AUTOMATED SUPPORT REQUIREMENTS SYSTEM (ASRS) Status

NSG April 2012

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ASRS Office of Primary Responsibility
Ground Processing, PCO
NASA, KSC, MS: GP-C1

Automated Support Requirements System (ASRS)

ASRS is the Agency tool of the Support Requirement System (SRS) for documenting support requirements and committing spaceflight OPS support (PRD, PSP, OR and OD) from range, range safety, communications, meteorology, rescue, and others…

- Used by SSP T&R, ISS, ISS/Payloads, LSP (ELV), MPCV EFT-1, and others for support (service) requirements
- ASRS follows the UDS structure, displays a derivative of the UDS-501-97 formats and provides a combination of UDS documents
- ASRS documents operational support requirements and responses which are made available to the organizations responsible for requesting and/or providing the support
- ASRS database entries include support needed for Prelaunch, Payload, Launch, Flight, International Space Station (ISS) Orbital, Landing, Recovery, and Launch Services Program (LSP) support operations
- SRS data in ASRS is separated according to program, mission phase, and center management responsibilities

Universal Documentation System (UDS)

The UDS is used to formalize arrangements between organizations and agencies that require support of space programs and installations that provide such support. Since its inception, the UDS has been expanded and revised to accommodate the needs of other test and operational programs. The UDS consists of three levels of documentation:

UDS level I Documents (Initiate program support planning)

- 1. Program Introduction Document (PID): The PID is the initial planning document submitted by an organization or agency to identify the scope and duration of a program activity and types of support required. This document is prepared and approved by the agency's Lead Center office prior to formal transmittal to the support organizations/agencies. It is used as a control document and is updated as required to reflect changes in program scope and responsibilities or support requirements.
- 2. Statement of Capability Document (SCD), The SCD is the support agency's response to the PID. This document is evidence that a program has been accepted for support by the support organization and/or agency, and defines the installation's capabilities for supporting the requirements stated in the PID. The support conditions, qualifications, and resources are identified in this document and serve as a baseline reference to subsequent commitment by support installations. The PID and the SCD complement each other in establishing the scope of the program support activity.

UDS Level 2 Documents (Provide requirements and support detail for program support activities)

- 1. Program Requirements Document (PRD), The PRD is prepared by an organization to describe the detailed technical and administrative operating requirements for support desired from support organizations. The PRD will document specific support requirements and not procedures or implementation actions. Separate sets of PRDs will be developed and maintained for the SSP and the ISSP.
- 2. Program Support Plan (PSP): The PSPs are response and commitment documents to operational support requirements presented in the PRDs. These documents are provided by support organizations for all sets of PRDs, and commit resource, identify items that cannot be supported, or request additional information, justification, funding coordination, etc.

UDS Level 3 Documents (Provide detailed operational support for activities/tests within a program)

- 1. Operations Requirements (OR): The OR is a mission oriented document prepared by requesting organizations as required to further refine support requirements for each mission, test, activity, etc. It contains requirements which are substantiated by the official PRDs and provides the support installations with specific requirements for issuing the ORs and PSPs. For both, SSP and ISSP, a single OR will be developed and maintained for each mission.
- 2. Operations- Directive (OD): The OD is the support response to an OR and provides the commitment for support by the organization or agency. It is a detailed plan for implementation of the support functions for a program, mission, specific test, or series of tests.

UDS Document Level	REQUIREMENTS Documentation	RESPONSE Documentation
1	Program Introduction (PI)	Statement of Capability (SC)
2	Program Requirements Document (PRD)	Program Support Plan (PSP)
3	Operations Requirements (OR)	Operations Directive (OD)

ASRS Office of Primary Responsibility (OPR)

KSC- Ground Processing

ASRS OPR Management

- Coordinate with SRS Program Manager for ASRS out-of-scope issues
- Chair to annual ASRS Management Meeting
- Chair to ASRS community of Requirement/Response (R&R) Managers and Database Managers (DBM)
- Interface and coordinate with NASA, contractor, and DoD Eastern Range
- Ensure ASRS availability
- Maintain ASRS software application
- Manage and approve release of major ASRS changes and documentation
- Manage and approve ASRS ESR's with Community Consensus (R&R/DBM)
- Manage and approve system problem resolution and ensures ESR/problem reports prepared, maintained and presented to ASRS Community (R&R/DBM)
- Coordinate enhancement to the ASRS
- Update, maintain and publish GP60-3 and ASRS training guides
- Process access permissions to ASRS database
- Provide ASRS training

ASRS OPR Support United Space Alliance (USA)

