

May Financial Review

June 18, 2012





ZIN Manager: Michael Johanson
 ZIN Engineering Lead: M.O'Toole
 ZIN Operations Lead: T. Wasserbauer
 ZIN Integration Lead: C. Rogers

NASA Program Manager: Tom St'Onge
NASA Project Manager: Bob Corban (Kevin McPherson)



SpaceDOC 101 encompasses the International Space Station (ISS) Fluids and Combustion Facility (FCF) Project and its initial payloads, Light Microscopy Module (LMM) and the Multi-user Droplet Combustion Apparatus (MDCA) have been launched and the flight units are installed on the ISS. The Flight units on the ISS, as well as the units on the ground (Ground Integration Units and the Engineering Development Units) need to be operated and maintained. This Delivery Order is for the operation of the FCF racks on orbit and on the ground, resolution of any anomalies, evaluation of trends, software upgrades, hardware obsolescence evaluation, new hardware development to support future capabilities, verification, and training the crew and operators on the hardware/software. Also, as new payloads are developed for the FCF, analytical modeling and engineering analysis of the interface will be required.



The CIR Flight Unit, along with MDCA, was delivered to the ISS by STS-126 (November 2008). The FIR Flight Unit along with the LMM were delivered to the ISS by STS-128 (August 2009).



Issue	Potential Impact	Action Plan	Resolution Date
FLEX - motor position error associated with the fuel reservoir dispenser #2	limits the ability to dispense fuel from the reservoir. Significant threat to near-term operations.	Most likely causes are (1) motor encoder failure or (2) an obstruction in the fuel reservoir/needle. This motor was run on 6/4 with no issues.	TBD

** No significant FCF, TSC or Integration Issues.*

- **FLEX2 Science Matrix**
 - **FLEX2 Surrogate Fuel Matrix –support decane fuel tests**
 - **18 successful test point ignitions and data downlink**
- **Prepared the SpaceX-1 MIUL for GRC review**
- **Submitted the SpaceX-1 De-manifest Safety Data Package**
- **Prepared the ACME Payload Verification Plan for baseline review**
- **Prepared the ACME ICD for baseline review**
- **Prepared the Stowage Provisioning and Shipping Procedure for baseline review**
- **Prepared Maintenance status report for JSC Logistics and Maintenance Team review**

- **Completed vibration test for MDCA Spare Avionics Box**
- **Initiated EMI test for MDCA spare avionics Box**

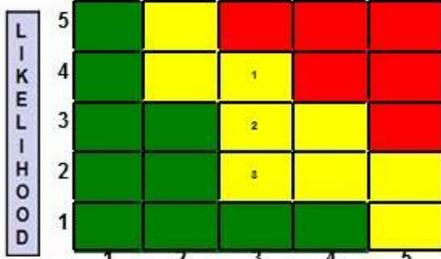
- **Continued Assembly of LMM Control Box**
- **Developed test approach for board level vibe test**

- **Completed GCIP Acoustic Test and Vibration Test**
- **Completed installation of EM GCIP onto CIR GIU Rack**

- **Completed DCM-LCTF processor board remove and replace**

- **Completed ACE Mission Sequence Test for ACE specific s/w update**
- **Completed IPSU Maintenance Test for IPSU specific s/w update**
- **CCB Authorized Released FCF-IPSU-MP-FlightBundle**

Deliverable	Planned	Actual	Note
Smoke Detector spare	Feb-2012	4/2012	
ATCU Fan Assemblies (2) spares	Apr-2012	4/2012	
ATCU Fan Filter Electronics Box spare	Apr-2012	4/2012	
EEU spare	Apr-2012	4/2012	
GCIP flight unit	Jun-2012		
MDCA Avionics Package spare	Jun-2012		
CIR Windows (2) spares	Jul-2012		
LMM Control Box spare (No Environmental)	Jul-2012		
QD Lubrication Kit (if required)	Jul-2012		
IPSU spare - Remora	Sep-2012		
Focus Prism spare	Nov-2012		
DCM spares (2)	Nov-2012		
ICM spare	Nov-2012		
MDCA Color Camera spare	Nov-2012		
GIU LCTF	Dec-2012		
Common IAM spare	Dec-2012		



CONSEQUENCES

Criticality

L x C Trend

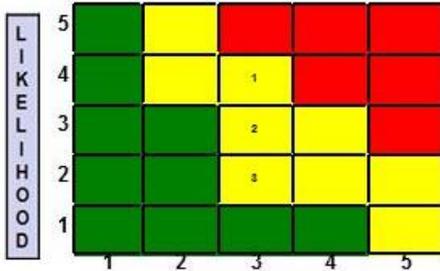
High ↓ Decreasing (Improving)

Med ↑ Increasing (Worsening)

