

MWI 7120.2

REVISION B

EFFECTIVE DATE: October 5, 2004

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MARSHALL WORK INSTRUCTION

ED01

DATA REQUIREMENTS IDENTIFICATION/ DEFINITION

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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		5/14/99	
Revision A		8/16/99	Organizational change to reflect systems engineer versus chief engineer in paragraph 6.3. Words added to paragraph 5.2.15 to clarify verification data category.
Revision	B	10/5/2004	Complete Revision. Updated URL. Font changed to Times New Roman as directed. Changed approval signature. Ensured requirements are stated as "Who/What Shall". Made document easier to follow by reorganizing to move CDRM data to the end. Addressed ACI requirements, especially marking of contractor data. Emphasized use of an overall DRL in lieu of IDR format by removing IDR data. Specified data fields that must be captured in the DRL for accounting/tracking. Eliminated the Reports of Work at the request of Procurement. Added a more efficient way to address requirements for a small procurement. Added recommended control process definitions to be applied to NASA-produced data. Added sample Contracting Officer's letter. Supporting text remains in the body of document. The use of "will" for direction to NASA and "shall" for direction to the contractor in examples of contract language remains in the document.

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1. PURPOSE

The purpose of this work instruction is to establish detailed instructions for identification and definition of data requirements for Center institutional activities and programs/projects in accordance with MPR 7120.3, Data Management, Programs/Projects, for Marshall Space Flight Center (MSFC) Data Management.

2. APPLICABILITY

These instructions apply to all MSFC organizational elements. Data may be generated by and/or acquired from contractors, principal investigators, in-house MSFC organizations, other National Aeronautics and Space Administration (NASA) centers, or other Government organizations.

3. APPLICABLE DOCUMENTS

- a. NPR 1441.1, "NASA Records Retention Schedules (NRRS)"
- b. MPR 1440.2, "MSFC Records Management Program"
- c. MPR 7120.3, "Data Management, Programs/Projects"
- d. MPR 8040.1, "Configuration Management, MSFC Programs/Projects"
- e. FAR, Federal Acquisition Regulation
- f. NFS, NASA Federal Acquisition Regulation Supplement

4. REFERENCES

None

5. DEFINITIONS

5.1 Center Data Requirements Manager (CDRM). A specific organization or individual appointed to carry out the Center's responsibility for development and maintenance of Center data requirements. The CDRM has the requisite authority to coordinate internal MSFC data requirement activities.

5.2 Contract. A mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. It includes all types of commitments that obligate the Government to an expenditure of appropriated funds and that, except as otherwise authorized, are in writing. In addition to bilateral instruments, contracts include (but are not limited to) awards and notices of awards; job orders or task letters issued under basic ordering agreements; letter contracts; orders, such as purchase orders, under which

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the contract becomes effective by written acceptance or performance; and bilateral contract modifications.

5.3 Contractor - An entity, i.e., individual, partnership, company, corporation, or association having a product or services contract with a procuring activity.

5.4 Control Process for NASA-Produced or External Agreement Data Deliverables. Indicates the level of control that the requiring organization has assigned to the data.

5.5 Data Manager (DM). An individual who establishes and administers the data management activities for a specific program, project, activity, or contract.

5.6 Data Procurement Document (DPD). A compilation of all documents that describe the data requirements of a particular task or project for contractual efforts.

5.7 Data Requirements Description (DRD). A detailed description of a required data item, including purpose, contents, format, maintenance requirements, and submittal requirements.

5.8 Data Requirements List (DRL). A list of required data items applicable to a specific NASA activity or contract. DRLs may be in the form of a NASA activity DRL which is developed to list all data requirements for a particular NASA activity that contains both NASA produced data and contracted data, or a DPD DRL.

5.9 Data Types for Contractual Efforts. The level of availability, review, approval, and control the Government exercises over the contractor-produced data.

5.10 External Agreement. An agreement with another NASA Center, Government Agency, or International Agency (e.g., Task Agreement, Memorandum of Understanding, etc.).

5.11 Functional Data Category. A category of data that has a defined scope based on the functional use of the data. Broad functional management categories which are to be used for classification of data requirements and apply to contractual and NASA activities are defined in Appendix A.

5.12 NASA Activity. A NASA activity is a Program/Project or activity that is funded through NASA, conducted onsite or in the immediate vicinity of a NASA Center, and that includes business, management, or technical tasks.

5.13 Office of Primary Responsibility (OPR). The NASA organization with primary responsibility for the content of specific data items or the organization responsible for the process represented by the document. OPR responsibilities may include preparing a document, controlling a document, and/or reviewing the technical content of a document submitted by a contractor or external organization. For Standard DRDs the OPR is a unique

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engineering/management discipline designated responsibility for defining a particular data requirement, i.e., safety, logistics, configuration management, manufacturing, test.

5.14 Small Business Innovation Research (SBIR) Data. Data first produced by a Contractor that is a small business firm in performance of a small business innovation research contract.

5.15 Solicitation. As used herein, includes Request for Proposal (RFP), Request for Offer (RFO), Request for Quotation (RFQ), or Invitation for Bid (IFB).

5.16 Standard Data Requirements Description (DRD). A data requirement that has been identified for repetitive use.

5.17 Statement of General Requirements (SGR). An integral section of the DPD that contains the introduction and those general requirements applicable to the preparation, maintenance, and delivery of data that are better defined in aggregate than in the individual DRDs.

6. INSTRUCTIONS

6.1 Identification/Definition of Data Requirements. The requiring organization shall identify the data requirements for each task or project in the formulation phase, develop a DRL to define the data requirements for each NASA activity per paragraph 6.2, and develop a DPD to define the data requirements for each procurement per paragraph 6.3. The DRL or DPD developer shall request an identification number from the CDRM for each DRL and DPD. CDRM functions are described in paragraph 6.4.

6.2 Development of a Data Requirements List (DRL) for all NASA Activities. The DRL provides the data requirements for a particular NASA activity and may include NASA produced data and contracted data. At the start of an activity, the strategy and planning shall be reviewed to determine the anticipated needs for data throughout the activity life cycle. Because specific data requirements may not yet be known, the data requirements of recent, similar activities should be examined. This review shall consider data needed to support design, business, manufacturing, testing, operation and maintenance; and documentation needed for legal, historical, internal audit, or other valid purposes. Related data that may be needed to meet broader enterprise or external requirements shall also be included. The data identified as a result of this review shall be documented in the DRL.

