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FLIGHT PROJECTS DIRECTORATE
GROUND SYSTEMS DEPARTMENT

DATA MANAGEMENT PLAN FOR THE HUNTSVILLE OPERATIONS SUPPORT CENTER (HOSC)

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DATA MANAGEMENT PLAN FOR THE HUNTSVILLE OPERATIONS SUPPORT CENTER (HOSC) MSFC-PLAN-3046

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1.0 INTRODUCTION

The purpose of this document is to establish, in accordance with MWI 7120.5, the data management plan for the Flight Projects Directorate's Ground Systems Department for the Huntsville Operations Support Center (HOSC). This plan covers the Enhanced HOSC System (EHS) Project, which includes HOSC Operations and Maintenance (O&M) and Payload Data Services System (PDSS). Also covered are the Payload Planning System (PPS) Project, the Payload Data Library (PDL) Project, the Telescience Resource Kit (TReK) Project, Utilization Development Capability (UDC), and the Microgravity Telescience Support Center (TSC) Project.

For the purposes of this data management plan, EHS, TReK, PDL, PPS, TSC, and UDC are all considered individual "projects". The HOSC management, organization, relationships and responsibilities are detailed in HOSC-PLAN-623 (Huntsville Operations Support Center Project Plan).

This data management plan is applicable to all HOSC projects under the control of the Flight Projects Directorate – Ground Systems Department (FD40). The Ground Systems Department (GSD) Manager shall authorize and ensure departmental compliance with the requirements of this plan.

This plan shall be controlled in accordance with the configuration control board process established in MSFC-PLAN-2929, "Configuration Management Plan for the Huntsville Operations Support Center (HOSC)".

2.0 APPLICABLE DOCUMENTS

HOSC-PLAN-623	Huntsville Operations Support Center Project Plan
HOSC-SYS-085	HOSC Development Configuration Management Procedures Manual
ISS-002	Drawing Release
ISSA-003	Document Release
ISSA-009	Document Data Quality Assurance
D683-29506-1	PALS Dataset Naming Convention
MWI 7120.4	Documentation Preparation, Programs/Projects

MWI 7120.5	Data Management Plans, Programs/Projects
MPG 1440.2	MSFC Records Management Program
MWI 2190.1	MSFC Export Control Program
MSFC Form 4312	Export Clearance Information Sheet
MSFC-PLAN-2929	Configuration Management Plan for the Huntsville Operations Support Center (HOSC)
SW683-70255-4	Payload Planning System (PPS) Software Engineering Management Plan (SEMP) Volume 4: PPS Software Configuration Management Plan (SCMP)
TREK-002	TReK Project Documentation
TREK-038	TReK Configuration Management Plan

3.0 DEFINITIONS/ACRONYMS

CCB	Configuration Control Board
CER	Center Export Representative
CM	Configuration Management
CMCR	Configuration Management Change Request
COTR	Contracting Officer for Technical Review
COTS	Commercial Off The Shelf
DDS	Distributed Desktop Services
DRB	Document Review Board
FileMaker Pro	A multi-user, relational database application hosted on various MSFC servers (Claris Corporation).
GSD	Ground Systems Department
HMCG	HOSC Management Coordination Group
HOCG	HOSC Operations Coordination Group
HOSC	Huntsville Operations Support Center
Interleaf	A commercially available word processing system.

MSFC	Marshall Space Flight Center
PDL	Payload Data Library
PDS	Project Data System
PDSS	Payload Data Services System
PCB	Project Control Board
PPS	Payload Planning System
TSC	Telescience Support Center
TReK	Telescience Resource Kit
UDC	Utilization Development Capability
Visual SourceSafe	A configuration management tool used for TReK source code and documentation (Microsoft Corporation).

