, e.g., Change Order, Supplemental Agreement, or Contracting Officer's letter shall be entered under the "Status" column of the Page Revision Log adjacent to the affected page or DRD number, and in the "as of" block. The date that was in the "as of" block shall be entered in the "Superseding" block.

3.3.3 The Document Change Log entitled "Incorporated Revisions" shall be changed to indicate the number, portions affected, and associated Supplemental Agreement number, if applicable.

3.3.4 The Document Change Log entitled "Outstanding Revisions" is changed periodically to indicate outstanding Change Orders and Contracting Officer notification letters.

3.4 DPD Reissues

- 3.4.1 When conditions warrant, the DPD shall be reissued by NASA and shall supersede the existing DPD in its entirety. Reissues shall be issued by contractual direction.
- 3.4.2 All revision symbols (vertical lines and contractual direction control numbers) shall be removed from all pages; revision dates shall remain in the Date Revised block on DRD's that have been revised. The issue symbol, which shall commence with "A" and progress through "Z," shall be entered in the DPD identification block of each DRD page of the DPD.

Safety and Mission Assurance Services
Data Requirements List

<u>DRD</u>	<u>DATA TYPE</u>	<u>TITLE</u>	<u>OPR</u>
CD - Contract Data 1107CD-001	2	Information Technology Security Plans	IS10
LS - Logistics Support 1107LS-001	2	Government Property Management Plan	AS41
MA - Management			
1107MA-001	1	Management Plan	QD01
1107MA-002	2	Evaluation and Assessment Reports	QD01
1107MA-003	2	MSFC Safety, Reliability, Maintainability and Quality Assurance (SRM&QA) Documents	QD01
1107MA-004	2	Problem Assessment Center (PAC) Operations Plan	QD01
1107MA-005	2	Management Status Review (MSR) Input	QD01
1107MA-006	2	Organizational Conflict of Interest (OCI) Avoidance Plan	PS33
1107MA-007	3	Contractor Employee Clearance Document	AS50
1107MA-008	3	Financial Management Report (533M and 533Q)	CS40
1107MA-009	3	Bi-weekly Notes	QD01
1107MA-010	3	Badged Employee and Remote IT User List	AS50
1107MA-011	3	Make or Buy Plan	QD01
1107MA-012	3	Position Risk Designation for Non-NASA Employee(s)	AS50
SA - Safety			
1107SA-001	1	Personnel Training and Certification Plan	QD40
1107SA-002	2	Safety, Health, and Environmental (SHE) Plan	QD50/AS10
1107SA-003	3	Mishap and Safety Statistics Reports	QD50

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A 2. **DRD NO.:** **1107CD-001**
3. **DATA TYPE:** 2 4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Information Technology Security Plans
7. **DESCRIPTION/USE:** To document information technology security risk management and safeguards for protection of unclassified NASA electronic information and data processed by Federal general support computer systems and major software applications.
8. **OPR:** IS10 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 45 days after Authority to Proceed (ATP)
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:** The information technology security plans shall be consistent with and further detail the approach contained in the offeror's proposal or sealed bid that resulted in the award of this contract and in compliance with the requirements stated in NFS 1852.204-76. Reference is made to NPR 2810.1, *Security of Information Technology* and NFS 1804.470-3, *Security plan for unclassified Federal Information Technology systems*.
14. **INTERRELATIONSHIP:** PWS paragraph 7.6
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** Information Technology Security Plans shall document the safeguards necessary to ensure sufficient availability, integrity, and confidentiality of that information accessed or managed within the systems and/or applications, based on the contractor's assessment of risks.
 - 15.2 **APPLICABLE DOCUMENTS:**

NFS 1852.204-76	<i>Security Requirements for Unclassified Information Technology Resources</i>
NIST SP 800-18	<i>Guide for Developing Security Plans for Information Technology Systems</i>
 - 15.3 **CONTENTS:** The Information Technology Security Plan shall meet the requirements of NFS 1852.204-76. The plan shall describe the contractor's processes for implementing information security including personnel background screening, personnel awareness and training, information protection, and security incident response.