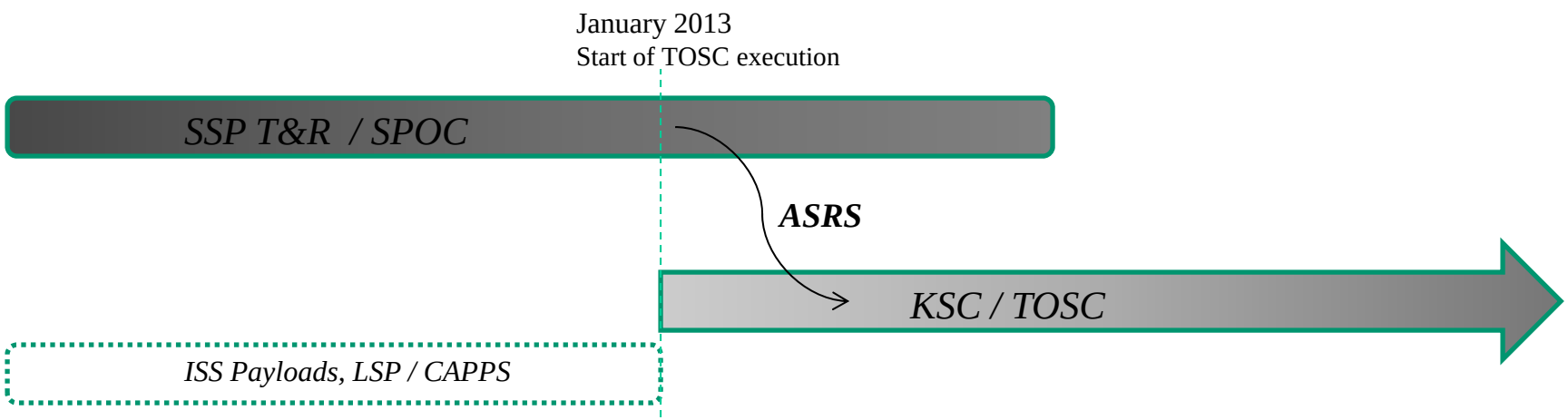
- System Administrative Support of OPR management functions
- System hardware, software and programming support
  - Ensure ASRS availability
  - Process and coordinate enhancement requests through implementation
  - Validate /test all software changes prior to release to ASRS production database
  - Assure all changes meet the production software
  - Assure all users with problem resolution
  - Access permissions to ASRS database (CURF)
  - Conduct ASRS user training

ASRS Fund Source

- Currently SSP Transition & Retirement (SSP-T&R) funds are used to sustain, operate and maintain ASRS
- ASRS is a NASA owned system

ASRS Transfer SPOC to TOSC

- ASRS KSC Ground Processing (GP) is currently funded by SSP T&R (PH) supported by SPOC
- ASRS is in new the KSC Test and Operations Support Contract (TOSC) RFP, listed as one of the systems to be picked-up (part of "Other Contractor Legacy IT/Bus Systems")
- ASRS TOSC support FY12 and beyond will be funded by AIT OMS-IWCS
- ASRS and its data will transfer from SPOC to TOSC



- KSC Ground Processing (GP) continues as ASRS OPR
- TOSC will support build of PRD (s) at KSC
- Award of TOSC expected October – November 2012
- Start of TOSC execution planned for January 2013

KSC SSP T&R - Orbiter Disposition Milestone Schedule

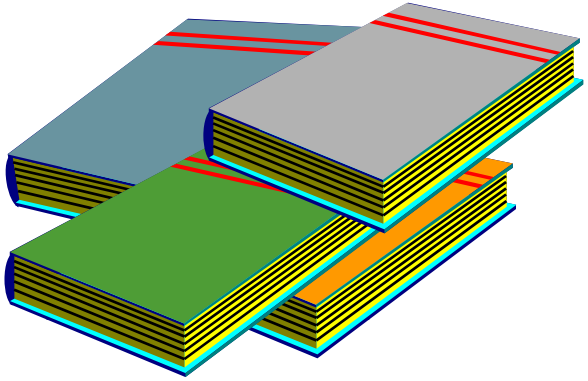
	OV-103 Discovery	OV-101 Enterprise	OV-105 Endeavour	OV-104 Atlantis
Destination	**NASM**	**Intrepid**	**CSC**	**KSC VC**
Final Power Down	12/16/2011	N/A	5/18/2012	12/22/2011
System Specific Reviews Start	2/16/2012	3/5/2012	8/6/2012	9/24/2012
CoFR Inputs Due to OPE	2/16/2012	3/15/2012	8/16/2012	10/4/2012
Integrated System/Project Engineering End State Readiness Review (KSC T&R ERB)	**2/23/2012**	**3/22/2012**	**8/23/2012**	**10/11/2012**
Orbiter Level III (JSC only)	**3/5/2012**	**3/30/2012**	**8/31/2012**	**10/26/2012**
Roll-out Readiness Review (KSC T&R CCB)	**3/1/2012**	**3/29/2012**	**8/30/2012**	**10/25/2012**
CD Roll-out Readiness Review	**3/2/2012**	***3/30/2012****	***8/31/2012****	***10/26/2012****
Orbiter End State Rollout/ SCA Mate Milestone Review (Level II)	**3/8/2012**	**4/5/2012**	**9/6/2012**	**11/1/2012**
OPF Rollout	3/20/2012	4/16/2012	9/18/2012	11/13/2012
Orbiter/ SCA Mate	4/13/2012	4/21/2012	9/18/2012	N/A
Delta Orbiter End State Rollout Review/SCA Mate Milestone Review	**4/5/2012**	**N/A**	**N/A**	**N/A**
Ferry Flight Readiness Milestone Review (Level II)	**4/16/2012**	**4/22/2012**	**9/19/2012**	**N/A**
Ferry Depart	4/17/2012	4/23/2012	9/20/2012	N/A
Ferry Arrival	4/17/2012	4/23/2012	9/20/2012	N/A

ASRS PRD Status

- SSP Flight Volume I and Flight Volume II (Payloads) **closed**
- SSP Launch and Landing Volume I (Shuttle) PRD scrub complete, **closed**
  - Closed September 15, 2011
  - Potential "Post-SSP" items were sent to R&Rs for disposition
  - Last STS mission DBR remain available for reference
- SSP Launch and Landing Volume II (Payloads) PRD **closed**
- SSP KPRD-I scrub complete remains active for KSC SSP Transition & Retirement (T&R)
  - KPRD-I scrub complete for SSP T&R required support
    - Identified 798 requirements as T&R support
    - Modified DBRs for T&R as needed
    - Flagged Core/Daily-use items as potential "Post SSP" in test code field
  - Support needed includes Orbiter final disposition
  - DBRs are deleted as systems and facilities are transitioned or retired
- MPCV/Orion EFT-1
  - Launch and Recovery Volume I (KSC) in-work
  - Flight Operations Volume II (JSC) new