6.2.1 DRL Preparation Instructions. The DRL developer shall document the activity DRL in the activity's Data Management (DM) Plan, or in a separate DRL document that can be referenced from the DM Plan. The DRL shall include the following minimum data for each data requirement: data requirement number, title, OPR, and submission dates or milestones. The following data is recommended to be included in the DRL: OPR Designees, Control Process, Approval Authority, Content Requirements or a link to that information, and any information deemed necessary by the Data Manager. The DRL data item numbers shall be assigned in the same format as DRD identifiers described in paragraph 6.3.2.1f (2). The DRL shall also

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reference any DPDs (by DPD and contract number) for contracts that are part of the activity. DRDs may be attached to the DRL as described in paragraph 6.2.1.1. See Appendix Z for a NASA activity DRL template and completion guidance.

6.2.1.1 Data Requirements Descriptions for NASA Activity DRL. Data requirements descriptions (DRDs) may be attached to the NASA activity DRL, if deemed necessary to describe the data requirement more fully than the DRL format allows. If DRDs are used in conjunction with the NASA activity DRL, the DRDs shall be prepared and identified in a manner similar to the DRD format described in 6.3.2.1f for contracts, except “DPD NO.” shall be replaced with “DRL NO.” in DRD Item 1.

Formats for MSFC DRDs are controlled by the CDRM. Deviation from these formats requires the approval of the CDRM. Originators of data requirements management forms shall adhere to the guidelines and format requirements presented herein.

6.3 Data Procurement Document (DPD) Development. Each DPD shall meet the format and content requirements specified in the following paragraphs to ensure a quality and consistent product is provided to Procurement for incorporation into the contract. See Appendix B for a sample DPD. A sample DPD for on-site procurements of less than a million dollars and a minimum number of DRDs is available on the MSFC DRM website (see 6.4.3).

6.3.1 DPD Development Process. Appendix B contains a flowchart of the DPD development process. DPD development shall commence with a “Draft” DPD and continue until formal “Basic” DPD is prepared for the negotiated contract. The “Draft” DPD shall be developed to match the data requirements referenced in the Statement of Work/Performance Work Statement (SOW/PWS) for a solicitation package. DPD development shall begin early in the development of a solicitation package. The DPD shall evolve as the SOW/PWS evolves.

6.3.2 DPD Preparation Instructions. The procuring organization shall assign a DPD developer. The DPD developer:

- a. Shall maintain the master version of the DPD.
- b. Shall ensure the DPD master file is maintained secure while the DPD is procurement sensitive (prior to contract award), disseminate per secure means (disk, encrypted email, etc), and ensure reviewers are aware of the DPD sensitivity and their security responsibilities..
- c. Shall ensure the DPD elements specified below are prepared in accordance with the instructions in section 6.3.2.1 and assembled in the order specified below:
 1. DPD Cover Sheet
 2. Document Change Log (DCL)
 3. Page Revision Log (PRL)
 4. Introduction and Statement of General Requirements (SGR)
 5. Data Requirements List (DRL)
 6. Data Requirements Descriptions (DRDs)
- d. Shall assemble the DRDs in alphanumeric order by the DRD identification number (DRD numbers assigned in accordance with 6.3.2.1.f.(1)).

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- e. Shall enter the DPD identification number and issue symbol on each form and DRD in the appropriate blanks. (The three to four digit DPD identification number is assigned sequentially by the CDRM)
- f. Shall apply the DPD issue to denote the revision status of the entire DPD, (e.g., Draft, Request for Proposal (RFP), Basic, Revision A, Revision B) and coordinate issue designation with the procurement office. The issue designation denotes the revision status of the entire DPD. The DPD remains a “Draft” issue until formal acceptance by the Contracting Officer. The issue which accompanies the RFP bears “RFP”. Upon formal issue of the DPD (when incorporated into a contract or model contract), the issue designation shall be “Basic”.
- g. Shall obtain the RFP/Contract Attachment number assigned to the DPD by the Procurement Office and assign DPD page numbers to be consistent with the RFP/Contract Attachment number assigned to the DPD.
- h. Shall deliver the applicable version of the DPD to Procurement to be incorporated in the contract package.
- i. Shall specify the required distribution for each DRD. The distribution shall be specified in Block 10 on each individual DRD or defined in a separate distribution matrix addressing all DRDs which is transmitted to the contractor by Contracting Officer’s letter. A sample Contracting Officer’s letter with distribution matrix is provided in Appendix Z. The CDRM may provide assistance in the preparation of this distribution matrix (for some DRDs), if requested. The separate distribution matrix is recommended. Providing the distribution requirements in this manner (rather than on the individual DRDs) reduces the need for contract modifications to change the distribution requirements for a DRD. The Contracting Officer can transmit new distribution requirements to the contractor via a letter instead of issuing a contract modification.

6.3.2.1 Elements of the Data Procurement Document (DPD)

- a. DPD Cover Sheet. The cover sheet identifies the DPD as an official Marshall Space Flight Center (MSFC) document, and shall be prepared on MSFC Form 3461.
- b. Document Change Log. The Document Change Log (DCL) shall be prepared on MSFC Form 3461-1 to provide the current revision status of the DPD. The DCL shall be issued with the formal DPD and shall be updated and issued with each DPD revision or reissue resulting from contract modifications.
- c. Page Revision Log. The Page Revision Log (PRL) shall be prepared on MSFC Form 3461-2 to provide the current status of each page of the DPD. The PRL shall be issued with the formal DPD and shall be updated and issued with each DPD revision or reissue resulting from contract modifications.
- d. Introduction and Statement of General Requirements (SGR). The procuring organization shall utilize the DPD Introduction and SGR template located on the CDRMs Data Requirements Management System (DRMS) web site. The procuring organization shall tailor the Introduction and SGR template in specific marked areas and consult with the

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CDRM and the organization's DM about tailoring other areas of the SGR. The DPD Introduction prescribes the DPDs applicability and maintenance requirements and describes the DPDs component parts and specifies their interrelationship. The SGR prescribes those general requirements applicable to the preparation, maintenance, and delivery of data that are better defined in aggregate than in the individual DRDs. The SGR also defines the maintenance of the DPD after it is incorporated in the contract. A sample DPD Introduction/SGR is provided in Appendix B.

- e. Data Requirements List. The DRL shall present a complete list of the data requirements applicable to a specific contract. The DRL shall list the number, title, data type, and OPR for each DRD. Additional information (e.g. submittal requirements) may be added to the DRL.

- f. Data Requirements Descriptions (DRD). DRDs shall utilize the same format as the Standard DRD example shown in Appendix C and DRD preparers shall utilize the "Instructions for Elements of a DRD" in Appendix C. The DRD shall present a complete description of a data requirement and prescribe content, format, maintenance, approval, and submittal requirements of the data product.
 - (1) DRD Preparation. Standard DRDs shall be used as the basis for preparation of DPDs for MSFC contracted projects. The content of standard DRDs may be tailored to meet the needs of a project as specified in the tailoring paragraph below. DRDs shall adhere to the format requirements established in this MWI and controlled by the CDRM. The DRD Continuation Sheet shall be used for additional preparation instructions that do not fit on the first DRD sheet. The Continuation Sheet repeats only that information required for tracking and identification (DRD title, DRD number, and data type). Documents required to supplement the DRD shall be entitled "Attachments" and identified with the same DPD number and issue, and DRD identification number and title. Pages of the attachment shall be numbered sequentially and each page shall state the total number of DRD pages.