Additionally, a separate system-level Information Technology System Security Plan shall be prepared for each Federal general support computer system or major software

application managed by the contractor and/or subcontractor personnel in the performance of this contract. The Information Technology System Security Plan(s) shall meet the requirements of NIST SP 800-18.

- 15.4 **FORMAT**: Contractor format for the Information Technology Security Plan is acceptable as long as the guidance described in NFS 1852.204-76 is followed. The Information Technology System Security Plan format shall be per NIST SP 800-18.
- 15.5 **MAINTENANCE**: Changes shall be incorporated by change page or complete reissue.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-001**
3. **DATA TYPE:** 1
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Management Plan
7. **DESCRIPTION/USE:** To provide a description of the contractor's overall management system and organization for accomplishing the requirements set forth in the contract.
8. **OPR:** QD01 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 30 days after Authority to Proceed (ATP).
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 2.0
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** The Management Plan shall describe the contractor's concept plans, practice, and approach for accomplishing the requirements set forth in the contract, i.e., managing and controlling Task Order Requests (TORs), Task Order Plans (TOPs), Task Orders (TOs) and TO sub-elements, and management interfaces. The plan shall be in such detail as necessary to convey the contractor's internal procedures.
- 15.2 **APPLICABLE DOCUMENTS:** None
- 15.3 **CONTENTS:** The Management Plan shall include:
 - a. Description of the project tasks to be accomplished and an outline of methods by which the contractor proposes to accomplish each task down to the Level II WBS task level.
 - b. Description of management concepts, plans, project management and task/control systems, organizational approach, approach to quality, and communication channels between the contractor and the Government. This shall include descriptions, flow charts, schedules, and other documentation necessary to give a comprehensive plan of organization and accomplishment.
- 15.4 **FORMAT:** Contractor format is acceptable.
- 15.5 **MAINTENANCE:** Changes shall be incorporated by change page or complete reissue.

approved changes.

- 15.4 **FORMAT**: Contractor format similar to government MSR charts is acceptable, hard copy charts with electronic presentation media is strongly encouraged.
- 15.5 **MAINTENANCE**: None required

performed by the technical subject matter experts for the conflicting business relationship are separated from each other.

- (b) That the subject matter experts when performing this order are physically separated from the portion of the company performing the work for the conflicting business relationships.

DRD Continuation Sheet

TITLE: Organizational Conflict of Interest (OCI) Avoidance Plan

DRD NO.: 1107MA-006

DATA TYPE: 2

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- (c) That each subject matter expert performing this order signs an express, binding, written agreement setting forth all responsibilities and duties to avoid organizational conflicts of interest and to protect sensitive data provided under this order.
 - (d) That techniques are in place to ensure that the contractor shall not favor the conflicting business relationships and will avoid the appearance of conflicts of interest.
- b. With regard to access to nonpublic information by the subject matter experts, the avoidance plan shall contain a plan to safeguard all proprietary/sensitive data the contractor receives. This plan shall include:
1. A provision that subject matter experts shall not disclose the proprietary/sensitive data relating to this order.
 2. A provision that subject matter experts only shall use the proprietary/sensitive data relating to this order.
 3. A provision that information, whether in hard copy or on electronic media, shall be marked, handled, stored, and destroyed in order to preclude an unauthorized disclosure of information.
 4. A provision that information technology shall be protected to prevent unauthorized disclosure of information.
 5. A provision that employees performing the effort must sign an express binding written agreement clearly agreeing to protect sensitive data.
 6. A requirement that subcontractors have appropriate OCI avoidance procedures in place for the use of subject matter experts.
 7. A requirement for periodic self-audits, the results of which shall be made available to the Government.
 8. Initial and periodic refresher OCI training for the contractor and subject matter experts working on the order.
 9. A Description of organizational and employee sanctions for violation of the OCI order clause or OCI Avoidance Plan provisions.
 10. Provisions on record keeping requirements regarding OCI (e.g., training, written agreements). The contractor shall make these records available to and cooperate with any neutral third party the Government assigns to review adherence to their OCI mitigation plan.
 11. A provision requiring the contractor to report any real, apparent, or potential conflict of interest that may arise to the Contracting Officer.
 12. A provision requiring the contractor to update the OCI Avoidance Plan for the subject matter experts upon occurrence of any event that will cause a change to the plan.