Ground Processing Directorate

NASA John F. Kennedy Space Center



SPECIAL Projects

SSP T&R KPRD-I (KSC)

ISS Payloads KPRD-III (KSC)

MPCV/EFT-1 Volume I, Launch & Recovery (KSC)

ISS Orbital VOL. 2 (MSFC)

ISS Orbital VOL. 1 (JSC)

ISS Annex Orbital (JSC)

ISS Annex Space-X (JSC)

MPCV/ EFT-1 Volume II, Flight Operations (JSC)

ELV by Mission (KSC)

ASRS

REQUESTERS

JSC
KSC
MSFC
GSFC
LaRC
DOD
DFRC
WSTF
DDMS
ER
SSP T&R
PAYLOADS
ELV
MPCV
Other…

SERVICES / PRODUCTS

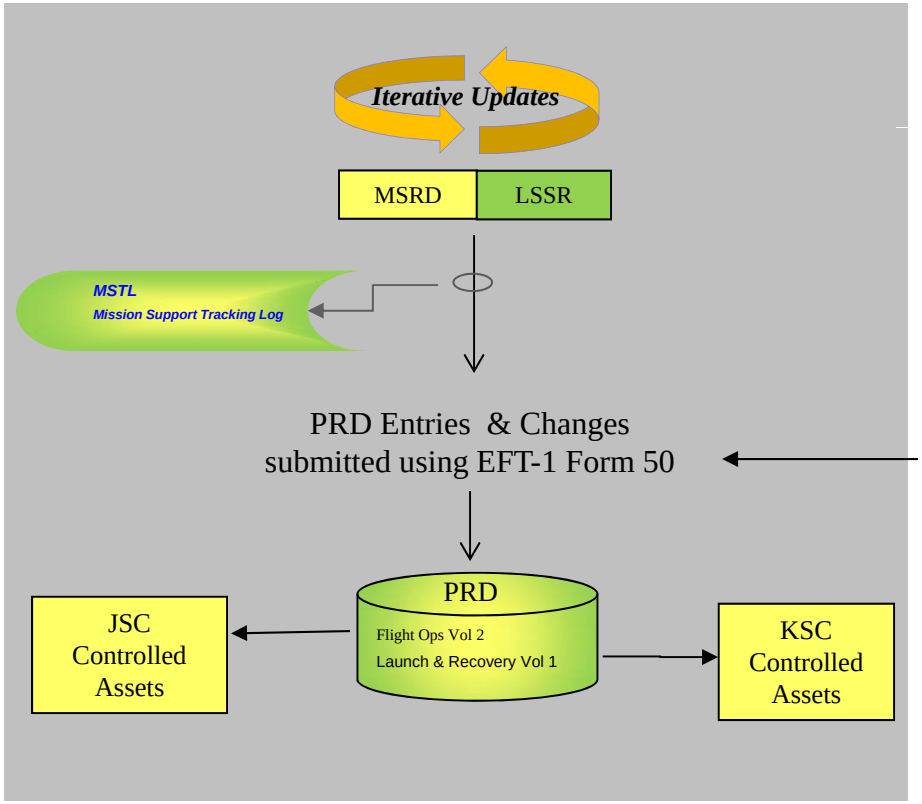
COMMUNICATIONS, PHOTO, TIMING, RESCUE, OPERATIONS, WEATHER, AIRCRAFT OPS, Other…

SUPPLIERS

JSC
KSC
MSFC
GSFC
LaRC
DOD
DFRC
WSTF
DDMS
ER
Other…

MPCV EFT-1 PRD Development

Sources of EFT-1 Support Requirements
-Mission Support Requirements Document (MSRD/NASA)
-Launch Site Support Requirements (LSSR/LM) document



Form 50 EFT-1 Support Requirement Request
Program Requirement Document (PRD)

1. To: Name (Last, First, MI) Mailcode Phone #	**2. Originator:** Name (Last, First, MI) Mailcode Phone #	**3. Date:**
4. Responsible Operations Organization POC Name (Last, First, MI) Mailcode Phone #	**5. Support Technical Point of Contact** (if known) Name (Last, First, MI) Mailcode Phone #	
6. Rationale:		
7. ☐ New Requirement ☐ Change DBR# _____ ☐ Deletion DBR#	**8. Requirement Trace:**	
9. Title:		
10. Operational Need Date:	**11. Funded By:** **Fund Reference Number:**	
12. Description (please spell out acronyms):		

13. Supplier Agency: (if known - check all that apply)

☐ Air Force Eastern Range	☐ KSC	☐ JSC
☐ Department of Defense (DOD)	☐ DFRC	☐ HQ
☐ Department of Defense Manned Spaceflight Support (DDMS-HSFS)	☐ GSFC	☐ 96 Space Test Squadron (SOC-DET)
☐ National Oceanic Atmospheric Admin (NOAA)	☐ MSFC	☐ Other:
	☐ WSSH	

14. MPCV Program Approval Name (Last, First, MI) Mailcode Phone #	**Signature**	**Date**
15. PRD Database/Requirement Response Manager Name (Last, First, MI) Mailcode Phone #	**Signature**	**Date**
16. PRD Analyst Name (Last, First, MI) Mailcode Phone #	**Signature**	**Date**
17. PRD Date Entered:		
18. PRD Assigned Request Number:		