Low → UnChanged

★ New since last month

Risk Id	Risk Title	Risk Statement	L	C	Approach
FCFSE-025 ★ Technical O'Toole	DCM LCTF failure	Given that there is no spare DCM LCTF; then there is the possibility that we cannot accomplish full FLEX2 science.	4	3	Mitigate: Manifest DCM LCTF 2001 on SPACE-X1. Add procurement and assembly of a second spare LCTF DCM to the 2012 DO period of performance. Status: 01/11/12 - No updates at this time. 02/17/12 - DCM LCTF components have been procured and initial assembly has begun. 03/28/12 - The DOC (Disk On Chip) has been replaced per Zin MWO. Software updates are in the process. ECD: 09/28/2012
FCFSE-026 ★ Technical Beltram	LMM GIU does not fully emulate the flight unit	Given that the LMM GIU does not fully emulate the flight unit; the possibility exists that future LMM flight experiments will not operate correctly.	3	3	Mitigate: Plan is to review LMM GIU non-flight design issues, and add task to update LMM GIU to the next DO period of performance. Status: 12/21/11 - Task has been added to the DO to upgrade to LMM GIU. 01/11/12 - No updates at this time. 02/17/12 - The LMM GIU has been assessed and the upgrades needed to emulate the flight system have been identified. Additionally, microscope motor functions are in the process of being repaired. 03/28/12 - Risk has been reviewed and there are no changes to its status at this time. 04/23/12 - Currently preparing trouble shoot procedures for LMM motor functions. ECD: 07/02/2012
FCFSE-014 ★ Technical Beltram	IOP removable hard drive shelf life	Given that the IOP removable hard drives have a limited shelf life; then there is the possibility that these hard drives won't work over time and the FIR and CIR racks will not be able to provide support for their payloads to perform science operations will occur.	2	3	Mitigate: Implement a procedure to re-format the hard drive on-orbit to minimize loss of magnetic field encoding data on the disk. Status: 04/23/12 - Currently on track for the development of the formatting procedure. ECD: 12/31/2012



CONSEQUENCES

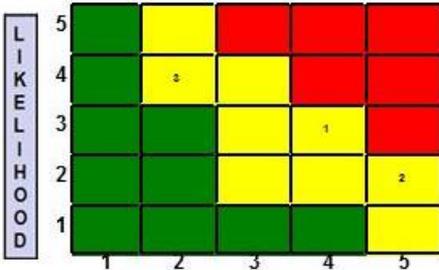
Criticality

- High (Red)
- Med (Yellow)
- Low (Green)

L x C Trend

- Decreasing (Improving) - Down arrow
- Increasing (Worsening) - Up arrow
- UnChanged - Right arrow
- New since last month - Star

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CONSEQUENCES

Criticality

High (Red)

Med (Yellow)

Low (Green)

L x C Trend

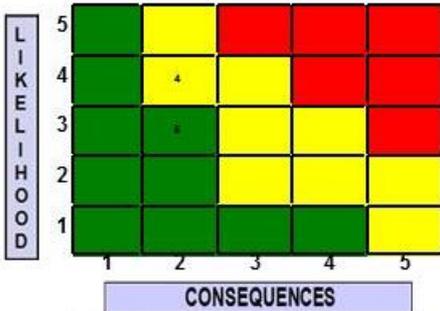
↓ Decreasing (Improving)

↑ Increasing (Worsening)

→ UnChanged

* New since last month

Risk Id	Risk Title	Risk Statement	L	C	Approach
MDCA-011 * Technical O'Toole	FLEX-2J Deployment Validation	Given that we cannot verify multiple droplet deployments in a 1G environment there is possibility that not all science will be met	3	4	Mitigate: Develop a robust 1G validation program Status: ECD:
MDCA-007 → Cost O'Toole	Lack of on-orbit spare avionics box	Given that there is no flight spare MDCA avionics box on ISS and there are no plans or budget to build a flight or GIU MDCA avionics box; then there is the possibility that, if the MDCA avionics box becomes inoperable, a complete loss of the ability to obtain FLEX-2 science will occur.	2	5	Mitigate: A plan to build a flight spare avionics package is authorized under the current DO with delivery planned for the 4th quarter of 2011. Status: 08/24/11 - Still on schedule to deliver flight spare avionics box. 10/04/11 - The project is still targeting the flight spare avionics delivery in December of 2011. 11/15/11 - Delivery of the assembly is projected for February 1, 2012. Verification and manifest is expected to be included in the follow-on DO period of performance. 03/07/12 - Flight spare MDCA avionics box is in the process of being built per ZIN Tech MWO. 03/28/12 - Flight spare avionics box is tentatively scheduled for several environmental tests as follows: Vibe & EMI in May of 2012 and Thermal Cycle in June of 2012. 04/23/12 - Flight spare avionics box is in the process of being built. ECD: 07/31/2012
MDCA-012 * Technical O'Toole	FLEX-2J Droplet Size Repeatability	Given the tolerance on droplet reproducibility has not been demonstrated there is possibility that we will not meet the reproducibility requirement	4	2	Mitigate: Review science requirement with JAXA and determine the capability of the flight hardware to meet the science requirement. Status: ECD:



Criticality **L x C Trend**

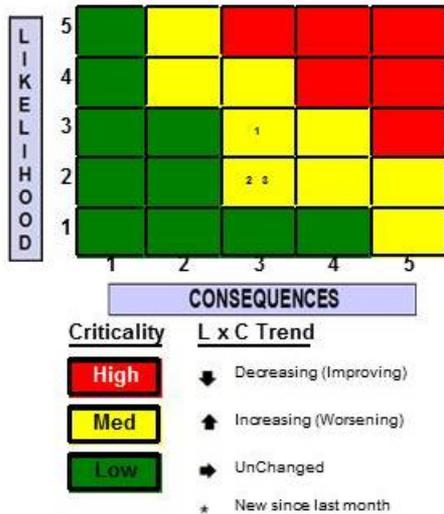
High ↓ Decreasing (Improving)

Med ↑ Increasing (Worsening)

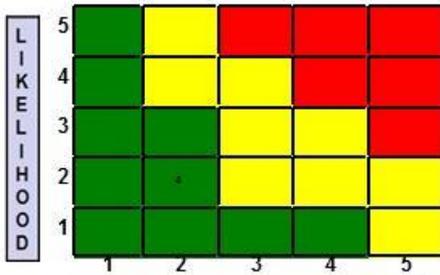
Low → UnChanged

* New since last month

Risk Id	Risk Title	Risk Statement	L	C	Approach
MDCA-013 * Technical O'Toole	FLEX-2J Droplet Imaging Resolution	Given that there is limited performance data for the droplet imaging camera at 60 frames per second there is possibility that we will not meet the resolution requirement	4	2	Mitigate: Review science requirement with JAXA and determine CIR h/w capability. Status: ECD:
MDCA-010 * Schedule O'Toole	FLEX-2J SRD not signed	Given that the FLEX2J SRD is not signed at PDR there is a risk that project cost and schedule will not be met.	3	2	Mitigate: Document requirements as understood via previous TIMs and coordinate with JAXA to obtain concurrence Status: ECD: 08/31/2012.



