

Flight Projects Directorate / Ground Systems Department FD40		
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APPENDIX B. PRODUCT IMPLEMENTATION PLANS

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Product Implementation Plan (PIP)

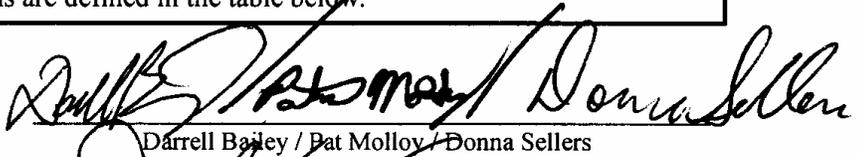
Title: Mission Systems	Export POC:	Bill Mordan
Team/Project Leader: Darrell Bailey	Systems Engineer:	Darrell Bailey
Release Authority: Darrell Bailey	Scheduler:	Barry Bryant

Reference CWC(s) for Budget, Schedule, and Requirements: FD-FB-FR-FI-04 (POIC)

Approach for Accomplishing Requirements: The requirements are for an extensive suite of integrated tools, facilities, and operational capabilities, which will enable operations of payloads/experiments on space platforms – principally the International Space Station. The approach is to acquire related support for development/integration and sustaining engineering through the HOSC Contract.

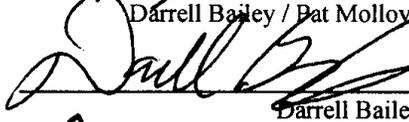
- Design, development, integration and test processes/procedures are defined in the table below.
- Government and contractor application of the MPD 1280.1/ISO-9000/AS9100A standards is as defined in HOSC-PLAN-661, HOSC Quality Plan, as synopsised herein.
- Customer functional and performance requirements for the system are defined in MSFC-PLAN-904. System- and lower-level requirements are defined in the system specification/documentation.
- Technical interfaces are defined in the system specification documentation and ICDs.
- The system life cycle model, defining inputs and outputs for each activity, development and management activities to be carried out, and technical/milestone reviews is as specified in MSFC-PLAN-2929 HOSC CM Plan.
- The master schedule identifies activity stages, reviews, baselines, related activities, resource requirements, associated dependencies, milestones and test activities.
- Team awareness and training requirements are indicated in the table below.
- Contractor design and development is per MIL-STD-2167A (tailored), as defined in the System Development Plan and Software Quality Assurance Plan.
- Design, development, verification, test, servicing and operations surveillance and product assurance/acceptance is by GSD personnel.
- Product design, development, verification, test, and sustaining engineering is by contractor personnel.
- Records requirements and custodians are defined in the table below.

Prepared by: Team/Project Leader



 Darrell Bailey / Pat Mollov / Donna Sellers

Approved by: Group Leader



 Darrell Bailey

Approved by: Project Manager



 Ann McNair

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Tables 1 and 2 below define codes for the specific quality system functions involved in this Mission Systems activity along with designation of who is responsible for performing the function. These codes are used in Table 3 to define who uses what procedures and who the records custodians are. Shading in the code cell indicates functions that support multiple activities (i.e., PIPs). These tables are updated on a semi-annual basis only.

Table 1 - Government

Code	Function	Responsibility
GLG	Development Group Lead	Darrell Bailey
TLG	Team Lead – Systems Development	Pat Molloy (DB, HPR board)
	Team Lead – Systems Integration	Donna Sellers (V&V, Systems Management)
SEG	Systems Engineer	Darrell Bailey
MSA	Mgt Support Assistant	Victoria Hilty
GPO	Government Procurement Office	--
CO	Contracting Officer	George Harvey, Lisette Kummer, asst.
COTR	Contracting Officer's Technical Rep	Bill Mordan
EXG	Export Control official	Bill Mordan
BMG	Business Management Office	Georgia James
SMA	MSFC S&MA (incl. Safety Office)	--
MRG	Management Representative	Bill Mordan
SSG	Security Official	Pattie Miller
VLG	IV&V Lead	Susan Best
ALG	Safety ALERT Coordinator	Doug Fooshee
FCG	Facility Coordinator	Brenda Wade, Bill Evans
SGS	Building Safety Coordinator	Jimmy Hill, Brenda Wade (4663/4650)
DBG	DBCG Chairperson	Mike Savage
CPG	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance

Note, this table does not indicate quality system-related functions for all of the Mission Systems personnel, for example Kevin Nichols, Jim Whitaker, Joel Best, and Julia Walton. It may be helpful to them to determine/review their roles in the quality system.

Table 2 - Contractor

Code	Function	Responsibility
PMK	Project Manager	Dick Marmann
GLK	Group Lead	Dave Johnson, Frank VanLandingham
OLK	Operations Lead	Doug Towne
MSK	Management Support Assistant	Darlene Belgrave
SEK	Systems Engineer	Barry Bryant
		Lee Pitts
		Greg Brown
		Dan Dodson
SWK	Software Engineer	George Ritter (telemetry)
		Pat Guillebeau (database)
		Bobby Neutze (PDSS)
		Greg Redman (System Support)

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HEK	Hardware Engineer	Aladin Beshir
NEK	Network Engineer	Larry Schneider
VLK	IV&V Lead	Kim Lankford
BMK	Business Management Office	Jonas Clem
HMK	HMCG Secretariat	Tom Wright
CMK	Contractor CM Secretariat	Mary Jane Brooks, Janice Branch, Angela Perkins
DMK	Data Mgt & HPR DB Coordinator	Mary Jane Brooks
MRK	Management Representative	Phillip Sommers, Todd Norton
HSDK	HOSC Support Desk	Sparky Goodman
WLCK	Workload Control	Chris Reid
SMK	System Administrator	Jerry Collins
SYK	System Controllers (SYSCON)	Devin Smith
ALK	Safety ALERT Coordinator	Randy Hargrove
HOK	Ops Planning and Integration	Dennis Botts, Nick Bornas
TRNK	User Training Coordinator	Barbara Tepper
TRIK	IST Training Coordinator	Sparky Goodman
MAK	Maintenance Lead	Doug Newton
FCK	Facility Coordinator	Kevin Clark
SGK	Building Safety Coordinator	Rick Houston (4610)
SAK	Safety Coordinator	Todd Norton, Linda Myszka
DBK	Database Lead	Pat Guillebeau
SCHK	Scheduler	Barry Bryant, Chris Reid
CPK	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance
PRK	Property Coordinator	Doug Newton

Table 3 below:

- Specifies the procedures used by civil service and contractor personnel for each ISO element and sub-element. Absence of a Mission Systems-unique procedure indicates use of the standard procedure. Contractor procedures support these indicated/specified procedures.
- Provides guidance for developing “records plans”. Records that are shown **bolded** are the mandatory subset.
- Reflects the total quality system. The quality system is designed to ensure consistent satisfaction of the customer requirements and achievement of the Project objectives. [Combining the Table 3 below with the functional assignments listed above, in Tables 1 and 2, defines individual roles in the satisfaction of the customer requirements and achievement of the Project objectives.](#)

Note, the codes listed in Tables 1 and 2 define the quality system functions involved in this Mission Systems activity. Appearance of function codes in Table 3, which are not defined in Tables 1 or 2, indicates that the function is not part of the Mission Systems activity and is covered under another PIP.

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
1	1 4.1	Purpose	Quality Plan (QP) Section 1		All		--
2	1 4.1	Applicability and Scope	QP Section 2		All		--
3	4.1	Authority, Review, Acceptance, and Revision	QP Section 3		MRG		--
4	4.2.3.f	Applicable Documents	QP Section 4		MRG		--
5	4.2.3.f	References	QP Section 5		MRG		--
6	3	Definitions/Acronyms	QP Section 6		All		--
7	--	Policy	QP Section 7		MRG		--
7.1	--	Organization and Administration	QP Section 7.1		MRG		--
7.1.1	5.5.1	Management Responsibility			MRG		--
7.1.1.1	5.1	Management Commitment	Section 7.1.1.1		All		--
7.1.1.2	4.2.1.a 5.3	Quality Policy	Section 7.1.1.2		All		--
7.1.1.3	4.2.1.a 5.4.1 8.2.1	Quality Goals, Objectives, and Principles	Section 7.1.1.3		All	Management Metrics Package	OUTL
7.1.1.4	5.5.1 5.5.3	Organization	Section 7.1.1.4		All		--
7.1.1.4.1	5.5.1	Management Responsibility and Authority	Section 7.1.1.4.1		Mgrs and Leads		--
7.1.1.4.2	4.1.d 6.1	Resources	Section 7.1.1.4.2		Mgrs and Leads		--

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
7.1.1.4.3	5.5.2	Management Representative	Section 7.1.1.4.3		Mgrs, Leads, MRG		--
7.1.1.5	4.1.c 5.6 8.2.2	Management Review	Section 7.1.1.5		Mgrs, Leads, MRK	Continuous Improvement (CI) Database MRB Agenda and Minutes	MRK MRK
7.1.2	--	Quality System					
7.1.2.1	4.1	General	QP Section 7.1.2.1		All		
7.1.2.2	4.1.a, b 4.2.1.b-d 4.2.1.f 4.2.2 4.2.3.d	Quality System Procedures	QP Section 7.1.2.2 HOSC-PLAN-661, Quality Plan for the HOSC (QP) MSFC-PLAN-3046, Data Management Plan (DMP) MSFC-PLAN-2929, Configuration Management Plan (CMP)		All	"Records" are the procedures themselves	Procedure OPRs
7.1.2.3	8.4	Analysis of Data	QP Section 7.1.2.3		All		--
7.1.2.4	4.1.f 8.5.1	Continual Improvement	QP Section 7.1.2.4 (Annual documentation review)		All, esp. document OPRs	CI (ref. 7.1.6)	--
7.1.3	5.2	Customer-Related Processes					
7.1.3.1	5.2	General	QP Section 7.1.3.1 HOSC-PLAN-623, HOSC Project Plan (PP) Section 9.1 CMP		Mgrs, Leads, DEV, O&M, BMG	Collaborative Work Commitment (CWC)	BMG
7.1.3.2	5.2 7.2.1	Determination Of Requirements Related To Products	QP Section 7.1.3.2 CMP		Mgrs, Leads, DEV	Engineering Change Request (ECR) MSFC-PLAN-904	HMK HMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
7.1.3.3	5.2 7.2.1	Review of Requirements Related to Products	QP Section 7.1.3.3 CMP (change process)		Mgrs, Leads, and DEV	Review Plans/Minutes ECR and Change Package	CMK ?? HMK
7.1.3.4	5.2 7.2.3	Customer Communication	QP Section 7.1.3.4		All		--
7.1.3.5	5.2 8.2.1	Customer Satisfaction	QP Section 7.1.3.5 FPD-OI-FD01.1, Management Process		All	HOSC User Survey How Are We Doing Survey	OUTL PMG
7.1.4	4.2.3	Data Management, Including Document and Data Control	QP Section 7.1.4		All		--
7.1.4.1	4.2.3	General	QP Section 7.1.4.1 CMP DMP		All		--
7.1.4.2	4.2.3 7.1.4.2	Document and Data Approval and Issue	QP Section 7.1.4.2 CMP DMP		All	ECR CI Master List including Release Authority	HMK MRK HMK (Level III), DMK/CMK (Level IV)
7.1.4.3	4.2.3 7.5.1.2	Document and Data Changes	QP Section 7.1.4.3 CMP DMP		All	ECR CI	HMK MRK
7.1.4.4	4.2.3.f	References and Standards	QP Section 7.1.4.4		Leads and DEV Engineers	Evidence of references/standards currency	??
7.1.5	5.5.1	Process Control	QP Section 7.1.5		All		--
7.1.5.1	6.3	Infrastructure	QP Section 7.1.5.1		All	HOSC Problem	DMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.10, HOSC Problem Report (HPR)			Report (HPR) How Are We Doing Survey	PMG
7.1.5.2	7.5.1	Control of Production and Service Provision	QP Section 7.1.5.2		Leads		
7.1.5.2.1	7.5.1 7.1.5.2	Production / Design and Development	QP Section 7.1.5.2.1 DMP CMP Government procedure in Section 7.8.1		Development Leads, DEV All Developers	ECR System Specification/Development Folders including ops and maintenance planning, etc. documentation	HMK CMK, Level IV CM
7.1.5.2.2	7.5.1 7.5.1.5 7.5.2	Service Provision	QP Section 7.1.5.2.2 HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD43.1, Ground Systems Operations MSFC-PROC-1933, HOSC Access Procedures MSFC-PLAN-2934, HOSC Emergency and Disaster Recovery Plan HOSC-HDBK-003, HOSC Facilities Document FPD-OI-FD40.10 – HPR HOSC-PLAN-209, IST Training Plan		Ops Leads, O&M Integrated Support Team	IST Personnel Certification (per HOSC-PLAN-209 and FPD-OI-FD40.4) IST Procedures Certification (per FPD-OI-FD40.4) Incident Report (per HOSC-HUH-233)	IST Discipline Lead IST Discipline Lead HSDK
7.1.5.2.3		Control of Research and Technology Activities	QP Section 7.1.5.2.3 MPG 8220.1, Conduct of Research		Mgrs, Leads, R&T Engrs.	Proposal Authority to	R&T Engr R&T Engr

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			and Technology Activities			Proceed Research Plan Research Record Review Record	R&T Engr R&T Engr R&T Engr
7.1.5.3	6.4	Work Environment	QP Section 7.1.5.3		All	HPR How Are We Doing Survey	DMK PMG
7.1.5.4	7.5.2	Validation of Processes for Production and Service provision	QP Section 7.1.5.4		Leads	N/A	--
7.1.5.5	8.2.3	Monitoring and Measurement of Processes	QP Section 7.1.5.5, 7.1.6, 7.1.7		All	N/A	--
7.1.6	4.1.f 8.1 8.2.3 8.4 8.5.1	Corrective and Preventive Action and Continual Improvement	QP Section 7.1.6		Mgrs and Leads All Aware	N/A	--
7.1.6.1	4.1.f 8.4 8.5.1 8.5.2	Corrective Action	QP Section 7.1.6.1 FPD-OI-FD40.10, HOSC Problem Report MWI 8621.1, Close Call and Mishap Reporting and Investigation		Esp. Mgrs and Leads All Aware	HOSC User Survey HPR How Are We Doing Survey Continuous improvement (CI) Mishaps/Investigation results	OUTL DMK PMG MRK S&MA
7.1.6.2	4.1.f 8.4 8.5.1	Preventive Action	QP Section 7.1.6.2 HOSC-PLAN-635, Risk Management Plan for the HOSC Project		Esp. Mgrs and Leads All Aware	Risk Identification and Analysis Form (RIAF)	MRK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
	8.5.3						
7.1.6.3	8.4	ALERTs	QP Section 7.1.6.3 MWI 1280.5, MSFC ALERT Processing		OLG, ALG SSG SMG SMK	ALERT (Safety) ALERT (Security)	ALG/ALK SSG
7.1.7	4.2.4	Control of Records	QP Section 7.1.7		All	QP Appendix C Records Plans	PMG
7.1.8	8.2.2	Audits	QP Section 7.1.8		Mgrs, Leads, MRG, MRK	N/A	--
7.1.8.1	8.2.2	Internal Quality Audits	QP Section 7.1.8.1		MRG Mgrs and Leads	Audit Schedule Audit Results CI, RIAF	MRG MRG MRK
7.1.8.2	5.4	Customer Audits	QP Section 7.1.8.2		MRG		--
7.1.8.3	7.4.3	Audits of Contractors	QP Section 7.1.8.3		Mgrs and Leads	Official records of initial proposals and proposal evaluation notes Semi-annual contractor evaluations	GPO COTR
7.1.8.4	5.6 8.2.2	Third-Party Audits	QP Section 7.1.8.4		Esp. Mgrs and Leads All aware	Official versions of Audit Schedule and Results are maintained by S&MA	S&MA
7.1.9	7.5.1	Servicing	QP Section 7.1.9 FPD-OI-FD40.7, Remote Servicing Plan FPD-OI-FD43.1, Ground Systems Operations		Leads	HPR HCR ECR (as defined in	DMK WLCK HMK

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.10, HOSC Problem Report FPD-OI-FD43.2, HOSC Configuration Request CMP			procedures)	
7.1.9.1	7.5.1	Regulatory and Legislative Requirements	QP Section 7.1.9.1 MPG 2190.1, MSFC Export Control Program		Leads	Export Control Records	EXG
7.1.9.2	7.5.1	Industry Codes and Practices	N/A		MRG		--
7.1.9.3	7.5.1	Service Level Agreements	QP Section 7.1.9.3 Per CWC CMP FPD-OI-FD43.2, HOSC Configuration Request HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures KSC HB GP60-3, Automated Support Requirements System (ASRS) Handbook JSC-27379, Support Requirements System Management Plan		Ops Leads	Service Level Agreements (SLA) are documented in the POIC Capabilities Document (SSP 50304) Section 12 ECR HCR SLA Metrics	HMK HMK WLCK OUTL
7.1.9.4	6.2.2 7.5.1	Training of Customer Personnel	QP Section 7.1.9.4 HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.7 – Remote Servicing Plan		OLG, OUTL OLK SWG SWK	Training Record	TRNK
7.1.9.5	7.5.1	Technical Support	QP Section 7.1.9.5 CMP		Leads	CWC SLA HPR	BMG HMK DMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.10 – HPR FPD-OI-FD40.7 – Remote Servicing Plan <i>(Local servicing is by application of all the other cited procedures)</i>			ECR	HMK
7.2	--	Legal and Technical	QP Section 7.2		Mgrs		--
7.3	6.2.1 6.2.2	Human Resources/Personnel and Administration	QP Section 7.3 Multiple References		Esp. MSA All Gov't Personnel	Many; administrative nature	MSAs and Leads
7.3.1	6.2.1 6.2.2	Competence, Awareness, and Training	QP Section 7.3.1 FPD-OI-FD43.1, Ground Systems Operations HOSC-PLAN-209, IST Training Plan FPD-OI-FD01.1, Management Process		All, Particularly Mgrs and Leads	Training/Certification Record Training Plan Attendance Record IST Training/Certification IT Training Record Safety Training Records	Mgrs and Leads MRG MRG TRIK Ctr. Ops. Directorate Supervisor Safety Web Page
7.4	--	Property and Supply					
7.4.1	7.5.4	Control of Customer-Supplied Product	QP Section 7.4.1 FPD-OI-FD40.10 – HPR HOSC-HUH-233, HOSC User Handbook FPD-OI-FD43.2, HOSC Configuration Request Includes updates for PPS SW from JSC, DBs, etc. (notification via e-mail; load via HCR)		OLG, FCG OLK, FCK SWG SWK	HPR GSE paperwork HCR Record of any lost, damaged or unsatisfactory customer property (via HPR)	DMK FCG WLCK DMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
7.4.2	7.5.5	Control of GSD/Project Property	QP Section 7.4.1 MPG 4000.2, MSFC Property Management		Esp. FCG, FCK All	Property Record Maintenance parts tracking (major)	PRK, FCG MAK
7.5	--	Procurement/Purchasing					
7.5.1	7.4.1	Process	QP Section 7.5.1 FPD-OI-FD40.11 – GSD Purchase Planning FPD-OI-FD40.12 – Task Directives FPD-OI-FD40.13, HOSC Contract Performance Evaluation		Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. copy Task Directives Contractor Performance Evaluation Procurement Plan	GPO Mgrs and Leads BMG COTR BMG
7.5.2	7.4.2	Purchasing Data	QP Section 7.5.2		Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. version Task Directives Credit Card Purchase Records Waiver (none given)	GPO Mgrs and Leads BMG CCH N/A