4.0 IDENTIFICATION/DEFINITION OF DATA REQUIREMENTS

It should be noted that the data requirements for the HOSC have been identified, defined and detailed by project document master lists in lieu of an In-House Data Requirements Document (IDRD). A standard IDRD would normally be generated in the planning stages of a project. In this case, however, an IDRD is unnecessary because this data management plan is being implemented relatively late in the life of the HOSC project. The document master list for each project contains the information required to manage the project data and meets the intent of MWI 7120.2.

The data requirements for EHS are identified in the EHS Document Tree Matrix, which is a FileMaker Pro database hosted on the HOSC contractor's "Black Star" server. Distributed Desktop Services (DDS) users may access the database on a read-only basis by entering FileMaker Pro, selecting File/Open/Hosts/Specify Hosts, and entering "black_star". When the list of files on the server appears, select "Doc8.fp3" for the EHS Document Tree Matrix. The Book Manager for the EHS Document Tree Matrix is responsible for maintaining the database. The EHS Document tree matrix contains (but is not limited to) documents generated under Contract NAS8-44000, which is the contract applicable to EHS documents covered by this plan.

The data requirements for PPS are identified in the Payload Planning System (PPS) Document Master List, a FileMaker Pro database hosted on the Ground Systems Department (GSD) Databases server. DDS users may access the database by entering FileMaker Pro, selecting File/Open/Hosts/Specify Hosts, and entering the IP address of the GSD Databases server. Contact the PPS Team Lead for the IP address of the GSD Databases server. When the list of files on the server appears, select "pps_dml.fp3" for the PPS Document Master List. The database is password protected, but guests may view the data on a read-only basis by leaving the password field blank and clicking the

"OK" box. The PPS Team Lead is responsible for maintaining the PPS Document Master List database.

The data requirements for the TSC are identified in the Telescience Support Center (TSC) Document Master List, a FileMaker Pro database hosted on the Ground Systems Department (GSD) Databases server. DDS users may access the database by entering FileMaker Pro, selecting File/Open/Hosts/Specify Hosts, and entering the IP address of the GSD Databases server. Contact the TSC System Engineer for the IP address of the GSD Databases server. When the list of files on the server appears, select "tsc_dml.fp3" for the TSC Document Master List. The database is password protected, but guests may view the data on a read-only basis by leaving the password field blank and clicking the "OK" box. The TSC System Engineer is responsible for maintaining the TSC Document Master List database.

The data requirements for the TReK Project (except document revision information) are contained in Section 4 of TREK-002, "TREK Project Documentation". Currently, all TReK source code and documentation resides electronically in Visual SourceSafe on the NASA "Enterprise" server, where access is password protected. The current revision of all TReK documentation is automatically listed in the "TREK-Documentation" directory on the Enterprise server (refer to Section 6.2 of this document).. The Telescience Systems Team Lead is responsible for maintaining TREK-002. Contact the Telescience Systems Team Lead for access to TREK-002 or other TReK-specific documents.

The data requirements for PDL are identified in the Payload Data Library (PDL) Document Master List, a FileMaker Pro database hosted on the Ground Systems Department (GSD) Databases server. DDS Users may access the database by entering FileMaker Pro, selecting File/Open/Hosts/Specify Hosts, and entering the IP address of the GSD Databases server. Contact the PDL Team Lead for the IP address of the GSD Databases server. When the list of files on the server appears, select "pdl_dml.fp3" for the PDL Document Master List. The database is password protected, but guests may view the data on a read-only basis by leaving the password field blank and clicking the "OK" box. The PDL Team Lead is responsible for maintaining the PDL Document Master List database.

The data requirements for UDC are identified in the UDC Document Master List, a FileMaker Pro database hosted on the Ground Systems Department (GSD) Databases server. DDS users may access the database by entering FileMaker Pro, selecting File/Open/Hosts/Specify Hosts, and entering the IP address of the GSD Databases server. Contact the UDC System Engineer for the IP address of the GSD Databases server. When the list of files on the server appears, select "udc_dml.fp3" for the UDC Document Master List. The database is password protected, but guests may view the data on a read-only basis by leaving the password field blank and clicking the "OK" box.