Risk Id	Risk Title	Risk Statement	L	C	Approach
TSC-004 * Cost	Lack of support depth	Given that there is no more than 1 subject matter expert in the areas of TSC System administration, FCF Ground software, and FCF data post-processing, there is a risk that FCF will not be supported adequately to ensure mission success.	3	3	Status: ECD: 12/28/2012
TSC-002 * Technical	DICES III voice loop system obsolete	Given that DICES III system hardware is at end-of-life, there is a risk that voice loop services will not be available to support mission operations.	2	3	Status: ECD: 12/28/2012
TSC-003 * Technical	Video System Difficult to Support	Given that the Grass Valley video matrix and AMX video switch system uses an unmaintainable and undocumented configuration, there is a risk that all video channels may not be available to support mission operations.	2	3	Status: ECD: 12/28/2012



CONSEQUENCES

- Criticality**
- High
 - Med
 - Low
- L x C Trend**
- ⬇ Decreasing (Improving)
 - ⬆ Increasing (Worsening)
 - ➡ UnChanged
 - * New since last month

Risk Id	Risk Title	Risk Statement	L	C	Approach
TSC-001 * Technical	Stale TSC documentation and not up to date	Given that documentation has not been updated as physical changes are made at the TSC, there is a risk that troubleshooting and maintenance will not be properly performed.	2	2	Status: ECD: 12/28/2012

Engineering Lead Jennifer Keller & Ray Pavlik

NASA Program Manager: Tom St. Onge

NASA Project Lead: Kevin McPherson / Bob Hawersaat



SAMS Objective:

- Provide acceleration measurement systems that meet the requirements of the researchers on board the International Space Station.
- SAMS measures the acceleration environment in the 0.01 to 400 Hz range for payloads.

MAMS Objective:

- Provide acceleration measurement system that measures the Quasi steady and vibratory acceleration data in the 0.00001 to 100 Hz frequency range on board the International Space Station (ISS) vehicle

PIMS Objective:

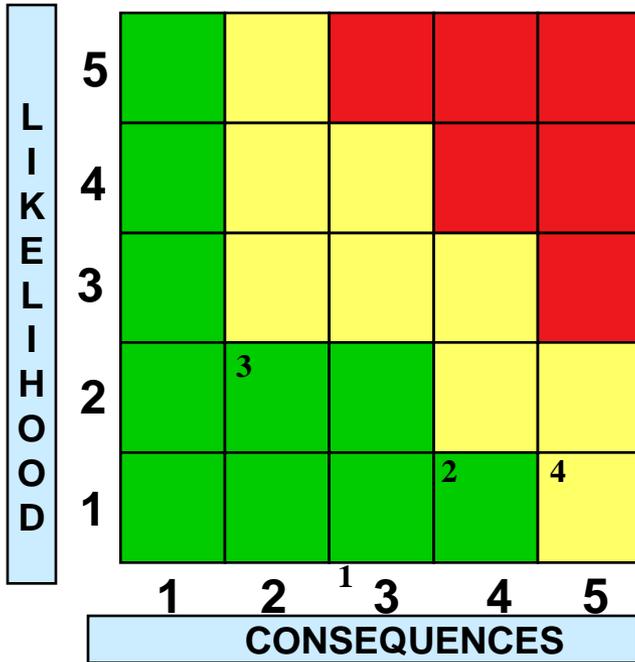
- Provide acceleration measurement data to Principal investigators who conduct scientific research on board the International Space Station.
- The SAMS acceleration measurement system provides the raw data that PIMS uses to provide analysis to the Principal Investigators. SAMS measures the acceleration environment in the 0.01 to 400 Hz range for payloads.



WBS	Milestone	Start	Baseline	Projected	Actual	Schedule Variance
1.8.1	TSH-ES Spare Cable EA50033 (MSG) cable build	3/2011		4/2011		
1.8.2	SE cable (EA12303) cable build	4/2011		5/2011	6/2011	
1.8.3	TSH-ES Spare	1/2011		3/2012		
1.8.4	TSH-ES Spare Cable EA50035 (FIR) cable build	5/2011		3/2012		
1.8.5	TSH-ES Spare Cable EA50001 (CIR) cable build	6/2011		3/2012		