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
7.5.3	7.4.3	Verification of Purchased Product	QP Sections 7.5.3 PP Reference 7.8.1 and 7.8.3		Mgrs and Leads, BMG, COTR	Monthly/Quarterly reports Contractor Performance Evaluation Reference 7.8.1 and 7.8.3	GPO COTR VLG/VLK
7.6	7.5.5	Transportation	QP Sections 7.6		MRG	N/A	--
7.6.1	7.5.5	Handling, Storage, Packaging, Preservation, and Delivery (HSPPD)	QP Section 7.6.1		Mgrs, Leads, SSG, SMG, SMK, SYK	HPR	DMK
7.6.1.1	7.5.1.3 7.5.5	Products in Development	QP Section 7.6.1.1 MSFC-RQMT-2467, HOSC ITS Requirements HOSC-PLAN-009, HOSC Contingency Plan HOSC-SYS-085, HOSC Configuration Management Procedures Manual		Development Leads, SEG		
7.6.1.2	7.5.1.3 7.5.5	Products in Operations/Utilization	QP Section 7.6.1.2 HOSC-PLAN-009 CMP MSFC-PLAN-2934 MSFC-RQMT-2467 HOSC-PROC-180		Ops Leads		
7.7	--	Project Formulation					
7.7.1	5.4.2 7.1	Quality Planning	QP Section 7.7.1		All	This PIP Official PIP in QP; ref. versions used by	PMG

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						government and contractor leads and personnel	
7.8	--	Project Management/Systems Engineering	QP Section 7.8		Mgrs and Leads		--
7.8.1	--	Design and Development	QP Section 7.8.1		Mgrs and Leads		--
7.8.1.1	4.3 7.1 7.5.1 8.1	General	QP Section 7.8.1.2 PP Section 9.1 CMP		Mgrs, Leads, Engrs, DEV, HMK, CMK	CWC ECR MSFC-PLAN-904 Any Customer-defined Specifications and Standards (in ECR)	BMG HMK HMK HMK
7.8.1.2	7.1 7.3.1	Design and Development Planning	QP Section 7.8.1.2 CMP		PMG, GLG, TLG, SEG, HMK, PMK, GLK, SEK, Engrs, DEV, VLG, VLK	PIP Schedule ECR Change Package Verification plan/procedures	PMG/TLG SCHK HMK VLG, VLK
7.8.1.3	7.3.1	Organizational and Technical Interfaces	QP Section 7.8.1.3 PP CMP		Mgrs, Leads, Engrs, BMG, HMK, DEV	CWC ECR Interface Control Document	BMG HMK HMK
7.8.1.4	7.3.2	Design and Development Inputs	QP Section 7.8.1.4 CMP DMP MWI 1280.5 (ALERTs) for Safety		Leads, Engrs, DEV, HMK, CMK, BMG, ALG, ALK, SSG, MRK	CWC ECR MSFC-PLAN-904, HOSC Functional Requirements and	BMG HMK HMK

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			and Security aspects			Implementation Plan – including any applicable Legal, Regulatory and Statutory Requirements ALERT Standards RIAF	ALG/ALK/SSG SEG/K MRK
7.8.1.5	7.3.3	Design and Development Outputs	QP Section 7.8.1.5 CMP		Leads, Engrs, DEV, HMK, CMK	System Specifications Build Release Pkg/ Development Folder Verification/Test Plan Per MSFC-HDBK-3173 for milestone reviews	HMK (Level III) CMK (Level IV) VLK (Level IV)
7.8.1.6	7.3.4	Design and Development Review	QP Section 7.8.1.6 CMP		Mgrs, Leads, Engrs, CMK, MRK, DEV	Review Announcement RID RIAF Reqmts Review Record Design Review Record	PMG CMK MRK CMK CMK
7.8.1.7	7.3.5 7.3.6.1 8.2.4 8.2.4.1	Design and Development Verification	QP Section 7.8.1.7 CMP		Leads, Engrs, DEV, VLG, VLK, CMK, DEV	Verification/Test Results Internal PR	VLG/VLK VLG/VLK

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
7.8.1.8	7.3.6 7.3.6.1 8.2.4	Design and Development Validation	QP Section 7.8.1.8 CMP FPD-OI-FD40.10, HPR		Leads, Engrs, DEV, VLG, VLK, DMK	HPR Validation Results	DMK VLG/VLK
7.8.1.9	7.3.6.2 8.2.4 8.2.4.1	Design and Development Verification and Validation Testing	QP Section 7.8.1.8 <i>Ref CMP</i>		Leads, Engrs, DEV, VLG, VLK	Verification/Test Plan/Procedure Verification/Test Results	VLG/VLK VLG/VLK
7.8.1.10	7.3.7	Control of Design and Development Changes	QP Section 7.8.1.10 CMP FPD-OI-FD43.2, HOSC Configuration Request		Mgrs, Leads, Engrs, DEV, CPG, CPK, HMK, CMK, SCHK, WLCK, SCHK	ECR and Change Package Minor OS change via HCR OS, DB, PPS update notification e-mail Build/Load schedule DB load via HCR	HMK WLCK Leads ?? SCHK WLCK
7.8.2	7.5.1.1 7.5.3	Product Identification and Traceability	QP Section 7.8.2 CMP FPD-OI-FD40.10, HPR		Leads, Engrs, DEV, CPG, CPK, CMK, HMK, VLG, VLK	ECR/PCN System Specification and other documentation such as prescribed in MSFC-HDBK-3173 Build Release Package Code Handover Checklist HPR DB ID and Trace Logs HW, SW, Document labels	HMK HMK (Level III) CMK ?? (Level IV) CMK VLG/VLK DMK HMK/CMK HMK/CMK PRK

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
7.8.3	8.1	Monitoring and Measurement of Product and Process	QP Section 7.8.3		Mgrs, Leads, MRG	Reference 7.8.1.1 - 7.8.1.10	--
7.8.3.1	8.2.4	Plans and Procedures	QP Section 7.8.3.1		Leads	Reference 7.8.1.2	--
7.8.3.2	8.2.4	In-Process Inspection and Testing	QP Section 7.8.3.2		Leads, Engrs, DEV	Reference 7.8.1.6 and 7.8.1.9	Ref
7.8.3.3	8.2.4	Receiving Inspection and Testing	QP Section 7.8.3.3 CMP – Verification and Audits FPD-OI-FD40.10 – HPR CMP – Deviations and Waivers		Leads, Engrs, DEV, HMK, CMK, DMK, VLG, VLK, OLG	Verification/Test Plan HPR Build Release Packages Deviation/Waiver (via HPR)	VLG/VLK DMK CMK DMK
7.8.3.4	8.2.4	Final Inspection and Testing	QP Section 7.8.3.4 FPD-OI-FD40.10 – HPR FPD-OI-FD40.4, Flight Certification for Ground Systems		Leads, Engrs, DEV, Ops Leads, DMK	HPR Readiness Review/Issues List FD41 and FD42 GLG Letter to OLG CoFR	DMK OLG OLG PMG
7.8.3.5	8.2.4	Inspection and Test Records	QP Section 7.8.3.5		Leads, Engrs, DEV, VLG, VLK, CMK	Verification/Test Plan Verification/Test Results Reference 7.8.3.2 – 7.8.3.4	VLG/VLK VLG/VLK Ref
7.8.3.6	4.1.e 8.2.1 8.2.3	Monitoring and Measurement of Process	QP Section 7.8.3.6 PP HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.10 – HPR		MRB members, i.e., Mgrs, Leads, MRG, MRK	Monthly Reports Safety Incidents/Statistics Surveys Threats	GPO S&MA OUTL/PMG MRK

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			RMP CMP			Incident Reports HPR CI RIAF Audit Reports CM Audit Reports	HSDK DMK MRK MRK MRG HMK
7.8.4	7.5.1.3 7.6	Control of Monitoring and Measuring Devices	QP Section 7.8.4 HOSC-PROC-180, HOSC Standard Operating Procedures CMP FPD-OI-FD40.10 – HPR	N/A	<u>For HW:</u> OLG, OLK, MAK, <u>For SW:</u> Dev. Leads, VLG, VLK <u>For Database:</u> DBG, DBK	<u>For HW:</u> HW Calibration Records <u>For SW:</u> ECR HPR Test plans/results (SW) <u>For Database:</u> DBCR	MAK HMK DMK VLG/VLK DBK
7.8.5	7.5.3	Inspection and Test Status	QP Section 7.8.5	N/A	SCHK, VLG, VLK, CMK, DEV, OLG	Test schedule Release Notes/Report Deviation/Waiver (via HPR) Dev. Folder Internal PR HPR Log IV&V Test Report Readiness	SCHK, VLK VLG/VLK DMK Developer VLG/VLK DMK VLG/VLK OLG

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
						Review/Issues List	
7.8.6	8.3	Control of Nonconforming Product	QP Section 7.8.6 FPD-OI-FD40.10, HPR CMP – Deviations and Waivers MWI 1280.5 (ALERTs)		All	IPR HPR Release Notes/Defects Report Deviation/Waiver (via HPR) ALERT MTBF	VLG/VLK DMK VLG/VLK DMK ALG/ALK /SSG OUTL
7.8.7	8.1 8.2.1 8.4	Statistical Techniques	QP Section 7.8.7 FPD-OI-FD43.1, Ground System Operations HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD01.1, Management Process		Mgrs, Leads	User Survey HPR Incident Report Management Metrics Package	OUTL DMK HSDK OUTL
8		Safety					
8.1		System Safety	QP Section 8.1 HOSC-PLAN-635, HOSC Risk Management Plan (RMP)		Leads and Engrs	RIAF	MRK
8.1.1		System Safety Tools	QP Section 8.1.1 CMP RMP MWI 1280.5 (ALERTs)		Mgrs, Leads and Engrs	RIAF ALERT (Safety) ALERT (Security)	MRK ALG/ALK SSG
8.1.2		Safety Review Board Support	QP Section 8.1.2 FPD-OI-FD40.4, Flight		All (aware)	Ref. 8.1.3	--

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Table 3 – Mission Systems Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
			Certification for Ground Systems				
8.1.3		Certification Of Flight Readiness (COFR)	QP Section 8.1.3 FPD-OI-FD40.4, Flight Certification for Ground Systems		All (aware)	CoFR	PMG
8.1.4		Range Safety	QP Section 8.1.4				
8.1.5		Space Debris Safety	QP Section 8.1.5				
8.1.6		Contingency Planning	QP Section 8.1.6 HOSC-PLAN-009, HOSC Contingency Plan MSFC-PLAN-2934, HOSC Emergency Disaster and Recovery Plan		OLG, OLK, FCG, FCK, SSG, SMG, SGS, SGK, SMK, SYK,		
8.1.7		Nuclear Safety For Launching of Radioactive Materials	QP Section 8.1.7				
8.2		Industrial Safety	QP Section 8.2		Mgrs, FCG, FCK		
8.2.1		Safety Meetings	QP Section 8.2.1 FPD-OI-FD01.1, Management Process		All (aware) SAK	Monthly Safety Meeting Notes: <ul style="list-style-type: none"> • Directorate Level • Group Level 	Supervisor Safety Web Page
8.2.2		Project Safety Area Surveys	QP Section 8.2.2 FPD-OI-FD01.1, Management Process FPD-OI-FD43.2, HOSC Configuration Request		All (aware) SAK	Monthly Safety Walk-around Notes HCR HPR CI RIAF	Supervisor Safety Web Page WLCK DMK MRK MRK

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Table 3 – Mission Systems Product Implementation Plan							
QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Mission Systems-Unique Procedure	User	Record	Custodian
						Work Orders	SGS, SGK
8.2.3		Contractor Industrial Safety Requirements	QP Section 8.2.3 Per SHE	N/A	All (aware) SAK	Monthly Report Incident Reports Self Evaluation	S&MA S&MA S&MA

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Product Implementation Plan (PIP)

Title: Telescience Resource Kit (TReK)	Export POC:	Bill Mordan
Team/Project Leader: Michelle Schneider	Systems Engineer:	Michelle Schneider
Release Authority: Michelle Schneider	Scheduler:	Barry Bryant

Reference CWC for Budget, Schedule, and Requirements: FD-FB-FR-FI-04 (POIC)

Approach for Accomplishing Requirements: The requirement is for a low-cost PC-based system that provides capabilities to generate displays/command forms, generate telemetry/command databases, process telemetry and uplink commands. The system is for usage by ISS researchers located across the United States. The approach is to design and develop the system (TReK) as an in-house project, using support contractors for independent verification, validation, and test support. Contractor support is through the HOSC Contract.

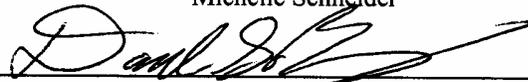
- Design, development, integration and test processes/procedures are defined in the table below.
- Government and contractor application of the MPD 1280.1/ISO-9000/AS9100A standards is as defined in HOSC-PLAN-661, HOSC Quality Plan, as synopsized herein.
- Customer functional and performance requirements for the system are defined in MSFC-PLAN-904. System- and lower-level requirements are defined in the system specification/documentation.
- Technical interfaces are defined in the system specification documentation and ICDs.
- The system life cycle model, defining inputs and outputs for each activity, development and management activities to be carried out, and technical/milestone reviews is as specified in MSFC-PLAN-2929 HOSC CM Plan.
- The master schedule identifies activity stages, reviews, baselines, related activities, resource requirements, associated dependencies, milestones and test activity scheduling.
- Team awareness and training requirements are indicated in the table below.
- Design and development methodology is as defined in TREK-001, TReK Product Plan.
- Design, development, IV&V, sustaining engineering, product acceptance, and operations surveillance by GSD personnel (7 FTEs).
- Verification, validation, test, and operations support by contractor personnel (3 FTEs).
- Records requirements and custodians are defined in the table below.

Prepared by: Team/Project Leader



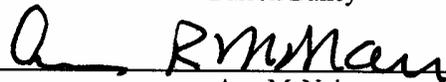
Michelle Schneider

Approved by: Group Leader



Darrell Bailey

Approved by: Project Manager



Ann McNair

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Tables 1 and 2 below define codes for the specific quality system functions involved in this TReK activity along with designation of who is responsible for performing the function. These codes are used in Table 3 to define who uses what procedures and who the records custodians are. Shading in the code cell indicates functions that support multiple activities (i.e., PIPs). These tables are updated on a semi-annual basis only.

Table 1 - Government

Code	Function	Responsibility
TLG	Team Lead	Michelle Schneider
SEG	Systems Engineer	Michelle Schneider
SWG	Software Engineer	Michelle Schneider
		Jeff Lippincott
		Steve Chubb
		Chris Sims
		Bruce Donald
MSA	Mgt Support Assistant	Victoria Hilty
GPO	Government Procurement Office	--
CO	Contract Officer	George Harvey, Lisette Kummer, asst.
COTR	Contracting Officer's Technical Rep	Bill Mordan
EXG	Export Control official	Bill Mordan
BMG	Business Management Office	Georgia James
SMA	MSFC S&MA (incl. Safety Office)	--
CCH	Credit Card Holder	Jim Rice
MRG	Management Representative	Bill Mordan
SMG	Certified System Manager	Jim Rice
SSG	Security Official	Pattie Miller
VLG	IV&V Lead	Susan Best
ALG	Safety ALERT Coordinator	Doug Fooshee
FCG	Facility Coordinator	Brenda Wade, Bill Evans
SGS	Building Safety Coordinator	Jimmy Hill, Brenda Wade (4663/4650)
CPG	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance

Table 2 - Contractor

Code	Function	Responsibility
PMK	Project Manager	Dick Marmann
GLK	Group Lead	Dave Johnson, Frank VanLandingham
OLK	Operations Lead	Doug Towne
MSK	Management Support Assistant	Darlene Belgrave
BMK	Business Management Office	Jonas Clem
HMK	HMCG Secretariat	Tom Wright
CMK	Contractor CM Secretariat	Mary Jane Brooks, Janice Branch, Angela Perkins
DMK	Data Mgt & HPR DB Coordinator	Mary Jane Brooks
MRK	Management Representative	Phillip Sommers, Todd Norton
HSDK	HOSC Support Desk	Sparky Goodman

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SMK	System Administrator	Jerry Collins
SYK	System Controllers (SYSCON)	Devin Smith
ALK	Safety ALERT Coordinator	Randy Hargrove
HOK	Ops Planning and Integration	Dennis Botts, Nick Bornas
TRNK	User Training Coordinator	Barbara Tepper
TRIK	IST Training Coordinator	Sparky Goodman
MAK	Maintenance Lead	Doug Newton
SGK	Building Safety Coordinator	Rick Houston (4610)
SAK	Safety Coordinator	Todd Norton, Linda Myszka
SCHK	Scheduler	Barry Bryant, Chris Reid
DBK	Database Lead	TReK config. / calibration DB from who ??
CPK	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance
PRK	Property Coordinator	Doug Newton

Table 3 below:

- Specifies the procedures used by civil service and contractor personnel for each ISO element and sub-element. Absence of a TReK-unique procedure indicates use of the standard procedure. Contractor procedures support these indicated/specified procedures.
- Provides guidance for developing “records plans”. Records that are shown **bolded** are the mandatory subset.
- Reflects the total quality system. The quality system is designed to ensure consistent satisfaction of the customer requirements and achievement of the Project objectives. [Combining the Table 3 below with the functional assignments listed above, in Tables 1 and 2, defines individual roles in the satisfaction of the customer requirements and achievement of the Project objectives.](#)

Note, the codes listed in Tables 1 and 2 define the quality system functions involved in this TReK activity. Appearance of function codes in Table 3, which are not defined in Tables 1 or 2, indicates that the function is not part of the TReK activity and is covered under another PIP.