The UDC System Engineer is responsible for maintaining the UDC Document Master List database.

Contractual data requirements are defined in the individual contract instruments. Data Procurement Documents or Reports of Work are the responsibility of the designated Contracting Officer for Technical Review (COTR).

5.0 PREPARATION

Preparation of internal documents shall be in accordance with MWI 7120.4 (Documentation Preparation, Programs/Projects), unless otherwise specified.

Contractor documents shall be prepared in accordance with the applicable contractual requirements.

6.0 CONTROL PROCEDURES

6.1 CONTRACT DELIVERABLES

Each COTR is responsible for documenting and managing the data to ensure compliance with the data requirements of their contract.

6.2 REVIEW, APPROVAL, AND NUMBERING OF INTERNAL AND EXTERNAL DOCUMENTS

There are three review and approval control processes for HOSC documents under Ground Systems Department control. The processes are defined as Configuration Control (referred to as Level III), Project Control (referred to as Level IV), and Team Control (referred to as Level V).

Configuration Control is the highest level of formal review and approval for HOSC documents under Ground Systems Department control. It affects multiple projects and, therefore, requires representatives (both NASA and contractor, as applicable) from all affected projects to serve on the Configuration Control Board (CCB). All HOSC documents requiring CCB review and approval shall be processed in accordance with MSFC-PLAN-2929 [(Configuration Management Plan for the Huntsville Operations Support Center (HOSC)], which provides a detailed description of the composition and workings of the Level III CCB.

Project Control refers to formal project level review and approval by a board authorized by the Level III CCB. The Project Control Board (PCB) consists of the NASA and contractor project managers and others, as determined by mutual agreement between the project managers. The PCB shall operate in accordance with the Level IV contractor's CM program.

Team Control (Level V) is an informal review and approval process usually reserved for internal team documents. The Team Lead or developer lead (NASA or contractor) shall have review and approval authority for these documents.

The following lists the review and approval authorities for each project.

	Review/Approval Authority		
Project	Configuration Control (Level III)	Project Control (Level IV)	Team Control (Level V)
EHS	1. CMCR Contractor only 2. CMCR NASA approval 3. HMCG control	6.8 CMCR Contractor only 6.8 CMCR NASA approval 6.8 DRB UMS control 6.8 FD41 Database (Lead) 6.8 HOCG	1. O&M Mgr. UMS control 2. O&M Mgr. NASA approval 3. O&M Mgr. NASA review 4. O&M Mgr. NASA (some) approval
PDL	HMCG CCB	PDL Software Review Board (TBD)	PDL Team Lead
PPS	HMCG CCB	PPS Software Review Board	PPS Component Lead
TReK	HMCG CCB	N/A	Telescience System Team Lead
UDC	HMCG CCB	N/A	UDC Team Lead
TSC	N/A	MSFC TSC Project Control Board	TSC Team Lead

All EHS documents shall be numbered and controlled in accordance with HOSC contractor document HOSC-SYS-085 (HOSC Development Configuration Management Procedures Manual). The EHS Document Tree Matrix specifies the individuals (by title and organization) with review and approval authority for each document contained in the matrix.

All PPS Level IV and Level V documents shall be numbered, reviewed and approved in accordance with PPS contractor document SW683-70255-4 [Payload Planning System (PPS) Software Engineering Management Plan (SEMP) Volume 4: PPS Software Configuration Management Plan (SCMP)].

TReK is an internal NASA project and, therefore, all Level III documents are numbered according to NASA procedures. All team controlled TReK project documents are numbered consecutively (e.g., TREK-001, TREK-002, etc.) according to the precedent established in TREK-002, Section 4. TReK documents which are intended for external users are also numbered consecutively, but contain the word “USER” in the document name (e.g., TREK-USER-001, TREK-USER-002, etc.).