Issue	Potential Impact	Action Plan	Resolution Date
Network issues onboard delaying EE-F05 boot process	EE-F05 not booting	Work with DMC to help determine network issues. In mean time, disconnect SE F04 from RTS/D1 and connect SE F02 to RTS/D1 to support MSG	Sensor moved in Sept. to support MSG. Work with DMC's is continual
5 Rack Rule restricting MAMS and SAMS operations	MAMS and SAMS unable to support CHIT requests for acceleration data support	Move SAMS ICU out of ER4 and into ER1 to help alleviate how many racks for MAMS and SAMS to minimally support customers (from 2 racks to 1 rack.)	Inc 22 when CADRE adds an additional PRO on console to support up to 7 racks - POD submitted OCR pod1all000369 "Update to G-4.1-1 Payload Rack Operations Constraint (Generic Payload Reg)" approved on June 23, 2009 to start with Increment 20, modifying the ground rule to allow SAMS as an exception when requested by Struc & Mech for a short period of time. This allows a little more flexibility and opportunity for SAMS under these circumstances.
Crew office cannot properly torque the SAMS MSG baseplate into the MSG WV	Not a good surface mount for the SAMS TSH-ES	<ol style="list-style-type: none"> ECO the SAMS AIDD to call out the torque values for the baseplate Request in writing the issue and why it cannot be performed. 	<p>9/15/09 – telecon held with MSG. It was decided that the fasteners on the SAMS baseplate for the TSH-ES will not be torqued. Integrated Safety Hazards are being updated on the MSG side, and SAMS is clarifying a SAMS safety hazard.</p> <p>TSH installed in MSG and working with SODI. Crew procedures said to be hand tight.</p>
ER1 RIC S/W Upgrade			Software upgraded the week of January 9 th . Waiting to watch behavior of the rack.
Long term budget for sustaining/sparing		<ol style="list-style-type: none"> Kevin working with Bob on POP charts for FY 2012 	
Don Parrott	Staffing & funding		
PLMDM issues	Limits number of racks on at one time, so SAMS having hard time getting ops time in COL and JEM.	<ol style="list-style-type: none"> ISS Plans on upgrading PLMDM to resolve the limit 	Because of other ISS issues, NET Jan 2012 timeframe
ER4 RIC issues	Not able to operate SAMS in ER4, therefore no data available in the JEM	<ol style="list-style-type: none"> Work with Express team to stay in the loop on when they may get recovery time. 	Unknown.

102 AMP (SAMS, MAMS, PIMS)



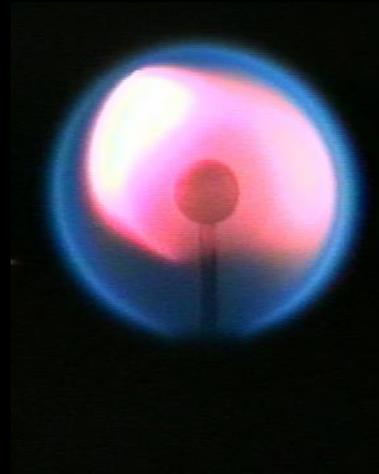
Criticality	LxC Trend	Approach
High	Decreasing	M-Mitigate
Med	Increasing	W-Watch
Low	Unchanged	A-Accept
	New	R-Research

Approaches: Mitigate, Watch, Accept, Research

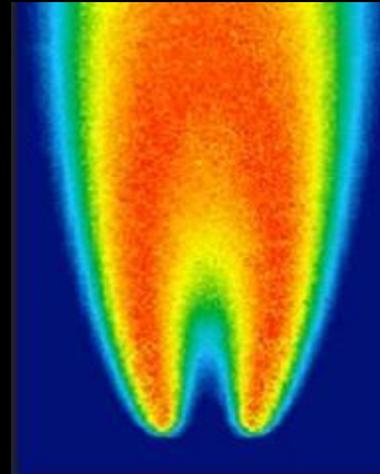
Risk ID	Risk Title	Risk Statement	L	C	Approach
DO102-1	TSH-ES wire size	Wire sizing could limit usage of the TSH-ES. The use of 12 gauge wire would increase the size of the TSH. Many power suppliers have 20 amp breakers.	1	2	Watch: Will address risk with inline breakers if a customer requires it. Not a problem for FIR or CIR. Status: Does not affect FCF or MSG. Will address when there is a user. Close date: Future User
DO102-2	Commanding Issue	NCR 237 identified: The laptop may lockup when commanding to the TSH-ES that is running at 400 Hz.	2	3	Watch: The system will need to be rebooted only. Alternative means to address this issue in future software builds will be considered. 400 Hz mode not a normal operating mode. Status: Waiting for funds to consider s/w fix Close date: On going
DO102-3	SAMS Sparing	SAMS PCS hardware not supported by the ISS program.	3	2	Mitigate: Ghosting function for hard drives in place. Laptop shells, spare hard drives and floppy drives have been set aside on ISS for SAMS use. Status: Need to configure one more set of spare hard drives Close date: 04/09
DO102-4	SAMS Fan Regulator	SAMS RTS Drawer #2 fan regulator frequency varies	2	4	Watch: Fan speed has shown the variable frequency for several months and has not shown any distinct changes in behavior over that period of time. Status: Need to configure one more set of spare hard drives Close date: 04/09



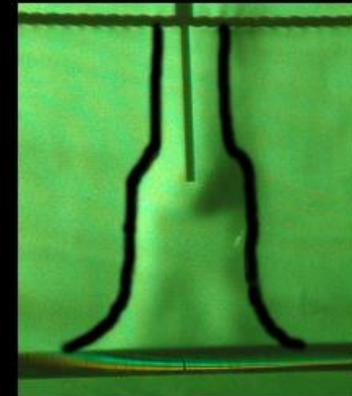
s-Flame
(drop test)



Flame Design
(drop test)



CLD Flame
(aircraft test)



2850 V

E-FIELD Flames
(1g schlieren)

Manager: Brian Borowski

NASA Program Manager: Tom St. Onge

NASA Project Lead: Mark Hickman

NASA Project Scientist: Dennis Stocker

SpaceDOC 110 encompasses the initial development phase of ACME including requirements and verification development and planning, flow system breadboard interface with existing FOMA breadboard and color camera trade studies to ultimately provide a new diagnostic capability for CIR. Work on Engineering Model design is included following completion of Preliminary Design Review in January of 2011.