15.4 **FORMAT**: Contractor format is acceptable.

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

included. Reconciliation between the 533M/533Q and the Cost Performance Report (CPR) or Modified Cost Performance Report (M/CPR) shall be submitted as an attachment to the 533M/533Q Report.

A backup report shall be provided that identifies the following fields: Task Order (TO), TO/sub-element, reporting category, PR number, WBS, cost center, fund, current month actuals, cumulative actuals, funding received, variance next month's estimate and monthly actuals at the individual project/program level.

DRD Continuation Sheet

TITLE: Financial Management Report (533M and 533Q)

DRD NO.: 1107MA-008

DATA TYPE: 3

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

15.4 **FORMAT:** Contractor internal automated printout reports may be substituted for 533M/533Q forms (with NASA Contracting Officer's approval) provided that the contractor report contains all of the data elements required by NASA Forms 533M and 533Q. Electronic submission of contractor data is strongly encouraged (reference NPR 9501.2, paragraph 3.7).

15.5 **MAINTENANCE:** None required

items or work efforts is impracticable at the time of submission.

DRD Continuation Sheet

TITLE: Make or Buy Plan

DRD NO.: 1107MA-011

DATA TYPE: 3

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

Note: The information required from a contractor in a make-or-buy plan shall be confined to those major items or work efforts that normally would require company management review of the make-or-buy decision because they are complex, costly, needed in large quantities, or require additional facilities to produce. Raw materials, commercial items, and off-the-shelf items shall not be included, unless their potential impact on contract cost or schedule is critical. Normally, make-or-buy programs should not include items or work efforts estimated to cost less than 1 percent of the total estimated contract price of any minimum dollar set by the agency.

15.4 **FORMAT:** Contractor format is acceptable. The plan shall be sub-divided to categorize each item by subsystem, major components, assemblies, subassemblies, and parts to be processed or manufactured.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107MA-012**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1

6. **TITLE:** Position Risk Designation for Non-NASA Employee(s)

7. **DESCRIPTION/USE:** To ensure that contractor employees are screened to an appropriate risk determination in accordance with NPR 1600.1, *NASA Security Program Procedural Requirements*, Chapter 4.

8. **OPR:** AS50 9. **DM:** QD01

10. **DISTRIBUTION:** The copy of the spreadsheet shall be submitted to Protective Services at the following address: Protective Services; Attn: Ms. Deborah Swafford; Building 4200, Room 222; MSFC, AL 35812 or deborah.g.swafford@nasa.gov.

11. **INITIAL SUBMISSION:** No later than 10 working days after Authority to Proceed (ATP)

12. **SUBMISSION FREQUENCY:** Update as personnel or position changes occur

13. **REMARKS:** Information shall be marked appropriately as subject to the Privacy Act of 1974 (Privacy Act Information [PAI]). The spreadsheet shall be used for all new hires and any current employees who have not previously submitted the required data on NASA Form 1760. All new hires must be noted as such on the spreadsheet.

14. **INTERRELATIONSHIP:** PWS paragraph 2.0

15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** The Position Risk Designation for Non-NASA Employee provides information necessary to determine the type of investigation required and how closely an individual is screened for a position.

