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RELEASED

Global Precipitation Measurement (GPM)

Thruster Deliverable Items List and Schedule (DILS)

National Aeronautics and Space Administration

Goddard Space Flight Center
Greenbelt, Maryland

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CM FOREWORD

This document is a Global Precipitation Measurement (GPM) Configuration Management (CM)-controlled document. Changes to this document require prior approval of the applicable Configuration Control Board (CCB) Chairperson or designee. Proposed changes shall be submitted to the GPM CM Office (CMO), along with supportive material justifying the proposed change. Changes to this document will be made by complete revision.

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CHANGE HISTORY LOG

REV LEVEL	DESCRIPTION OF CHANGE	APPROVED BY	DATE APPROVED
Rev –	Initial Release of Document per GPM-CCR-0212	C. Carlisle	3/29/2009
Rev A	Update document Table 2-1 Hardware Deliverables Remove Item #5 Thruster Valve – Spare – Add Option 1 Table 2-2 per GPM-CCR-272	C. Carlisle	5/28/2009

List of TBDs/TBRs

Item No.	Location	Summary	Ind./Org.	Due Date

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1.0 INTRODUCTION

This document is the Global Precipitation Measurement (GPM) Thruster Deliverable Items List and Schedule (DILS). This document provides specific information on the hardware and documentation deliverables for the thrusters.

1.1 PROPRIETARY DATA

Some of the content of documents may be of a proprietary nature to the document preparing/ sending Party. In the event data is deemed to be proprietary, and for which protection is to be maintained, the sending Party shall mark the document with a notice to indicate that the data therein is proprietary and shall be used and disclosed by the receiving Party and its related entities (e.g., vendors and subvendors) only for the purposes of fulfilling the receiving Party's responsibilities under the Global Precipitation Measurement Project, and that the identified and marked technical data shall not be disclosed or retransferred to any other entity without prior written permission of the document preparer.

1.2 APPLICABLE DOCUMENTS

GPM-PROP-SOW-0019 Global Precipitation Measurement Project Thruster Statement of Work

GPM-PROP-SPEC-0023 Global Precipitation Measurement Project Thruster Specification

2.0 DELIVERABLES

This section provides a tabular listing of documentation deliverables, including the following information:

Description: This provides the Title of the deliverable item.

Reference: This provides the reference to the pertinent document calling out the deliverable

Category:

> **A = Approval** – Documents in this category require approval from the National Aeronautics and Space Administration (NASA)/Goddard Space Flight Center (GSFC) Contracting Officer (CO). In general, documents shall be provided in vendor format as long as required content, as specified in the Global Precipitation Measurement Project Thruster Statement of Work (GPM-PROP-SOW-0019), is addressed.
>
> **R = Review** – Documents in this category do not require formal NASA/GSFC CO approval. They must be received within a specified time period and are subject to evaluation. The NASA/GSFC CO reserves the time-limited right of disapproval for each submission. The time-limited period is two weeks from receipt of documents.
>
> **I = Information** – Documents in this category are informal and are for information only.

Quantity: This provides the required number of copies for the deliverable. All data is required to be submitted electronically. The number in the quantity column refers to the number of hard copies required.

Delivery Date: This provides the fixed or relative date or time that the deliverable is required.

2.1 HARDWARE DELIVERABLES

Table 2-1: Hardware Deliverables

Item #	Description	Reference	Quantity	Delivery Date
1	Thruster with Straight Nozzle – Flight Unit	SOW Sect. 1.2	8	Twelve (12) months after start of contract
2	Thruster with 90-Degree Nozzle – Flight Unit	SOW Sect. 1.2	4	With item #1
3	Thruster with Straight Nozzle – Spare	SOW Sect. 1.2	1	With item #1
4	Thruster with 90-Degree Nozzle – Spare	SOW Sect. 1.2	1	With item #1
5	Thruster Cover	SOW Sect. 4.2	12	With item #1
6	Alignment Fixture	SOW Sect. 4.2	12	With item #1
7	Test Plug	SOW Sect. 4.2	12	With item #1

Table 2-2: Hardware Deliverables – Option 1

Item #	Description	Reference	Quantity	Delivery Date
1	Thruster Valve - Spare	SOW Sect. 1.2.1	1	Twelve (12) months after option is exercised