Issues	Potential Impact	Action Plan	Resolution Date
<p>Coming out of the Phase 0/1 Safety Review there are some potential programmatic impacts involving materials, basic design elements and test matrices</p>	<p>Could result in changes to the design and/or test matrices</p>	<p>Project Scientist has been informed of areas of concern and will address and baseline the test matrix</p>	<p>4/12 Project Scientist has addressed the potential impacts. Decisions are now at a programmatic level</p>

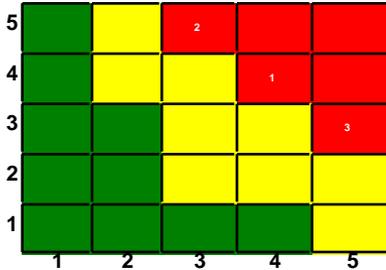
- Worked on further defining interfaces and requirements for BRE
- Prepared test plans for E-Field subassembly functional test and E-Field subassembly EMI test
- Successfully completed the functional test of the E-Field subassembly
- EMI test of the E-Field Subsystem scheduled for June 12
- Finalized preliminary gas resource estimates
- Completed revision of ERD and subsequent documents
- Supported IDR Kickoff Meeting and provided reviewable documents and products for the review

WBS	Milestone FY12	Credit	Start	Baselined	Projected	Actual	Scheduled Variance
1.1	Interim Design Review	100% package complete	May 2012	June 2012	June 2012		



Task Level Risk Assessment

LIKELIHOOD



CONSEQUENCES

Criticality

L x C Trend

High

↓ Decreasing (Improving)

Med

↑ Increasing (Worsening)

Low

→ UnChanged

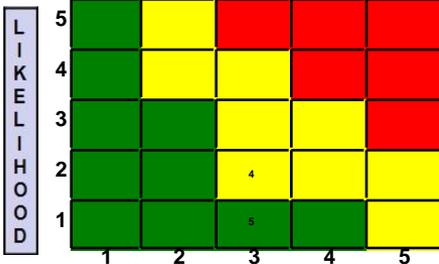
* New since last month

Risk Id	Risk Title	Risk Statement	L	C	Approach
ACME-021 * Technical Mroczka	Inability to disassemble Mass Flow Controllers for Conformal Coat / Ruggedizing	Given that the Mass Flow Controllers cannot be fully taken apart to perform conformal coating and staking on the electronic boards; then there may be an incompatibility with elements of the chamber atmosphere including fuels, oxygen and diluent mixtures causing CIA electronics to fail.	4	4	Research: Test the MFCs under current environmental conditions to determine their performance. Status: ECD: 09/28/2012
ACME-014 ↓ Technical Rogers	IPSU to IOP image transfer rates take too long	Given that the current data transfer rates from the IPSU to the IOP is severely limited, transfer of ACME data may take an unacceptable amount of time and may reduce obtainable science for the allotted operational time on board ISS.	5	3	Watch: Need to keep an eye on this and follow up with the CIR team to keep updated on transfer improvements. Status: 12/13/11 - The FCF team has improved transfer rates by utilizing both IOP hard drives. The FCF team needs to provide quantitative data transfer rates. 03/27/12 - Risk reviewed by the ACME team and no status updates at this time. 05/08/12 - ACME RMWG has reviewed this risk and there are no updates at this time. ECD: 12/31/2012
ACME-010 → Technical Mroczka	CIA electronics and fuel mixture compatibility	Given that the CIA electronics is exposed to chamber atmosphere; then there may be incompatibility with elements of the chamber atmosphere including fuels, oxygen and diluent mixtures causing CIA electronics to fail.	3	5	Mitigate: Develop a test plan to determine what components and what surface treatments would mitigate this risk. Status: 01/10/12 - Chris the Systems Eng. will be taking on this task and will start Jan 23rd, 2012. 03/27/12 - Risk reviewed by the ACME team and no status updates at this time. ECD: 12/25/2012



ACME

Task Level Risk Assessment



CONSEQUENCES

Criticality

High

Med

Low

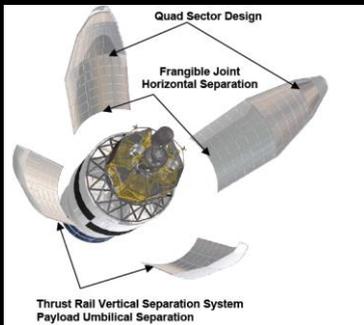
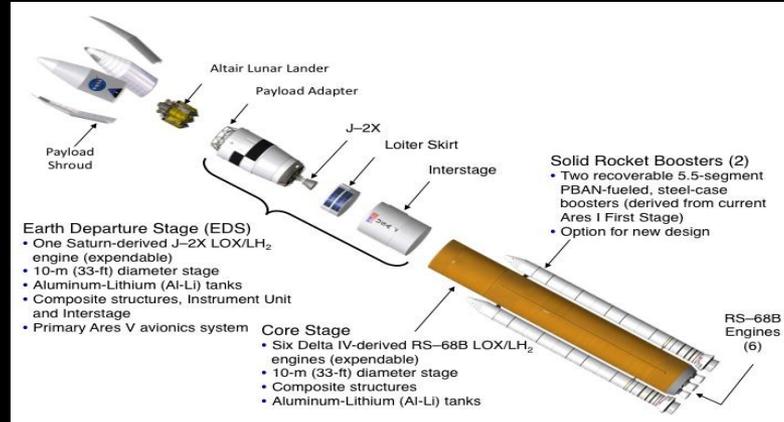
L x C Trend

- ↓ Decreasing (Improving)
- ↑ Increasing (Worsening)
- UnChanged
- * New since last month