 - (2) DRD Identification Requirements. DRDs shall be identified by unique alpha-numeric identifiers. The initial numbers of the DRD identifier shall be the three- to four-digit DPD number (assigned by the CDRM) followed by two alpha characters representing the appropriate functional data category (e.g., MA, SA, LS, etc.) and ending with three digits assigned sequentially within the functional data category (e.g., 9999CM-001, 9999CM-002). The CDRM is responsible for assigning the DRD identifiers.

 - (3) Tailoring of Standard DRDs for the Specific Procurement. After the procuring activity identifies the need for specific DRDs, the content of the chosen standard DRDs shall be tailored by the requiring organization to meet the needs of the procurement. Common areas of tailoring are the submission requirements and data type. It is recommended that the requiring organization provide tailored DRDs to

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the standard DRD OPR organizations for review to ensure appropriate tailoring. A unique DRD shall be prepared by the OPR when a standard DRD does not exist which can be tailored to meet project requirements. Although standard DRDs are tailorable for use in specific DPDs, there may be limitations to this tailoring set by the standard DRD OPR. If the OPR has specified that tailoring the standard DRD requires OPR approval, the requiring organization shall consult the standard OPR designee before a standard DRD is tailored for a particular contract. The notes attached to the standard DRD indicate this requirement in the tailoring instructions. The CDRM may facilitate this coordination, if requested.

- (4) Determination of Data Types. The procuring activity shall assign a Data Type to each data requirement to indicate the level of NASA control to be applied. The philosophy of Government control shall be based on such factors as the planned insight level and product lifecycle. If the level of NASA control needs to increase as the data product matures, the procuring activity can assign one Data Type to a data deliverable at an early delivery milestone (e.g., Type 3) and assign a different Data Type requiring a higher level of Government approval (e.g., Type 1) at a later delivery milestone. If multiple control processes apply to a specific Data Type, a suffix may be added to the Type to indicate the control process applied by the Government (e.g., Type 1A could indicate that the Government plans to apply configuration management control, Type 1B could indicate project manager control, etc.).

The types of data and their contractually applicable requirements for approval and delivery are:

<u>Data Type</u>	<u>Description</u>
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- 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**.

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- 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. **NOTE TO DPD DEVELOPER/REQUISITIONER: FAR Clause 52.227-16 shall be in contract to get delivery of this data.**
- 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 DPDs 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).

6.4 Center Data Requirements Management

6.4.1 Standard DRD Development and Maintenance. The CDRM shall maintain a set of standard DRDs based on an examination of data requirements used throughout the Centers history and new requirements identified since the establishment of the original standard DRD set. Issuance of new management directives or regulations, the identification of new requirements, or maturity in functional disciplines may necessitate the creation of new standard DRDs.

See Figure 1 in Appendix C for the process of developing a new or revising an existing standard DRD. See Appendix C for a sample standard DRD and detailed instructions for each line item in a DRD.

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The CDRM shall solicit appointment of individuals to serve as OPR designees for each standard DRD. The names of the OPR designees shall be provided by the CDRM on the MSFC Data Requirements Management System (DRMS) and OPR matrix. The standard DRDs are verified and approved by the cognizant OPR.

The CDRM encourages standard DRD OPRs to provide sample Statement of Work/Performance Work Statement (SOW/PWS) language, guidance on the application of the standard DRD to specific activities, and instructions for tailoring the DRD (if applicable) to meet the needs of individual activities. If the Standard DRD OPR requires restrictions on tailoring, these shall be stated in the tailoring instructions. This additional information, if available, is attached to the standard DRD to aid users.

The CDRM shall maintain and control approved standard DRDs. These standard DRDs are generated, reviewed, and approved by their applicable OPRs for technical completeness and integrity. The CDRM shall ensure proper format, administrative compliance, and applicability to a particular category(ies).

The CDRM shall assign an alphabetic identifier to each standard DRD. The initial three characters of the standard DRD identifier shall be "STD" followed by two alpha characters representing the appropriate functional data category, e.g., MA, SA, LS, etc., and ending with the assignment of three or four characters representing the title or subject of the description, e.g., STD/CD-NTR, STD/CM-CMP, etc.

Revisions of standard DRDs shall be controlled by date. The version date is provided in the header area of each standard DRD and on the OPR Matrix. The CDRM shall annually require standard DRD OPRs to review OPR designee names and standard DRDs for accuracy and currency. The date of the latest OPR DRD review shall be noted on the OPR Matrix and the DRMS.

Standard DRDs are maintained in Microsoft Word and provided through the DRMS web site in Portable Document Format (PDF) format.

6.4.2 DPD/DRL Number Tracking Log Maintenance. The CDRM is responsible for assigning numbers to DPDs and DRLs and shall maintain a log of the numbers assigned. The log shall contain information (e.g., project name, data manager, project manager, RFP, and contract number, contractor name) pertinent to each DPD and DRL developed.

6.4.3 Introduction/Statement of General Requirements. The CDRM shall maintain and update a generic DPD Introduction/SGR. The CDRM shall coordinate any changes with organizations responsible for requirements defined in the SGR, such as Procurement, Repository and Legal.

6.4.4 MSFC Data Requirements Management System (DRMS) Web Site. The DRMS web site, available via a link from the MSFC Integrated Document Library, includes the standard DRDs in

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PDF format, additional data about each standard DRD, the current approved SGR, a matrix of standard DRDs (which provides DRD number, title, OPR, OPR designees, version date and OPR DRD review date), and a link to data management procedures and work instructions. For Microsoft Word versions of any formats, see the CDRM.

7. NOTES

None

8. SAFETY PRECAUTIONS AND WARNING NOTES

None

9. RECORDS

The CDRM shall maintain records of the standard DRDs, DPD/DRL Number Tracking Log and records of annual reviews. These records are not scheduled in NPR 1441.1. They are being maintained indefinitely as required by NPR 1441.1 as unscheduled records until they are officially scheduled by the Agency Records Manager. DPDs and DRLs shall be maintained by the NASA procuring activities as part of the project specific case files.

10. PERSONNEL TRAINING AND CERTIFICATION

None

11. FLOW DIAGRAM

See the Appendices B and C.

12. CANCELLATION

MWI 7120.2A dated August 16, 1999

Original signed by
Robin N. Henderson for

David A. King
Director

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Appendix A

Data Category Definitions

A.1 Contractual Data (CD). This category includes the definition of data delivery requirements contained in applicable procurement and regulatory procedures incorporated in or referenced by contractual instruments.