 - 15.2 **APPLICABLE DOCUMENTS:**
NPR 1600.1 *NASA Security Program Procedural Requirements*

 - 15.3 **CONTENTS:** The Position Risk Designation for Non-NASA Employee shall contain the following information for each employee: Social Security Number (SSN), Last Name, First name, Middle Suffix, Date of Birth, City of Birth, County of Birth, State of Birth, Country of Birth, E-mail address, Telephone Number, Mission Essential Infrastructure (MEI) Required, Personnel Reliability Program (PRP) Required and Remote IT Access Only.

 - 15.4 **FORMAT:** The Spreadsheet shall be provided in Microsoft Excel electronically via CD,

delivered directly to Protective Services, or Encrypted Email (no other means of transmittal will be accepted).

15.5 **MAINTENANCE**: None required

- a. Training and certification program.
 - 1. General.
 - (a) Program description.
 - (b) Program administration.
 - (c) Certification duration.
 - (d) Definitions.

DRD Continuation Sheet

TITLE: Personnel Training and Certification Plan

DRD NO.: 1107SA-001

DATA TYPE: 1

PAGE: 2/2

15. **DATA PREPARATION INFORMATION (CONTINUED):**

- (e) Job description summaries.
- (f) Task assignments per job description.
- (g) Skills required per job description.
- 2. Certification requirements/skills.
 - (a) Education.
 - (b) Experience/work history.
 - (c) Specialized training.
 - (d) Physical condition/attitude.
- 3. Certification process.
 - (a) Supervision responsibilities.
 - (b) Certifying authority.
 - (c) Formal/informal examination.
 - (d) Proficiency demonstration.
- 4. Certification documentation.
- b. Specific skills requiring training and proficiency shall include:
 - 1. Schematic and drawing comprehension.
 - 2. Test and launch operations.
- c. Specific skills requiring certification and proficiency shall include:
 - 1. Solid propellant inspection *.
 - 2. Confined space *.
 - 3. Welding inspection and nondestructive evaluation (NDE).
 - 4. Program Critical Hardware (PCH) *.
 - 5. Lifting Equipment Training Certified Examiner.
 - 6. Propellant and Explosive Handler *.
 - 7. Risk Management Course Instructors (NASA Headquarters provided training, travel required).

* Training provided by the Government at MSFC.

15.4 **FORMAT**: Contractor format is acceptable.

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

MPD 1840.1	<i>MSFC Environmental Health Program</i>
MPR 1840.2	<i>MSFC Hazard Communication Program</i>
MPD 1860.1	<i>Laser Safety</i>
MPR 1800.1	<i>Bloodborne Pathogens</i>
MWI 3410.1	<i>Personnel Certification Program</i>
MPR 8715.1	<i>Marshall Safety, Health and Environmental (SHE) Program</i>

DRD Continuation Sheet

TITLE: Safety, Health, and Environmental (SHE) Plan

DRD NO.: 1107SA-002

DATA TYPE: 2

PAGE: 2/3

15. **DATA PREPARATION INFORMATION (CONTINUED):**

MPD 8900.1 *Medical Operations Responsibilities for Human Space Flight Programs* (NOTE: This document only applies to Space Station contracts)

NFPA Standards *National Fire Codes*

NPR 8715.3 *NASA Safety Manual*

NASA-STD-8719.11 *Safety Standard for Fire Protection*

15.3 **CONTENTS:** The Safety, Health, and Environmental Plan shall describe the manner in which the contractor implements the requirements of the applicable documents as they pertain to the specific statement of work tasks to be performed and updated when necessary. The Safety, Health and Environmental Plan shall clearly state if the contracted effort contain potentially hazardous or non-hazardous operations and fully address the following applicable topics:

- a. Management leadership and employee involvement:
 1. Statement of management policy and commitment to provide for the safety and health of personnel (i.e., employees, customers, and public) and property, and compliance with EPA, OSHA and NASA requirements.
 2. Description of procedures for insuring management and employees are held accountable for implementing their task in a safe and healthful manner through motivational techniques, disciplinary program, or other innovative techniques.
 3. Descriptions of safety, health, environmental awareness and motivation programs that, include documented safety meetings and safety awareness training for employees. (Onsite Safety meeting statistics shall be documented in the Supervisors Safety Web page: http://msfcsma3.msfc.nasa.gov/dbwebs/apps/sswp/SSWP_login.taf)
 4. Method of program evaluation that, identify the methods and frequency for internal evaluation of the safety, health, and environmental program.
 5. Method to ensure the Flowdown of safety responsibilities between all company levels and subcontractors, when applicable.
 6. Identification by title the individual who will be responsible for the implementation of the SHE program elements.
 7. Method to ensure compliance with MPR 8715.1, when work will be performed onsite at MSFC.
- b. System and worksite analysis:
 1. Methods of hazard identification, e.g., hazard analysis, safety assessment, change analysis, risk assessment and employee identified concerns.
 2. Descriptions of OSHA programs that require documented programs (e.g., Respiratory Protection, Hazard Communication, Confined Space, and Lockout/Tagout, etc. Include the interrelationships with the MSFC programs.) (Note: Only programs applicable to the contracted effort need to be addressed.)
 3. Requirements for formal worksite safety inspections as required by OSHA, to including schedule and documentation requirements. Onsite OSHA inspections

are performed by NASA.

4. Requirements for documented supervisors' safety visits. Onsite safety visits shall be performed once per month per supervisor and documented in the Supervisors Safety Web page.

DRD Continuation Sheet

TITLE: Safety, Health, and Environmental (SHE) Plan

DRD NO.: 1107SA-002

DATA TYPE: 2

PAGE: 3/3

15. **DATA PREPARATION INFORMATION (CONTINUED):**

c. Hazard prevention and control:

1. Methods to identify potentially hazardous operations and generate plans, procedures, and other working documents which clearly identify the hazardous situations and the necessary cautions taken to mitigate the hazard; an annual review of the plans and procedures; and, MSFC Safety Department concurrence for onsite hazardous procedures. A list of identified potentially hazardous operations will be provided in the SHE plan.
2. Method of ensuring controls over the procurement, storage, issuance, and use of hazardous substances and procedures for recycling and disposal of hazardous waste in accordance with MPR 8500.1.
3. Method of ensuring a documented emergency management program. Include a list of emergency points of contract. (Note: Onsite contractors may use MPR 1040.3.)
4. Method of investigating all mishaps and close calls to determine root cause, including an outline of reporting requirements. (Reference DRD 1107SA-003, *Mishap and Safety Statistics Report*).
5. Method for providing safety, health, and environmental services applicable to the contracted effort such as hazardous waste disposal, industrial hygiene monitoring, emergency medical support, hearing conservation program, and hazard communication. (These services can be provided by MSFC for onsite work.)
6. Method for employees to suspend work where safety or environmental conditions warrant such action.

d. Safety and health training:

1. Method for training each employee to recognize hazards, avoid accidents, know the hazards specific to their job, and understand the disciplinary program.
2. Method for training and certification of personnel performing potentially hazardous operations. Identify the job categories under the contracted effort that require certification in accordance with MWI 3410.1, "Personnel Certification Program". Personnel Certification for onsite identified job categories shall be tracked in the MSFC Certification Database (CERTRAK) in accordance with MWI 3410.1. (NOTE: offsite contracts shall list the job categories under the contracted effort that require OSHA documented training and certification.)

e. Environmental compliance - Provisions for compliance with environmental laws and regulations by: reporting hazardous and toxic substance use; implementing and reporting green procurements in accordance with MWI 8540.2; reducing, reusing, and recycling of hazardous and toxic substances prior to disposal; minimizing stormwater pollution; ensuring equipment and processes permitted by applicable laws; and disposing of solid and liquid materials as permitted by applicable laws.

15.4 **FORMAT**: Contractor format is acceptable.