Risk Id	Risk Title	Risk Statement	L	C	Approach
ACME-008 ↓ Technical Gobeli	E-field emission exceedences	Given that there might be e-field exceedence emissions; then there is the possibility that the EMI requirement will not be met and ACME hardware would be adversely effected causing diminished science to occur.	2	3	<p>Mitigate: The ACME team will be intensively working with the EMI lab to determine what if any EMI exceedences occur to meet its EMI requirement and minimize any impact on the hardware. Status: 1/11/11 Planned testing has been delayed due to funding. 11/23/10 No changes or updates at this time. 9/14/2010 No changes or updates at this time. 05/03/11 - 5/3/2011 - This risk will be on hold until the Engineering Model is completed. 05/31/11 - 5/31/11 - Nothing new to report. 02/14/12 - Still appear to be on target for test date. ECD: 05/31/2013</p>
ACME-017 → Management Rogers	Lack of adequate ISS supplied Nitrogen	Given that it is not known how much ISS Nitrogen can be supplied and re-supplied for use by the CIR for ACME; then there is the possibility that Nitrogen will not be available for ACME and a loss of science will occur.	1	3	<p>Watch: Awaiting the test point matrix to be developed to get a better estimate of required nitrogen. Status: 10/25/11 - Draft update of science matrix is in review. 12/13/11 - No updates at this time. Zin personnel are still awaiting the draft of the science matrix from the NASA Scientist. 01/10/12 - Still reviewing at the monthly ACME RMWG. 02/14/12 - No updates at this time. 03/27/12 - Risk reviewed by the ACME team and no status updates at this time. 05/08/12 - ACME RMWG has reviewed this risk and there are no updates at this time. 05/08/12 - Test point matrix has been completed and is in the process of being reviewed for Nitrogen needed from ISS. ECD: 12/31/2012</p>

ZIN Manager: Michael Johanson
ZIN Engineering Lead: Bill Dial

NASA Project Manager: Gerry Sadler



SpaceDOC 119 encompasses evaluation of potential manufacturing approaches focusing on the Heavy Lift Payload Shroud but not be limited to (e.g. can include other element composite dry structures). Approaches may include: existing composite manufacturing sites, MAF, and new sites. ZIN and our subcontractor Zero Point will identify needed composite manufacturing assets and capabilities to support current Heavy Lift Vehicle concept and associated requirements based on manufacturing assessments done by the NASA ESMD ACT project. The scope of the analysis shall include logistics and supply chain requirements.

Issue	Potential Impact	Action Plan	Resolution Date
None			

- Continued to provide support in updating the BOE for the Baseline SLS Fairing (Phase 0)
- Expect to start work Shroud Structural Analysis and Design task next month

Milestone Schedule

119 Ares V Payload Shroud Element (PSE) Project

Milestone (Cal 10)	Baseline (Cal 10)	Projected	Actual	Schedule Variance
Payload Shroud Technology Development Plan	November 30, 2010	Nov 30, 2010	Nov 30, 2010	None
Preliminary Element Integration Assessment Report	January 15, 2011	Jan 15, 2011	Jan15, 2011	None
Manufacturing Implementation Plan	February 15, 2011	Feb 15, 2011	Feb 15, 2011	None
Final Element Integration Assessment Report	March 25, 2011	April 25, 2011	April 25, 2011	1 month no cost extension approved by Gerry Sadler
Provide a Basis of Estimate Bottoms Up Assessment of the Current SLS Shroud for metallic and composite 8.4 meter baselines.	June 6, 2011	June 6, 2011	June 6, 2011	None
Assessment of CPS Impacts on Payload Shroud	September 30, 2011	Sept 30, 2011	Oct. 13, 2011	Delivery slipped based on stop work due to lack of funding, slip was approved by Gerry Sadler
Fairing Basis of Estimate Updates 1. PPBE13 Update 2. Initial PPBE14 Update 3. Final PPBE14 Update	1. Oct. 30, 2011 2. May 30, 2012 3. Sep 30, 2012	1. Oct. 30, 2011 2. May 30, 2012 3. Sep 30, 2012		The PPBE schedule is determined by NASA and the dates of the deliverables are subject to change.
Analysis and Design Reports 1. SRR 2. SDR	1. Oct. 1, 2011 2. Feb 1, 2012	1. Feb 1, 2012 2. Feb 1, 2012		SLS SRR & SDR are NASA determined dates. They are currently planned to be combined and held Feb. 15, 2012.
Payload Fairing Evaluation: Test Plans and Procedures	15 day prior to testing			Work put on hold by Gerry Sadler
Delta IV Stage Integration Assessment	Jan 31, 2012	Jan. 31, 2012		Work put on hold by Gerry Sadler

Study Delivery Order – No risks

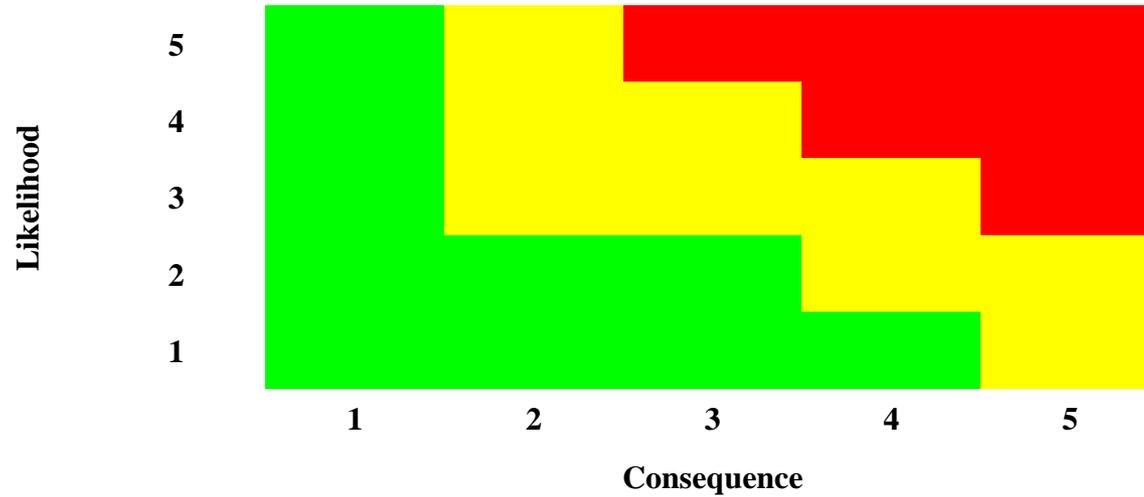


Project Manager: Chris Sheehan



SpaceDOC 126 continues the work performed under SpaceDOC 113 to manufacture and flight verify the CSM/Glenn Harness as a crew preference item. Additionally, this delivery order carries drawing and documentation build information and materials research to allow for removal of the SDTO containment bag