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
1	1 4.1	Purpose	Quality Plan (QP) Section 1		All		--
2	1 4.1	Applicability and Scope	QP Section 2		All		--
3	4.1	Authority, Review, Acceptance, and Revision	QP Section 3		MRG		--
4	4.2.3.f	Applicable Documents	QP Section 4		MRG		--
5	4.2.3.f	References	QP Section 5		MRG		--
6	3	Definitions/Acronyms	QP Section 6		All		--
7	--	Policy	QP Section 7		MRG		--
7.1	--	Organization and Administration	QP Section 7.1		MRG		--
7.1.1	5.5.1	Management Responsibility			MRG		--
7.1.1.1	5.1	Management Commitment	Section 7.1.1.1		All		--
7.1.1.2	4.2.1.a 5.3	Quality Policy	Section 7.1.1.2		All		--
7.1.1.3	4.2.1.a 5.4.1 8.2.1	Quality Goals, Objectives, and Principles	Section 7.1.1.3		All	Management Metrics Package	OUTL
7.1.1.4	5.5.1 5.5.3	Organization	Section 7.1.1.4		All	N/A	--
7.1.1.4.1	5.5.1	Management Responsibility and Authority	Section 7.1.1.4.1		Mgrs and Leads	N/A	--
7.1.1.4.2	4.1.d 6.1	Resources	Section 7.1.1.4.2		Mgrs and Leads	N/A	--

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
7.1.1.4.3	5.5.2	Management Representative	Section 7.1.1.4.3		Mgrs, Leads, MRG	N/A	--
7.1.1.5	4.1.c 5.6 8.2.2	Management Review	Section 7.1.1.5	N/A	Mgrs, Leads, MRK	Continuous Improvement (CI) Database MRB Agenda and Minutes	MRK MRK
7.1.2	--	Quality System					
7.1.2.1	4.1	General	QP Section 7.1.2.1	N/A	All	N/A	
7.1.2.2	4.1.a, b 4.2.1.b-d 4.2.1.f 4.2.2 4.2.3.d	Quality System Procedures	QP Section 7.1.2.2 HOSC-PLAN-661, Quality Plan for the HOSC (QP) MSFC-PLAN-3046, Data Management Plan (DMP) MSFC-PLAN-2929, Configuration Management Plan (CMP)	N/A	All	“Records” are the procedures themselves	Procedure OPRs
7.1.2.3	8.4	Analysis of Data	QP Section 7.1.2.3	N/A	All	N/A	--
7.1.2.4	4.1.f 8.5.1	Continual Improvement	QP Section 7.1.2.4 (Annual documentation review)	N/A	All, esp. document OPRs	CI (ref. 7.1.6)	--
7.1.3	5.2	Customer-Related Processes					
7.1.3.1	5.2	General	QP Section 7.1.3.1 HOSC-PLAN-623, HOSC Project Plan (PP) Section 9.1 CMP	N/A	Mgrs, Leads, DEV and O&M	Collaborative Work Commitment (CWC)	HMK
7.1.3.2	5.2 7.2.1	Determination Of Requirements Related To Products	QP Section 7.1.3.2 CMP	N/A	Mgrs, Leads, DEV	Engineering Change Request (ECR) MSFC-PLAN-904	HMK HMK

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
7.1.3.3	5.2 7.2.1	Review of Requirements Related to Products	QP Section 7.1.3.3 CMP (change process)	N/A	Mgrs, Leads, and DEV	Review Plans/Minutes ECR and Change Package	?? HMK
7.1.3.4	5.2 7.2.3	Customer Communication	QP Section 7.1.3.4	N/A	All	N/A	--
7.1.3.5	5.2 8.2.1	Customer Satisfaction	QP Section 7.1.3.5 FPD-OI-FD01.1, Management Process	N/A	All	HOSC User Survey How Are We Doing Survey	OUTL PMG
7.1.4	4.2.3	Data Management, Including Document and Data Control	QP Section 7.1.4	TReK Product Documentation	All	N/A	--
7.1.4.1	4.2.3	General	QP Section 7.1.4.1 CMP DMP	N/A	All	N/A	--
7.1.4.2	4.2.3 7.1.4.2	Document and Data Approval and Issue	QP Section 7.1.4.2 CMP DMP	N/A	All	ECR CI Master List including Release Authority	HMK MRK HMK (Level III), DMK/CMK (Level IV)
7.1.4.3	4.2.3 7.5.1.2	Document and Data Changes	QP Section 7.1.4.3 CMP DMP	N/A	All	ECR CI	HMK MRK
7.1.4.4	4.2.3.f	References and Standards	QP Section 7.1.4.4	N/A	Leads and Engineers	Evidence of references/standards currency	??
7.1.5	5.5.1	Process Control	QP Section 7.1.5	N/A	All	N/A	--
7.1.5.1	6.3	Infrastructure	QP Section 7.1.5.1	TReK Product Plan	All	HOSC Problem	DMK

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.10, HOSC Problem Report (HPR)			Report (HPR) How Are We Doing Survey	PMG
7.1.5.2	7.5.1	Control of Production and Service Provision	QP Section 7.1.5.2	TReK Product Plan	Leads		
7.1.5.2.1	7.5.1 7.1.5.2	Production / Design and Development	QP Section 7.1.5.2.1 DMP CMP Government procedure in Section 7.8.1	N/A	Development Leads, DEV All Developers	ECR System Specification/Development Folders including ops and maintenance planning, etc. documentation	HMK CMK, Level IV CM
7.1.5.2.2	7.5.1 7.5.1.5 7.5.2	Service Provision	QP Section 7.1.5.2.2 HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD43.1, Ground Systems Operations MSFC-PROC-1933, HOSC Access Procedures MSFC-PLAN-2934, HOSC Emergency and Disaster Recovery Plan HOSC-HDBK-003, HOSC Facilities Document FPD-OI-FD40.10 – HPR HOSC-PLAN-209, IST Training Plan	N/A	Ops Leads, O&M Integrated Support Team	IST Personnel Certification (per HOSC-PLAN-209 and FPD-OI-FD40.4) IST Procedures Certification (per FPD-OI-FD40.4) Incident Report (per HOSC-HUH-233)	IST Discipline Lead IST Discipline Lead HSDK
7.1.5.2.3		Control of Research and Technology Activities	QP Section 7.1.5.2.3 MPG 8220.1, Conduct of Research	N/A	Mgrs, Leads, R&T Engrs.	Proposal Authority to	R&T Engr R&T Engr

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Table 3 – TreK Product Implementation Plan							
QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
			and Technology Activities			Proceed Research Plan Research Record Review Record	R&T Engr R&T Engr R&T Engr
7.1.5.3	6.4	Work Environment	QP Section 7.1.5.3	N/A	All	HPR How Are We Doing Survey	DMK PMG
7.1.5.4	7.5.2	Validation of Processes for Production and Service provision	QP Section 7.1.5.4	N/A	Leads	N/A	--
7.1.5.5	8.2.3	Monitoring and Measurement of Processes	QP Section 7.1.5.5, 7.1.6, 7.1.7	N/A	All	N/A	--
7.1.6	4.1.f 8.1 8.2.3 8.4 8.5.1	Corrective and Preventive Action	QP Section 7.1.6	N/A	Mgrs and Leads All Aware	N/A	--
7.1.6.1	4.1.f 8.4 8.5.1 8.5.2	Corrective Action	QP Section 7.1.6.1 FPD-OI-FD40.10, HOSC Problem Report MWI 8621.1, Close Call and Mishap Reporting and Investigation	N/A	Esp. Mgrs and Leads All Aware	HOSC User Survey HPR How Are We Doing Survey TReK User Survey Continuous improvement (CI) Mishaps/Investigation results TReK Problem Report Database TReK Current Activities Schedule	OUTL DMK PMG TLG MRK S&MA TLG SEG

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
7.1.6.2	4.1.f 8.4 8.5.1 8.5.3	Preventive Action	QP Section 7.1.6.2 HOSC-PLAN-635, Risk Management Plan for the HOSC Project	N/A	Esp. Mgrs and Leads All Aware	Risk Identification and Analysis Form (RIAF) TReK PR or Current Activities Schedule	MRK SEG
7.1.6.3	8.4	ALERTs	QP Section 7.1.6.3 MWI 1280.5, MSFC ALERT Processing	N/A	OLG, ALG SSG SMG SMK	ALERT (Safety) ALERT (Security)	ALG/ALK SSG
7.1.7	4.2.4	Control of Records	QP Section 7.1.7	N/A	All	QP Appendix C Records Plans	PMG
7.1.8	8.2.2	Audits	QP Section 7.1.8	N/A	Mgrs, Leads, MRG, MRK	N/A	--
7.1.8.1	8.2.2	Internal Quality Audits	QP Section 7.1.8.1	N/A	MRG Mgrs and Leads	Audit Schedule Audit Results CI, RIAF	MRG MRG MRK
7.1.8.2	5.4	Customer Audits	QP Section 7.1.8.2	N/A	MRG	N/A	--
7.1.8.3	7.4.3	Audits of Contractors	QP Section 7.1.8.3	N/A	Mgrs and Leads	Official records of initial proposals and proposal evaluation notes Semi-annual contractor evaluations	GPO COTR
7.1.8.4	5.6 8.2.2	Third-Party Audits	QP Section 7.1.8.4	N/A	Esp. Mgrs and Leads All aware	Official versions of Audit Schedule and Results are maintained by S&MA	S&MA

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
7.1.9	7.5.1	Servicing	QP Section 7.1.9 FPD-OI-FD40.7, Remote Servicing Plan FPD-OI-FD43.1, Ground Systems Operations FPD-OI-FD40.10, HOSC Problem Report FPD-OI-FD43.2, HOSC Configuration Request CMP	N/A	Leads	HPR HCR ECR (as defined in procedures)	DMK WLCK HMK
7.1.9.1	7.5.1	Regulatory and Legislative Requirements	QP Section 7.1.9.1 MPG 2190.1, MSFC Export Control Program	N/A	Leads	Export Control Records	EXG
7.1.9.2	7.5.1	Industry Codes and Practices	N/A	N/A	MRG	N/A	--
7.1.9.3	7.5.1	Service Level Agreements	QP Section 7.1.9.3 Per CWC CMP FPD-OI-FD43.2, HOSC Configuration Request HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures KSC HB GP60-3, Automated Support Requirements System (ASRS) Handbook JSC-27379, Support Requirements System Management Plan		Ops Leads	Service Level Agreements (SLA) are documented in the POIC Capabilities Document (SSP 50304) Section 12 ECR HCR SLA Metrics	HMK HMK WLCK OUTL
7.1.9.4	6.2.2 7.5.1	Training of Customer Personnel	QP Section 7.1.9.4 HOSC-HUH-233, HOSC User Handbook	TReK Product Plan	TLG, SWG OLK	Training Record	TLG, SWG

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.7 – Remote Servicing Plan		SWG SWK		
7.1.9.5	7.5.1	Technical Support	QP Section 7.1.9.5 CMP FPD-OI-FD40.10 – HPR FPD-OI-FD40.7 – Remote Servicing Plan (<i>Local servicing is by application of all the other cited procedures</i>)	TReK Product Plan TReK Web Site	Leads	CWC SLA HPR ECR	BMG HMK DMK HMK
7.2	--	Legal and Technical	QP Section 7.2	N/A	Mgrs	N/A	--
7.3	6.2.1 6.2.2	Human Resources/Personnel and Administration	QP Section 7.3 Multiple References	N/A	Esp. MSA All Gov't Personnel	Many; administrative nature	MSAs and Leads
7.3.1	6.2.1 6.2.2	Competence, Awareness, and Training	QP Section 7.3.1 FPD-OI-FD43.1, Ground Systems Operations HOSC-PLAN-209, IST Training Plan FPD-OI-FD01.1, Management Process	N/A	All, Particularly Mgrs and Leads	Training/Certification Record Training Plan Attendance Record IST Training/Certification IT Training Record Safety Training Records	Mgrs and Leads MRG MRG TRIK Ctr. Ops. Directorate Supervisor Safety Web Page
7.4	--	Property and Supply					
7.4.1	7.5.4	Control of Customer-Supplied Product	QP Section 7.4.1 FPD-OI-FD40.10 – HPR HOSC-HUH-233, HOSC User Handbook	N/A	OLG, FCG OLK, FCK SWG	HPR GSE paperwork HCR	DMK FCG WLCK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
			FPD-OI-FD43.2, HOSC Configuration Request Includes updates for PPS SW from JSC, DBs, etc. (notification via e-mail; load via HCR)		SWK TReK TLG	Record of any lost, damaged or unsatisfactory customer property (via HPR)	DMK
7.4.2	7.5.5	Control of GSD/Project Property	QP Section 7.4.1 MPG 4000.2, MSFC Property Management	N/A	Esp. FCG, FCK All	Property Record Maintenance parts tracking (major)	PRK, FCG MAK
7.5	--	Procurement/Purchasing					
7.5.1	7.4.1	Process	QP Section 7.5.1 FPD-OI-FD40.11 – GSD Purchase Planning FPD-OI-FD40.12 – Task Directives FPD-OI-FD40.13, HOSC Contract Performance Evaluation	N/A	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. copy Task Directives Contractor Performance Evaluation Procurement Plan	GPO Mgrs and Leads BMG COTR BMG
7.5.2	7.4.2	Purchasing Data	QP Section 7.5.2	FPD-OI-FD40.13 – KTR (Contractor) Evaluation	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. version Task Directives Credit Card Purchase Records	GPO Mgrs and Leads BMG CCH

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
						Waiver (none given)	N/A
7.5.3	7.4.3	Verification of Purchased Product	QP Sections 7.5.3 PP Reference 7.8.1 and 7.8.3	N/A	Mgrs and Leads, BMG, COTR	Monthly/Quarterly reports Contractor Performance Evaluation Reference 7.8.1 and 7.8.3	GPO COTR VLG/VLK
7.6	7.5.5	Transportation	QP Sections 7.6	N/A	MRG	N/A	--
7.6.1	7.5.5	Handling, Storage, Packaging, Preservation, and Delivery (HSPPD)	QP Section 7.6.1	N/A	Mgrs, Leads, SSG, SMG, SMK, SYK	HPR	DMK
7.6.1.1	7.5.1.3 7.5.5	Products in Development	QP Section 7.6.1.1 MSFC-RQMT-2467, HOSC ITS Requirements HOSC-PLAN-009, HOSC Contingency Plan HOSC-SYS-085, HOSC Configuration Management Procedures Manual	TReK Software Backup Plan	Development Leads, SEG		
7.6.1.2	7.5.1.3 7.5.5	Products in Operations/Utilization	QP Section 7.6.1.2 HOSC-PLAN-009 CMP MSFC-PLAN-2934 MSFC-RQMT-2467 HOSC-PROC-180	TReK Software Backup Plan	Ops Leads		
7.7	--	Project Formulation					
7.7.1	5.4.2	Quality Planning	QP Section 7.7.1	N/A	All	This PIP	PMG

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
	7.1					Official PIP in QP; ref. versions used by government and contractor leads and personnel	
7.8	--	Project Management/Systems Engineering	QP Section 7.8	N/A	Mgrs and Leads	N/A	--
7.8.1	--	Design and Development	QP Section 7.8.1	TReK Product Plan	Mgrs and Leads	N/A	--
7.8.1.1	4.3 7.1 7.5.1 8.1	General	QP Section 7.8.1.2 PP Section 9.1 CMP	MSFC-RQMT-2629	Mgrs, Leads, Engrs, DEV, HMK, CMK	CWC ECR MSFC-PLAN-904 Any Customer-defined Specifications and Standards (in ECR)	BMG HMK HMK HMK
7.8.1.2	7.1 7.3.1	Design and Development Planning	QP Section 7.8.1.2 CMP	TReK Product Plan	PMG, GLG, TLG, SEG, HMK, PMK, GLK, SEK, Engrs, DEV, VLG, VLK	PIP Schedule ECR Change Package Verification plan/procedures	PMG/TLG SCHK HMK VLG, VLK
7.8.1.3	7.3.1	Organizational and Technical Interfaces	QP Section 7.8.1.3 PP CMP	TReK Product Plan	Mgrs, Leads, Engrs, BMG, HMK, DEV	CWC ECR Interface Control Document	BMG HMK HMK
7.8.1.4	7.3.2	Design and Development Inputs	QP Section 7.8.1.4 CMP DMP	TReK Product Plan	Leads, Engrs, DEV, HMK, CMK, BMG, ALG, ALK,	CWC ECR MSFC-PLAN-904,	BMG HMK HMK

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
			MWI 1280.5 (ALERTs) for Safety and Security aspects		SSG, MRK	HOSC Functional Requirements and Implementation Plan – including any applicable Legal, Regulatory and Statutory Requirements ALERT Standards RIAF	ALG/ALK /SSG SEG/K MRK
7.8.1.5	7.3.3	Design and Development Outputs	QP Section 7.8.1.5 CMP	TReK Product Plan	Leads, Engrs, DEV, HMK, CMK	System Specifications Build Release Pkg/ Development Folder Verification/Test Plan Per MSFC-HDBK-3173 for milestone reviews	HMK (Level III) CMK ?? (Level IV) VLK (Level IV)
7.8.1.6	7.3.4	Design and Development Review	QP Section 7.8.1.6 CMP	TReK Product Plan	Mgrs, Leads, Engrs, CMK, MRK, DEV	Review Announcement RID RIAF Reqmts Review Record Design Review Record Customer Input Database TReK Current	PMG CMK MRK CMK CMK SEG SEG

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
						Activities Schedule	
7.8.1.7	7.3.5 7.3.6.1 8.2.4 8.2.4.1	Design and Development Verification	QP Section 7.8.1.7 CMP	TReK Product Plan	Leads, Engrs, DEV, VLG, VLK, CMK, DEV	Verification/Test Results Internal PR TReK PR Database	VLG/VLK VLG/VLK TLG
7.8.1.8	7.3.6 7.3.6.1 8.2.4	Design and Development Validation	QP Section 7.8.1.8 CMP FPD-OI-FD40.10, HPR	TReK Product Plan	Leads, Engrs, DEV, VLG, VLK, DMK	HPR Validation Results TReK PR	DMK VLG/VLK SEG
7.8.1.9	7.3.6.2 8.2.4 8.2.4.1	Design and Development Verification and Validation Testing	QP Section 7.8.1.8 CMP	TReK Product Plan	Leads, Engrs, DEV, VLG, VLK	Verification/Test Plan/Procedure Verification/Test Results	VLG/VLK VLG/VLK
7.8.1.10	7.3.7	Control of Design and Development Changes	QP Section 7.8.1.10 CMP FPD-OI-FD43.2, HOSC Configuration Request	TReK Product Plan	Mgrs, Leads, Engrs, DEV, CPG, CPK, HMK, CMK, SCHK, WLCK, SCHK	ECR and Change Package Minor OS change via HCR OS, DB, PPS update notification e-mail Build/Load schedule DB load via HCR TReK Current Activities Schedule	HMK WLCK Leads SCHK WLCK SEG
7.8.2	7.5.1.1 7.5.3	Product Identification and Traceability	QP Section 7.8.2 CMP FPD-OI-FD40.10, HPR	TReK CM Plan	Leads, Engrs, DEV, CPG, CPK, CMK, HMK, VLG, VLK	ECR/PCN System Specification and other documentation such as prescribed in MSFC-HDBK-3173	HMK HMK (Level III) CMK (Level IV)

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
						Build Release Package Code Handover Checklist HPR DB ID and Trace Logs HW, SW, Document labels TReK Install Scripts and Logs	CMK VLG/VLK DMK HMK/CMK HMK/CMK PRK TLG
7.8.3	8.1	Monitoring and Measurement of Product and Process	QP Section 7.8.3	N/A	Mgrs, Leads, MRG	Reference 7.8.1.1 - 7.8.1.10	--
7.8.3.1	8.2.4	Plans and Procedures	QP Section 7.8.3.1	TReK Test Plan TReK Year 2000 Test Plan Validation/Test Plan Release Checklist	Leads	Reference 7.8.1.2	--
7.8.3.2	8.2.4	In-Process Inspection and Testing	QP Section 7.8.3.2	TReK Product Plan	Leads, Engrs, DEV	Reference 7.8.1.6 and 7.8.1.9	Ref
7.8.3.3	8.2.4	Receiving Inspection and Testing	QP Section 7.8.3.3 CMP – Verification and Audits FPD-OI-FD40.10 – HPR CMP – Deviations and Waivers	TReK Product Plan	Leads, Engrs, DEV, HMK, CMK, DMK, VLG, VLK, OLG	Verification/Test Plan HPR Build Release Packages Deviation/Waiver (via HPR) TReK PR DB TReK Release Notes	VLG/VLK DMK CMK DMK TLG TLG