Rev: Basic, 3/12/2012

Ground Processing Directorate
NASA John F. Kennedy Space Center

ASRS Management

CENTER	TITLE	NAME	PHONE	EMAIL
KSC-Ground Processing ASRS-OPR	**ASRS System Manager**	Eric M. Barcon	(321) 867-3522	Eric.M.Barcon@nasa.gov
KSC- MPCV/EFT-1	(NASA) R&R Manager / Database Manager	Eric M. Barcon	(321) 867-3522	Eric.M.Barcon@nasa.gov
	(Contractor) R&R Manager	Marsha R. Causey	(321) 867-7602	Marsha.R.Causey@nasa.gov
KSC- SSP T&R	(NASA) R&R Manager / Database Manager	Eric M. Barcon	(321) 867-3522	Eric.M.Barcon@nasa.gov
	(Contractor) R&R Manager/Database Manager	Ellen M. Hill	(321) 861-2381	Ellen.M.Hill@usa-spaceops.com
KSC- ISS (Payloads)	(NASA) R&R Manager / Database Manager	Deborah J. Hahn	(321) 867-6183	Deborah.J.Hahn@nasa.gov
	(Contractor) R&R Manager/Database Manager	Kim Doty Jane C. Pratt	(321) 867-5432 (321) 867-5137	Kimberly.A.Doty@boeing.com Jane.C.Pratt@boeing.com
KSC- ELV (LSP)	(NASA) R&R Manager / Database Manager	Frank S. Stone	(321) 867-5582	Frank.S.Stone@nasa.gov
	(Contractor) R&R Manager/Database Manager	Marsha R. Causey Donna K. Spencer	(321) 867-7602 (321) 867-8758	Marsha.R.Causey@nasa.gov Donna.K.Spencer@nasa.gov
GSFC	(NASA) R&R Manager	James A. Bangerter	(301) 286-7306	James.A.Bangerter@nasa.gov
	(Contractor) R&R Manager (Contractor) Analyst	Turonald Banks Jennifer M. May	(301) 823-2563 (301) 823-2629	Turonald.Banks.contractor@exelisinc.com Jennifer.May.contractor@exelisinc.com
JSC- MPCV/EFT-1, ISS SRS	**SRS, Program Manager**	Joe M. Aquino	(281) 483-4033	Joseph.M.Aquino@nasa.gov
	(NASA) R&R Manager /Database Manager	Joe M. Aquino	(281) 483-4033	Joseph.C.Aquino@nasa.gov
	(Contractor) R&R Manager/Database Manager	Kitty C. Holman	(281) 483-0572	Kitty.C.Holman@nasa.gov
MSFC	(NASA) R&R Manager /Database Manager	Philip Cauthen	(256) 544-4204	Philip.Cauthen@nasa.gov
	(Contractor) R&R Manager/Database Manager	Frances A. Rigsby	(256) 544-2908	Frances.A.Rigsby@nasa.gov
DDMS-X	R&R Manager	Russell Wood	(321) 494-3461	Russell.Wood@patrick.af.mil
Dryden	R&R Manager	George H. Grimshaw	(661) 276-3644	George.H.Grimshaw@nasa.gov
WSSH	R&R Manager	Robert E. Mitchell	(505) 524-5774	Robert.E.Mitchell@nasa.gov
Range	R&R Manager	Alejandro Carazo	(321) 853-8650	Alejandro.Carazo.Ctr@patrick.af.mil
KSC	NASA-Air Force Representative	William H. Haase	(321) 494-9163	William.H.Haase@nasa.gov

ASRS web site: http://www-ph.ksc.nasa.gov/ASRS/index.htm

ASRS Management Meeting 2012 Actions

ASRS - 2012 - 01 **Coordinate GSFC - KSC CCDev Meeting (HSF COTS PRD)**
(KSC/ Eric Barcon) In-work
Working with Jim Bangerter/GSFC for meeting scope (understand how commercial HSF communication support requirements will be coordinated with GSFC. Past support was coordinated thru JSC, will future support be coordinated directly with GSFC using a PRD)

ASRS – 2012 - 02 **Draft "Quick Guide (sheet)" on options for processing KSC customer support requirements / requests**
(KSC/Eric Barcon) In-work
In draft. Expected a one sheet based on options discussed at ASRS Management Meeting 2012.

ASRS - 2012 - 03 **ASRS system backup Plan, USA (SSP/T&R)**
(KSC/ Dori Corbin) Complete
ASRS Database is backed up completely every Sunday morning and incremental backups are done nightly. ASRS executables are on two separate servers which are backed up completely every Sunday morning and incremental backups are done nightly. ASRS backups are stored offsite (Orlando, FL)

ASRS - 2012 - 04 **ASRS Disaster Recovery Plan for System and Data, USA (SSP/T&R)**
(KSC/ Dori Corbin) Complete
There is no failover in place for ASRS; if KSC is shutdown then ASRS will not be accessible.

ASRS – 2012 - 05 **ASRS Validation Server data refresh with Production data**
(KSC/ Dori Corbin) Ready
ASRS Validation server may be down for an hour or more (refresh date and time TBD with input from ASRS users)
Production server should not be impacted by the refresh.

ASRS - 2012 - 06 **Revise ASRS Handbook GP60-3**
(KSC/ Eric Barcon) In-work

ASRS – 2012 - 07 **Move ASRS Website from SSP-T&R (PH) to KSC Ground Processing (GP)**
(KSC/Eric Barcon) In-work