A.2 Configuration Management (CM). This category includes the data that is required for a uniform system of configuration identification, status accountability, and control. This data includes all data down to that level of detail necessary to identify and ensure integrity of the configuration. This category essentially covers the engineering management system to define how and by whom the configuration of the system is controlled. It includes the data that is necessary and primary in controlling hardware, firmware, and software.

A.3 Design and Development Engineering (DE). This category includes the definition of specific engineering requirements; hardware design, analyses, and solutions to implement specifications; analytical and test verification programs necessary to assure design solution adequacy; design, manufacturing and assembly documentation; and controls to ensure design performance reproducibility.

A.4 Environmental Engineering (EE). Data within this category describes the procedures, controls, analytical methods, test methods, and reporting needed to ensure the environmentally compliant handling, processing, and disposal of all hazardous materials and pollutants of a specific project. The data identifies all potential hazards, required restrictions and controls, and mandated limits from concept through project termination in both ground and flight operations.

A.5 Human Engineering (HE). Data within this category describes the application of knowledge about human capabilities and limitations to system or equipment design and development to achieve efficient, effective, and safe system performance at minimum cost and manpower, skill, and training demands. Human engineering ensures that the system or equipment design, required human tasks, and work environment are compatible with the sensory, perceptual, mental, and physical attributes of the personnel who operate, maintain, control, or support it.

A.6 Logistics/Support (LS). This category includes the data necessary to perform the logistics function, including spare parts analyses and lists of spares. It reflects the logistics plans, programming, analysis, handling, storage, supply, maintenance, support facilities, packaging, Government property management, and schedules.

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A.7 Management (MA). This category includes that portion of the management system that interfaces with the other data categories and ensures that they are properly integrated. This category includes the data required to plan, review, manage, and control a specific MSFC project. These data also include the management structure supporting the specific program and financial information, performance measurement, progress reporting, make or buy plans, and training plans.

A.8 Materials and Processes (MP). This category includes the definition of specific engineering selections, necessary functional properties, material and hardware level processing criteria, and controls necessary to attain functional property assurance, manufacturing planning, and implementation procedures to assure repeatable and controlled operations.

A.9 Operations (OP). Data within this category includes the requirements, plans, procedures, and activities required for ground and mission operations from delivery of system hardware at the launch site through recovery and post-flight operations. It reflects such areas as long range plans for tracking network and Department of Defense (DOD) support, prelaunch and postlanding support, as well as specific mission requirements such as launch trajectories, specific mission objectives, and personnel requirements.

A.10 Orbital Servicing (OS). This category includes data related to the on-orbit servicing and maintenance of orbiting facilities, such as integrated systems analyses, support requirement analyses, orbital replacement units (ORU) characteristics, ORU inventory/quality control/maintenance, orbital servicing quality control, maintainability/servicing assessments, maintenance and refurbishment logistics, orbital contamination control, hardware simulation, and storage plans.

A.11 Quality Engineering (QE). This category includes data used in planning, controlling, supporting, and reporting quality activities, data associated with internal program management systems, and procedures used in applying quality functions to ensure that design and production of end items comply with QE requirements. Quality Engineering ensures that items delivered fulfill requirements by auditing the processes that minimize variability and provide conformity.

A.12 Reliability and Maintainability (RM). This category includes control and review procedures to ensure that component, subsystem, system and software design, manufacture, assembly, and testing produce items that meet the established specifications. It includes reliability and maintainability plans, reliability assessments, reliability status reports, manufacturing process control plans, quality control and inspection plans, and production acceptance testing documents. It includes development, qualification and reliability demonstration testing, reliability assessment of test results, tests of a statistical sampling nature, and manufacturing verification tests to obtain quality assurance.

A.13 Safety (SA). Data within this category describes the procedures, controls, methods, studies, and reporting needed to ensure the safety, health, and environment of all operations of a specific MSFC project and identifies all potential hazards from concept through project

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termination in both ground and flight operations. It assumes the existence of safety considerations within other appropriate categories and is concerned with integrating and controlling these safety considerations through a central safety program.

A.14 Systems Engineering (SE). This category encompasses the overall systems/subsystems/equipment mission definitions, systems specification, and system level requirements for reliability, maintainability, transportability, integration, operations, technical studies, system level analyses, and evaluations, etc., necessary for system technical description and specification(s).

A.15 Software (SW). This category includes data used throughout the life cycle to plan, manage, control, and support activities involved in development, testing (including software verification and validation) and use of software products. Software data also includes the product description, product requirements, and validation of software compliance with requirements.

A.16 Verification (VR). This category includes data that is used to document planned verification activities, support equipment, and facilities. It also includes data that is used to document verification requirements definition, traceability, compliance to requirements, testing (including hardware validation) and results of verification activities.

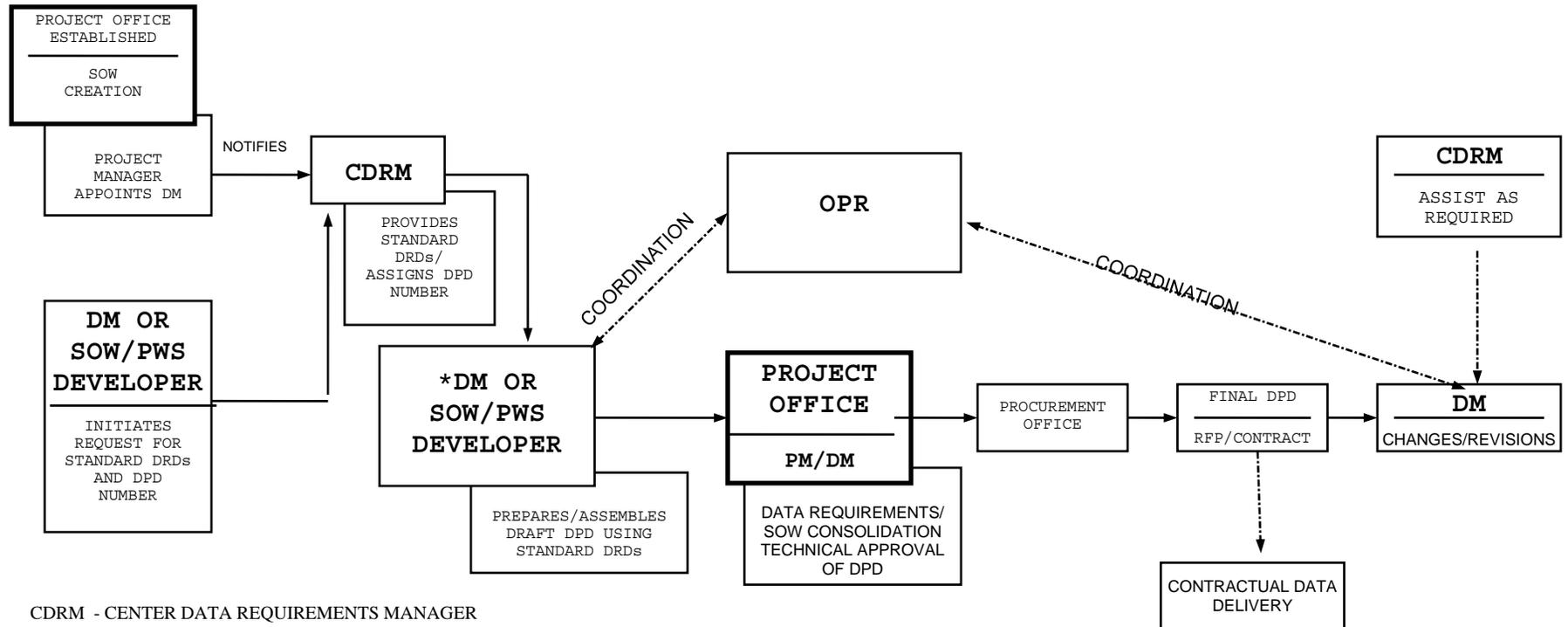
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Appendix B