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Table 3 – TreK Product Implementation Plan							
QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
7.8.3.4	8.2.4	Final Inspection and Testing	QP Section 7.8.3.4 FPD-OI-FD40.10 – HPR FPD-OI-FD40.4, Flight Certification for Ground Systems	TReK Test Plan	Leads, Engrs, DEV, Ops Leads, DMK	HPR Readiness Review/Issues List FD41 and FD42 GLG Letter to OLG CoFR TReK PR DB	DMK OLG OLG PMG TLG
7.8.3.5	8.2.4	Inspection and Test Records	QP Section 7.8.3.5	Validation/Test Plan	Leads, Engrs, DEV, VLG, VLK, CMK	Verification/Test Plan Verification/Test Results Reference 7.8.3.2 – 7.8.3.4 TReK Test Database	VLG/VLK VLG/VLK Ref SEG
7.8.3.6	4.1.e 8.2.1 8.2.3	Monitoring and Measurement of Process	QP Section 7.8.3.6 PP HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.10 – HPR RMP CMP	N/A	MRB members, i.e., Mgrs, Leads, MRG, MRK	Monthly Reports Safety Incidents/Statistics Surveys Threats Incident Reports HPR CI RIAF Audit Reports CM Audit Reports	GPO S&MA OUTL/PMG MRK HSDK DMK MRK MRK MRG HMK
7.8.4	7.5.1.3	Control of Monitoring and Measuring Devices	QP Section 7.8.4	TReK Product Plan	<u>For HW:</u>	<u>For HW:</u>	

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
	7.6		HOSC-PROC-180, HOSC Standard Operating Procedures CMP FPD-OI-FD40.10 – HPR		OLG, OLK, MAK, <u>For SW:</u> Dev. Leads, VLG, VLK <u>For Database:</u> TLG (DB), DBK	HW Calibration Records <u>For SW:</u> ECR HPR Test plans/results (SW) <u>For Database:</u> DBCR TReK Test Database	MAK HMK DMK VLG/VLK DBK SEG
7.8.5	7.5.3	Inspection and Test Status	QP Section 7.8.5	TReK Product Plan	SCHK, VLG, VLK, CMK, DEV, OLG	Test schedule Release Notes/Report Deviation/Waiver (via HPR) Dev. Folder Internal PR HPR Log IV&V Test Report Readiness Review/Issues List TReK Test Database	VLK/SCHK VLG/VLK DMK Developer VLG/VLK DMK VLG/VLK OLG SEG
7.8.6	8.3	Control of Nonconforming Product	QP Section 7.8.6 FPD-OI-FD40.10, HPR CMP – Deviations and Waivers	TReK Product Plan	All	IPR HPR Release Notes/Defects	VLG/VLK DMK VLG/VLK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
			MWI 1280.5 (ALERTs)			Report Deviation/Waiver (via HPR) ALERT MTBF TReK PR DB	DMK ALG/ALK /SSG OUTL TLG
7.8.7	8.1 8.2.1 8.4	Statistical Techniques	QP Section 7.8.7 FPD-OI-FD43.1, Ground System Operations HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD01.1, Management Process		Mgrs, Leads	User Survey HPR Incident Report Management Metrics Package	OUTL DMK HSDK OUTL
8		Safety					
8.1		System Safety	QP Section 8.1 HOSC-PLAN-635, HOSC Risk Management Plan (RMP)	N/A	Leads and Engrs	RIAF	MRK
8.1.1		System Safety Tools	QP Section 8.1.1 CMP RMP MWI 1280.5 (ALERTs)	N/A	Mgrs, Leads and Engrs	RIAF ALERT (Safety) ALERT (Security)	MRK ALG/ALK SSG
8.1.2		Safety Review Board Support	QP Section 8.1.2 FPD-OI-FD40.4, Flight Certification for Ground Systems	N/A	All (aware)	Ref. 8.1.3	--
8.1.3		Certification Of Flight Readiness (COFR)	QP Section 8.1.3 FPD-OI-FD40.4, Flight Certification for Ground Systems		All (aware)	CoFR	PMG

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Table 3 – TreK Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	TReK-Unique Procedure	User	Record	Custodian
8.1.4		Range Safety	QP Section 8.1.4	N/A	N/A	N/A	--
8.1.5		Space Debris Safety	QP Section 8.1.5	N/A	N/A	N/A	--
8.1.6		Contingency Planning	QP Section 8.1.6 HOSC-PLAN-009, HOSC Contingency Plan MSFC-PLAN-2934, HOSC Emergency Disaster and Recovery Plan		OLG, OLK, FCG, FCK, SSG, SMG, SGS, SGK, SMK, SYK		
8.1.7		Nuclear Safety For Launching of Radioactive Materials	QP Section 8.1.7	N/A	N/A	N/A	N/A
8.2		Industrial Safety	QP Section 8.2	N/A	Mgrs, FCG, FCK	N/A	--
8.2.1		Safety Meetings	QP Section 8.2.1 FPD-OI-FD01.1, Management Process	N/A	All (aware) SAK	Monthly Safety Meeting Notes: • Directorate Level • Group Level	Supervisor Safety Web Page
8.2.2		Project Safety Area Surveys	QP Section 8.2.2 FPD-OI-FD01.1, Management Process	N/A	All (aware) SAK	Monthly Safety Walk-around Notes HCR HPR CI RIAF Work Orders	Supervisor Safety Web Page WLCK DMK MRK MRK SGS
8.2.3		Contractor Industrial Safety Requirements	QP Section 8.2.3 Per SHE	N/A	All (aware) SAK	Monthly Report Incident Reports Self Evaluation	S&MA S&MA S&MA

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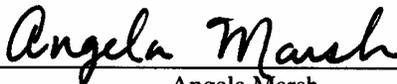
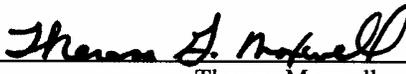
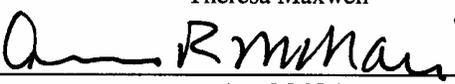
Product Implementation Plan (PIP)

Title: Payload Planning System (PPS)	Export POC:	Bill Mordan
Team/Project Leader: Angela Marsh	Systems Engineer:	George LaCoe
Release Authority: Theresa Maxwell	Scheduler:	Barry Bryant

Reference CWC(s) for Budget, Schedule, and Requirements: FD-FB-FR-FG-04 (PPS)

Approach for Accomplishing Requirements: The requirement is for an automated software tool to be used by payload planning personnel to produce increment specific planning and execution support products. The approach is to develop the tools as a collaborative effort with the HOSC Contractor. Planning tool elements from JSC will be as appropriate.

- Design, development, integration and test processes/procedures are defined in the table below.
- Government and contractor application of the MPD 1280.1/ISO-9000/AS9100A standards is as defined in HOSC-PLAN-661, HOSC Quality Plan, as synopsized herein.
- Customer functional and performance requirements for the system are defined in MSFC-PLAN-904. System- and lower-level requirements are defined in the system specification/documentation.
- Technical interfaces are defined in the system specification documentation and ICDs.
- The system life cycle model, defining inputs and outputs for each activity, development and management activities to be carried out, and technical/milestone reviews is as specified in MSFC-PLAN-2929 HOSC CM Plan.
- The master schedule identifies activity stages, reviews, baselines, related activities, resource requirements, associated dependencies, milestones and test activity scheduling.
- Team awareness and training requirements are indicated in the table below.
- GSD design and development methodology is as defined in Quality Plan Section 7.8.1. Contractor design and development is per MIL-STD-2167A (tailored), as defined in the System Development Plan and Software Quality Assurance Plan.
- Design, development, inspection, test, on-going servicing, and surveillance/quality assurance by GSD personnel (~ 15 FTEs).
- Design, development, verification, test, and on-going servicing support by contractor personnel (~ 13 FTEs).
- Records requirements and custodians are defined in the table below.

Prepared by: Team/Project Leader	 <hr style="border: 0; border-top: 1px solid black;"/> Angela Marsh
Approved by: Group Leader	 <hr style="border: 0; border-top: 1px solid black;"/> Theresa Maxwell
Approved by: Project Manager	 <hr style="border: 0; border-top: 1px solid black;"/> Ann McNair

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Tables 1 and 2 below define codes for the specific quality system functions involved in this Payload Planning System activity along with designation of who is responsible for performing the function. These codes are used in Table 3 to define who uses what procedures and who the records custodians are. Shading in the code cell indicates functions that support multiple activities (i.e., PIPs). These tables are updated on a semi-annual basis only.

Table 1 - Government

Code	Function	Responsibility
PMG	Project Manager	Ann McNair
GLG	Development Group Lead	Theresa Maxwell
TLG	Team Lead - PPS	Angela Marsh
OLG	Operations Lead	Nate Bocclair
OUTL	Ops Utilization Team Lead	Lisa Watson-Morgan
SEG	Systems Engineer	George LaCoe
SWG	Software Engineer	Jamie Bramlett
		Kerri Minton
		Kim Muery
		Shaun Phillips
		Sandra Blalock
		Roger Bunnell
MSA	Mgt Support Assistant	Dawn Walton
GPO	Government Procurement Office	George Harvey
CO	Contract Officer	George Harvey, Lisette Kummer, asst.
COTR	Contracting Officer's Technical Rep	Bill Mordan
EXG	Export Control official	Bill Mordan
BMG	Business Management Office	Georgia James
SMA	MSFC S&MA (incl. Safety Office)	--
CCH	Credit Card Holder	George LaCoe, Pat Sage
MRG	Management Representative	Bill Mordan
SMG	Certified System Manager	Debbie Graham
SSG	Security Official	Pattie Miller
VLG	IV&V Lead	Lea Richardson
ALG	ALERT Coordinator	Doug Fooshee
FCG	Facility Coordinator	Brenda Wade, Bill Evans
SGS	Building Safety Coordinator	Rick Houston (4610)
R&T	Research and Development	John Jaap, Elizabeth Davis, Patrick Meyer
CPG	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance

Table 2 - Contractor

Code	Function	Responsibility
PMK	Project Manager	Dick Marmann
GLK	Group Lead	Dave Johnson, Frank VanLandingham
OLK	Operations Lead	Doug Towne
MSK	Management Support Assistant	Darlene Belgrave
SEK	Systems Engineer	Dan Dodson

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SWK	Software Engineer	George Ritter
HEK	Hardware Engineer	Bobby Pruitt
NEK	Network Engineer	Larry Schneider
VLK	IV&V Lead	Kim Lankford
BMK	Business Management Office	Jonas Clem
HMK	HMCG Secretariat	Tom Wright
CMK	Contractor CM Secretariat	Mary Jane Brooks
DMK	Data Mgt & HPR DB Coordinator	Mary Jane Brooks
MRK	Management Representative	Phillip Sommers, Todd Norton
HSDK	HOSC Support Desk	Sparky Goodman
WLCK	Workload Control	Chris Reid
SMK	System Administrator	Jerry Collins
ALK	ALERT Coordinator	David P. Davis
HOK	Ops Planning and Integration	Dennis Botts, Nick Bornas
TRNK	User Training Coordinator	Barbara Tepper
TRIK	IST Training Coordinator	Sparky Goodman
MAK	Maintenance Lead	Doug Newton
FCK	Facility Coordinator	Kevin Clark
SGK	Building Safety Coordinator	Rick Houston (4610)
SAK	Safety Coordinator	Todd Norton, Linda Myszka
SCHK	Scheduler	Barry Bryant, Chris Reid
CPK	Change Package Engineer	Dan Dodson
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance
IST	Integrated Support Team	Kim Lankford
SCM	Software Configuration Management	Emily Holifield
PRK	Property Coordinator	Doug Newton

Table 3 below:

- Specifies the procedures used by civil service and contractor personnel for each ISO element and sub-element. Absence of a Payload Planning System-unique procedure indicates use of the standard procedure. Contractor procedures support these indicated/specified procedures.
- Provides guidance for developing “records plans”. Records that are shown **bolded** are the mandatory subset.
- Reflects the total quality system. The quality system is designed to ensure consistent satisfaction of the customer requirements and achievement of the Project objectives. [Combining the Table 3 below with the functional assignments listed above, in Tables 1 and 2, defines individual roles in the satisfaction of the customer requirements and achievement of the Project objectives.](#)

Note, the codes listed in Tables 1 and 2 define the quality system functions involved in this Payload Planning System activity. Appearance of function codes in Table 3, which are not defined in Tables 1 or 2, indicates that the function is not part of the Payload Planning System activity and is covered under another PIP.

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
1	1 4.1	Purpose	Quality Plan (QP) Section 1	N/A = use of the standard procedure	All	N/A = no record applicable	--
2	1 4.1	Applicability and Scope	QP Section 2	N/A	All	N/A	--
3	4.1	Authority, Review, Acceptance, and Revision	QP Section 3	N/A	MRG	N/A	--
4	4.2.3.f	Applicable Documents	QP Section 4	N/A	MRG	N/A	--
5	4.2.3.f	References	QP Section 5	N/A	MRG	N/A	--
6	3	Definitions/Acronyms	QP Section 6	N/A	All	N/A	--
7	--	Policy	QP Section 7	N/A	MRG	N/A	--
7.1	--	Organization and Administration	QP Section 7.1	N/A	MRG	N/A	--
7.1.1	5.5.1	Management Responsibility			MRG		--
7.1.1.1	5.1	Management Commitment	Section 7.1.1.1	N/A	All	N/A	--
7.1.1.2	4.2.1.a 5.3	Quality Policy	Section 7.1.1.2	N/A	All	N/A	--
7.1.1.3	4.2.1.a 5.4.1 8.2.1	Quality Goals, Objectives, and Principles	Section 7.1.1.3	N/A	All	Management Metrics Package	OUTL
7.1.1.4	5.5.1 5.5.3	Organization	Section 7.1.1.4	N/A	All	N/A	--
7.1.1.4.1	5.5.1	Management Responsibility and Authority	Section 7.1.1.4.1	N/A	Mgrs and Leads	N/A	--
7.1.1.4.2	4.1.d 6.1	Resources	Section 7.1.1.4.2	N/A	Mgrs and Leads	N/A	--

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.1.4.3	5.5.2	Management Representative	Section 7.1.1.4.3	N/A	Mgrs, Leads, MRG	N/A	--
7.1.1.5	4.1.c 5.6 8.2.2	Management Review	Section 7.1.1.5	N/A	Mgrs, Leads, MRK	Continuous Improvement (CI) Database MRB Agenda and Minutes	MRK MRK
7.1.2	--	Quality System					
7.1.2.1	4.1	General	QP Section 7.1.2.1	N/A	All	N/A	
7.1.2.2	4.1.a, b 4.2.1.b-d 4.2.1.f 4.2.2 4.2.3.d	Quality System Procedures	QP Section 7.1.2.2 HOSC-PLAN-661, Quality Plan for the HOSC (QP) MSFC-PLAN-3046, Data Management Plan (DMP) MSFC-PLAN-2929, Configuration Management Plan (CMP)	N/A	All		
7.1.2.3	8.4	Analysis of Data	QP Section 7.1.2.3	N/A	All	N/A	--
7.1.2.4	4.1.f 8.5.1	Continual Improvement	QP Section 7.1.2.4 (Annual documentation review)	N/A	All, esp. document OPRs		
7.1.3	5.2	Customer-Related Processes					
7.1.3.1	5.2	General	QP Section 7.1.3.1 HOSC-PLAN-623, HOSC Project Plan (PP) Section 9.1 CMP	N/A	Mgrs, Leads, GLG, BMG	Collaborative Work Commitment (CWC)	BMG
7.1.3.2	5.2 7.2.1	Determination Of Requirements Related To Products	QP Section 7.1.3.2 CMP	N/A	Mgrs, Leads, DEV, SEG, SEK	Engineering Change Request (ECR) MSFC-PLAN-904 PPS System	HMK HMK HMK

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						Specification	
7.1.3.3	5.2 7.2.1	Review of Requirements Related to Products	QP Section 7.1.3.3 CMP (change process)	N/A	Mgrs, Leads, SEG, SEK and DEV	Review Plans / Minutes ECR and Change Package	CMK HMK
7.1.3.4	5.2 7.2.3	Customer Communication	QP Section 7.1.3.4	N/A	All	N/A	--
7.1.3.5	5.2 8.2.1	Customer Satisfaction	QP Section 7.1.3.5 FPD-OI-FD01.1, Management Process	N/A	All	HOSC User Survey How Are We Doing Survey	OUTL PMG
7.1.4	4.2.3	Data Management, Including Document and Data Control	QP Section 7.1.4	N/A	All	N/A	--
7.1.4.1	4.2.3	General	QP Section 7.1.4.1 CMP DMP	N/A	All	N/A	--
7.1.4.2	4.2.3 7.1.4.2	Document and Data Approval and Issue	QP Section 7.1.4.2 CMP DMP	N/A	All	ECR Master List including Release Authority	HMK HMK (Level III), DMK/CMK (Level IV)
7.1.4.3	4.2.3 7.5.1.2	Document and Data Changes	QP Section 7.1.4.3 CMP DMP	N/A	All	ECR CI	HMK MRK
7.1.4.4	4.2.3.f	References and Standards	QP Section 7.1.4.4	N/A	Leads and DEV Engineers	PPS System Specification	HMK
	5.5.1	Process Control	QP Section 7.1.5	N/A	All	N/A	--
7.1.5.1	6.3	Infrastructure	QP Section 7.1.5.1	N/A	All	HOSC Problem	DMK

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.10, HOSC Problem Report (HPR)			Report (HPR) How Are We Doing Survey	PMG
7.1.5.2	7.5.1	Control of Production and Service Provision	QP Section 7.1.5.2	N/A	Leads		
7.1.5.2.1	7.5.1 7.1.5.2	Production / Design and Development	QP Section 7.1.5.2.1 DMP CMP Government procedure in Section 7.8.1	N/A	Development Leads, DEV All Developers	ECR SDS CBC IPR	HMK SCM SCM SCM
7.1.5.2.2	7.5.1 7.5.1.5 7.5.2	Service Provision	QP Section 7.1.5.2.2 HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD43.1, Ground Systems Operations MSFC-PROC-1933, HOSC Access Procedures MSFC-PLAN-2934, HOSC Emergency and Disaster Recovery Plan HOSC-HDBK-003, HOSC Facilities Document FPD-OI-FD40.10 – HPR HOSC-PLAN-209, IST Training Plan	N/A	Ops Leads, O&M Integrated Support Team	IST Personnel Certification (per HOSC-PLAN-209 and FPD-OI-FD40.4) IST Procedures Certification (per FPD-OI-FD40.4) Incident Report (per HOSC-HUH-233)	IST Discipline Lead IST Discipline Lead HSDK
7.1.5.2.3		Control of Research and Technology Activities	QP Section 7.1.5.2.3 MPG 8220.1, Conduct of Research and Technology Activities	N/A	Mgrs, Leads, R&T Engrs.	Proposal Authority to Proceed	R&T Engr R&T Engr

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						Research Plan Research Record Review Record	R&T Engr R&T Engr R&T Engr
7.1.5.3	6.4	Work Environment	QP Section 7.1.5.3	N/A	All	How Are We Doing Survey	PMG
7.1.5.4	7.5.2	Validation of Processes for Production and Service provision	QP Section 7.1.5.4	N/A	Leads	N/A	--
7.1.5.5	8.2.3	Monitoring and Measurement of Processes	QP Section 7.1.5.5, 7.1.6, 7.1.7	N/A	All	N/A	--
7.1.6	4.1.f 8.1 8.2.3 8.4 8.5.1	Corrective and Preventive Action and Continual Improvement	QP Section 7.1.6	N/A	Mgrs and Leads All Aware	N/A	--
7.1.6.1	4.1.f 8.4 8.5.1 8.5.2	Corrective Action	QP Section 7.1.6.1 FPD-OI-FD40.10, HOSC Problem Report	N/A	Esp. Mgrs and Leads All Aware	HOSC User Survey HPR How Are We Doing Survey Continuous improvement (CI)	OUTL DMK PMG MRK
7.1.6.2	4.1.f 8.4 8.5.1 8.5.3	Preventive Action	QP Section 7.1.6.2 HOSC-PLAN-635, Risk Management Plan for the HOSC Project	N/A	Esp. Mgrs and Leads All Aware	Risk Identification and Analysis Form (RIAF)	MRK
7.1.6.3	8.4	ALERTs	QP Section 7.1.6.3 MWI 1280.5, MSFC ALERT Processing	N/A	OLG, ALG SSG SMG SMK	ALERT (Safety) ALERT (Security)	ALG/ALK SSG

