

DSS-14 DTRR

June 7, 2004

Review Board

- Gene Burke (Chair, RAP Office Manager)
- Al Berman (Office 930)
- Mark Hayes (ITT Engineering Manager)
- Jean Patterson (Division 33 Rep to IND)
- Fred Battle (Safety Engineer)
- Bob Haroldsson (GDSCC downtime lead)
- Wayne Sible (Implementation Engineer, Office 940)

Review Criteria

- Product(s) are ready to be tested
- Test plan(s), designs and procedures reviewed and deemed sufficient to adequately test the subsystem(s) and its interfaces
- Test procedures, test equipment, input simulators, test facilities, and test teams are ready to begin testing

Agenda/Schedule

- Down Time Overview – S. Morgan
- ACR Task Status
 - 10:10 Hardware Modkit Status – H. Ahlstrom
 - 10:25 Software Modkit Status – M. Strain
 - 10:40 Test Plans and Status – K. Shimizu
 - 10:50 OE Status Report – M. Wert
- HBA Upgrade Task Status
 - 11:05 Hardware Modkit Status – J. Liu
 - 11:20 Software Modkit Status – H. Ahlstrom
 - 11:30 Test Plans and Status – J. Liu
 - 11:40 OE Status Report – K. Williams
- Integrated Schedule – H. Ahlstrom
- Board Discussion

Review Scope

- DSS-14 downtime from 7/7/04 – 12/7/04
- Review is limited to the status of the Antenna Controller Replacement (ACR) task and the Hydrostatic Bearing Assembly (HBA) upgrade task.
- Review content specified by 813-101
 - Material presents a summary of the readiness for installation and testing
 - Detailed issues regarding individual deliverables should be addressed in RFAs or in the appropriate transfer or test review

Associated Tasks

- The following tasks have indicated an interest to use portions of the downtime on a Non-Interference Basis (NIB)
 - USC Installation (*)
 - NSP Uplink Integration Testing
 - NSP D5.3 Uplink and Downlink Acceptance Testing
 - NMC Installation
 - UWV Switch Installation for GSSR

* - Scheduled by RAP

Dependencies

- ACR Installation will require an upgrade to the NSP Downlink software for CONSCAN to function correctly
 - Anomaly was detected in ACR pre-AT
 - Will either be the D5.3 delivery or a minor software version update (version 4.1.3)
 - Need is understood by the NSP Downlink PEM
- New NSS support files are required
 - Requires a table change at SPPA (M&C OE responsible)
 - Requires files to be delivered to NSS (ANT OE responsible)

ACR Hardware Modkit Status

CI	Name	ETA	Shipping Status	Pre-Install Testing	Liens	Installation Procedure	Training Material
101.102	DMA	Initiated	QA'ed	N/A	See Notes	Signature cycle	not started
101.319	ACCC	Initiated	JPL	N/A	See Notes	Signature cycle	not started
101.320	ALC	Initiated	JPL	Complete	See Notes	Signature cycle	not started
101.330	MESA	Initiated	JPL	In Progress	See Notes	Signature cycle	not started
101.340	ASA	Initiated	QA'ed	N/A	See Notes	Signature cycle	not started
111.107	ACA	Initiated	DLF	Complete	None	Signature cycle	not started
111.119	AMC	Initiated	to DLF	Complete	See Notes	Signature cycle	not started
111.121	AMT	Initiated	DLF	Complete	None	Signature cycle	not started
111.402	AWDG	Initiated	GDSCC	Complete	See Notes	Draft	N/A
403.113	FCG	Initiated	DLF	Complete	None	Complete	N/A
403.301	MCG	Initiated	DLF	Complete	None	Complete	N/A

ACR Hardware Modkit Status (1)