Data Procurement Document Development Flow and Sample

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DATA PROCUREMENT DOCUMENT DEVELOPMENT



CDRM - CENTER DATA REQUIREMENTS MANAGER

- DM - DATA MANAGER
- DPD - DATA PROCUREMENT DOCUMENT
- DRD - DATA REQUIREMENTS DESCRIPTION
- DRL - DATA REQUIREMENTS LIST
- OPR - OFFICE OF PRIMARY RESPONSIBILITY
- PM - PROJECT MANAGER
- PWS - PERFORMANCE WORK STATEMENT
- RFP - REQUEST FOR PROPOSAL
- SOW - STATEMENT OF WORK

* CDRM WILL PROVIDE ASSISTANCE WITH PREPARATION AS REQUESTED AND RESOURCES AVAILABLE

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PROCUREMENT DOC.	DATA
	NO. ISSUE 9999 Draft
 NAS8-XXXXX _____	
CONTRACT/RFP	

EXHIBIT NUMBER	
 J-X _____	
ATTACHMENT NUMBER	
 TITLE OF PROCUREMENT _____	
PROJECT/SYSTEM	
 DATA PROCUREMENT DOCUMENT	
 Contractor _____	
CONTRACTOR	
 Date _____	
DATE	
National Aeronautics and Space Administration	

MSFC - Form 3461 (Rev September 1989)

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National Aeronautics and Space Administration					DATA PROCUREMENT DOC.		
DOCUMENT CHANGE LOG					NO.	ISSUE	
					9999	Draft	
INCORPORATED REVISIONS OUTSTANDING REVISIONS				AS OF:		SUPERSEDING:	PAGE:
AUTHORITY	PORTION AFFECTED - PAGE NO./NO.				REMARKS		
	INTRO	SGR	DRL	DRD			

MSFC - Form 3461-1 (Rev August 1970)

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National Aeronautics and Space Administration PAGE REVISION LOG		DATA PROCUREMENT DOC. NO. ISSUE 9999 Draft	
NOTE: The current revision is denoted by a vertical line in the outer margin adjacent to the affected text.	AS OF:	SUPERSEDING:	PAGE:
INSERT LATEST REVISED PAGES. DISCARD SUPERSEDED PAGES.			
ITEM	PAGE	STATUS	ITEM PAGE STATUS

MSFC - Form 3461-2 (Rev August 1970)

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GENERIC DPD INTRODUCTION/STATEMENT OF GENERAL REQUIREMENTS

[NOTE TO DPD DEVELOPER/REQUISITIONER: This standard SGR requires tailoring for each specific DPD. See highlights for areas requiring modification.]

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 DRDs 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, a Table of Contents, an Introduction, a Statement of General Requirements, DPD maintenance procedures, a DRL, and the DRDs.

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 DRDs.

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 (DRDs)

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.

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

<u>CATEGORY SYMBOL</u>	<u>DESCRIPTION</u>
CD	Contractual Data
CM	Configuration Management
DE	Design and Development Engineering
LS	Logistics/Support
MA	Management
MP	Materials and Processes
OP	Mission Operations
OS	Orbital Servicing
QE	Quality Engineering
RM	Reliability and Maintainability
SA	Safety
SE	Systems Engineering
SW	Software
VR	Verification

Tailoring note: you may delete the data categories not utilized.

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 DRDs have been sectionalized in accordance with the above data categories.

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

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.

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

TYPE

DESCRIPTION

- 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. **NOTE TO DPD DEVELOPER/REQUISITIONER: FAR Clause 52.227-16 shall be in the contract to get delivery of this data.**
- 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

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* 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 DPDs 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.

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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/required**. 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: **NOTE TO DPD DEVELOPER/REQUISITIONER**: The Statement of Work shall contain language to address the marking of data (e.g. "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 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

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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 export control official, and/or unless an export license/license exemption is obtained/available from the United States Department of State. Violations of these regulations are punishable by fine, imprisonment, or both.

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 exception is obtained/available from the Bureau of Export Administration (BXA), United States Department of Commerce. Violations of these regulations are punishable by fine, imprisonment, or both.

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

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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 entry into [Specify electronic system (e.g., MSFC Repository, Projectlink)], 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.

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- 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 ECPs are excluded from the marking provisions of this paragraph. All Type 1 documentation, excluding configuration management requirements, shall be marked “PRELIMINARY PENDING

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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.

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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.

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- 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 DRDs 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.

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Data Requirements List

<u>DRD</u>	<u>DATA TYPE</u>	<u>TITLE</u>	<u>OPR</u>
CD - Contractual Data			
9999CD-001	2	Information Technology Security Plan	AD34
9999CD-002	3	Technology Reports	CD30
CM - Configuration Management			
9999CM-001	1	Configuration Management Plan	ED43
9999CM-002	1	Specifications	ED43
9999CM-003	3	Engineering Drawings and Associated Lists	ED43
9999CM-004	3	Specification and Drawing Trees	ED43
9999CM-005	1	Engineering Change Proposals and Associated Documentation	ED43
9999CM-006	1	Deviation/Waiver Approval Request	ED43
9999CM-007	3	Configuration Accounting and Status Reports	ED43
9999CM-008	1	Acceptance Data Package	ED43
9999CM-009	3	Modification Kit Instructions (MIs) and Installation Notice Cards (INCs)	ED43
DE - Design and Development Engineering			
9999DE-001	2	Electrical, Electronic, and Electromechanical (EEE) Parts Control Plan	ED16
9999DE-002	2	Fracture Control Plan	ED22
9999DE-003	2	As-Designed EEE Parts List	ED16
9999DE-004	3	As-Built EEE Parts List	ED16
9999DE-005	1	Electrical, Electronic, and Electromechanical Nonstandard Parts Approval Request	ED16
LS - Logistics			
9999LS-001	2	Logistics Plan	AD42
9999LS-002	2	Government Property Management Plan	AD41
9999LS-003	3	Special Handling and Storage Requirements Document(s)	AD42

NOTE: Only one DRD is provided in this sample.