All TReK source code and documentation resides electronically in Visual SourceSafe on the NASA "Enterprise" server. The Telescience System Team Lead may delegate authority to the development team members to revise TReK documents, but shall have ultimate review and approval authority for release of all team control documents. TREK documents are updated in accordance with TREK-038 ("TREK Configuration Management Plan) by the TREK development team, and the Visual SourceSafe software maintains revision control and history for all TREK documents. Once a document is "checked back in" following revision, it is automatically listed in the "TREK-Documentation" directory on the Enterprise server as the latest and current version of the document.

The numbering of PDL documents is controlled by four PDL contractor procedures: ISS-002, (Drawing Release), ISSA-003 (Document Release), ISSA-009 (Document Data Quality Assurance), and D683-29506-1 (PALS Dataset Naming Convention). PDL is in the process of transitioning from an engineering tool to a program level application. It is anticipated that a project control board will be formed having approval authority for Level IV documents, and that the PDL Team Lead will have approval authority for all PDL Level V documents. When this review and approval process has been formalized, this plan will be updated to document this process.

Presently, the TSC Project is in the formative stages. The numbering of all TSC documents shall be consistent with the numbering convention established for the PDS system. The Marshall Space Flight Center (MSFC) TSC Project Control Board, which is the planned Level IV PCB, has not yet been formed. When in place, the TSC PCB is expected to have review/approval authority for any Level IV TSC documents. When this review and approval process has been formalized, this plan will be updated to document this process. The TSC Team lead shall have the review and approval authority for all TSC Level V documents.

The UDC Project is being discontinued and, therefore, no additional documents are anticipated.

6.3 CONFIGURATION CONTROL

The configuration of all Level III HOSC documents shall be controlled in accordance with MSFC-PLAN-2929 [Configuration Management Plan for the Huntsville Operations Support Center (HOSC)].

6.4 PROJECT-SPECIFIC FORMS AND DATA CONTROL

All project managers shall document the control of project-specific forms.

The EHS configuration management plan, HOSC-SYS-085 (HOSC Development Configuration Management Procedures Manual) identifies EHS project-specific forms, the control of the data, and specifies the control mechanism for those forms.

The PPS Project uses several project-specific forms, provided and controlled by the PPS contractor. A description of these forms and their application is provided in SW683-70255-4 [Payload Planning System (PPS) Software Engineering Management Plan (SEMP) Volume 4: PPS Software Configuration Management Plan (SCMP)].

The TReK Customer Input Form is a vehicle for TReK users to provide feedback to the Telescience Systems Team on the TReK software. The form is part of the TReK beta-release software and, therefore, is under the control of TREK-038 (TReK Configuration Management Plan). Customer Input Forms completed by TReK users are assigned a tracking number and are retained by the Telescience Team Lead. Completed Input Forms are reviewed and evaluated by the Telescience Team Lead for impact and possible inclusion in the TReK software.

The TReK Problem Report database is an internal tool used on the TReK Project for documenting and tracking problems, customer feedback and future enhancements to the TReK software. TReK Problem Reports are issued a tracking number and are maintained in a Filemaker Pro database on the GSD Databases server. The Telescience Team and software validation contractor are responsible for entering and resolving the TReK Problem Reports, and have sole write-access to the database.

PDL has two project-specific forms, the Problem Report Form and the Report Request Form. The Problem Report Form is embedded in the “Help” utility of the PDL software and is used to identify problems associated with the PDL application. Problem Reports are tracked internally by the PDL contractor, on an informal basis, in an Oracle database contained in the PDL software.

The Report Request Form is a form which PDL users can employ to request PDL reports. The PDL contractor informally tracks the Report Requests in an Oracle database contained in the PDL software. The Report Request Form is controlled electronically, and the most current form may be accessed on the PDL web page (http://pdl.msfc.nasa.gov).

6.5 CONTROL PROCEDURES FOR INFORMAL CORRESPONDENCE

Each project manager shall retain any records of informal correspondence deemed to be important to their project, at their discretion. The method of record retention is also at the discretion of the project manager, and records may be kept in any media or format.