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.7	4.2.4	Control of Records	QP Section 7.1.7	N/A	All	QP Appendix C Records Plans	PMG
7.1.8	8.2.2	Audits	QP Section 7.1.8	N/A	Mgrs, Leads, MRG, MRK	N/A	--
7.1.8.1	8.2.2	Internal Quality Audits	QP Section 7.1.8.1	N/A	MRG Mgrs and Leads	Audit Schedule Audit Results	MRG MRG
7.1.8.2	5.4	Customer Audits	QP Section 7.1.8.2	N/A	MRG	N/A	--
7.1.8.3	7.4.3	Audits of Contractors	QP Section 7.1.8.3	N/A	Mgrs and Leads	Official records of initial proposals and proposal evaluation notes Semi-annual contractor evaluations	GPO COTR
7.1.8.4	5.6 8.2.2	Third-Party Audits	QP Section 7.1.8.4	N/A	Esp. Mgrs and Leads All aware		
7.1.9	7.5.1	Servicing	QP Section 7.1.9 FPD-OI-FD40.7, Remote Servicing Plan FPD-OI-FD43.1, Ground Systems Operations FPD-OI-FD40.10, HOSC Problem Report FPD-OI-FD43.2, HOSC Configuration Request CMP	N/A	Leads	HPR HCR ECR (as defined in procedures)	DMK WLCK HMK
7.1.9.1	7.5.1	Regulatory and Legislative Requirements	QP Section 7.1.9.1 MPG 2190.1, MSFC Export	N/A	Leads	Export Control Records	EXG

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			Control Program				
7.1.9.2	7.5.1	Industry Codes and Practices	N/A	N/A	MRG	N/A	--
7.1.9.3	7.5.1	Service Level Agreements	QP Section 7.1.9.3 Per CWC CMP FPD-OI-FD43.2, HOSC Configuration Request HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures KSC HB GP60-3, Automated Support Requirements System (ASRS) Handbook JSC-27379, Support Requirements System Management Plan		Ops Leads	Service Level Agreements (SLA) are documented in the POIC Capabilities Document (SSP 50304) Section 12 ECR HCR SLA Metrics	HMK HMK WLCK OUTL
7.1.9.4	6.2.2 7.5.1	Training of Customer Personnel	QP Section 7.1.9.4 HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.7 – Remote Servicing Plan	N/A	OLG, OUTL OLK SWG SWK	Training Record	TRNK
7.1.9.5	7.5.1	Technical Support	QP Section 7.1.9.5 CMP FPD-OI-FD40.10 – HPR FPD-OI-FD40.7 – Remote Servicing Plan <i>(Local servicing is by application of all the other cited procedures)</i>		Leads	CWC SLA HPR ECR	BMG HMK DMK HMK
7.2	--	Legal and Technical	QP Section 7.2	N/A	Mgrs	N/A	--
7.3	6.2.1	Human Resources/Personnel and	QP Section 7.3	N/A	Esp. MSA	Many; administrative	MSAs and

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
	6.2.2	Administration	Multiple References		All Gov't Personnel	nature	Leads
7.3.1	6.2.1 6.2.2	Competence, Awareness, and Training	QP Section 7.3.1 FPD-OI-FD43.1, Ground Systems Operations HOSC-PLAN-209, IST Training Plan FPD-OI-FD01.1, Management Process	N/A	All, Particularly Mgrs and Leads	IDP Training Plan Attendance Record IST Training/Certification	MSA MRG MRG TRIK
7.4	--	Property and Supply					
7.4.1	7.5.4	Control of Customer-Supplied Product	QP Section 7.4.1 FPD-OI-FD40.10 – HPR HOSC-HUH-233, HOSC User Handbook FPD-OI-FD43.2, HOSC Configuration Request Includes updates for PPS SW from JSC, DBs, etc. (notification via e-mail; load via HCR)	N/A	OLG, FCG OLK, FCK SWG SWK	HPR GSE paperwork HCR Record of any lost, damaged or unsatisfactory customer property (via HPR)	DMK FCG WLCK DMK
7.4.2	7.5.5	Control of GSD/Project Property	QP Section 7.4.1 MPG 4000.2, MSFC Property Management	N/A	Esp. FCG, FCK All	Property Record Maintenance parts tracking	PRK, FCG MAK
7.5	--	Procurement/Purchasing					
7.5.1	7.4.1	Process	QP Section 7.5.1 FPD-OI-FD40.11 – GSD Purchase Planning FPD-OI-FD40.12 – Task Directives FPD-OI-FD40.13, HOSC Contract	N/A	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. copy	GPO COTR

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			Performance Evaluation			Task Directives Contractor Performance Evaluation Procurement Plan	BMG COTR BMG
7.5.2	7.4.2	Purchasing Data	QP Section 7.5.2	N/A	Mgrs and Leads, BMG, COTR, CCH	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. version Task Directives Credit Card Purchase Records Waiver (none given)	GPO COTR BMG CCH N/A
7.5.3	7.4.3	Verification of Purchased Product	QP Sections 7.5.3 PP Reference 7.8.1 and 7.8.3	N/A	Mgrs and Leads, BMG, COTR	Monthly/Quarterly reports Contractor Performance Evaluation Reference 7.8.1 and 7.8.3	GPO COTR VLG/VLK
7.6	7.5.5	Transportation	QP Sections 7.6	N/A	MRG	N/A	--
7.6.1	7.5.5	Handling, Storage, Packaging, Preservation, and Delivery (HSPPD)	QP Section 7.6.1	N/A	Mgrs, Leads, SSG, SMG, SMK, SYK	HPR	DMK
7.6.1.1	7.5.1.3 7.5.5	Products in Development	QP Section 7.6.1.1 MSFC-RQMT-2467, HOSC ITS Requirements	N/A	Development Leads, SEG		

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			HOSC-PLAN-009, HOSC Contingency Plan HOSC-SYS-085, HOSC Configuration Management Procedures Manual				
7.6.1.2	7.5.1.3 7.5.5	Products in Operations/Utilization	QP Section 7.6.1.2 HOSC-PLAN-009 CMP MSFC-PLAN-2934 MSFC-RQMT-2467 HOSC-PROC-180	N/A	Ops Leads		
7.7	--	Project Formulation					
7.7.1	5.4.2 7.1	Quality Planning	QP Section 7.7.1	N/A	All	This PIP Official PIP in QP; ref. versions used by government and contractor leads and personnel	PMG
7.8	--	Project Management/Systems Engineering	QP Section 7.8	N/A	Mgrs and Leads	N/A	--
7.8.1	--	Design and Development	QP Section 7.8.1		Mgrs and Leads	N/A	--
7.8.1.1	4.3 7.1 7.5.1 8.1	General	QP Section 7.8.1.2 PP Section 9.1 CMP	N/A	Mgrs, Leads, Engrs, DEV, HMK, CMK	CWC ECR MSFC-PLAN-904 Any Customer- defined Specifications and Standards (in ECR)	BMG HMK HMK HMK

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Table 3 - Payload Planning System Product Implementation Plan							
QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.8.1.2	7.1 7.3.1	Design and Development Planning	QP Section 7.8.1.2 CMP	N/A	PMG, GLG, TLG, SEG, HMK, PMK, GLK, SEK, Engrs, DEV, VLG, VLK	PIP Schedule ECR Change PKG Verification plan/procedures	PMG SCHK HMK, CPE VLG, VLK
7.8.1.3	7.3.1	Organizational and Technical Interfaces	QP Section 7.8.1.3 PP CMP	N/A	Mgrs, Leads, Engrs, BMG, HMK, DEV	CWC Interface Control Document	BMG HMK
7.8.1.4	7.3.2	Design and Development Inputs	QP Section 7.8.1.4 CMP DMP MWI 1280.5 (ALERTs) for Safety and Security aspects	N/A	Leads, Engrs, DEV, HMK, CMK, BMG, ALG, ALK, SSG, MRK	CWC ECR MSFC-PLAN-904, HOSC Functional Requirements and Implementation Plan – including any applicable Legal, Regulatory and Statutory Requirements ALERT RIAF PPS System Specification	BMG HMK HMK ALG/ALK /SSG MRK HMK
7.8.1.5	7.3.3	Design and Development Outputs	QP Section 7.8.1.5 CMP	N/A	Leads, Engrs, DEV, HMK, CMK, VLG, VLK	PPS System Specification Build Release Pkg/ Development Folder Verification/Test Plan	HMK (Level III) DEV VLK

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						Per MSFC-HDBK-3173 for milestone reviews	
7.8.1.6	7.3.4	Design and Development Review	QP Section 7.8.1.6 CMP	N/A	Mgrs, Leads, Engrs, CMK, MRK, DEV	Review Announcement RID RIAF Reqmts Rvw Record Design Rvw Record	PMG CMK MRK CMK CMK
7.8.1.7	7.3.5 7.3.6.1 8.2.4 8.2.4.1	Design and Development Verification	QP Section 7.8.1.7 CMP	N/A	Leads, Engrs, DEV, VLG, VLK, CMK	Verification/Test Results Internal PR	SCM SCM/DEV
7.8.1.8	7.3.6 7.3.6.1 8.2.4	Design and Development Validation	QP Section 7.8.1.8 CMP FPD-OI-FD40.10, HPR	N/A	Leads, Engrs, DEV, VLG, VLK, DMK	HPR Validation Results - STR	DMK VLG/VLK
7.8.1.9	7.3.6.2 8.2.4 8.2.4.1	Design and Development Verification and Validation Testing	QP Section 7.8.1.8 <i>Ref CMP</i>	N/A	Leads, Engrs, DEV, VLG, VLK	Verification/Test Plan/Procedure CoFR Verification/Test Results FRR	VLG/VLK O&M VLG/VLK O&M
7.8.1.10	7.3.7	Control of Design and Development Changes	QP Section 7.8.1.10 CMP FPD-OI-FD43.2, HOSC Configuration Request	N/A	Mgrs, Leads, Engrs, DEV, CPG, CPK, HMK, CMK, SCHK,	ECR and Change Package Configuration changes via HCR	HMK WLCK

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
					WLCK, SCHK	Build/Load schedule DB load via HCR HPR	SCHK WLCK DMK
7.8.2	7.5.1.1 7.5.3	Product Identification and Traceability	QP Section 7.8.2 CMP FPD-OI-FD40.10, HPR	N/A	Leads, Engrs, DEV, CPG, CPK, CMK, HMK, VLG, VLK	ECR/PCN PPS System Specification Build Release Package CBC HPR DB ID and Trace Logs HW, SW, Document labels	HMK HMK (Level III) CMK (Level IV) SCM DMK HMK/CMK HMK/CMK
7.8.3	8.1	Monitoring and Measurement of Product and Process	QP Section 7.8.3	N/A	Mgrs, Leads, MRG	Reference 7.8.1.1 - 7.8.1.10	--
7.8.3.1	8.2.4	Plans and Procedures	QP Section 7.8.3.1	N/A	Leads	Reference 7.8.1.2	--
7.8.3.2	8.2.4	In-Process Inspection and Testing	QP Section 7.8.3.2	N/A	Leads, Engrs, DEV	Reference 7.8.1.6 and 7.8.1.9	Ref
7.8.3.3	8.2.4	Receiving Inspection and Testing	QP Section 7.8.3.3 CMP – Verification and Audits FPD-OI-FD40.10 – HPR CMP – Deviations and Waivers	N/A	Leads, Engrs, DEV, HMK, CMK, DMK, VLG, VLK, OLG	Verification/Test Plan/Procedures HPR Build Release Packages Deviation/Waiver (via HPR)	VLG/VLK DMK CMK DMK
7.8.3.4	8.2.4	Final Inspection and Testing	QP Section 7.8.3.4 FPD-OI-FD40.10 – HPR	N/A	Leads, Engrs, DEV, Ops Leads, DMK	HPR Readiness	DMK OLG

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			FPD-OI-FD40.4, Flight Certification for Ground Systems			Review/Issues List FD41 and FD42 OLG Letter to OLG CoFR	OLG PMG
7.8.3.5	8.2.4	Inspection and Test Records	QP Section 7.8.3.5	N/A	Leads, Engrs, DEV, VLG, VLK, CMK	Verification/Test Plan Verification/Test Results Reference 7.8.3.2 – 7.8.3.4	VLG/VLK VLG/VLK Ref
7.8.3.6	4.1.e 8.2.1 8.2.3	Monitoring and Measurement of Process	QP Section 7.8.3.6 PP HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.10 – HPR RMP CMP	N/A	MRB members, i.e., Mgrs, Leads, MRG, MRK	Monthly Reports Safety Incidents/Statistics Surveys Threats Incident Reports HPR CI RIAF Audit Reports CM Audit Reports	GPO S&MA OUTL/PMG MRK HSDK DMK MRK MRK MRG HMK
7.8.4	7.5.1.3 7.6	Control of Monitoring and Measuring Devices	QP Section 7.8.4 HOSC-PROC-180, HOSC Standard Operating Procedures CMP FPD-OI-FD40.10 – HPR	N/A	N/A	N/A	N/A

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.8.5	7.5.3	Inspection and Test Status	QP Section 7.8.5	N/A	SCHK, VLG, VLK, CMK, DEV, OLG	Test schedule Release Notes/Report Deviation/Waiver (via HPR) Dev. Folder Internal PR HPR Log IV&V Test Report Readiness Review/Issues List	SCHK SCM DMK DEV VLG/VLK DMK DMK VLG/VLK OLG
7.8.6	8.3	Control of Nonconforming Product	QP Section 7.8.6 FPD-OI-FD40.10, HPR CMP – Deviations and Waivers MWI 1280.5 (ALERTs)	N/A	All	IPR HPR Release Notes/Defects Report Deviation/Waiver (via HPR) ALERT MTBF	VLG/VLK DMK VLG/VLK DMK ALG/ALK /SSG OUTL
7.8.7	8.1 8.2.1 8.4	Statistical Techniques	QP Section 7.8.7 FPD-OI-FD43.1, Ground System Operations HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD01.1, Management Process		Mgrs, Leads, MRK, DMK, HSDK	User Survey HPR Incident Report Management Metrics Package	OUTL DMK HSDK TLG

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Table 3 - Payload Planning System Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
8		Safety					
8.1		System Safety	QP Section 8.1 HOSC-PLAN-635, HOSC Risk Management Plan (RMP)	N/A	Leads and Engrs	RIAF	MRK
8.1.1		System Safety Tools	QP Section 8.1.1 CMP RMP MWI 1280.5 (ALERTs)	N/A	Mgrs, Leads and Engrs	RIAF ALERT (Safety) ALERT (Security)	MRK ALG/ALK SSG
8.1.2		Safety Review Board Support	QP Section 8.1.2 FPD-OI-FD40.4, Flight Certification for Ground Systems	N/A	All (aware)	Ref. 8.1.3	--
8.1.3		Certification Of Flight Readiness (COFR)	QP Section 8.1.3 FPD-OI-FD40.4, Flight Certification for Ground Systems		All (aware)	CoFR	PMG
8.1.4		Range Safety	QP Section 8.1.4	N/A	N/A	N/A	--
8.1.5		Space Debris Safety	QP Section 8.1.5	N/A	N/A	N/A	--
8.1.6		Contingency Planning	QP Section 8.1.6 HOSC-PLAN-009, HOSC Contingency Plan MSFC-PLAN-2934, HOSC Emergency Disaster and Recovery Plan		OLG, OLK, FCG, FCK, SSG, SMG, SGS, SGK, SMK, SYK		
8.1.7		Nuclear Safety For Launching of Radioactive Materials	QP Section 8.1.7	N/A	N/A	N/A	N/A
8.2		Industrial Safety	QP Section 8.2	N/A	Mgrs, FCG, FCK	N/A	--
8.2.1		Safety Meetings	QP Section 8.2.1 FPD-OI-FD01.1, Management	N/A	All (aware)	Monthly Safety Meeting Notes:	Supervisor Safety Web

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Table 3 - Payload Planning System Product Implementation Plan							
QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			Process		SAK Mgrs	<ul style="list-style-type: none"> • Directorate Level • Group Level 	Page
8.2.2		Project Safety Area Surveys	QP Section 8.2.2 FPD-OI-FD01.1, Management Process FPD-OI-FD43.2, HOSC Configuration Request	N/A	All (aware) SAK Mgrs	Monthly Safety Walk-around Notes HCR HPR CI RIAF Work Orders	Supervisor Safety Web Page WLCK DMK MRK MRK SGS
8.2.3		Contractor Industrial Safety Requirements	QP Section 8.2.3 Per SHE	N/A	All (aware) SAK	Monthly Report Incident Reports Self Evaluation	S&MA S&MA S&MA

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Tables 1 and 2 below define codes for the specific quality system functions involved in this Data Reduction Center activity along with designation of who is responsible for performing the function. These codes are used in Table 3 to define who uses what procedures and who the records custodians are. Shading in the code cell indicates functions that support multiple activities (i.e., PIPs). These tables are updated on a semi-annual basis only.

Table 1 - Government

Code	Function	Responsibility
PMG	Project Manager	Ann McNair
GLG	Group Lead	Theresa Maxwell
OLG	Operations Lead	Nate Bocclair
TRG	Data Reduction Lead	Sandra Blalock
OUTL	Ops Utilization Team Lead	Lisa Watson
RTG	Ground Support Rqmts	Nelda Hiley
SEG	Systems Engineer	Sandra Blalock
HEG	Hardware Engineer	George LaCoe
MSA	Mgt Support Assistant	Dawn Walton
GPO	Government Procurement Office	--
CO	Contract Officer	George Harvey, Lisette Kummer, asst.
COTR	Contracting Officer's Technical Rep	Bill Mordan
EXG	Export Control official	Bill Mordan
BMG	Business Management Office	Georgia James
SMA	MSFC S&MA (incl. Safety Office)	--
MRG	Management Representative	Bill Mordan
SSG	Security Official	Pattie Miller
ALG	Safety ALERT Coordinator	Doug Foosee
FCG	Facility Coordinator	Brenda Wade
SGS	Building Safety Coordinator	Brenda Wade (4663/4650)
CPG	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in DRC development
O&M	Operations & Maintenance	All persons involved in DRC O&M

Table 2 - Contractor

Code	Function	Responsibility
PMK	Project Manager	Dick Marmann
GLK	Group Lead	Dave Johnson
OLK	Operations Lead	Doug Towne
MSK	Management Support Assistant	Darlene Belgrave
DRK	Data Reduction Lead	John Scott
SEK	Systems Engineer	Lee Pitts, Dan Dodson
SWK	Software Engineer	George Ritter
HEK	Hardware Engineer	Robert Pruitt
NEK	Network Engineer	Larry Schneider, Ed Hodges
VLK	IV&V Lead	Kim Lankford
BMK	Business Management Office	Jonas Clem

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HMK	HMCG Secretariat	Tom Wright
CMK	CM Secretariat	Mary Jane Brooks
DMK	Data Mgt & HPR DB Coordinator	Mary Jane Brooks
MRK	Management Representative	Phillip Sommers, Todd Norton
HSDK	HOSC Support Desk	Sparky Goodman
WLCK	Workload Control	Chris Reid
SMK	System Administrator	Jerry Collins/Jim Kennedy
SYK	System Controllers (SYSCON)	Devin Smith
ALK	Safety ALERT Coordinator	Tim Harrison
HOK	Ops Planning and Integration	Dennis Botts, Nick Bornas
TRNK	User Training Coordinator	Albiens Brazelton
TRIK	IST Training Coordinator	Sparky Goodman
MAK	Maintenance Lead	Doug Newton
FCK	Facility Coordinator	Kevin Clark
SGK	Building Safety Coordinator	Linda Myszka
SAK	Safety Coordinator	Todd Norton, Linda Myszka
DBK	Database Lead	Ann Scott
SCHK	Scheduler	John Scott, Barry Bryant
CPK	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance
PRK	Property Coordinator	Doug Newton

Table 3 below:

- Specifies the procedures used by civil service and contractor personnel for each ISO element and sub-element. Absence of a Data Reduction Center-unique procedure indicates use of the standard procedure. Contractor procedures support these indicated/specified procedures.
- Provides guidance for developing “records plans”. Records that are shown **bolded** are the mandatory subset.
- Reflects the total quality system. The quality system is designed to ensure consistent satisfaction of the customer requirements and achievement of the Project objectives. [Combining the Table 3 below with the functional assignments listed above, in Tables 1 and 2, defines individual roles in the satisfaction of the customer requirements and achievement of the Project objectives.](#)

Note, the codes listed in Tables 1 and 2 define the quality system functions involved in this Data Reduction Center activity. Appearance of function codes in Table 3, which are not defined in Tables 1 or 2, indicates that the function is not part of the Data Reduction Center activity and is covered under another PIP.