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DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 9999 **ISSUE:** Basic
2. **DRD NO.:** 9999CD-001
3. **DATA TYPE:** 2
4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Information Technology Security Plan(s)
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:** AD34 9. **DM:**
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 45 days after contract award
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:** The information technology security plan(s) 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.
14. **INTERRELATIONSHIP:**
15. **DATA PREPARATION INFORMATION:**
 - 15.1 **SCOPE:** Information Technology Security Plan(s) 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:**

NPR 2810.1	<i>Security of Information Technology</i>
NFS 1804.470-3	<i>Security Plan for unclassified Federal Information Technology systems</i>
NFS 1852.204-76	<i>Security Requirements for Unclassified Information Technology Resources</i>
 - 15.3 **CONTENTS:** The Information Technology Security Plan shall meet the requirements of the applicable documents in 15.2 and document how the contractor and subcontractor personnel utilize, in a secure manner commensurate with the sensitivity of the information involved, those Federal computer systems and software applications managed by others. 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

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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 the applicable documents in 15.2. NPR 2810.1 defines “general support computer systems” and “major applications” and provides plan requirements for both.

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

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

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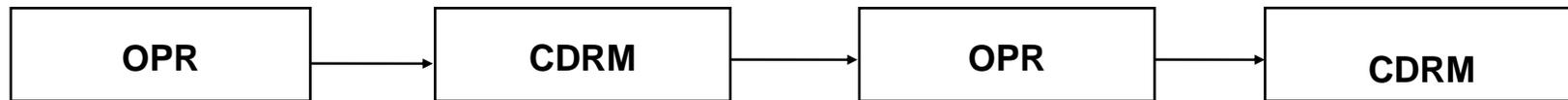
Appendix C

Standard DRD Development Flow

Sample Standard Data Requirements Description (DRD) And Instructions for Each Element

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**FIGURE 1 - STANDARD DRD DEVELOPMENT
(NEW/REVISIONS)**



- INITIATES AND PREPARES NEW/ REVISED STANDARD DRD
- COORDINATES WITH OTHER USERS

- REVIEWS FORMAT AND EDITS AS NECESSARY
- ASSIGNS STANDARD DRD IDENTIFIER BY CATEGORY

NOTE: CDRM may also initiate the preparation of a new or revised standard DRD and coordinate it with the standard DRD OPR.

- APPROVES NEW/ REVISED STANDARD DRD

- INCORPORATES INTO STANDARDS DATABASE

CDRM - CENTER DATA REQUIREMENTS MANAGER
 DRD - DATA REQUIREMENTS DESCRIPTION
 OPR - OFFICE OF PRIMARY RESPONSIBILITY

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SAMPLE STANDARD DATA REQUIREMENTS DESCRIPTION (DRD)

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** XXX **ISSUE:** Standard 2. **DRD NO.:** STD/CD-ITSP
3. **DATA TYPE:** 2 4. **DATE REVISED:**
5. **PAGE:** 1/1
6. **TITLE:** Information Technology Security Plan(s)
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:** AD34 9. **DM:**
10. **DISTRIBUTION:** Per Contracting Officer's letter
11. **INITIAL SUBMISSION:** 45 days after contract award
12. **SUBMISSION FREQUENCY:** Revise as required
13. **REMARKS:** The information technology security plan(s) 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.
14. **INTERRELATIONSHIP:**
15. **DATA PREPARATION INFORMATION:**
- 15.1 **SCOPE:** Information Technology Security Plan(s) 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:**

NPR 2810.1	<i>Security of Information Technology</i>
NFS 1804.470-3	<i>Security Plan for unclassified Federal Information Technology systems</i>
NFS 1852.204-76	<i>Security Requirements for Unclassified Information Technology Resources</i>
- 15.3 **CONTENTS:** The Information Technology Security Plan shall meet the requirements of the applicable documents in 15.2 and document how the contractor and subcontractor personnel utilize, in a secure manner commensurate with the sensitivity of the information involved, those Federal computer systems and software applications managed by others. 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

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Information Technology System Security Plan(s) shall meet the requirements of the applicable documents in 15.2. NPR 2810.1 defines “general support computer systems” and “major applications” and provides plan requirements for both.

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

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

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**Note to STD/CD-ITSP
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Applicability Instructions:

This DRD is required for all contracts containing NASA FAR Supplement (NFS) clause NFS 1852.204-76 (as prescribed by NFS 1804.470). This clause states “The Contractor shall be responsible for Information Technology security for all systems connected to a NASA network or operated by the Contractor for NASA, regardless of location. This clause is applicable to all or any part of the contract that includes information technology resources or services in which the Contractor needs have physical or electronic access to NASA’s sensitive information contained in unclassified systems that directly support the mission of the Agency. This includes information technology, hardware, software, and the management, operation, maintenance, programming, and system administration of computer systems, networks, and telecommunications systems.”* This DRD covers two different levels of contractor information technology security responsibility: (1) the contractor has access to NASA information through Federal computer systems or software applications not managed by the contractor; and (2) the contractor has access to NASA information and is responsible for the management, operation, maintenance, programming, and system administration of Federal computer systems and/or software applications. The second level requires a separate system-level Information Technology System Security Plan for each system or application managed or administered by the contractor, in addition to the general Information Technology Security Plan. If assistance is needed to determine if an Information Technology System Security Plan is required, Statement of Work (SOW) preparers and Contracts Specialists shall consult with the OPR contacts for this DRD.

*NFS 1852.204-76 (dated July 2001)

Tailoring Instructions:

If it is determined that a system-level Information Technology System Security Plan is not required (i.e., the contractor will not be managing or administering a Federal computer system or major software application), the DRD may be tailored as follows:

Change “Plan(s)” to “Plan” throughout DRD

Item 15.3: Delete the last paragraph (“Additionally, a separate system-level Information Technology System Security Plan shall be ... and provides plan requirements for both.”)

*****See next page for sample Statement of Work paragraph*****

NOTE:

These instructions on DRD applicability are not a part of the DRD and shall not be included in a DPD.

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**Note to STD/CD-ITSP
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Sample Statement of Work words for contracts within the scope of NFS 1804.470 and NFS 1852.204-76:

“The contractor shall prepare an Information Technology Security Plan that documents how the contractor and subcontractor personnel 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 STD/CD-ITSP.”

*This sentence may be deleted if it is determined a system-level Information Technology System Security Plan is not required. Replace “plan(s)” with “plan.”