WBS	Title	EVM Method	Start Date	End Date	EVM Plan
1.1	Management				
1.1.1	Project Management	LOE	6.01.11	5.31.12	8.3%/month
1.1.2	EVM/Cost Reporting	LOE	6.01.11	5.31.12	8.3%/month
1.1.3	Configuration Management	LOE	6.01.11	5.31.12	8.3%/month
1.1.4	Property Management	LOE	6.01.11	5.31.12	8.3%/month
1.1.5	Shipping and Receiving	LOE	6.01.11	5.31.12	8.3%/month
1.1.6	Purchasing	LOE	6.01.11	5.31.12	8.3%/month
1.3	Product Assurance				
1.3.1	Quality Management	LOE	9.14.11	5.8.12	12.5%/month
1.7	HHC Final Design and Fabrication	LOE	6.01.11	5.31.12	8.3%/month
1.8	System Assembly, Integration, Test and Launch	LOE	9.21.11	5.22.12	12.5%/month



NO RISKS IDENTIFIED AT THIS TIME

Trend Legend

⬆️ Upward

⬇️ Downward

➡️ No Change

■ New

Issue	Potential Impact	Action Plan	Resolution Date
None	-	-	-



ZIN Project Lead: Ray Pavlik
ZIN Software Lead: Jennifer Keller

NASA Project Manager: Diane Malarik
NASA Deputy Project Manager: Mike Zernic
NASA GRC PI: Rich Reinhart
NASA GRC Deputy PI: Sandy Johnson

- An on-orbit, adaptable, Software Defined Radios (SDR)/Space Telecommunications Radio System (STRS)-based testbed facility to conduct a suite of experiments to advance technologies, reduce risk, and enable future mission capabilities on the International Space Station (ISS).
- DO-128 Scope of Work includes:
 - Performing configuration management activities, including software.
 - Remaining development of the CoNNeCT Flight and Ground System Software.
 - Integration with the Payload Operations Integration Center (POIC) and SCaN-provided SN, NEN, and NISN.
 - Sustaining Engineering and Operations of the Flight and Ground System.
 - Experiment Integration and Operation

Do 128 Issues and Concerns

Issue	Potential Impact	Action Plan	Resolution Date
None			

- Subtask A CM/DM
 - Processed documentation required for ORR.
 - Scanned, compiled, and filed Flight Log Books and As-Run documentation.
 - Supported GIU drawing update activities.
 - Dispositioned 99 comments to the Software Configuration Management Plan.
- Subtask B SE&I and Experiment Integration
 - Supported development of a final update to the SCaN Testbed payload as-built hardware list. The document was updated to reflect the integration work completed at TNSC, Japan.
 - Several associates attended the training class on “Control and Maintenance of Measuring and Test Equipment”.
 - Supported TSC Ops training with GIU operation and assisted with GIU GD SDR characterization.
 - Assisted the GRC Cal Lab with updating, adding and correcting their equipment database for the SCaN test equipment. Staged the majority of the equipment for the Agilent Calibration Team. Agilent said to include any equipment that may have been overlooked and they would fit them in (at no extra charge).
 - The latest version of the plans for the T.E.I. modifications were accepted by the radio/experimenter teams. Assembled all the previous versions of the Visio drawings. The work was approved. The process plan and procedures for the necessary modifications were started and completed.
 - Certified the GIU Functional for Experimenters.
 - Completed the initial design of the GIU GPS Systems for presentation to an ERB.

- Subtask B SE&I and Experiment Integration (continued)
 - Generated CRs for updating various GIU and GSE Drawings.
 - Generated MWOs for GIU GSE Relocation and GSE Upgrades.
 - Generated PR for JPL GSE I/F Implementation Hardware.
 - Dispositioned approximately 90 review comments to the review draft of the Experimenter's Handbook, GRC-CONN-PLAN-5006. Incorporated the comment dispositions and released the Handbook on 5/3/2012.
 - Met with SCaN Testbed PI team to coordinate handbook experiment process with NRA activities.
 - Coordinated a meeting between the PI team and Mission Operations Team to develop an initial approach to working with Experimenters who have APS pointing requirements other than TDRS and WGS. The initial approach was shared with JPL and the response was that it appeared to be a workable approach.
 - Developed and released a white paper on an approach to dealing with changes to software that may need to be made during Experimenter testing on the GIU, as well as during Experimenter on-orbit operations. The white paper is intended to serve as a discussion tool.
 - Supported a meeting with the NASA SE&I Lead and the PI team to develop a listing of information that should be contained in the RF HID document. The outcome was that much of the antenna characteristics and performance data would be placed in the RF HID. As well, characterization of the location and alignment of the antennas with respect to the ISS will be included.