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
1	1 4.1	Purpose	Quality Plan (QP) Section 1	N/A = use of the standard procedure	All	N/A = no record applicable	--
2	1 4.1	Applicability and Scope	QP Section 2	N/A	All	N/A	--
3	4.1	Authority, Review, Acceptance, and Revision	QP Section 3	N/A	MRG	N/A	--
4	4.2.3.f	Applicable Documents	QP Section 4	N/A	MRG	N/A	--
5	4.2.3.f	References	QP Section 5	N/A	MRG	N/A	--
6	3	Definitions/Acronyms	QP Section 6	N/A	All	N/A	--
7	--	Policy	QP Section 7	N/A	MRG	N/A	--
7.1	--	Organization and Administration	QP Section 7.1	N/A	MRG	N/A	--
7.1.1	5.5.1	Management Responsibility			MRG		--
7.1.1.1	5.1	Management Commitment	Section 7.1.1.1	N/A	All	N/A	--
7.1.1.2	4.2.1.a 5.3	Quality Policy	Section 7.1.1.2	N/A	All	N/A	--
7.1.1.3	4.2.1.a 5.4.1 8.2.1	Quality Goals, Objectives, and Principles	Section 7.1.1.3	N/A	All	Management Metrics Package	OUTL
7.1.1.4	5.5.1 5.5.3	Organization	Section 7.1.1.4	N/A	All	N/A	--
7.1.1.4.1	5.5.1	Management Responsibility and Authority	Section 7.1.1.4.1	N/A	Mgrs and Leads	N/A	--
7.1.1.4.2	4.1.d 6.1	Resources	Section 7.1.1.4.2	N/A	Mgrs and Leads	N/A	--

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.1.4.3	5.5.2	Management Representative	Section 7.1.1.4.3	N/A	Mgrs, Leads, MRG	N/A	--
7.1.1.5	4.1.c 5.6 8.2.2	Management Review	Section 7.1.1.5	N/A	Mgrs, Leads, MRK	Continuous Improvement (CI) Database MRB Agenda and Minutes	MRK MRK
7.1.2	--	Quality System					
7.1.2.1	4.1	General	QP Section 7.1.2.1	N/A	All	N/A	
7.1.2.2	4.1.a, b 4.2.1.b-d 4.2.1.f 4.2.2 4.2.3.d	Quality System Procedures	QP Section 7.1.2.2 HOSC-PLAN-661, Quality Plan for the HOSC (QP) MSFC-PLAN-3046, Data Management Plan (DMP) MSFC-PLAN-2929, Configuration Management Plan (CMP)	N/A	All	"Records" are the procedures themselves	Procedure OPRs
7.1.2.3	8.4	Analysis of Data	QP Section 7.1.2.3	N/A	All	N/A	--
7.1.2.4	4.1.f 8.5.1	Continual Improvement	QP Section 7.1.2.4 (Annual documentation review)	N/A	All, esp. document OPRs	CI (ref. 7.1.6)	--
7.1.3	5.2	Customer-Related Processes					
7.1.3.1	5.2	General	QP Section 7.1.3.1 HOSC-PLAN-623, HOSC Project Plan (PP) Section 9.1 CMP	N/A	Mgrs, Leads, BMG	Collaborative Work Commitment (CWC)	BMG
7.1.3.2	5.2 7.2.1	Determination Of Requirements Related To Products	QP Section 7.1.3.2 CMP	N/A	Mgrs, Leads, DEV, SEK, SEG	Engineering Change Request (ECR) MSFC-PLAN-904 MSFC-SPEC-3423	HMK HMK HMK

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.3.3	5.2 7.2.1	Review of Requirements Related to Products	QP Section 7.1.3.3 CMP (change process)	N/A	Mgrs, Leads, DEV, SEG, SEK	Review Plans/Minutes ECR and Change Package	CMK HMK
7.1.3.4	5.2 7.2.3	Customer Communication	QP Section 7.1.3.4	N/A	All	N/A	--
7.1.3.5	5.2 8.2.1	Customer Satisfaction	QP Section 7.1.3.5 FPD-OI-FD01.1, Management Process	N/A	All	HOSC User Survey How Are We Doing Survey	OUTL PMG
7.1.4	4.2.3	Data Management, Including Document and Data Control	QP Section 7.1.4	N/A	All	N/A	--
7.1.4.1	4.2.3	General	QP Section 7.1.4.1 CMP DMP	N/A	All	N/A	--
7.1.4.2	4.2.3 7.1.4.2	Document and Data Approval and Issue	QP Section 7.1.4.2 CMP DMP	N/A	All	ECR CI Master List including Release Authority	HMK MRK HMK (Level III), DMK/CMK (Level IV)
7.1.4.3	4.2.3 7.5.1.2	Document and Data Changes	QP Section 7.1.4.3 CMP DMP MSFC-SPEC-3423	N/A	All	ECR CI	HMK MRK
7.1.4.4	4.2.3.f	References and Standards	QP Section 7.1.4.4	N/A	Leads and DEV Engineers	Evidence of references/standards currency	??
7.1.5	5.5.1	Process Control	QP Section 7.1.5	N/A	All	N/A	--

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.5.1	6.3	Infrastructure	QP Section 7.1.5.1 FPD-OI-FD40.10, HOSC Problem Report (HPR)	N/A	All	HOSC Problem Report (HPR) How Are We Doing Survey	DMK PMG
7.1.5.2	7.5.1	Control of Production and Service Provision	QP Section 7.1.5.2	N/A	Leads		
7.1.5.2.1	7.5.1 7.1.5.2	Production / Design and Development	QP Section 7.1.5.2.1 DMP CMP Government procedure in Section 7.8.1	N/A	Development Leads, DEV	ECR System Specification/Development Folders including ops and maintenance planning, etc. documentation	HMK CMK, Level IV CM All Developers
7.1.5.2.2	7.5.1 7.5.1.5 7.5.2	Service Provision	QP Section 7.1.5.2.2 HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD43.1, Ground Systems Operations MSFC-PROC-1933, HOSC Access Procedures MSFC-PLAN-2934, HOSC Emergency and Disaster Recovery Plan HOSC-HDBK-003, HOSC Facilities Document FPD-OI-FD40.10 – HPR HOSC-PLAN-209, IST Training Plan	N/A	Ops Leads, O&M	IST Personnel Certification (per HOSC-PLAN-209 and FPD-OI-FD40.4) IST Procedures Certification (per FPD-OI-FD40.4) Incident Report (per HOSC-HUH-233)	IST Discipline Lead IST Discipline Lead HSDK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.5.2.3		Control of Research and Technology Activities	QP Section 7.1.5.2.3 MPG 8220.1, Conduct of Research and Technology Activities	N/A	N/A	N/A	--
7.1.5.3	6.4	Work Environment	QP Section 7.1.5.3	N/A	All	HPR How Are We Doing Survey	DMK PMG
7.1.5.4	7.5.2	Validation of Processes for Production and Service provision	QP Section 7.1.5.4	N/A	Leads	N/A	--
7.1.5.5	8.2.3	Monitoring and Measurement of Processes	QP Section 7.1.5.5, 7.1.6, 7.1.7	N/A	All	N/A	--
7.1.6	4.1.f 8.1 8.2.3 8.4 8.5.1	Corrective and Preventive Action	QP Section 7.1.6	N/A	Mgrs and Leads All Aware	N/A	--
7.1.6.1	4.1.f 8.4 8.5.1 8.5.2	Corrective Action	QP Section 7.1.6.1 FPD-OI-FD40.10, HOSC Problem Report MWI 8621.1, Close Call and Mishap Reporting and Investigation	N/A	Esp. Mgrs and Leads All Aware	HOSC User Survey HPR How Are We Doing Survey Continuous improvement (CI) Mishaps/Investigation results	OUTL DMK PMG MRK S&MA
7.1.6.2	4.1.f 8.4 8.5.1 8.5.3	Preventive Action	QP Section 7.1.6.2 HOSC-PLAN-635, Risk Management Plan for the HOSC Project	N/A	Esp. Mgrs and Leads All Aware	Risk Identification and Analysis Form (RIAF)	MRK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.6.3	8.4	ALERTs	QP Section 7.1.6.3 MWI 1280.5, MSFC ALERT Processing	N/A	OLG, ALG SSG SMK	ALERT (Safety) ALERT (Security)	ALG/ALK SSG
7.1.7	4.2.4	Control of Records	QP Section 7.1.7	N/A	All	QP Appendix C Records Plans	PMG
7.1.8	8.2.2	Audits	QP Section 7.1.8	N/A	Mgrs, Leads, MRG, MRK	N/A	--
7.1.8.1	8.2.2	Internal Quality Audits	QP Section 7.1.8.1	N/A	MRG Mgrs and Leads	Audit Schedule Audit Results CI, RIAF	MRG MRG MRK
7.1.8.2	5.4	Customer Audits	QP Section 7.1.8.2	N/A	MRG	N/A	--
7.1.8.3	7.4.3	Audits of Contractors	QP Section 7.1.8.3	N/A	Mgrs and Leads	Official records of initial proposals and proposal evaluation notes Semi-annual contractor evaluations	GPO COTR
7.1.8.4	5.6 8.2.2	Third-Party Audits	QP Section 7.1.8.4	N/A	Esp. Mgrs and Leads All aware	Official versions of Audit Schedule and Results are maintained by S&MA	S&MA
7.1.9	7.5.1	Servicing	QP Section 7.1.9 FPD-OI-FD40.7, Remote Servicing Plan FPD-OI-FD43.1, Ground Systems Operations FPD-OI-FD40.10, HOSC Problem Report	N/A	Leads	HPR HCR ECR (as defined in procedures)	DMK WLCK HMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			FPD-OI-FD43.2, HOSC Configuration Request CMP				
7.1.9.1	7.5.1	Regulatory and Legislative Requirements	QP Section 7.1.9.1 MPG 2190.1, MSFC Export Control Program	N/A	Leads	Export Control Records	EXG
7.1.9.2	7.5.1	Industry Codes and Practices	N/A	N/A	MRG	N/A	--
7.1.9.3	7.5.1	Service Level Agreements	N/A	N/A	N/A	N/A	--
7.1.9.4	6.2.2 7.5.1	Training of Customer Personnel	QP Section 7.1.9.4 HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.7 – Remote Servicing Plan	N/A	OLG, OUTL OLK SWK	Training Record	DRK
7.1.9.5	7.5.1	Technical Support	QP Section 7.1.9.5 CMP FPD-OI-FD40.10 – HPR FPD-OI-FD40.7 – Remote Servicing Plan <i>(Local servicing is by application of all the other cited procedures)</i>	N/A	Leads	CWC SLA HPR ECR	BMG HMK DMK HMK
7.2	--	Legal and Technical	QP Section 7.2	N/A	Mgrs	N/A	--
7.3	6.2.1 6.2.2	Human Resources/Personnel and Administration	QP Section 7.3 Multiple References	N/A	Esp. MSA All Gov't Personnel	Many; administrative nature	MSAs and Leads
7.3.1	6.2.1 6.2.2	Competence, Awareness, and Training	QP Section 7.3.1 FPD-OI-FD43.1, Ground Systems Operations HOSC-PLAN-209, IST Training	N/A	All, Particularly Mgrs and Leads	Training/Certification Record (IDP's) Training Plan Attendance Record	MSA MRG MRG

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			Plan FPD-OI-FD01.1, Management Process			IST Training/ Certification IT Training Record Safety Training Records	TRIK Ctr. Ops. Directorate Supervisor Safety Web Page
7.4	--	Property and Supply					
7.4.1	7.5.4	Control of Customer-Supplied Product	QP Section 7.4.1 FPD-OI-FD40.10 – HPR HOSC-HUH-233, HOSC User Handbook FPD-OI-FD43.2, HOSC Configuration Request	N/A	OLG, FCG OLK, FCK SWK	HPR GSE Record of any lost, damaged or unsatisfactory customer property (via HPR) MADS Database	DMK FCG DMK DBK
7.4.2	7.5.5	Control of GSD/Project Property	QP Section 7.4.1 MPG 4000.2, MSFC Property Management	N/A	Esp. FCG, FCK All	Property Record Maintenance parts tracking (major)	PRK, FCG MAK
7.5	--	Procurement/Purchasing					
7.5.1	7.4.1	Process	QP Section 7.5.1 FPD-OI-FD40.11 – GSD Purchase Planning FPD-OI-FD40.12 – Task Directives FPD-OI-FD40.13, HOSC Contract Performance Evaluation	N/A	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. copy Task Directives Contractor Performance Evaluation	GPO COTR BMG COTR

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						Procurement Plan	BMG
7.5.2	7.4.2	Purchasing Data	QP Section 7.5.2	N/A	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. version Task Directives Waiver (none given)	GPO COTR BMG N/A
7.5.3	7.4.3	Verification of Purchased Product	QP Sections 7.5.3 PP Reference 7.8.1 and 7.8.3	N/A	Mgrs and Leads, BMG, COTR	Monthly/Quarterly reports Contractor Performance Evaluation Reference 7.8.1 and 7.8.3	GPO COTR VLK
7.6	7.5.5	Transportation	QP Sections 7.6	N/A	MRG	N/A	--
7.6.1	7.5.5	Handling, Storage, Packaging, Preservation, and Delivery (HSPPD)	QP Section 7.6.1	N/A	Mgrs, Leads, SSG, SMK, SYK	HPR	DMK
7.6.1.1	7.5.1.3 7.5.5	Products in Development	QP Section 7.6.1.1 MSFC-RQMT-2467, HOSC ITS Requirements HOSC-PLAN-009, HOSC Contingency Plan HOSC-SYS-085, HOSC Configuration Management Procedures Manual	N/A	Development Leads, SEG		

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.6.1.2	7.5.1.3 7.5.5	Products in Operations/Utilization	QP Section 7.6.1.2 HOSC-PLAN-009 CMP MSFC-PLAN-2934 MSFC-RQMT-2467 HOSC-PROC-180	N/A	O&M Leads		
7.7	--	Project Formulation					
7.7.1	5.4.2 7.1	Quality Planning	QP Section 7.7.1	N/A	All	This PIP Official PIP in QP; ref. versions used by government and contractor leads and personnel	PMG
7.8	--	Project Management/Systems Engineering	QP Section 7.8	N/A	Mgrs and Leads	N/A	--
7.8.1	--	Design and Development	QP Section 7.8.1		Mgrs and Leads	N/A	--
7.8.1.1	4.3 7.1 7.5.1 8.1	General	QP Section 7.8.1.2 PP Section 9.1 CMP	N/A	Mgrs, Leads, Engrs, DEV, HMK, CMK	CWC ECR MSFC-PLAN-904	BMG HMK HMK
7.8.1.2	7.1 7.3.1	Design and Development Planning	QP Section 7.8.1.2 CMP	N/A	PMG, GLG, DRG, SEG, HMK, PMK, GLK, SEK, Engrs, DEV, VLG, VLK	PIP Schedule ECR Change Package Verification plan/procedures	PMG/DRG SCHK HMK VLK

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.8.1.3	7.3.1	Organizational and Technical Interfaces	QP Section 7.8.1.3 PP CMP	N/A	Mgrs, Leads, Engrs, BMG, HMK, DEV	CWC ECR Interface Control Document	BMG HMK HMK
7.8.1.4	7.3.2	Design and Development Inputs	QP Section 7.8.1.4 CMP DMP MWI 1280.5 (ALERTs) for Safety and Security aspects	N/A	Leads, Engrs, DEV, HMK, CMK, BMG, ALG, ALK, SSG, MRK	CWC ECR MSFC-PLAN-904, HOSC Functional Requirements and Implementation Plan – including any applicable Legal, Regulatory and Statutory Requirements MSFC-SPEC-3423, DRC Requirements Specifications DRF RIAF ALERT Standards RIAF	BMG HMK HMK DMK DBK MRK ALG/ALK /SSG SEK MRK
7.8.1.5	7.3.3	Design and Development Outputs	QP Section 7.8.1.5 CMP	N/A	Leads, Engrs, DEV, HMK, CMK	MSFC-SPEC-3423 Build Release Pkg/ Development Folder Verification/Test Plan Per MSFC-HDBK-	HMK (Level III) CMK (Level IV) VLK

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						3173 for milestone reviews	
7.8.1.6	7.3.4	Design and Development Review	QP Section 7.8.1.6 CMP	N/A	Mgrs, Leads, Engrs, CMK, MRK, DEV	Review Announcement RID RIAF Reqmts Rvw Record Design Rvw Record	PMG CMK MRK CMK CMK
7.8.1.7	7.3.5 7.3.6.1 8.2.4 8.2.4.1	Design and Development Verification	QP Section 7.8.1.7 CMP	N/A	Leads, Engrs, DEV, VLK, CMK, DEV	Verification/Test Results Internal PR	VLK VLK
7.8.1.8	7.3.6 7.3.6.1 8.2.4	Design and Development Validation	QP Section 7.8.1.8 CMP FPD-OI-FD40.10, HPR	N/A	Leads, Engrs, DEV, VLK, DMK	HPR Validation Results	DMK VLK
7.8.1.9	7.3.6.2 8.2.4 8.2.4.1	Design and Development Verification and Validation Testing	QP Section 7.8.1.8 <i>Ref CMP</i>	N/A	Leads, Engrs, DEV, DRG, VLK	Verification/Test Plan/Procedure Verification/Test Results	VLK VLK
7.8.1.10	7.3.7	Control of Design and Development Changes	QP Section 7.8.1.10 CMP FPD-OI-FD43.2, HOSC Configuration Request	N/A	Mgrs, Leads, Engrs, DEV, CPG, CPK, HMK, CMK, SCHK, WLCK, SCHK	ECR and Change Package Minor OS change via HCR Build/Load schedule DB load via HCR	HMK WLCK SCHK WLCK