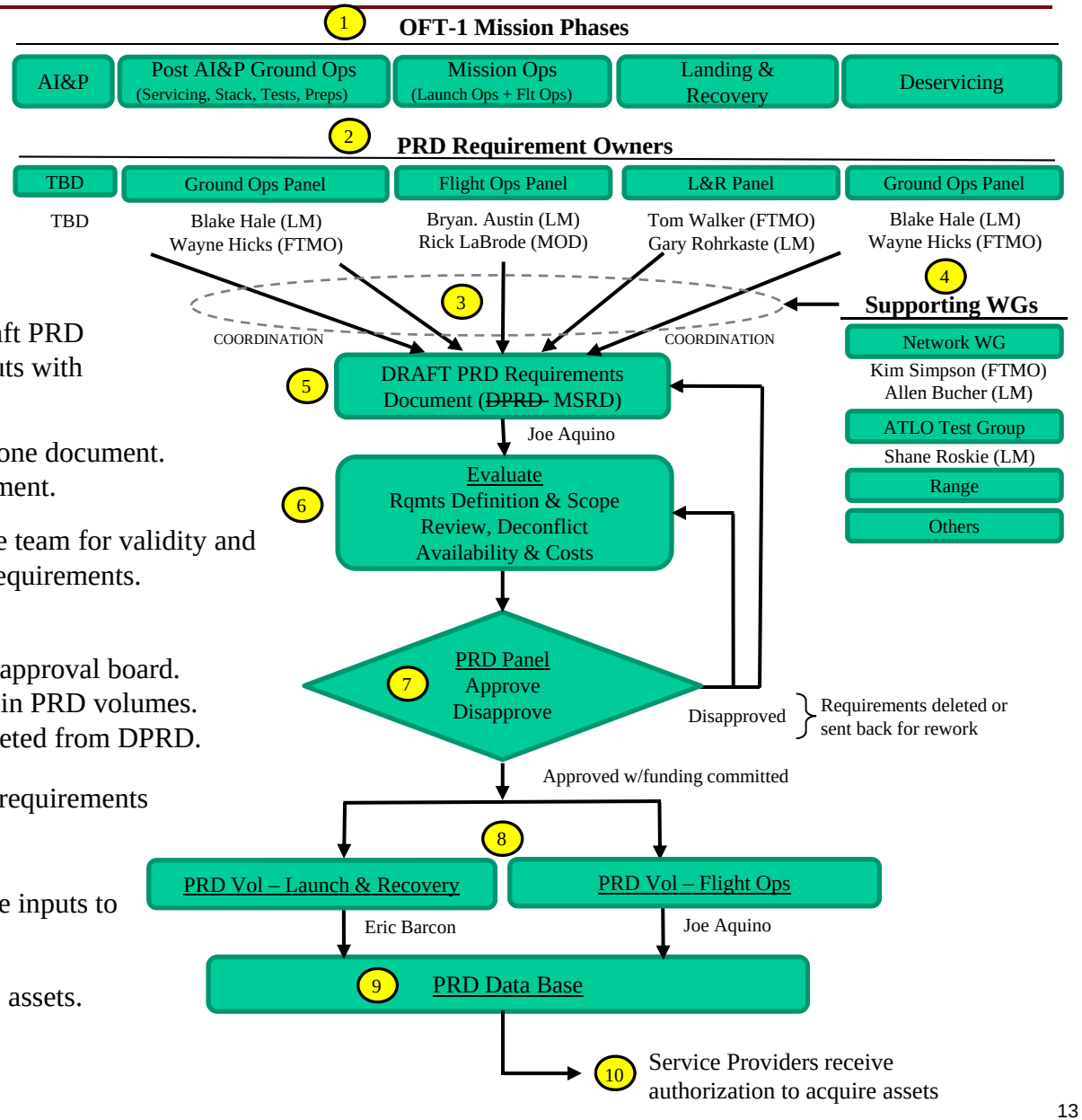
Backup

ASRS web site: http://www-ph.ksc.nasa.gov/ASRS/index.htm

OFT-1 (EFT-1) Draft PRD Development Process

(updated September 21, 2011)

1. OFT-1 has 5 mission phases.
2. Each phase is "owned" by a working group or a WG Panel
3. Phase owners will develop draft PRD requirements.
4. Supporting working groups develop draft PRD requirements, too. Will coordinate inputs with phase owners.
5. Draft requirements will be captured in one document. FTMO develops & maintains the document.
6. Draft requirements evaluated within the team for validity and completeness. Review and deconflict requirements. Establish asset availability and costs.
7. Draft requirements are reviewed by an approval board. Approved rqmts forwarded for capture in PRD volumes. Disapproved rqmts get reworked or deleted from DPRD.
8. Barcon and Aquino partition approved requirements into their PRD volumes.
9. PRD owners coordinate and manage the inputs to the PRD data base.
10. Service providers authorized to acquire assets.



Send updates/corrections to:
wayne.hicks@zeltech.com, 757-660-6143

OFT-1 Mission Overview

OFT-1 Mission Overview

The Orbit Flight Test #1 (OFT-1) is a one-day, two-orbit flight test using an unmanned, pre-production Orion spacecraft (LAS+CM+SM). The goal is to operate Orion in actual launch, orbit, and re-entry environments to evaluate functions and gather data to validate design and operational capabilities before crewed missions. The Orion spacecraft will be launched on a Delta IV Heavy LV from LC-37. The CM will re-enter and splash down in the Pacific Ocean off the coast of Baja, Mexico. The CM will be recovered and deserviced before being returned to KSC. (The LAS and SM are not recovered.)

The mission consists of five phases:

1. Assembly, Integration, and Processing (AI&P) – The CSM and LAS will be assembled and tested in the O&C Building and CRF respectively before being transported to Astrotech for serving and mating.

2. Post-AI&P Ground Operations – Consists of (a) CM hazardous servicing operations and LAS mate operations at Astrotech; (b) transporting the Orion spacecraft from Astrotech to LC-37; (c) stacking Orion onto the Delta IV LV; and (d) conducting post-stack operations, pad tests, and closeout activities to prepare Orion for the day of launch.

3. Mission Operations – The one-day, two-orbit flight test that launches from LC-37 and re-enters and lands in the Pacific Ocean off the coast of Baja, Mexico. Orion's launch operations (pre-launch and countdown) will be conducted from the O&C Building at KSC. Orion's flight operations (ascent, orbit, and re-entry) will be conducted from the MCC at JSC.