Lien #	Category	Description	Planned Closure	Expected Closure	Need Date
CI: 101.102		ADA			
1	1	Reducing fitting, 1" x 1/2" NPT	6/25/2004	6/25/2004	7/7/2004
CI: 101.319		ACCC			
1	8	Installation Procedure, 868-000186 Rev A	6/15/2004	6/4/2004	7/7/2004
2	8	Hardware Maintenance Training, 838-010	7/15/2004	7/15/2004	8/18/2004
3	6	DWG 9620818, ME Servo I-face diag.	7/15/2004	6/30/2004	8/1/2004
4	6	DWG 9620856, Compensation Header Servo Amp	7/15/2004	6/30/2004	8/1/2004
5	6	DWG 9620890, MEDC Assy	7/15/2004	6/30/2004	8/1/2004
6	6	DWG 9620891, MEDC Wiring Diag	7/15/2004	6/30/2004	8/1/2004
7	6	ECI 200078 for 9619272, Auto Scaling	7/15/2004	6/30/2004	8/1/2004
CI: 101.320		ALC			
1	10	Front Power Strip, Waber #903CB	8/15/2004	8/15/2004	8/19/2004
2	1	Wire, Blue, TFFN, 18 AWG, 250 feet	6/30/2004	6/30/2004	7/12/2004
3	1	Wire, Yellow, TFFN, 16 AWG, 100 feet	6/30/2004	6/30/2004	7/12/2004
4	1	Wire, Green, TFFN, 16 AWG, 100 feet	6/30/2004	6/30/2004	7/12/2004
5	1	EMT Conduit, 1/2", 120 Feet	6/30/2004	6/30/2004	7/12/2004
6	1	EMT Conduit, 3/4", 190 Feet	6/30/2004	6/30/2004	7/12/2004
7	1	EMT Conduit, 1", 40 Feet	6/30/2004	6/30/2004	7/12/2004

ACR Hardware Modkit Status (2)

Lien #	Category	Description	Planned Closure	Expected Closure	Need Date
CI: 101.330		MESA			
1	10	Front Power Strip, Waber #903CB	8/15/2004	8/15/2004	8/19/2004
CI: 101.340		ASA			
1	10	Front Power Strip, Waber #903CB	8/15/2004	8/15/2004	8/19/2004
2	1	Resistor, 536K, 0.4 W, 1%, Qty 10	6/30/2004	6/30/2004	7/13/2004
3	1	Resistor, 1.24K, 1/8W, 1%, Qty 10	6/30/2004	6/30/2004	7/13/2004
4	1	Resistor, 1.0K, 1/8W, 1%, Qty 10	6/30/2004	6/30/2004	7/13/2004
5	1	Capacitor, 1.5uF, 50 VDC, Qty 10	6/30/2004	6/30/2004	7/13/2004
CI: 101.119		AMC			
1	10	Front Power Strip, Waber #903CB	8/15/2004	8/15/2004	8/19/2004
CI: 111.402		Weather Station Assembly			
1	8	Installation Procedure, 868-000167	12/28/2003	12/1/2004	12/1/2004
2	9	HTP, 868-00168	12/28/2003	12/1/2004	12/1/2004
3	6	CTM, 865-000330	12/28/2003	Delivered	
4	1	Weather Station Assy, 9622072	12/28/2003	Delivered	
5	4	Weather Station Assy, 9622072, Spare	12/28/2003	Delivered	
6	5	Assmann Pyschrometer, Temp/PH calibrator	12/28/2003	8/30/2004	12/1/2004
7	4	Skyvane Wind sensor, spare	12/28/2003	12/1/2004	12/1/2004
8	4	Skyvane Sensor cable, spare	12/28/2003	Delivered	
9	4	Motor Aspirated Radiation Shield, spare	12/28/2003	12/1/2004	12/1/2004

ACR MESkit Status

- MSA #16 released

CI	Name	ETA	Shipping Status	Pre-Install Testing	Liens
101.320	ALC	Initiated	JPL	N/A	TBD
101.330	MESA	Initiated	JPL	N/A	TBD
101.340	ASA	Initiated	DLF	N/A	None

ACR Software Modkit Status

CI	Name	Test Procedure	Testing Status	SOM/UG	RDD	Expected Liens	Training Material	SWTA
101.323	ANT Logic Controller	*	Eng. Test	*	Peer Reviewed	None	*	Post-AT
101.324	ALC User Display	*	Eng. Test	*	Peer Reviewed	None	*	Post-AT
101.351	SR Servo Assy	**	Eng. Test	**	In process	**	**	Post-AT
111.108	ANT Control Assy.	**	Pre-AT	**	Draft in peer review	**	**	Post-AT
111.110	ANT Recorder Assy	N/A	N/A	N/A	Draft in peer review	N/A	N/A	Post-AT
111.120	ANT Monitor & Control	**	Pre-AT	**	Draft in peer review	**	**	Post-AT
111.122	ANT Maintenance Terminal	**	Pre-AT	**	Draft in peer review	**	**	Post-AT
111.123	ANT Displays	**	Pre-AT	**	Draft in peer review	**	**	Post-AT
Common Documents								
*		HTP 869-000078A Draft		UG 887-000051B Released			Training Material (838-010) Not Started	
**		STP 889-000127 Peer Reviewed		SOM 837-024 In peer review		STP and SOM released post-AT	Training Material in progress	