6.6 IDENTIFICATION AND CONTROL OF RESTRICTED DISTRIBUTION DOCUMENTS

Some HOSC documents are restricted in their distribution for security reasons. Documents having restricted distribution are identified by a "Yes" in the "Restricted Distribution" field in the applicable document master list. Requests for access to HOSC documents with restricted distribution (all projects) may be directed to the NASA HOSC Computer Security Official, as listed on the EHS Document Tree Matrix "cross-reference".

All EHS documents are maintained electronically by the EHS contractor at the contractor's facilities. Documents having unrestricted distribution may be accessed on the Red Dwarf web page (https://red-dwarf.msfc.nasa.gov).

Currently, all TReK documentation is maintained electronically in Visual SourceSafe on the NASA "Enterprise" (TReK) server, where access is password protected. Contact the Telescience Systems Team Lead for access to unrestricted TReK-specific documents.

Presently, there are only two TSC documents. The current plan is for TSC documents to be available online (electronic media) in the Project Data System (PDS). For access to hardcopies of unrestricted TSC documents, contact the TSC System Engineer.

PDL documentation may be accessed electronically on the PDL web page (http://pdl.msfc.nasa.gov). For access to unrestricted documents not listed on the PDL web page, contact the PDL Team Lead.

PPS documentation is presently maintained electronically in "Interleaf" by the PPS contractor at the contractor's facilities. For access to hardcopies of unrestricted PPS documents, contact the PPS Team Lead.

UDC documents are maintained electronically by the UDC System Engineer. Contact the UDC System Engineer for access to unrestricted UDC documentation.

6.7 IMPORT/EXPORT PROCEDURES

Individuals wishing to export data shall complete an Export Clearance Information Sheet (MSFC Form 4312) and submit the form to the Flight Projects Directorate Center Export Representative (CER) for processing. The CER shall then process the submitted Form 4312 in accordance with MWI 2190.1 (MSFC Export Control Program). Currently, the import of documents/data into the HOSC is not applicable.

6.8 RESTRICTED RIGHTS SOFTWARE AND LIMITED RIGHTS DATA CONTROL

Each project manager shall identify any proprietary software and any proprietary data used in their project, whether used in the direct development of HOSC software or incidental to the management of their project. Project managers shall be responsible for ensuring that proprietary software and/or data used on their project is utilized within the limitations stipulated in the licensing agreement. Additionally, project managers shall identify any HOSC software or data proprietary to NASA developed for their project, as applicable.

6.9 CONTROL OF CLASSIFIED MATERIAL

There are no classified HOSC documents.

6.10 SCHEDULE, STATUS AND TRACKING OF INTERNAL AND EXTERNAL DATA

The project manager for each project shall be responsible for the schedule and tracking of their own project documentation.

The Software Development Schedule for EHS software is in a FileMaker Pro database hosted on the HOSC contractor's "Black Star" server. Distributed Desktop Services (DDS) users may access the database on a read-only basis by entering FileMaker Pro, selecting File/Open/Hosts/Specify Hosts, and entering "black_star". When the list of files on the server appears, select "SDS database.fp3" for the EHS Software Development Schedule.

7.0 RECORD MANAGEMENT

Refer to Section 4 of this document for identification and location of document master lists for each HOSC project. Refer to Section 5 for the media type and access instructions for HOSC project documentation.

The Book Manager for each document, as specified in the project master list, shall be the document custodian. Book Managers are responsible for maintaining the revision history of documents under their control.

All HOSC CCB records shall be maintained in accordance with MSFC-PLAN-2929 [Configuration Management Plan for the Huntsville Operations Support Center (HOSC)], which describes the records to be kept, the responsible organization and the storage location. The HOSC configuration management plan also specifies the retention schedule and media for the records.

Project managers shall ensure that Record Plans are filed in accordance with MPG 1440.2 (MSFC Records Management Plan), for all project documents under their control.

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