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.8.2	7.5.1.1 7.5.3	Product Identification and Traceability	QP Section 7.8.2 CMP FPD-OI-FD40.10, HPR	N/A	Leads, Engrs, DEV, CPG, CPK, CMK, HMK, VLK	ECR/PCN System Specification and other documentation such as prescribed in MSFC-HDBK-3173 Build Release Package Code Handover Checklist HPR DB ID and Trace Logs HW, SW, Document labels	HMK HMK (Level III) CMK (Level IV) CMK VLK CMK DMK HMK/CMK HMK/CMK
7.8.3	8.1	Monitoring and Measurement of Product and Process	QP Section 7.8.3	N/A	Mgrs, Leads, MRG	Reference 7.8.1.1 - 7.8.1.10	--
7.8.3.1	8.2.4	Plans and Procedures	QP Section 7.8.3.1	N/A	Leads	Reference 7.8.1.2	--
7.8.3.2	8.2.4	In-Process Inspection and Testing	QP Section 7.8.3.2	N/A	Leads, Engrs, DEV	Reference 7.8.1.6 and 7.8.1.9	Ref
7.8.3.3	8.2.4	Receiving Inspection and Testing	QP Section 7.8.3.3 CMP – Verification and Audits FPD-OI-FD40.10 – HPR CMP – Deviations and Waivers	N/A	Leads, Engrs, DEV, HMK, CMK, DMK, DRG, VLK, OLG	Verification/Test Plan HPR Build Release Packages Deviation/Waiver (via HPR)	VLK DMK CMK DMK
7.8.3.4	8.2.4	Final Inspection and Testing	QP Section 7.8.3.4 FPD-OI-FD40.10 – HPR FPD-OI-FD40.4, Flight	N/A	Leads, Engrs, DEV, Ops Leads, DMK	HPR Readiness Review/Issues List	DMK OLG

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			Certification for Ground Systems			CoFR	PMG
7.8.3.5	8.2.4	Inspection and Test Records	QP Section 7.8.3.5	N/A	Leads, Engrs, DEV, VLK, CMK	Verification/Test Plan Verification/Test Results Reference 7.8.3.2 – 7.8.3.4	VLK VLK, CMK Ref
7.8.3.6	4.1.e 8.2.1 8.2.3	Monitoring and Measurement of Process	QP Section 7.8.3.6 PP HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.10 – HPR RMP CMP	N/A	MRB members, i.e., Mgrs, Leads, MRG, MRK	Monthly Reports Safety Incidents/Statistics Surveys Threats Incident Reports HPR CI RIAF Audit Reports CM Audit Reports	GPO S&MA OUTL/PMG MRK HSDK DMK MRK MRK MRG HMK
7.8.4	7.5.1.3 7.6	Control of Monitoring and Measuring Devices	QP Section 7.8.4 HOSC-PROC-180, HOSC Standard Operating Procedures CMP FPD-OI-FD40.10 – HPR	N/A	<u>For HW:</u> OLG, OLK, MAK, <u>For SW:</u> Dev. Leads, VLK	<u>For HW:</u> HW Calibration Records <u>For SW:</u> ECR HPR Test plans/results (SW)	MAK HMK DMK VLK

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
					For Database: DRG (DB), DBK	For Database: DBCR	DBK
7.8.5	7.5.3	Inspection and Test Status	QP Section 7.8.5	N/A	SCHK, DRG, VLK, CMK, DEV, OLG	Test schedule Release Notes/Report Deviation/Waiver (via HPR) Dev. Folder Internal PR HPR Log IV&V Test Report Readiness Review/Issues List	SCHK VLK CMK. DMK Developer VLK CMK DMK VLK/CMK OLG
7.8.6	8.3	Control of Nonconforming Product	QP Section 7.8.6 FPD-OI-FD40.10, HPR CMP – Deviations and Waivers MWI 1280.5 (ALERTs)	N/A	All	IPR HPR Release Notes/Defects Report Deviation/Waiver (via HPR) ALERT MTBF	VLK DMK VLK DMK ALG/ALK /SSG OUTL
7.8.7	8.1 8.2.1 8.4	Statistical Techniques	QP Section 7.8.7 FPD-OI-FD43.1, Ground System Operations HOSC-PROC-180, HOSC	N/A	Mgrs, Leads	User Survey HPR Incident Report Management	OUTL DMK HSDK

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			Standard Operating Procedures FPD-OI-FD01.1, Management Process			Metrics Package	OUTL
8		Safety					
8.1		System Safety	QP Section 8.1 HOSC-PLAN-635, HOSC Risk Management Plan (RMP)	N/A	Leads and Engrs	RIAF	MRK
8.1.1		System Safety Tools	QP Section 8.1.1 CMP RMP MWI 1280.5 (ALERTs)	N/A	Mgrs, Leads and Engrs	RIAF ALERT (Safety) ALERT (Security)	MRK ALG/ALK SSG
8.1.2		Safety Review Board Support	QP Section 8.1.2 FPD-OI-FD40.4, Flight Certification for Ground Systems	N/A	All (aware)	Ref. 8.1.3	--
8.1.3		Certification Of Flight Readiness (COFR)	QP Section 8.1.3 FPD-OI-FD40.4, Flight Certification for Ground Systems	N/A	All (aware)	CoFR	PMG
8.1.4		Range Safety	QP Section 8.1.4	N/A	N/A	N/A	--
8.1.5		Space Debris Safety	QP Section 8.1.5	N/A	N/A	N/A	--
8.1.6		Contingency Planning	QP Section 8.1.6 HOSC-PLAN-009, HOSC Contingency Plan MSFC-PLAN-2934, HOSC Emergency Disaster and Recovery Plan	N/A	OLG, OLK, FCG, FCK, SSG, SMG, SGS, SGK, SMK, SYK,		

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Table 3 - Data Reduction Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
8.1.7		Nuclear Safety For Launching of Radioactive Materials	QP Section 8.1.7	N/A	N/A	N/A	N/A
8.2		Industrial Safety	QP Section 8.2	N/A	Mgrs, FCG, FCK	N/A	--
8.2.1		Safety Meetings	QP Section 8.2.1 FPD-OI-FD01.1, Management Process	N/A	All (aware) Mgrs SAK	Monthly Safety Meeting Notes: <ul style="list-style-type: none">• Directorate Level• Group Level	Supervisor Safety Web Page
8.2.2		Project Safety Area Surveys	QP Section 8.2.2 FPD-OI-FD01.1, Management Process FPD-OI-FD43.2, HOSC Configuration Request	N/A	All (aware) Mgrs SAK	Monthly Safety Walk-around Notes . HCR HPR CI RIAF Work Orders	Supervisor Safety Web Page WLCK DMK MRK MRK SGK, SGS
8.2.3		Contractor Industrial Safety Requirements	QP Section 8.2.3 Per SHE	N/A	All (aware) SAK	Monthly Report Incident Reports Self Evaluation	S&MA S&MA S&MA

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Product Implementation Plan (PIP)

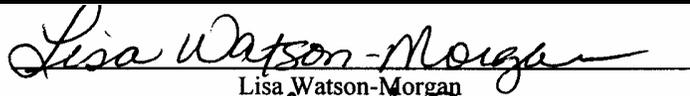
Title: Mission Systems Operations (MSO)	Export POC:	Bill Mordan
Team/Project Leader: Nathaniel Bocclair	Systems Engineer:	N/A
Release Authority: Nathaniel Bocclair	Scheduler:	Barry Bryant

Reference CWC(s) for Budget, Schedule, and Requirements: MP-R1-RV-RU-04 (Shuttle), SD-SM-MK-40-04 (TSC), CWC FD43-34 (POIC)

Approach for Accomplishing Requirements: The requirements are for operational support for the Payload Operations Integration Center, United States Operations Center, Shuttle Engineering Support Center, Shuttle Terrestrial Operations Support Room, Shuttle Conference Work Area, Shuttle Action Center, and Data Reduction Center. The approach is to provide this support as a collaborative effort with the HOSC Contractor.

- Operations, servicing, technical support, and maintenance processes and procedures are defined in the table below.
- Government and contractor application of the MPD 1280.1/ISO-9000/AS9100A standards is as defined in HOSC-PLAN-661, HOSC Quality Plan, as synopsized herein.
- Customer functional and performance requirements for the operational systems are defined in MSFC-PLAN-904. Service levels and commitments are defined in service level agreements and in the HOSC Project Plan respectively.
- Technical interfaces are defined in the system specification documentation and ICDs.
- The system life cycle model is as specified in MSFC-PLAN-2929 HOSC CM Plan.
- The master schedule identifies activity stages, reviews, baselines, related activities, resource requirements, associated dependencies, milestones and test activity scheduling.
- Team awareness and training requirements are indicated in the table below.
- GSD design and development methodology is as defined in Quality Plan Section 7.8.1. Contractor design and development is per MIL-STD-2167A (tailored), as defined in the System Development Plan and Software Quality Assurance Plan.
- Overall planning, direction, surveillance/inspection, customer management interface, and contractor product assurance/acceptance by GSD personnel (~ 10 FTEs).
- Planning, requirements, and servicing, operations, and maintenance by contractor personnel (~ 80 FTEs).
- Records requirements and custodians are defined in the table below.

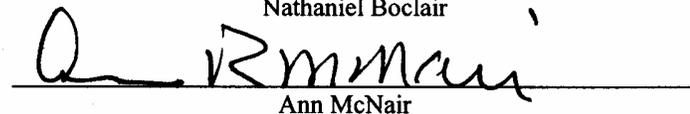
Prepared by: Team/Project Leader


Lisa Watson-Morgan

Approved by: Group Leader


Nathaniel Bocclair

Approved by: Project Manager


Ann McNair

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Tables 1 and 2 below define codes for the specific quality system functions involved in this Mission Systems Operations activity along with designation of who is responsible for performing the function. These codes are used in Table 3 to define who uses what procedures and who the records custodians are. Shading in the code cell indicates functions that support multiple activities (i.e., PIPs). These tables are updated on a semi-annual basis only.

Table 1 - Government

Code	Function	Responsibility
OLG	Operations Group Lead + HOCG Chair	Nate Boclair
OUTL	Ops Utilization Team Lead	Lisa Watson-Morgan
RTG	Ground Support Rqmts Team Lead	Nelda Hiley
MSA	Mgt Support Assistant	Margaret Hanson
GPO	Government Procurement Office	
CO	Contract Officer	George Harvey, Lisette Kummer, asst.
COTR	Contracting Officer's Technical Rep	Bill Mordan
EXG	Export Control official	Bill Mordan
BMG	Business Management Office	Georgia James
SMA	MSFC S&MA (incl. Safety Office)	
CCH	Credit Card Holder	N/A for MSOG
MRG	Management Representative	Bill Mordan
SMG	Certified System Manager	Jim Rice, Debbie Graham
SSG	Security Official	Pattie Miller
ALG	Safety ALERT Coordinator	Doug Fooshee
FCG	Facility Coordinator	Brenda Wade, Bill Evans, Robert Phillips
SGS	Building Safety Coordinator	Jimmy Hill, Brenda Wade (4663/4650)
CPG	Change Package Engineer	as assigned by ESP
NBT	New Business Team	Lisa Watson-Morgan, Cynthia Frost
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance

Table 2 - Contractor

Code	Function	Responsibility
PMK	Project Manager	Dick Marmann
OLK	Operations Lead	Doug Towne
MSK	Management Support Assistant	Darlene Belgrave
DRK	Data Reduction Ops Lead	Walt Williams
VLK	IV&V Lead	Kim Lankford
BMK	Business Management Office	Jonas Clem
HMK	HMCG Secretariat	Tom Wright
CMK	Contractor CM Secretariat	Mary Jane Brooks, Janice Branch, Angela Perkins
DMK	Data Mgt & HPR DB Coordinator	Mary Jane Brooks
MRK	Management Representative	Philip Sommers, Todd Norton
HSDK	HOSC Support Desk	Sparky Goodman
WLCK	Workload Control	Chris Reid
SMK	System Administrator	Jerry Collins
SYK	System Controllers (SYSCON)	Devin Smith

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ALK	Safety ALERT Coordinator	Randall Hargrove
HOK	Ops Planning and Integration	Dennis Botts, Nick Bornas
TRNK	User Training Coordinator	Barbara Tepper, Scott Schutzenhofer
TRIK	IST Training Coordinator	Sparky Goodman
MAK	Maintenance Lead	Doug Newton
FCK	Facility Coordinator	Kevin Clark
SGK	Building Safety Coordinator	Rick Houston (4610)
SAK	Safety Coordinator	Todd Norton, Linda Myszka
SCHK	Scheduler	Barry Bryant, Chris Reid
CPK	Change Package Engineer	as assigned by ESP
DEV	Developer	All persons involved in development of anything
O&M	Operations & Maintenance	All persons involved in operations or maintenance
PRK	Property Coordinator	Doug Newton

Table 3 below:

- Specifies the procedures used by civil service and contractor personnel for each ISO element and sub-element. Absence of a Mission Systems Operations-unique procedure indicates use of the standard procedure. Contractor procedures support these indicated/specified procedures.
- Provides guidance for developing “records plans”. Records that are shown **bolded** are the mandatory subset.
- Reflects the total quality system. The quality system is designed to ensure consistent satisfaction of the customer requirements and achievement of the Project objectives. [Combining the Table 3 below with the functional assignments listed above, in Tables 1 and 2, defines individual roles in the satisfaction of the customer requirements and achievement of the Project objectives.](#)

Note, the codes listed in Tables 1 and 2 define the quality system functions involved in this Mission Systems Operations activity. Appearance of function codes in Table 3, which are not defined in Tables 1 or 2, indicates that the function is not part of the Mission Systems Operations activity and is covered under another PIP.

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Table 3 – Mission Systems Operations Product Implementation Plan

QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
1	1 4.1	Purpose	Quality Plan (QP) Section 1	N/A = use of the standard procedure	All	N/A = no record applicable	--
2	1 4.1	Applicability and Scope	QP Section 2	N/A	All	N/A	--
3	4.1	Authority, Review, Acceptance, and Revision	QP Section 3	N/A	MRG	N/A	--
4	4.2.3.f	Applicable Documents	QP Section 4	N/A	MRG	N/A	--
5	4.2.3.f	References	QP Section 5	N/A	MRG	N/A	--
6	3	Definitions/Acronyms	QP Section 6	N/A	All	N/A	--
7	--	Policy	QP Section 7	N/A	MRG	N/A	--
7.1	--	Organization and Administration	QP Section 7.1	N/A	MRG	N/A	--
7.1.1	5.5.1	Management Responsibility			MRG		--
7.1.1.1	5.1	Management Commitment	Section 7.1.1.1	N/A	All	N/A	--
7.1.1.2	4.2.1.a 5.3	Quality Policy	Section 7.1.1.2	N/A	All	N/A	--
7.1.1.3	4.2.1.a 5.4.1 8.2.1	Quality Goals, Objectives, and Principles	Section 7.1.1.3	N/A	All	Management Metrics Package, customer surveys	OUTL
7.1.1.4	5.5.1 5.5.3	Organization	Section 7.1.1.4	N/A	All	N/A	--
7.1.1.4.1	5.5.1	Management Responsibility and Authority	Section 7.1.1.4.1	N/A	Mgrs and Leads	N/A	--
7.1.1.4.2	4.1.d 6.1	Resources	Section 7.1.1.4.2	N/A	Mgrs and Leads	N/A	--

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.1.1.4.3	5.5.2	Management Representative	Section 7.1.1.4.3	N/A	Mgrs, Leads, MRG	N/A	--
7.1.1.5	4.1.c 5.6 8.2.2	Management Review	Section 7.1.1.5	N/A	Mgrs, Leads, MRK	Continuous Improvement (CI) Database MRB Agenda and Minutes	MRK MRK
7.1.2	--	Quality System					
7.1.2.1	4.1	General	QP Section 7.1.2.1	N/A	All	N/A	
7.1.2.2	4.1.a, b 4.2.1.b-d 4.2.1.f 4.2.2 4.2.3.d	Quality System Procedures	QP Section 7.1.2.2 HOSC-PLAN-661, Quality Plan for the HOSC (QP) MSFC-PLAN-3046, Data Management Plan (DMP) MSFC-PLAN-2929, Configuration Management Plan (CMP)	N/A	All	"Records" are the procedures themselves	Procedure OPRs
7.1.2.3	8.4	Analysis of Data	QP Section 7.1.2.3	N/A	All	N/A	--
7.1.2.4	4.1.f 8.5.1	Continual Improvement	QP Section 7.1.2.4 (Annual documentation review)	N/A	All, esp. document OPRs	CI (ref. 7.1.6)	--
7.1.3	5.2	Customer-Related Processes					
7.1.3.1	5.2	General	QP Section 7.1.3.1 HOSC-PLAN-623, HOSC Project Plan (PP) Section 9.1 CMP	N/A	Mgrs, Leads, DEV and O&M	Collaborative Work Commitment (CWC)	BMG
7.1.3.2	5.2 7.2.1	Determination Of Requirements Related To Products	QP Section 7.1.3.2 CMP	N/A	Mgrs, Leads, DEV	Engineering Change Request (ECR) MSFC-PLAN-904	HMK HMK

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7.1.3.3	5.2 7.2.1	Review of Requirements Related to Products	QP Section 7.1.3.3 CMP (change process)	N/A	Mgrs, Leads, and DEV	Review Plans/Minutes ECR and Change Package	CMK HMK
7.1.3.4	5.2 7.2.3	Customer Communication	QP Section 7.1.3.4	N/A	All	N/A	--
7.1.3.5	5.2 8.2.1	Customer Satisfaction	QP Section 7.1.3.5 FPD-OI-FD01.1, Management Process	N/A	All	HOSC User Survey How Are We Doing Survey	OUTL PMG
7.1.4	4.2.3	Data Management, Including Document and Data Control	QP Section 7.1.4	N/A	All	N/A	--
7.1.4.1	4.2.3	General	QP Section 7.1.4.1 CMP DMP	N/A	All	N/A	--
7.1.4.2	4.2.3 7.1.4.2	Document and Data Approval and Issue	QP Section 7.1.4.2 CMP DMP	N/A	All	ECR CI Master List including Release Authority	HMK MRK HMK (Level III), DMK/CMK (Level IV)
7.1.4.3	4.2.3 7.5.1.2	Document and Data Changes	QP Section 7.1.4.3 CMP DMP	N/A	All	ECR CI	HMK MRK
7.1.4.4	4.2.3.f	References and Standards	QP Section 7.1.4.4	N/A	Leads and DEV Engineers	Evidence of references/standards currency	
7.1.5	5.5.1	Process Control	QP Section 7.1.5	N/A	All	N/A	--
7.1.5.1	6.3	Infrastructure	QP Section 7.1.5.1	N/A	All	HOSC Problem	DMK

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			FPD-OI-FD40.10, HOSC Problem Report (HPR)			Report (HPR) How Are We Doing Survey	PMG
7.1.5.2	7.5.1	Control of Production and Service Provision	QP Section 7.1.5.2	N/A	Leads		
7.1.5.2.1	7.5.1 7.1.5.2	Production / Design and Development	QP Section 7.1.5.2.1 DMP CMP Government procedure in Section 7.8.1	N/A	Development Leads, DEV All Developers	ECR System Specification/Development Folders including ops and maintenance planning, etc. documentation	HMK CMK, Level IV CM
7.1.5.2.2	7.5.1 7.5.1.5 7.5.2	Service Provision	QP Section 7.1.5.2.2 HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD43.1, Ground Systems Operations MSFC-PROC-1933, HOSC Access Procedures MSFC-PLAN-2934, HOSC Emergency and Disaster Recovery Plan HOSC-HDBK-003, HOSC Facilities Document FPD-OI-FD40.10 – HPR HOSC-PLAN-209, IST Training Plan	N/A	Ops Leads, O&M Integrated Support Team	IST Personnel Certification (per HOSC-PLAN-209 and FPD-OI-FD40.4) IST Procedures Certification (per FPD-OI-FD40.4) Incident Report (per HOSC-HUH-233)	IST Discipline Lead IST Discipline Lead HSDK