ACR Software Modkit Status

- Summary of Test Readiness Review peer review (version 1.0.0.6.1)
 - Testing included complete STP coverage
 - Ensure that CDE and OE have consistent list of priority 1 anomalies
 - Plan for remainder of testing is adequate
 - Anomalies known from version 1.0.0.6.1: 10
- Version 1.0.0.6.2 tested 5/10/04 – 6/4/04
 - Testing included complete STP coverage
 - Anomalies

	Open	Fixed
• Anomalies found during test of 1.0.0.6.1:	9	1
• Anomalies found during test of 1.0.0.6.2:	3	1
• Non-coding anomalies	2	

ACR Software Modkit Status

- Plan to fix all open Category 1 anomalies in version 1.0.0.6.3 prior to the S/W Test Readiness Review
- Anomalies will be entered into AAMS before the S/W Test Readiness Review

ACR Testing Schedule

	<u>Planned</u>	<u>Needed</u>
• Software Test Readiness Peer Review	May 17	
• Software version 1.0.0.6.2 testing	May 17–June 4	
• Software testing	Through July 15	
• Software priority 1 anomalies correction	Through July 15	July 15
• Software PAT	July 15–29	Aug. 2
• ALC PAT (at JPL)	July 26–30	Aug. 2
• Software TRR	Aug. 2	Aug. 4
• Software AT (at JPL, STP-based)	Aug. 4-18	Aug. 18
• Initial software checkout starts (DSS-14)	Aug. 18–Sep. 10	Sep. 16
• ALC Software AT (at DSS-14, HTP-based)	Oct. 1–5	Oct. 6
• ANT Subsystem AT (DSS-14, SITP-based)	Oct. 20–Nov. 18	Nov. 18

Test Procedure Status

Document	Doc. No.	Need Date Release Date	Status
STP	889-000127	7/8/04 9/3/04	Incorporating review comments
70M ME HTP	869-000126	10/7/04 11/8/04	In review by CDE
70M ASI HTP	869-000100	10/1/04 Released	Released
70M SR HTP	869-000125	10/1/04 Released	Released
70M ALC HTP	869-000078 Rev A	7/26/04 11/8/04	Working
70M Servo HTP	869-000128	10/15/04 21/1/04	In review by CDE
70M SITP	839-0058	10/20/04 12/31/04	In review cycle
70M OTP	TBD	11/18/04 TBD	Working

ACR OE STATUS REPORT

- Summary of Anomalies:
 - Through completion of version 6.2 pre-acceptance testing:
 - TBD1 criticality-1 problems
 - TBD2 proposed corrected in version 6.3
- Summary of Workarounds:
 - None known at this time
- Summary of Functional Deferrals:
 - CDE has requested deferral of IIRV predicts and file-driven planetary predicts
- Status of RDDs and SOM:
 - All four RDDs have been provided (draft) for OE review during PAT
 - Three SOM sections have been provided to OE for review and comments were incorporated
- Status of OTP:
 - Draft for 70m task and NOPE review (6/4)
 - To contain 3 days engineering tracking, conscan enabled
 - Contains TBD PITs and demos (to be run in unscheduled hours / day after successful completion of engineering tracks)
 - Final draft to documentation (6/11)
 - Release TBD
- Status of Operations Procedures:
 - None of these operations documents (843 SOPs / 871 series NOPs) currently contains syntax for ANT operator directives
 - ACR is not removing specifically-referenced functionality
 - Conscan
 - Planetary mode
 - No revisions expected

HBA Hardware Modkit Status

CI#	Name	ETA	Shipping Status	Pre-Install Testing	Liens	Installation Procedure	Training Material
101.106	AHA	Initiated	GDSCC	Complete	See Notes	Peer Reviewing	In Progress
101.319	ACCC	Initiated	JPL	N/A	See Notes	Signature Cycle	Not started
101.320	ALC	Initiated	JPL	Complete	See Notes	Signature cycle	Not started
101.402	APL	Initiated	Apex	N/A	See Notes	Peer Reviewing	N/A
101.403	AFP	Initiated	ITT	N/A	No	N/A	N/A