4. Landing and Recovery – The CM will be recovered with a Navy well-deck ship and returned to the AstroTech facility in Long Beach, California.

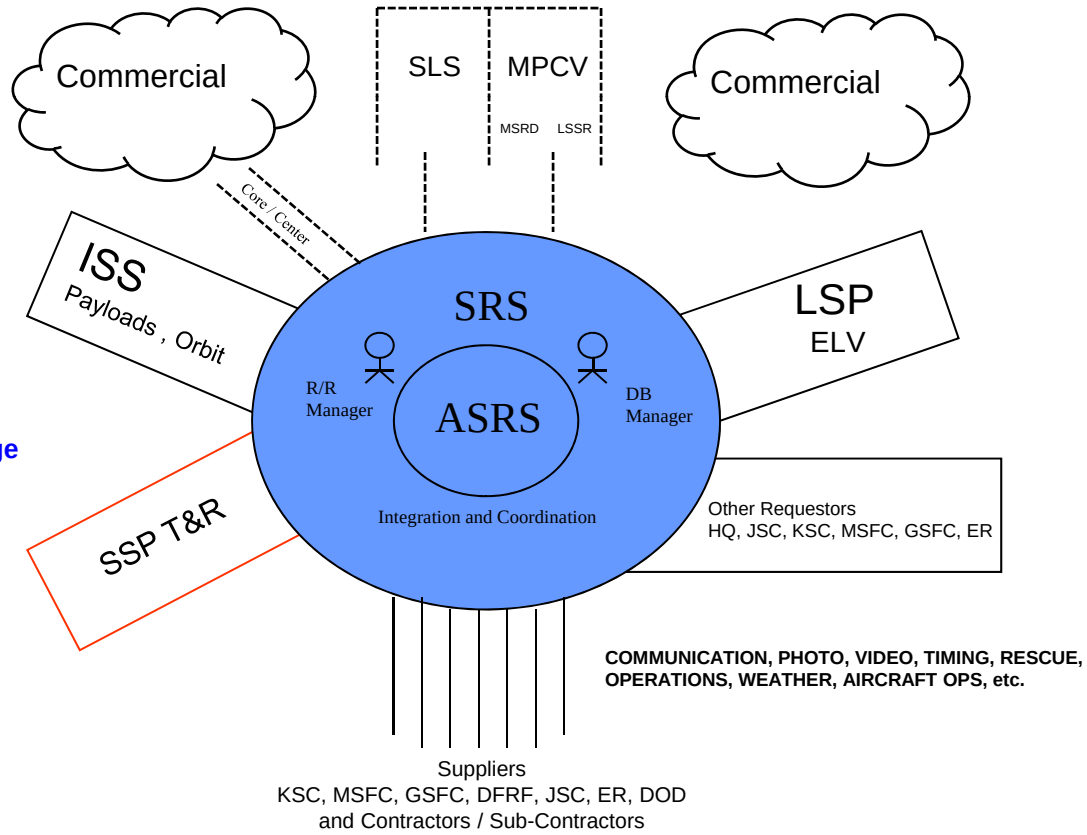
5. CM Deservicing Operations – The CM's hydrazine and ammonia systems will be drained and deserviced. The CM will be loaded onto a transporter and prepared for shipment to KSC.

Each mission phase is being led by a manager and/or technical lead responsible for identifying the government-provided assets needed to support the integration, operations, and test activities that will occur during that mission phase. Other working groups providing institutional services or external capabilities work with the phase managers and leads to establish the needs for additional assets.

SRS / ASRS

- NASA spaceflight Program operations have different business processes due to the nature of their work
- SRS and ASRS work as a standalone tool for all Spaceflight Programs (Phases/Organizations) to serve all program business operation in integrating, coordinating and processing operational **support requests**
- SRS personnel (Requirement/Response Managers(R/R), Database Managers (DBM)) provide integration and coordination that streamlines OPS support request for use of shared capabilities

The UDS provides a systematic, standardized format and common language



History of the Support Requirements System (SRS) and ASRS

The Support Requirement System (SRS) is the formal documentation system for requesting launch and flight support for NASA's space programs. Support requirements definition, commitment response, and implementation are assigned to Lead Centers by the SRS Management Plan

- Initial support documentation for human space flight programs (Mercury and Gemini) followed guidelines established by the DoD
- Manned Space Flight Support Requirements Documentation (MSFSRD) system was developed by NASA using DoD guidelines for the Apollo, Skylab, and ASTP programs. The increasing complexity of NASA's programs together with an increase in the number of interrange programs (many users were dealing with more than one range) suggested the need for a common support documentation system
- DoD Range Commanders Council (RCC) in January l966, chartered the Inter-Range Documentation Group (IRDG) to establish a standardized system to be used at DoD National Ranges for documenting user programs, test support requirements, and range support capabilities and commitments. NASA was invited as an associate member of the IRDG since, as a major user, NASA would use the resulting documentation system
- NASA, interested in standardizing documentation within its own organizations, provided substantial assistance to the IRDG in developing a common documentation system
- Range Commanders Council approved a Universal Documentation System (UDS) November 1967
- UDS has been used for expendable launch vehicle range support since its early development
- The UDS requirements system was operated manually for many years
- NASA agreed to use the DoD UDS at the start of the Space Shuttle Program
- In 1981, at the start of the Space Shuttle Program, it was decided that the system could be made more efficient and faster by automating the process
- The Automated Support Requirements System (ASRS) was developed 1981-1983 by KSC to enhance efficiency and timeliness of the NASA's SRS
- ASRS implemented as an operational system in 1983, to support Space Shuttle flights
- ASRS hosted in the KSC Support Planning and Data Management System I (SPDMS I)
- ASRS, driven by system growth, was migrated to SPDMS II in early 1991
- ASRS was enhanced and migrated to a central ASRS server at KSC rather than distributed ASRS servers at other centers (Oracle application on client server network), 2004.