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7.1.5.2.3		Control of Research and Technology Activities	QP Section 7.1.5.2.3 MPG 8220.1, Conduct of Research and Technology Activities	N/A	Mgrs, Leads, R&T Engrs.	Proposal Authority to Proceed Research Plan Research Record Review Record	R&T Engr R&T Eng R&T Engr R&T Engr R&T Engr
7.1.5.3	6.4	Work Environment	QP Section 7.1.5.3	N/A	All	HPR How Are We Doing Survey	DMK PMG
7.1.5.4	7.5.2	Validation of Processes for Production and Service provision	QP Section 7.1.5.4	N/A	Leads	N/A	--
7.1.5.5	8.2.3	Monitoring and Measurement of Processes	QP Section 7.1.5.5, 7.1.6, 7.1.7	N/A	All	N/A	--
7.1.6	4.1.f 8.1 8.2.3 8.4 8.5.1	Corrective and Preventive Action	QP Section 7.1.6	N/A	Mgrs and Leads All Aware	N/A	--
7.1.6.1	4.1.f 8.4 8.5.1 8.5.2	Corrective Action	QP Section 7.1.6.1 FPD-OI-FD40.10, HOSC Problem Report MWI 8621.1, Close Call and Mishap Reporting and Investigation	N/A	Esp. Mgrs and Leads All Aware	HOSC User Survey HPR How Are We Doing Survey Continuous improvement (CI) Mishaps/Investigation results	OUTL DMK PMG MRK S&MA
7.1.6.2	4.1.f	Preventive Action	QP Section 7.1.6.2 HOSC-PLAN-635, Risk	N/A	Esp. Mgrs and Leads	Risk Identification and Analysis Form	MRK

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	8.4 8.5.1 8.5.3		Management Plan for the HOSC Project		All Aware	(RIAF)	
7.1.6.3	8.4	ALERTs	QP Section 7.1.6.3 MWI 1280.5, MSFC ALERT Processing	N/A	OLG, ALG SSG SMG SMK	ALERT (Safety) ALERT (Security)	ALG/ALK SSG
7.1.7	4.2.4	Control of Records	QP Section 7.1.7	N/A	All	QP Appendix C Records Plans	PMG
7.1.8	8.2.2	Audits	QP Section 7.1.8	N/A	Mgrs, Leads, MRG, MRK	N/A	--
7.1.8.1	8.2.2	Internal Quality Audits	QP Section 7.1.8.1	N/A	MRG Mgrs and Leads	Audit Schedule Audit Results CI, RIAF	MRG MRG MRK
7.1.8.2	5.4	Customer Audits	QP Section 7.1.8.2	N/A	MRG	N/A	--
7.1.8.3	7.4.3	Audits of Contractors	QP Section 7.1.8.3	N/A	Mgrs and Leads	Official records of initial proposals and proposal evaluation notes Semi-annual contractor evaluations	GPO COTR
7.1.8.4	5.6 8.2.2	Third-Party Audits	QP Section 7.1.8.4	N/A	Esp. Mgrs and Leads All aware	Official versions of Audit Schedule and Results are maintained by S&MA	S&MA
7.1.9	7.5.1	Servicing	QP Section 7.1.9 FPD-OI-FD40.7, Remote Servicing	N/A	Leads	HPR HCR	DMK WLCK

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			Plan FPD-OI-FD43.1, Ground Systems Operations FPD-OI-FD40.10, HOSC Problem Report FPD-OI-FD43.2, HOSC Configuration Request CMP			ECR (as defined in procedures)	HMK
7.1.9.1	7.5.1	Regulatory and Legislative Requirements	QP Section 7.1.9.1 MPG 2190.1, MSFC Export Control Program	N/A	Leads	Export Control Records	EXG
7.1.9.2	7.5.1	Industry Codes and Practices	N/A	N/A	MRG	N/A	--
7.1.9.3	7.5.1	Service Level Agreements	QP Section 7.1.9.3 Per CWC CMP FPD-OI-FD43.2, HOSC Configuration Request HOSC-HUH-233, HOSC User Handbook HOSC-PROC-180, HOSC Standard Operating Procedures KSC HB GP60-3, Automated Support Requirements System (ASRS) Handbook JSC-27379, Support Requirements System Management Plan		Ops Leads	Service Level Agreements (SLA) are documented in the POIC Capabilities Document (SSP 50304) Section 12 ECR HCR SLA Metrics	HMK HMK WLCK OUTL
7.1.9.4	6.2.2 7.5.1	Training of Customer Personnel	QP Section 7.1.9.4 HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.7 – Remote Servicing Plan	N/A	OLG, OUTL OLK SWG SWK	Training Record	TRNK

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7.1.9.5	7.5.1	Technical Support	QP Section 7.1.9.5 CMP FPD-OI-FD40.10 – HPR FPD-OI-FD40.7 – Remote Servicing Plan <i>(Local servicing is by application of all the other cited procedures)</i>		Leads	CWC SLA HPR ECR	BMG HMK DMK HMK
7.2	--	Legal and Technical	QP Section 7.2	N/A	Mgrs	N/A	--
7.3	6.2.1 6.2.2	Human Resources/Personnel and Administration	QP Section 7.3 Multiple References	N/A	Esp. MSA All Gov't Personnel	Many; administrative nature	MSAs and Leads
7.3.1	6.2.1 6.2.2	Competence, Awareness, and Training	QP Section 7.3.1 FPD-OI-FD43.1, Ground Systems Operations HOSC-PLAN-209, IST Training Plan FPD-OI-FD01.1, Management Process	N/A	All, Particularly Mgrs and Leads	Training/Certification Record Training Plan Attendance Record IST Training/Certification IT Training Record Safety Training Records	Mgrs and Leads MRG MRG TRIK Ctr. Ops. Directorate Supervisor Safety Web Page
7.4	--	Property and Supply					
7.4.1	7.5.4	Control of Customer-Supplied Product	QP Section 7.4.1 FPD-OI-FD40.10 – HPR HOSC-HUH-233, HOSC User Handbook	N/A	OLG, FCG OLK, FCK SWG SWK	HPR GSE paperwork HCR Record of any lost,	DMK FCG WLCK DMK

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			FPD-OI-FD43.2, HOSC Configuration Request Includes updates for PPS SW from JSC, DBs, etc. (notification via e-mail; load via HCR)			damaged or unsatisfactory customer property	
7.4.2	7.5.5	Control of GSD/Project Property	QP Section 7.4.1 MPG 4000.2, MSFC Property Management	N/A	Esp. FCG, FCK All	Property Record Maintenance parts tracking	PRK, FCG MAK
7.5	--	Procurement/Purchasing					
7.5.1	7.4.1	Process	QP Section 7.5.1 FPD-OI-FD40.11 – GSD Purchase Planning FPD-OI-FD40.12 – Task Directives FPD-OI-FD40.13, HOSC Contract Performance Evaluation	N/A	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. copy Task Directives Contractor Performance Evaluation Procurement Plan	GPO Mgrs and Leads BMG COTR BMG
7.5.2	7.4.2	Purchasing Data	QP Section 7.5.2	N/A	Mgrs and Leads, BMG, COTR	Official contract records are maintained by the Procurement Office Contract Statement of Work (SOW) ref. version Task Directives Credit Card Purchase Records	GPO Mgrs and Leads BMG CCH

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						Waiver (none given)	N/A
7.5.3	7.4.3	Verification of Purchased Product	QP Sections 7.5.3 PP Reference 7.8.1 and 7.8.3	N/A	Mgrs and Leads, BMG, COTR	Monthly/Quarterly reports Contractor Performance Evaluation Reference 7.8.1 and 7.8.3	GPO COTR VLG/VLK
7.6	7.5.5	Transportation	QP Sections 7.6	N/A	MRG	N/A	--
7.6.1	7.5.5	Handling, Storage, Packaging, Preservation, and Delivery (HSPPD)	QP Section 7.6.1	N/A	Mgrs, Leads, SSG, SMG, SMK, SYK	HPR	DMK
7.6.1.1	7.5.1.3 7.5.5	Products in Development	QP Section 7.6.1.1 MSFC-RQMT-2467, HOSC ITS Requirements HOSC-PLAN-009, HOSC Contingency Plan HOSC-SYS-085, HOSC Configuration Management Procedures Manual		Development Leads, SEG		
7.6.1.2	7.5.1.3 7.5.5	Products in Operations/Utilization	QP Section 7.6.1.2 HOSC-PLAN-209 CMP MSFC-PLAN-2934 MSFC-RQMT-2467 HOSC-PROC-180		Ops Leads		
7.7	--	Project Formulation					
7.7.1	5.4.2	Quality Planning	QP Section 7.7.1	N/A	All	This PIP	PMG

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	7.1					Official PIP in QP; ref. versions used by government and contractor leads and personnel	
7.8	--	Project Management/Systems Engineering	QP Section 7.8	N/A	Mgrs and Leads	N/A	--
7.8.1	--	Design and Development	QP Section 7.8.1		Mgrs and Leads	N/A	--
7.8.1.1	4.3 7.1 7.5.1 8.1	General	QP Section 7.8.1.2 PP Section 9.1 CMP	N/A	Mgrs, Leads, Engrs, DEV, HMK, CMK	CWC ECR MSFC-PLAN-904 Any Customer-defined Specifications and Standards (in ECR)	BMG HMK HMK HMK
7.8.1.2	7.1 7.3.1	Design and Development Planning	QP Section 7.8.1.2 CMP	N/A	PMG, GLG, TLG, SEG, HMK, PMK, GLK, SEK, Engrs, DEV, VLG, VLK	PIP Schedule ECR Change Package Verification plan/procedures	PMG/TLG SCHK HMK VLG, VLK
7.8.1.3	7.3.1	Organizational and Technical Interfaces	QP Section 7.8.1.3 PP CMP	N/A	Mgrs, Leads, Engrs, BMG, HMK, DEV	CWC ECR Interface Control Document	BMG HMK HMK
7.8.1.4	7.3.2	Design and Development Inputs	QP Section 7.8.1.4 CMP DMP	N/A	Leads, Engrs, DEV, HMK, CMK, BMG, ALG, ALK,	CWC ECR MSFC-PLAN-904, HOSC Functional	BMG HMK HMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			MWI 1280.5 (ALERTs) for Safety and Security aspects		SSG, MRK	Requirements and Implementation Plan – including any applicable Legal, Regulatory and Statutory Requirements ALERT Standards RIAF	ALG/ALK /SSG SEG/K MRK
7.8.1.5	7.3.3	Design and Development Outputs	QP Section 7.8.1.5 CMP	N/A	Leads, Engrs, DEV, HMK, CMK	System Specifications Build Release Pkg/ Development Folder Verification/Test Plan Per MSFC-HDBK-3173 for milestone reviews	HMK (Level III) CMK (Level IV) VLK (Level IV)
7.8.1.6	7.3.4	Design and Development Review	QP Section 7.8.1.6 CMP	N/A	Mgrs, Leads, Engrs, CMK, MRK, DEV	Review Announcement RID RIAF Reqmts Rvw Record Design Rvw Record	PMG CMK MRK CMK CMK
7.8.1.7	7.3.5 7.3.6.1 8.2.4 8.2.4.1	Design and Development Verification	QP Section 7.8.1.7 CMP	N/A	Leads, Engrs, DEV, VLG, VLK, CMK, DEV	Verification/Test Results Internal PR	VLG/VLK VLG/VLK

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7.8.1.8	7.3.6 7.3.6.1 8.2.4	Design and Development Validation	QP Section 7.8.1.8 CMP FPD-OI-FD40.10, HPR	N/A	Leads, Engrs, DEV, VLG, VLK, DMK	HPR Validation Results	DMK VLG/VLK
7.8.1.9	7.3.6.2 8.2.4 8.2.4.1	Design and Development Verification and Validation Testing	QP Section 7.8.1.8 <i>Ref CMP</i>	N/A	Leads, Engrs, DEV, VLG, VLK	Verification/Test Plan/Procedure Verification/Test Results	VLG/VLK VLG/VLK
7.8.1.10	7.3.7	Control of Design and Development Changes	QP Section 7.8.1.10 CMP FPD-OI-FD43.2, HOSC Configuration Request	N/A	Mgrs, Leads, Engrs, DEV, CPG, CPK, HMK, CMK, WLCK, SCHK	ECR and Change Package Minor OS change via HCR Build/Load schedule DB load via HCR	HMK WLCK SCHK WLCK
7.8.2	7.5.1.1 7.5.3	Product Identification and Traceability	QP Section 7.8.2 CMP FPD-OI-FD40.10, HPR	N/A	Leads, Engrs, DEV, CPG, CPK, CMK, HMK, VLG, VLK	ECR/PCN System Specification and other documentation such as prescribed in MSFC-HDBK-3173 Build Release Package Code Handover Checklist HPR DB ID and Trace Logs HW, SW, Document labels	HMK HMK (Level III) CMK (Level IV) CMK VLG/VLK DMK HMK/CMK HMK/CMK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.8.3	8.1	Monitoring and Measurement of Product and Process	QP Section 7.8.3	N/A	Mgrs, Leads, MRG	Reference 7.8.1.1 - 7.8.1.10	--
7.8.3.1	8.2.4	Plans and Procedures	QP Section 7.8.3.1	N/A	Leads	Reference 7.8.1.2	--
7.8.3.2	8.2.4	In-Process Inspection and Testing	QP Section 7.8.3.2	N/A	Leads, Engrs, DEV	Reference 7.8.1.6 and 7.8.1.9	Ref
7.8.3.3	8.2.4	Receiving Inspection and Testing	QP Section 7.8.3.3 CMP – Verification and Audits FPD-OI-FD40.10 – HPR CMP – Deviations and Waivers	N/A	Leads, Engrs, DEV, HMK, CMK, DMK, VLG, VLK, OLG	Verification/Test Plan HPR Build Release Packages Deviation/Waiver (via HPR)	VLG/VLK DMK CMK DMK
7.8.3.4	8.2.4	Final Inspection and Testing	QP Section 7.8.3.4 FPD-OI-FD40.10 – HPR FPD-OI-FD40.4, Flight Certification for Ground Systems	N/A	Leads, Engrs, DEV, Ops Leads, DMK	HPR Readiness Review/Issues List FD41 and FD42 GLG Letter to OLG CoFR	DMK OLG OLG PMG
7.8.3.5	8.2.4	Inspection and Test Records	QP Section 7.8.3.5	N/A	Leads, Engrs, DEV, VLG, VLK, CMK	Verification/Test Plan Verification/Test Results Reference 7.8.3.2 – 7.8.3.4	VLG/VLK VLG/VLK Ref
7.8.3.6	4.1.e 8.2.1 8.2.3	Monitoring and Measurement of Process	QP Section 7.8.3.6 PP HOSC-HUH-233, HOSC User Handbook FPD-OI-FD40.10 – HPR	N/A	MRB members, i.e., Mgrs, Leads, MRG, MRK	Monthly Reports Safety Incidents/Statistics Surveys Threats	GPO S&MA OUTL/PMG MRK

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
			RMP CMP			Incident Reports HPR CI RIAF Audit Reports CM Audit Reports	HSDK DMK MRK MRK MRG HMK
7.8.4	7.5.1.3 7.6	Control of Monitoring and Measuring Devices	QP Section 7.8.4 HOSC-PROC-180, HOSC Standard Operating Procedures CMP FPD-OI-FD40.10 – HPR	N/A	<u>For HW:</u> OLG, OLK, MAK, <u>For SW:</u> Dev. Leads, VLG, VLK <u>For Database:</u> TLG (DB), DBK	<u>For HW:</u> HW Calibration Records <u>For SW:</u> ECR HPR Test plans/results (SW) <u>For Database:</u> DBCR	MAK HMK DMK VLG/VLK DBK
7.8.5	7.5.3	Inspection and Test Status	QP Section 7.8.5	N/A	SCHK, VLG, VLK, CMK, DEV, OLG	Test schedule Release Notes/Report Deviation/Waiver (via HPR) Dev. Folder Internal PR HPR Log IV&V Test Report Readiness Review/Issues List	SCHK, VLK VLG/VLK DMK Developer VLG/VLK DMK VLG/VLK OLG

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
7.8.6	8.3	Control of Nonconforming Product	QP Section 7.8.6 FPD-OI-FD40.10, HPR CMP – Deviations and Waivers MWI 1280.5 (ALERTs)	N/A	All	IPR HPR Release Notes/Defects Report Deviation/Waiver (via HPR) ALERT MTBF	VLG/VLK DMK VLG/VLK DMK ALG/ALK /SSG OUTL
7.8.7	8.1 8.2.1 8.4	Statistical Techniques	QP Section 7.8.7 FPD-OI-FD43.1, Ground System Operations HOSC-PROC-180, HOSC Standard Operating Procedures FPD-OI-FD01.1, Management Process		Mgrs, Leads	User Survey HPR Incident Report DRC Statistics Management Metrics Package	OUTL DMK HSDK OLG ?? OUTL
8		Safety					
8.1		System Safety	QP Section 8.1 HOSC-PLAN-635, HOSC Risk Management Plan (RMP)	N/A	Leads and Engrs	RIAF	MRK
8.1.1		System Safety Tools	QP Section 8.1.1 CMP RMP MWI 1280.5 (ALERTs)	N/A	Mgrs, Leads and Engrs	RIAF ALERT (Safety) ALERT (Security)	MRK ALG/ALK SSG
8.1.2		Safety Review Board Support	QP Section 8.1.2 FPD-OI-FD40.4, Flight Certification for Ground Systems	N/A	All (aware)	Ref. 8.1.3	--

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QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
8.1.3		Certification Of Flight Readiness (COFR)	QP Section 8.1.3 FPD-OI-FD40.4, Flight Certification for Ground Systems		All (aware)	CoFR	PMG
8.1.4		Range Safety	QP Section 8.1.4	N/A	N/A	N/A	--
8.1.5		Space Debris Safety	QP Section 8.1.5	N/A	N/A	N/A	--
8.1.6		Contingency Planning	QP Section 8.1.6 HOSC-PLAN-009, HOSC Contingency Plan MSFC-PLAN-2934, HOSC Emergency Disaster and Recovery Plan		OLG, OLK, FCG, FCK, SSG, SMG, SGS, SGK, SMK, SYK,		
8.1.7		Nuclear Safety For Launching of Radioactive Materials	QP Section 8.1.7	N/A	N/A	N/A	N/A
8.2		Industrial Safety	QP Section 8.2	N/A	Mgrs, FCG, FCK	N/A	--
8.2.1		Safety Meetings	QP Section 8.2.1 FPD-OI-FD01.1, Management Process	N/A	All (aware) SAK	Monthly Safety Meeting Notes: <ul style="list-style-type: none"> • Directorate Level • Group Level 	Supervisor Safety Web Page
8.2.2		Project Safety Area Surveys	QP Section 8.2.2 FPD-OI-FD01.1, Management Process FPD-OI-FD43.2, HOSC Configuration Request	N/A	All (aware) SAK	Monthly Safety Walk-around Notes HCR HPR CI	Supervisor Safety Web Page WLCK DMK MRK

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Table 3 – Mission Systems Operations Product Implementation Plan							
QP Section	ISO/AS Clause	MMM/HOSC Quality Plan	Standard Procedure	Activity-Unique Procedure	User	Record	Custodian
						RIAF Work Orders	MRK SGS, SGK
8.2.3		Contractor Industrial Safety Requirements	QP Section 8.2.3 Per SHE	N/A	All (aware) SAK	Monthly Report Incident Reports Self Evaluation	S&MA S&MA S&MA