2.2 DOCUMENTATION DELIVERABLES

Table 2-3: Documentation Deliverables

Item #	Description	Reference	Category	Quantity	Delivery Date
1	Monthly Status Report	SOW Sect. 2.1	I	1	Ten (10) calendar days following the month being reported
2	Design Conformance Review	SOW Sect. 2.3.1	A	1	Three (3) months after Award of Contract
3	DCR Agenda	SOW Sect. 2.3.1	A	1	Fifteen (15) calendar days before DCR
4	Design Conformance Review Report	SOW Sect. 2.3.1	A	1	Ten (10) calendar days after completion of DCR
5	Pre-Environmental Review (PER)	SOW Sect. 2.3.2	A	1	Five (5) calendar days before start of environmental testing on first Flight Unit
6	PER Agenda	SOW Sect. 2.3.2	A	1	Five (5) calendar days before PER
7	Flight Unit Pre-Shipment Review (PSR)	SOW Sect. 2.3.3	A	1	Five (5) calendar days prior to delivery of each Flight Unit
8	PSR Agenda	SOW Sect. 2.3.3	A	1	Five (5) calendar days before PSR
9	Draft Interface Control Document (ICD)	SOW Sect. 3.2.1	R	1	One (1) month after start of contract
10	ICD	SOW Sect. 3.2.1	A	1	Fifteen (15) calendar days before DCR
11	Drawing Package	SOW Sect. 3.2.2	R	1	Fifteen (15) calendar days before DCR
12	Design Conformance Review Presentation Package	SOW Sect. 3.2.3	I	1	Fifteen (15) calendar days before DCR
13	Hot Fire Test Matrix	SOW Sect. 3.2.3	A	1	Preliminary due fifteen (15) calendar days before DCR. Final delivered at PER.
14	Data Delivery Package	SOW Sect. 3.2.4	A	1	With each delivered Flight Unit
15	Verification Test Plan	SOW Sect. 3.2.5	A	1	Fifteen (15) calendar days before DCR
16	Verification Test Procedures	SOW Sect. 3.2.6	R	1	Thirty (30) calendar days before start of testing and as changes occur
17	Contamination Control Plan	SOW Sect. 3.2.7	R	1	Fifteen (15) calendar days before DCR

Item #	Description	Reference	Category	Quantity	Delivery Date
18	Fracture Control Plan	SOW Sect. 3.2.8	R	1	Fifteen (15) calendar days before DCR
19	Qualification Test Report	SOW Sect. 3.2.9	A	1	Fifteen (15) calendar days before DCR
20	Thruster Operational Constraints Document	SOW Sect. 3.2.10	R	1	Preliminary Fifteen (15) calendar days before DCR. Final Delivered at PSR.
21	Thermal Analysis/Model	SOW Sect. 3.3	R	1	Fifteen (15) calendar days before DCR
22	Structural Analysis	SOW Sect. 3.4	R	1	Fifteen (15) calendar days before DCR
23	Quality Assurance Plan	SOW Sect. 5.1.1	R	1	Twenty-eight (28) calendar days after contract award
24	Class I Configuration Management (CM) Changes	SOW Sect. 5.1.3	A	1	Five (5) calendar days after Vendor CM review
25	Class II CM Changes	SOW Sect. 5.1.3	R	1	Five (5) calendar days after Vendor CM review
26	Failure Reports	SOW Sect. 5.1.4	A	1	Five (5) calendar days after Vendor Failure Review Process determines disposition
27	Safety Package	SOW Sect. 5.2.3	A	1	Preliminary fifteen (15) calendar days before DCR. Final thirty (30) calendar days before PSR.
28	Failure Mode and Effects Analysis (FMEA)	SOW Sect. 5.3.1	R	1	Fifteen (15) calendar days before DCR
29	EEE Parts Stress Analysis	SOW Sect. 5.3.2	R	1	Fifteen (15) calendar days before DCR
30	Worst Case Analysis	SOW Sect. 5.3.3	R	1	Fifteen (15) calendar days before DCR
31	Limited-Life Items List	SOW Sect. 5.3.4	A	1	Fifteen (15) calendar days before DCR
32	Verification Matrix	SOW Sect. 5.5.1	A	1	Fifteen (15) calendar days before DCR
33	Trended Parameter List	SOW Sect. 5.5.2	R	1	Fifteen (15) calendar days before DCR
34	Test and Trend Analysis Reports	SOW Sect. 5.5.2	I	1	Delivered at PSR
35	EEE Parts Identification List	SOW Sect. 5.7.1	A	1	Fifteen (15) calendar days before DCR

Item #	Description	Reference	Category	Quantity	Delivery Date
36	Alert/Advisory Disposition and Preparation	SOW Sect. 5.7.6	R	1	Due Monthy following DCR
37	Materials and Processes Identification List	SOW Sect. 5.8.1	A	1	Fifteen (15) calendar days before DCR
38	As-Built Materials List	SOW Sect. 5.8.1	A	1	Five (5) calendar days prior to PSR
39	Materials Usage Agreement	SOW Sect. 5.8.2 and 5.8.3	A	1	Fifteen (15) calendar days before DCR
40	Materials Procurement Certificate of Compliance	SOW Sect. 5.8.7	R	1	Fifteen (15) calendar days before DCR
41	Vendor's Welding and Inspection Procedure	SOW Sect. 5.8.9	A	1	Fifteen (15) calendar days before DCR

APPENDIX A: ABBREVIATIONS AND ACRONYMS

A	Approval
CCB	Configuration Control Board
CDR	Critical Design Review
CM	Configuration Management
CMO	Configuration Management Office
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
DCR	Design Conformance Review
DILS	Deliverable Items List and Schedule
EEE	Electrical, Electronic, and Electromechanical
GPM	Global Precipitation Measurement
GSE	Ground Support Equipment
GSFC	Goddard Space Flight Center
I	Information
ICD	Interface Control Document
MIP	Mandatory Inspection Point
NASA	National Aeronautics and Space Administration
PDR	Preliminary Design Review
PER	Pre-Environmental Review
PSR	Pre-Shipment Review
QA	Quality Assurance
R	Review
SOW	Statement of Work