ASRS Management

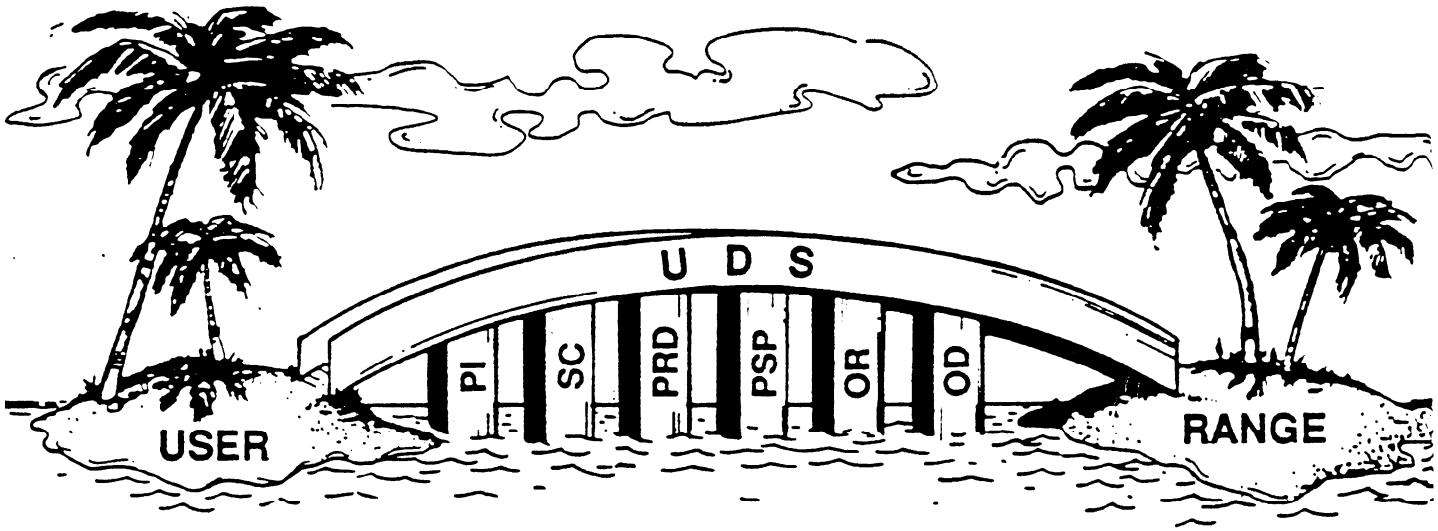
Requirement and Response (R&R) Manager

- Each NASA Center and DoD is represented by a R&R Manager
- Requests for support requirements and support commitment/responses are processed through the R&R Manager
- Resolves funding issues
- Coordinates and obtains requirements/commitments/responses
- Resolves issues (conflict resolution when a supplier is unable to provide a straight WILCO response)
- Verifies organization approval, validates and submits requirement and commitment responses to the Database Manager (DBM)
- Maintains requirements and commitments traceability (change control)

Database Manager (DBM)

- DBM ensures the requirement is accurate, valid and funded.
- DBM approves necessary database actions (create, modify, or delete data) into the assigned ASRS book as appropriate
- Conducts scrubs & reviews of assigned ASRS database PRDs
- Elevates unresolved issue to the Program Manager in the appropriate Program Office and to the Program Requirements Control Board for final disposition prior to the Launch Readiness Review and Flight Readiness Review
- Maintains change control
- Archives copies of their PRD
- Provides reports for users upon request

REQUIREMENTS AND RESOURCE COMMITMENTS MUST BE DOCUMENTED



THE UDS BRIDGES THE GAP BETWEEN USER REQUIREMENTS AND RANGE COMMITMENTS BY USING A SYSTEMATIC, STANDARDIZED FORMAT AND A COMMON LANGUAGE.

PROGRAM REQUIREMENTS DOCUMENT (PRD)
UDS sections

PROGRAM REQUIREMENTS DOCUMENT / PROGRAM SUPPORT PLAN/ OPERATIONS REQUIREMENT / OPERATIONS DIRECTIVE (**PRD**/PSP/OR/OD)