HBA H/W Lien Status (1)

CI#	Lien Item Description	Agreed close date	Expected close date	Needed date
101.106				
Antenna Hydraulics Assembly	Hydraulic Oil (220PM)	7/7/2004; 10/11/2004	7/7/2004; 10/11/2004	7/7/2004; 10/11/2004
	HIP	6/7/2004	6/7/2004	8/26/2004
	Dehydration CPU spare	5/30/2004	6/15/2004	Spare

HBA H/W Lien Status (2)

CI#	Lien Item Description	Agreed close date	Expected close date	Needed date
101.402				
Antenna Power and Lighting	1/2" Rigid Metal Conduit Threadless Connector/Coupling (10qty)	5/30/2004	6/4/2004	7/12/2004
	1/2" Rigid Metal Conduit Threadless Box Connector/Coupling (10qty)			
	3/4" Rigid Metal Conduit Threadless Connector/Coupling (10qty)			
	3/4" Rigid Metal Conduit Threadless Box Connector/Coupling (36qty)			
	1" Rigid Metal Conduit Threadless Connector/Coupling (10qty)			
	1" Rigid Metal Conduit Threadless Box Connector/Coupling (10qty)			
	1-1/4" Rigid Metal Conduit Threadless Connector/Coupling (10qty)			
	1-1/4" Rigid Metal Conduit Threadless Box Connector/Coupling (10qty)			
	1/2" Threaded Rigid Conduit Body (5qty)			
	3/4" Threaded Rigid Conduit Body (5qty)			
	1" Threaded Rigid Conduit Body (5qty)			
	1/2" Threaded Rigid Conduit Body Cover (5qty)			
	3/4" Threaded Rigid Conduit Body Cover (5qty)			
	1" Threaded Rigid Conduit Body Cover (5qty)			
	1/2" Threaded Rigid Conduit Body Gasket (5qty)			
	3/4" Threaded Rigid Conduit Body Gasket (5qty)			
	1" Threaded Rigid Conduit Body Gasket (5qty)			

HBA H/W Lien Status (3)

CI#	Lien Item Description	Agreed close date	Expected close date	Needed date
101.319				
ACCC	Installation Procedure, 868-000186 Rev A	6/15/2004	6/4/2004	7/7/2004

HBA MESkit Status

- Maintenance and Spare Agreement was released as MSA21
- Spares were shipped with Modkits, paper MESkit is released (#040200-CL17).

HBA Software Modkit Status

- Software modkits are integrated and delivered with ACR task.

CI	Name	Test Procedure	Testing Status	SOM/UG	RDD	Expected Liens	Training Material	SWTA
101.323	ANT Logic Controller	HTP 869-000078A	Eng. Test	UG887-000051B	Peer reviewed	None	not started	Post-AT
101.324	ALC User Display	HTP 869-000078A	Eng. Test	UG887-000051B	Peer reviewed	None	not started	Post-AT

HBA Test Plans and Status

- HBA Hardware manual testing starts right after the installation (HBA ATP #869-000131):
 - 8/26–9/14
- HBA ALC added function test:
 - 9/22–9/27
- HBA acceptance test, Part II (HBA ATP #869-000131):
 - 10/15–10/19

Safety and Lifting Plans

- The station has drafted the safety and lifting plans.
- During the hardware installation. The station will have
 - Pre-Construction safety briefing at Goldstone
 - Daily safety meeting to start day
 - Daily Close out meetings for status assessment

HBA OE Status Report

- Task Criteria
 - Schedule reviewed and under discussion with GDSCC
 - Modkit status: On site
 - Pre-installation testing completed
 - HIP status: 60-70% complete, reviewed and signed off on 6-4-04
 - Spares Status: On site
 - Equipment and tools on site
- Workarounds
 - Several released drawings not accessible on PDMS
- Functional Deferrals
 - There are a number of sensors being installed not controlled by ALC
 - Lien items- Dehydration CPU & ISO 220 Oil (delivery pending site request)
- OMM status
 - Reviewed and completed 5-5-04
 - Training and materials TBD
- Acceptance Test: No anomalies