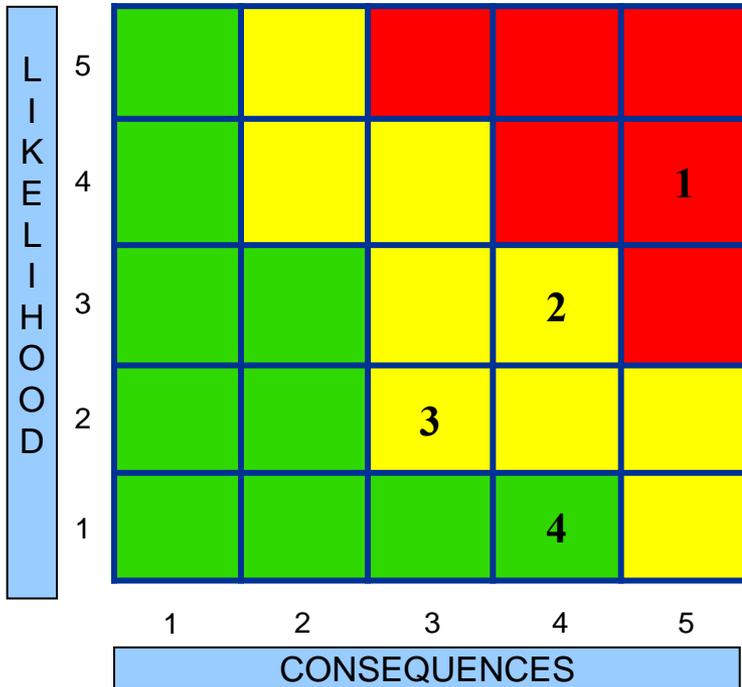
- Subtask C Flight & Ground Software
 - Contributed to the generation, review, and update of the following documents in preparation for ORR:
 - GRC-CONN-DOC-0906 Base - Software Avionics Error Codes
 - GRC-CONN-DOC-0908 Base - Flight Software Squawk Messages
 - GRC-CONN-OPS-0912 Base - Mission Operations Modules
 - GRC-CONN-OPS-0913 Mission Operations Off-Nominal Procedures
 - GRC-CONN-OPS-0915 Base - Ground Software Errors and Recovery
 - Software Lab: Updated inventory equipment list using NASA's N-PROP list for B333 R302A, Created equipment list to transition over to ZIN, Estimated current draw requirements for new SCaN Testbed ZIN SW Lab, Assisted NASA in finding and returning Langley's S950 processor, extender, and Ethernet boards.
 - Troubleshooting scripting test procedures and testing scripting bug fixes.
 - Started development on the database applications for storage and retrieval of TReK recordings on the SCaN Testbed server (both flight and GIU operations).
 - Kicked off Experiment Interface Software development process. Met with members of the management team, the PI team, and the DTN team.

- Subtask D Mission Operations
 - Supported the following meetings: the SCaN Testbed Network Working Group Meeting for Space Network and Near Earth Network interfaces, Research Planning Working Group (RPWG) meeting, telecon with ISS Pointing that focused on finalizing the OIP between the SCaN Testbed Mission Ops team and ISS Pointing, SSPCB S-Band Normal Data Dump Request, SCaN Testbed - 2012 FISMA Review (IT Security).
 - Contributed to the generation, review, and update of all documents in preparation for ORR.
 - Started generation of SFEP User's Guide, GRC-CONN-DOC-0891.
 - Continue work on the SCAN Testbed Experimental Path Security Plan (SSP) with a target completion and insertion into RMS by June 15.
 - Worked on updates to SCAN Testbed System Overview version 6 (architecture). This version will incorporate the final configuration of all the link connections on the ground hardware for the Primary and Experimental communications paths in support of Checkout and Commissioning. The next step is to submit to CM for review and approval.
 - Created a script, procedure, and briefing for Scenario 2. Interfaced with POIC to implement scenario simulation timeline. Functioned as GIU and Flight System commander, controller, SFEP operator, scheduler, and APS operator for the second POIC Scenario Session.
 - Created a script, procedure, and briefing for Mission Simulation 1. Functioned as GIU and Flight System commander, controller, SFEP operator, scheduler, and APS operator for the first POIC Mission Simulation.
 - Began planning and interfacing with POIC for an additional Scenario Session (6/8) and Pre-Launch Mission Simulation (7/12).
 - Completed the May monthly GRC IT network security scan and will apply the recommended updates per report to all SCaN Testbed windows based hardware.

Hardware/Software Deliverables

No.	Item Description	Planned Completion Date	Actual Completion Date	Note
a)	Subtask A –CM/DM: Configuration Management and Tracking System (CMTS)	December 31, 2012		Hardware
b)	Subtask C – Flt & Grnd SW: Verified Post-Ship Flight Software for subsequent upload to the Flight System	July 2012		Software
c)	Subtask C – Flt & Grnd SW: Verified Ground Software required for JAXA Ground Processing	February 2012	February 2012	Software
d)	Subtask C – Flt & Grnd SW: Ground Software to support Mission Simulations	Q3 FY12		Software
e)	Subtask C – Flt & Grnd SW: Verified Ground Software, suitable for use during C/O & C	June 2012		Software
f)	Subtask C – Flt & Grnd SW: Verified Ground Software, suitable for use with Post-Ship Flight Software	July 2012		Software
g)	Subtask D – Mission Ops: Control Center Equipment for use during Mission Simulations and Mission	Q3 FY12		Hardware
h)	Subtask D – Mission Ops: Data Distribution Services Software	May 2012		Software

STATUS AS OF: 5/31/12



LxC Trend	Rank	Approach	Risk Title
N	1	M	Underfunded Operations and Experiments Phase
↓	2	M	Experimenter Software Interface
N	3	M	Loss of Experienced Software Personnel
N	4	M,W	ELC HRDL Repair

<u>Criticality</u>	<u>L x C Trend</u>	<u>Approach</u>
High	↓ Decreasing (Improving)	M – Mitigate
Med	↑ Increasing (Worsening)	W – Watch
Low	→ Unchanged	A – Accept
	N New	R – Research
		C – Closed