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SECTION TITLE

1000 ADMINISTRATIVE
1010A APPROVAL AUTHORITY
1031 INDEX
1050 ABBREVIATIONS/ACRONYMS
1051 TEST CODE DEFINITION
1052 SPECIAL CODE DEFINITION
1060 KEY TECHNICAL PERSONNEL
1070 TECHNICAL REFERENCES
1100 PROGRAM DESCRIPTION
1130 TEST DESCRIPTION
1405 TEST VEHICLE INSTRUMENTATION FREQUENCY SUMMARY
1420 TEST VEHICLE TELEMETRY SYSTEM DESCRIPTION
1470 TEST VEHICLE RECOVERY AIDS DESCRIPTION
1480 OTHER TEST VEHICLE SYSTEMS
1600 SYSTEM READINESS TESTS
2000 TEST REQUIREMENTS/SUPPORT PLANS
2100 METRIC DATA
2120 METRIC DATA - OTHER
2200 TELEMETRY DATA
2300 COMMAND SYSTEMS
2330 COMMAND UPLINK
2400 TIMING
2412 TIMING SEQUENCER REQUIREMENTS
2413 VISUAL COUNTDOWN
2600 OTHER SYSTEMS
2620 OTHER SYSTEMS - SUPPORT INSTRUMENTATION
2630 OTHER SYSTEMS - ENVIRONMENTAL
2640 OTHER SYSTEMS - DATA
2700 COMMUNICATION
2710 AIR/GROUND VOICE COMMUNICATIONS
2730 VOICE NETWORK TRANSMISSION
2732 TELETYPE NETWORK TRANSMISSION
2734 VIDEO/DATA NETWORK TRANSMISSION
2750 VOICE TERMINATIONS
2752 POINT-TO-POINT TERMINATIONS
2753 TELETYPE TERMINATIONS
2755 VIDEO/DATA TERMINATIONS
2756 VOICE RADIO TERMINATIONS
2757 MISCELLANEOUS TERMINATIONS
2760 COMMUNICATIONS RECORDINGS
2770 TELEPHONE
2780 OTHER COMMUNICATIONS
2800 VIDEO
3010 REAL TIME FLIGHT CONTROL/SUPPORT CENTERS
3020 REAL TIME DISPLAYS
3040 REAL TIME DATA FORMATS
3100 PHOTOGRAPHY
3110 DOCUMENTARY PHOTOGRAPHY
3120 ENGINEERING SEQUENTIAL PHOTOGRAPHY
3200 METEOROLOGY
3210 METEOROLOGICAL CONSTRAINTS
3220 METEOROLOGICAL FORECASTS
3230 METEOROLOGICAL OBSERVATIONS
3300 RECOVERY
3360 RECOVERY - ABORT AREAS
3400 OTHER TECHNICAL SUPPORT
3410 OTHER TECHNICAL SUPPORT - AIRCRAFT
3411 OTHER TECHNICAL SUPPORT - SEACRAFT
3421 PROTECTIONS FROM EMITTING SYSTEMS
3440 OTHER TECHNICAL SUPPORT - TRAINING
4100 DATA PROCESSING SPECIFICATIONS
4200 DATA DISPOSITION
4232 DATA DISPOSITION - DETAIL - VOICE/TV RECORDING
4233 DATA DISPOSITION - DETAIL - PHOTOGRAPHIC
4234 DATA DISPOSITION - DETAIL - METEOROLOGICAL
4236 DATA DISPOSITION - DETAIL - MISCELLANEOUS
4240 DATA DISPOSITION - ENVIRONMENTAL
5100A PERSONNEL ASSIGNMENT SCHEDULES
5100C PERSONNEL ASSIGNMENT SCHEDULES
5200 TRANSPORTATION
5300 SERVICES
5310 SERVICES - ADMINISTRATIVE, PERSONNEL, AND OFFICE
5311 SERVICES - FIRE AND RESCUE
5312A SERVICES - MEDICAL
5312B SERVICES - MEDICAL
5313 SERVICES - PUBLIC AFFAIRS
5314 SERVICES - SECURITY AND SAFETY
5315 SERVICES - COMMUNITY, EDUCATION, AND FOOD SERVICE
5320 SERVICES - UTILITIES (ELECTRIC, WATER, AND SANITATION)
5321 SERVICES - HANDLING, STORAGE, AND DISPOSAL
5322 SERVICES - AIR CONDITIONING AND ENVIRONMENTAL OBSERVATIONS
5330 SERVICES - PROCUREMENT, SHIPPING, RECEIVING, AND STOCK CONTROL
5340 SERVICES - PROPELLANTS, GASES, AND CHEMICALS
5342 SERVICES - CHEMICAL CLEANING
5350 SERVICES - VEHICLES
5351 SERVICES - GROUND HANDLING EQUIPMENT
5360 SERVICES - AIRCRAFT
5370 SERVICES - AIR OPERATIONS
5371 SERVICES - MARINE OPERATIONS
5410 LABORATORY - CHEMICAL AND PHYSICAL ANALYSIS
5430 LABORATORY - CALIBRATION
5440 LABORATORY - TECHNICAL SHOPS AND LABS
5500 MAINTENANCE
5600 FACILITIES
6000 OTHER SUPPORT

Timing Guidelines for Identifying Support Requirements

PI and PRD Baseline Lead Times prior to Mission Execution

	PI	PRD
New Construction of Facilities	3 1/2 Years	3 Years
Extensive Additions	3 Years	2 1/2 Years
Extensive Programming	2 Years	1 1/2 Years
Instrumentation Additions	2 Years	1 1/2 Years
Minor Improvements	1 Year	1/2 Year

Eastern Range: The baseline lead times should be used for planning purposes. The actual time lines for a specific program should be coordinated with the Eastern Range during the Program Introduction (PI) / Statement of Capability (SC) phases of the UDS.

Requirement Changes

- Requirement Scrubs are conducted (every 2-years or as needed) to maintain the health of the ASRS database

- Changes to the current support requirements happen on a daily basis and from mission to mission, some changes are:
  - Minor changes (based on current core capabilities) and some
  - Major changes (complexity, scope, or new) require changes/augmentation of current support capabilities

- New or major change in scope are usually those driven by Program requirements (NSTS-07700, PRCB/CRs, New projects, System Eng., OPS, etc.) and in most cases require additional Program funds

- New or changed requirements should be entered into ASRS database as Routine Support Requirements (RSRs)
  - At T-30 days prior to the start of a specific test or operation,
  - Support requirements are entered with less than 30 days lead time are flagged as Expedite Operations Requirements (EOR) to ensure more rapid processing and response
  - Requirement cutoff takes place T-72 hours prior to start of tests or operations. Real time support requirements may still be levied using existing scheduling systems, briefing messages, or network advisories. If the requirements are to be permanent, they will be entered into the ASRS PRDs after the test or operation to official document the requirement

- To help manage the changes in support requirements use the PRD Change Request KSC form 29-1100NS (Shuttle) or JSC Form 50 (MPCV/Orion EFT-1)