Integrated Schedule

- Schedule developed by JPL CDEs
 - Integrates all planned activities for ACR and HBA tasks
 - Includes USC installation activities
 - Multiple reviews by GDSCC engineering staff
 - Schedule is resource-loaded and resource-leveled
 - Schedule is based on a normal 8x5 workweek
 - Except in a few critical areas when additional shifts are used
 - Oil changeout
 - Some HTPs
 - Swing shift utilized for pointing calibration tracks
 - Schedule includes pre-planned “correct and test” periods following testing of key components/assemblies
 - Schedule includes training periods
- Schedule has almost no contingency
- Progress reporting will be weekly

GDSCC Schedule Commitment

- GDSCC staff believes the schedule to be realistic
 - Unexpected outages during the installation and test period may impact the available resources
- Bob Haroldsson will take responsibility for the execution of the schedule
 - monitor the tasks listed on the schedule
 - arbitrate any conflicting priorities that come up
 - make decisions assigning GDSCC resources
 - update the MS Project schedule and provide weekly reports on progress
 - keep lines of communication open with engineering
 - generally be responsible for keeping the activities on schedule

DTRR Summary

- Tasks are ready to successfully install and test at DSS-14
- Schedule is very tight
 - Contingency is available through the use of additional hours beyond 8x5 work-week
 - NIB tasks will be deferred if there is any jeopardy in completing the ACR and HBA installation and testing within the planned downtime at our discretion

Backup Material

AMC Software Anomalies

IAR	Description	Status	Planned Closure
1278	SR fault isn't reflected in STS display	Started; Difficulty: med	6/8/2004
1280	Missing AMT responses to SU	Difficulty: easy	7/13/2004
1284	Event for failed WX sensor or missing data scrolls off NMC log	Started; Difficulty: med	6/10/2004
1285	STS display needs to indicate when not in AC mode	Difficulty: med	6/8/2004
1286	Failed MARS fan allowed use of bad data	Difficulty: easy	6/30/2004
1287	Clarify labels for systematic error models on TRK and CNF displays	Difficulty: easy	7/14/2004
1291	ME keyswitch in PCU doesn't reject commands	Investigation to determine if simulation problem	6/15/2004
1296	Change version number to 1.0.0.6.3 (non-coding)	Difficulty: easy	7/15/2004
1297	Change include files as required for version 1.0.0.6.3 (non-coding)	Difficulty: easy	7/15/2004
1299	Occasional lost AC acquisition	Started; Difficulty: med	6/15/2004
1307	DCOS and DB2 become rejected	Difficulty: med	6/23/2004
1308	TRK doesn't move sometimes	Started; Difficulty: med	6/30/2004
1309	WRAP display doesn't show invalid predicts	Fixed	Closed
1311	STS and CNF need SR R position	Difficulty: easy	7/14/2004
1313	Remove log box from CNF display	Difficulty: easy	7/14/2004
10082	Deliver archive hard disk data files to SPMC (non-coding)	Completed	Closed

ALC Software Anomaly List

ID #	Description	Status	Planned Closure
ALC 047	Automated Film Height probe calibration does not work.	Started	11-Jun-04
ALC 071	Az Angle Encoder strobe not correct for proper delay of "hold" to read.	Started	18-Jun-04
ALC 077	Can not startup, due to hang up between internal variables "shutdownall" and "startingall", for certain fault situations & not resettable.	Investigating	25-Jun-04
ALC 086	SMP internal variable "mainP2running" can get locked up "on" when it is not on. Causes erroneous information.	Investigating	25-Jun-04
ALC 090	Msg block 5 appears to not generate message "on change" consistently.	Investigating	18-Jun-04
ALC 094	HBA reservoir Oil Temp status needs to be revised to reflect the SIS.	Started	11-Jun-04
ALC 095	HBA Main Pumps come on all at once w/o sequential time delay when "lead" PC Pump fails and "lag" comes on line.	Started	18-Jun-04
ALC 108	IP Addressing of data to AMC for each station	Started	25-Jun-04
ALC 040	Pumps automatically restart after Alidade Estop is reset. DSN requires additional startup command.	Investigating	25-Jun-04

Acronyms

- ACA – Antenna Control Assy
- ACCC – Ant Config Control & Cable
- ADA - Antenna Drive Assembly
- ALC – Antenna Logic Controller
- AMC – Ant Monitor & Control Assy
- AMT – Ant Maintenance Terminal
- ASA – Antenna Servo Assy
- AWDG – Ant Weather Data Group
- DMA – Drives and Mechanical Assy
- FCG – FTS Config and Cable Group
- MCG – Master Clock Firmware
- MESA - Master Eq. Servo Assy