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

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 1107 **ISSUE:** Revision A
2. **DRD NO.:** **1107SA-003**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/2
6. **TITLE:** Mishap and Safety Statistics Reports
7. **DESCRIPTION/USE:** To provide reporting of metrics, mishaps, close calls, and serious non-occupational injuries or illnesses.
8. **OPR:** QD50 9. **DM:** QD01
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:**
 - a. Safety Statistics (e.g., contract number, subcontractors, NAIC codes, number of employees, number of supervisors, hours worked, etc.): submitted on MSFC Form 4371 by the 10th of each month following Authority to Proceed (ATP).
 - b. Mishaps, Close Calls, and serious non-occupational injuries or illnesses
 1. Type A or B mishaps, high visibility mishaps or close calls, and onsite Type C lost time injury or illness: Immediate telephone notification to the Contracting Officer, and Industrial Safety (256-544-0046 or 4-HELP, Safety Option) so that Center Director notifies the NASA Administrator within 24 hours of occurrence or awareness. Include location and time of incident, number of fatalities, number hospitalized, type of damage, estimated cost, brief description, and contact person and phone number.
 2. Non-occupational fatality or serious injury occurring onsite or to an onsite contractor employee: Notification to Contracting Officer and S&MA so that Center Director notifies the NASA Administrator within 24 hour of occurrence or awareness. (Offsite non-occupational injury or illness notification is at the discretion of the family.)
 3. a. All Onsite MSFC mishaps and close calls: (applicable to onsite contractors only): NASA Initial Safety Incident Report within 4 hours of occurrence or awareness on MSFC Form 4370 or equivalent either by telephone 256-544-4357 (4-HELP); Safety Option or electronically by Quick Incident. Report at https://msfcsma3.msfc.nasa.gov/s&ma_01/mishap/index.htm.
 b. Offsite Mishaps and Close Calls Type C and below: Initial notification by next MSFC 4371.
 4. All Mishaps (Type A, B, C, Incidents and Close Calls): Mishap Report NASA Form 1627 or electron update of NASA Incident Reporting Information System (IRIS) record within 6 calendar days of Mishap.
 5. Type A, B, and Close Calls with high Type A or B potential: Mishap Board Report after completion of investigation.
 6. All Mishaps: Monthly Follow-up Corrective Action Plan/Status as required until closed.

12. **SUBMISSION FREQUENCY:**
 - a. MSFC Form 4370 or electronic equivalent - Each occurrence of a mishap except as identified in section 11.b.
 - b. NASA Form 1627 or electronic equivalent - Each occurrence of a mishap. Corrective action status reports are due every 30 days until the final report is submitted.
 - c. MSFC Form 4371 - By the 10th of each month.
 - d. Mishap Board Report – Each occurrence of a Type A or B mishap, or as directed by Center management.
13. **REMARKS:**
14. **INTERRELATIONSHIP:** DRD 1107SA-002, *Safety, Health, and Environmental (SHE) Plan*. PWS paragraph 2.3

DRD Continuation Sheet

TITLE: Mishap and Safety Statistics Reports

DRD NO.: 1107SA-003

DATA TYPE: 3

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15. **DATA PREPARATION INFORMATION:**

15.1 **SCOPE:** The Mishap and Safety Statistics Reports document all mishaps and close calls as required in NPR 8621.1.

15.2 **APPLICABLE DOCUMENTS:**

NPR 8621.1 NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping

MWI 8621.1 Close Call and Mishap Reporting and Investigation Program

15.3 **CONTENTS:** The Mishap and Safety Statistics Reports shall contain the information required by NPR 8621.1 and MWI 8621.1. The contractor shall use the forms listed in 15.4 to report mishaps and related information required to produce the safety metrics.

15.4 **FORMAT:** The following formats or electronic equivalent shall be submitted:

- a. MSFC Form 4370, "MSFC Flash Mishap Report."
- b. NASA Form 1627, "NASA Mishap Report."
- c. MSFC Form 4371, "MSFC Contractor Accident and Safety Statistics."
- d. Mishap Board Report using the format provided in NPR 8621.1.

15.5 **MAINTENANCE:** None required