For contracts that are outside the scope of NFS 1804.470 and NFS 1852.204-76, the following shall be added to the Statement of Work in lieu of the DRD:

“Security of Information Technology

The contractor shall incorporate appropriate safeguards to ensure the availability, integrity, and confidentiality of NASA's electronic information processed or accessed during the performance of this contract. Safeguards shall be commensurate with the sensitivity or criticality of the processed/accessed information and shall be sufficient to minimize the risks to NASA's missions and credibility.”

NOTE:

These instructions on DRD applicability are not a part of the DRD and shall not be included in a DPD.

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Instructions for Elements of a DRD

ITEM

DESCRIPTION/FORMAT

- 1: **DPD* NO. *(or DRL):** Enter Data Procurement Document (DPD)/Data Requirements List(DRL) number obtained from Center Data Requirements Manager (CDRM), e.g., 321, 969, etc. This number is unique to a particular DPD/DRL. Use XXX if no number has been assigned, or for Standard DRDs.
ISSUE: Enter the appropriate issue information, e.g., Draft, RFP, Basic, etc. NOTE: See MWI 7120.2 for instructions regarding **ISSUE** for DPD/DRL preparation.
- 2: **DRD NO.:** Enter the unique DRD identification number. This number is comprised of three digits that are the DPD/DRL number followed by the two letter Data Category designation, and a sequential three digit number, e.g., 321CM-001, 456DE-009, etc. Use xxxCM-XXX if no number assigned by the CDRM. Use STD/CM-XXX if standard. NOTE: See MWI 7120.2 for standard DRD numbering instructions.
- 3: **DATA TYPE:** Enter the type of data according to the contractual applicable requirements, e.g., 1, 2, 3, etc. Data Type is defined in MWI 7120.2 and the DPD Statement of General Requirements. Control Processes/Approval Authority for DRLs shall be defined in the Data Management Plan and/or SGR for that project.
- 4: **DATE REVISED:** Enter the date of the DRD revision. Use only when the DRD has been revised after contract award baseline. Prior to contract award, this item should remain blank.
- 5: **PAGE:** Enter the current page number/total pages, e.g., 1/2, 2/2, etc.
- 6: **TITLE:** Enter an appropriate title for the DRD.
- 7: **DESCRIPTION/USE:** Enter a brief descriptive statement and/or purpose for the data requirement. One or two sentences is adequate.
- 8: **OPR:** Enter the appropriate Office of Primary Responsibility (OPR), e.g., ED43, QD10, etc. The OPR is the organization designated to define the data requirement and exercise technical or administrative control over it.
- 9: **DM:** Enter the appropriate Data Manager (DM), e.g., ED43, QD10, etc. The DM is usually selected by the procuring activity or project office and represents this office on formal data requirements. The DM organization code is usually the requisitioner's or COTR's office code.
- 10: **DISTRIBUTION:** Enter distribution requirements, e.g., Per Contracting Officer's letter, Per Distribution Matrix, etc. "Per Contracting Officer's letter" is usually adequate. This is suggested because defining distribution requirements in the DPD may cause a contract modification if the codes change. The Contracting Officer may issue a new distribution by letter at any time without causing a contract modification to be necessary.

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<u>ITEM</u>	<u>DESCRIPTION/FORMAT</u>
--------------------	----------------------------------

- 11: **INITIAL SUBMISSION**: Enter initial submission requirements for the requested data, e.g., 90 days after Authority to Proceed (ATP), etc. There shall be only one submission listed here. Submission dates shall not be actual calendar dates, but shall be tied to a project milestone (e.g., “30 days after PDR”). Calendar dates may necessitate contract modification if the schedule slips.
- 12: **SUBMISSION FREQUENCY**: Enter the submission frequency requirements (e.g., monthly, quarterly) or submissions subsequent to initial for the requested data [e.g., As part of the Preliminary Design Review (PDR) and Critical Design Review (CDR) data packages, baseline after CDR, update as required].
- 13: **REMARKS**: Enter special instructions/remarks to the contractor not included elsewhere on this form. Use for additional/clarifying information. Reference or other documents may be listed here also. It is acceptable to leave “Remarks” blank.
- 14: **INTERRELATIONSHIP**: Enter SOW paragraph numbers or other DRDs that interrelate or reference this requirement (e.g., SOW paragraph 4.3, DRD 988MP-002, etc.)
- 15.1: **SCOPE**: Enter the scope of the data item required. One or two sentences as a short summary of the content.
- 15.2: **APPLICABLE DOCUMENTS**: Document titles shall be in italics. NOTE: Applicable documents are applicable to the preparation of the deliverable data only. The applicable documents shall be referenced in Items 15.3 or 15.4 to indicate how they apply to the preparation of the document. List all applicable documents in the following format:
MM 8040.12 *Standard Contractor Configuration Management Requirements, MSFC Programs*
MIL-STD-100 *Military Standard, Engineering Drawing Practices*
- In the case of no applicable documents, use the following:
APPLICABLE DOCUMENTS: None.
- 15.3: **CONTENTS**: Enter the requirements for the contents of the data item requested by this DRD. Applicable documents shall be referenced here, if appropriate with specific application, i.e., “The data shall be prepared in accordance with MM XXXX, Section 1, paragraph 5.1.6.”
- 15.4: **FORMAT**: Enter any special format instructions for the data item, e.g., Contractor format is acceptable, The format shall follow the following document . . ., etc. “Contractor format is acceptable” is used when no specific format is required..

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15.5: **MAINTENANCE**: Enter any special maintenance instructions for the data item, e.g., maintenance shall be in accordance with . . ., Changes shall be incorporated by . . ., etc. If there are no instructions, enter "None required". "Changes shall be incorporated by change page or complete reissue" is usually adequate.

Documents, such as plans and specifications, that require maintenance shall have "Changes shall be incorporated by change page or complete reissue" because they may be updated.

Reports are usually "None required" because a report is reissued for each submittal.

Note: As shown in the previous example, additional pages are included in Standard DRDs which contain Applicability Instructions, Tailoring Instructions, and a sample of Statement of Work words.

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Appendix Z

Guidance

6.2.1 Data Requirements List Template with Sample Data and Preparation Guidance

6.3.2 Sample Contracting Officer's Letter

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DRL Number ¹ : XXX							
Data Requirement Number ²	Title ³	OPR ⁴	Control Process ⁵	Approval Authority ⁶	Submission Dates or Milestones ⁷	Content Requirements ⁸	NRRS Number ⁹
XXXCM-001	System Specification	TD05	CM	Level III CCB	SRR, baseline after SRR	MWI 7120.4	8/5.A.1
XXXCM-002	Engineering Drawings	ED10, ED20	CM	Level III CCB	PDR, CDR, baseline after CDR	MSFC-STD-555	8/5.A.1
XXXDE-001	Structural Analysis	ED22	OPR	None (reviewed at PDR, CDR)	PDR, CDR	OI ED22-01X	8/5.A.2
XXXMA-001	Project Plan	TD05	Approval	Level III DCB	Approve prior to SRR	MWI 7120.2	8/5.A.1

The following DPDs were developed in support of this NASA Activity	
DPD Number ¹⁰	Contract Number ¹¹
899	NAS8-012345

- 1 The DRL number requested from and assigned by the CDRM.
- 2 Unique alpha-numeric identifier assigned by the CDRM. The initial numbers of the data requirement identifier is a three- to four-digit number followed by two alpha characters representing the appropriate functional data category (e.g., MA, SA, LS, etc.) and ending with the three digits assigned sequentially within the functional data category (e.g., 9999CM-001, 9999CM-002).
- 3 Title of the data requirement description.
- 4 OPR/OPR Designee assigned to the data item for preparation, review, and validation of the item.
- 5 Control Process assigned to the data (i.e., CM, Requiring Organization Approval, OPR Control).
- 6 Specific role or board assigned approval or review authority over the planned data. Typical approval authorities are: Control Boards (CCB, PCB, DCB), Project Manager, or OPR organization.
- 7 Dates or milestones (Preliminary Design Review, Critical Design Review, Flight Readiness Review, etc.) at which the data requirements are due to be submitted.
- 8 The document which defines the content requirements that the data requirement is to be prepared in accordance with (e.g., MPR number, standard number).
- 9 The appropriate record retention schedule per NPR 1441.1, NASA Records Retention Schedule, typical entry format is Schedule/Item.
- 10 If contracts are issued to support the NASA activity, list the number(s) assigned to the DPD(s).
- 11 Contract Number(s) of the DPD(s) listed in item 10.

6.2.1 Data Requirements List Template with Sample Data and Preparation Instructions

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6.2.1 Data Requirements List Template with Sample Data and Preparation Instructions (cont)

6.2.1. DRL Preparation Guidance. The following control process definitions are recommended for NASA-produced or External Agreement-produced data deliverables. These definitions should be established in the Program/Project Data Management Plan, and then applied through the DRL. These definitions are consistent with the control process requirements in MPR 7120.3.

Control Processes for NASA-Produced or External Agreement Data Deliverables. The NASA Activity assigns a control process to each NASA-produced or External Agreement-produced data deliverables to indicate the level of control required. Each control process has an associated approval authority which has decision authority over the data routed through the process. If the level of control needs to increase as the data product matures, the requiring activity can assign one Control Process to a data deliverable at an early delivery milestone (e.g., OPR control) and assign a different Control Process requiring a higher level of requiring activity approval (e.g., CM control) at a later delivery milestone.

The recommended control processes definitions are:

- a. Configuration Management (CM). All issues and interim changes to those issues shall require authorization through the requiring organization's CM process/Configuration Control Board (CCB) prior to formal release for use or implementation. The CM control process shall be conducted in accordance with MPR 8040.1 and the project CM Plan.

NOTE: CM control shall be used to authorize configuration documentation (requirements, specifications, drawings) to ensure relationship of documentation and documentation changes to the applicable configuration items. The CM process may also be utilized for non-configuration documentation. The approval authority associated with the CM control process is a Configuration Control Board (CCB) (or a Project Control Board that includes CCB authority).

- b. Requiring Organization Approval. All issues and interim changes to those issues shall require authorization through the requiring organization's Approval process and associated Approval Authority (e.g., Project Manager, Document Control Board (DCB)) prior to dissemination for use. Data approval processes shall be conducted in accordance with MPR 7120.3 and the project DM Plan.

NOTE: A data approval process is used to authorize non-configuration documentation. The approval authority associated with an Approval process may be an individual (e.g., Project Manager) or a board (e.g., Project Control Board (PCB), Document Control Board (DCB), etc.). There may be multiple data approval processes defined for a project or activity.

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6.2.1 Data Requirements List Template with Sample Data and Preparation Instructions (cont)

- c. OPR Control. These data shall be delivered by the producing organization as required by the Data Requirements List (DRL) or agreement, and do not require approval by the requiring organization. However, to be a satisfactory delivery, the data shall satisfy all applicable requirements.

NOTE: An OPR control process is used to authorize non-configuration documentation when the project has designated that the OPR organization may authorize data through their organization's control procedure. The OPR then submits the data to the project as scheduled in the DRL. The project reviews the submitted data for adequacy and accepts the data or provides comments back to the OPR organization.

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6.3.2 Sample Contracting Officer's Letter

(Insert Contractor's Name, contact, and address)

Subject: Contract NAS8-12345, Distribution of Data Deliverables

This letter provides instructions for submittal and distribution of all data deliverables and any update or revision thereto in accordance with Data Procurement Document (DPD) XXXX. (Insert Contractor's Name) shall transmit each data deliverable electronically by submittal to [specify electronic system or email address(s)]. With each data delivery, (Insert Contractor's Name) shall provide a transmittal memorandum including the information specified in the DPD XXXX Statement of General Requirements (SGR). The transmittal memorandum shall list the data deliverable distribution shown in the enclosed matrix. In addition, (Insert Contractor's Name) shall submit one reproducible hard copy of each transmittal memorandum and data deliverable to (insert desired delivery destination).

The data restriction (export control, limited rights, etc.) associated with each data deliverable shall be marked on the data or specified in the transmittal memorandum as required in the DPD SGR.

In the event that any data deliverable is not reproducible, (Insert Contractor's Name) shall provide the number of hard copies specified in the distribution matrix or enough copies for MSFC to provide one copy to each person or office designated on the distribution list.

Please contact the undersigned at (enter contracting officer's phone number) if you have any question or comments.

(Insert Contracting Officer's Name)

Contracting Officer

Enclosure (1)

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6.3.2 Sample Contracting Officer's Letter (cont)

Enclosure
Distribution DPD XXXX

DPD NO. XXXX	TITLE	TYPE	MSFC Repository	Contracts	COTR	Data Management
CD-001	New Technology Report	3	1	1		1
CM-001	Specifications	1	1	1		1
DE-001	Fracture Control Plan	2	1	1		1
LS-001	Logistics Plan	2	1	1		1
MA-001	Project Management Plan	1	1	1	1	1
MA-002	Monthly Status Reports	3	1	1	1	1
MP-001	NDT Plan	1	1	1		1
QE-001	Quality Plan	1	1	1		1
SA-001	Safety Plan	1	1	1	1	1
SE-001	Mass Properties Report	3	1	1		1
SW-001	Software Design Spec	1	1	1		1
VR-001	Verification Plan	2	1	1		1

Repository	J. Smith	M. Johnson	CM/DM Receipt Desk
CN22	PS20	JA21	JA21
MSFC Repository	Contracts	COTR	Data Management

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