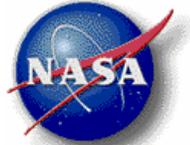




Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes



National Aeronautics and
Space Administration

January 19, 2005
Building 1, Room 966
2:00 – 4:00 pm

Attendees

CCB members and other attendees are listed in Attachment 1.

Agenda Item 1: CR AMS-02/D-008 - Baseline AMS-02 Experiment/Payload Integration Hardware Interfaces (C-ICD Part I), Rev. A

- ❑ Change request was approved and signed by Trent Martin/EA.
- ❑ Official cover to be signed.
- ❑ Official cover to ICD Part I and Part II to be faxed to Professor Ting for his signature.

Agenda Item 2: Open Paper Management Tool – Open Items Report

- ❑ OPMT attached as Attachment 2 is the updated version reflecting all updates and statuses provided at CCB.
- ❑ No new actions were assigned, but modifications were made to existing actions
 - Open Item 04-046: Build an integrated logic flow, assembly, and test schedule and for the payload at CERN. Include a clear plan for Quality Control and MRB Authority for the payload integration and assembly at CERN. Ensure that an iterative electrical / functional test scheme is included to ensure adequate operation of hardware / software before access to that "installed" crate or detector is no longer possible. Task assigned to Bill Hungerford/AMS.
 - Briefed by G. Laurenti/AMS at KSC TIM.

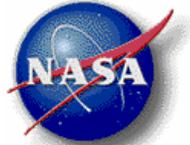
Facility at Geneva looking for alternative; STA magnet test here at JSC or **IABG**, Aachen (proposed by K. Luebelsmeyer/AMS), or ETH Zurich. Looking into options as backup to CERN (Aguilar/AMS working the issue).

T. Martin/EA wants G. Laurenti's schedule to be in scheduling format.



Alpha Magnetic Spectrometer
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Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes



National Aeronautics and
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January 19, 2005

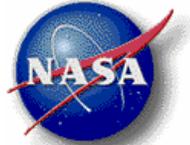
- Open Item 04-055: Review the composite panel strength testing results and requirements from the Structures Working Group with variability of data and relative paucity of data. Task assigned to Chris Tutt/LMSO.
 - C. Tutt/LMSO received a phone call from P. Romine, there is enough concern on whether test cases run on allowable. Issue is being worked, no date given for completion
- Open Item 04-120: Work with all AMS experimenters to close out all open issues associated with the Phase II Flight Safety Review Safety Data Package. Task assigned to Leland Hill/LMSO.
 - Some data has been received since the October TIM and January TIM; Some data not due until March 2005.
 - Due date was changed from 01/31/05 to 03/31/05.
 - Final Safety Data Package due 03/08/05.
- Open Item AMS_02-CDR-01: Provide information in Phase II Safety Data Package and SVP will be updated. Task assigned to Chris Tutt/LMSO.
 - Action due date changed to March 31, 2005.
- Open Item AMS_02-CDR-04: AMS will provide all design and analysis data required to meet EVR requirements per SSP 57003. Task assigned to Ross Harold/LMSO and Paul Nemeth/LMSO.
 - C. Tutt/LMSO and R. Harold/LMSO to discuss all open issues.
 - C. Tutt/LMSO to send email to W. Reid/OZ to let him know when LMSO is ready to meet with Boeing PEI and W. Reid/OZ will set-up meeting. Meeting should also include T. Martin/EA and G. Cook.

Any open action with Boeing PEI needs to be brought to the CCB so that the CDR items can be closed.



Alpha Magnetic Spectrometer
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National Aeronautics and
Space Administration

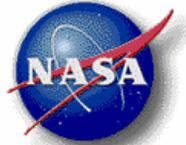
January 19, 2005

- Open Item AMS_02-CDR-06: Complete analysis and coordinate design of debris shields. To be completed by Phase III Safety. Task assigned to Dana Lear/LMSO.
 - L. Hill/LMSO to get in touch with D. Lear/LMSO to discuss what L. Hill/LMSO needs for Phase II.
 - C. Tutt/LMSO, P. Mott/LMSO, & R. Harold/LMSO need to be involved.
 - T. Martin/EA stated that anything pressure safety critical needs to be covered.
- Open Item AMS_02-CDR-10: Perform thermal assessment of UMA. Task assigned to Craig Clark/LMSO.
 - No thermal analysis has been performed on the UMA.
- Open Item AMS_02-CDR-17 – Action 2: Interface definition for control electronics to Vacuum Vent Valve. Task assigned to Bill Hungerford/AMS.
 - Action has been reassigned to Steve Harrison/SCL.
- Open Item AMS_02-Doc_Review-67: Update Vacuum Case ICD as indicated. Task assigned to Phil Mott/LMSO.
 - VC ICD and SVP Change Requests to be issued before the end of January 2005. Change LMSO to Jacobs or contractor.
- Open Item AMS_02-Doc_Review-68: Update JSC 29095 Part I as indicated. Task assigned to Ross Harold/LMSO and Paul Nemeth/LMSO.
 - Change Request AMS-02/D-008 was approved and action closed on 01/19/05.
- Open Item AMS_02-Doc_Review-78: Update JSC 29095 Part I as indicated. Task assigned to Ross Harold/LMSO.
 - Change Request AMS-02/D-008 was approved and action closed on 01/19/05.



Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes



National Aeronautics and
Space Administration

January 19, 2005

Open Discussion

- Trent Martin/EA
 - Next CCB is scheduled for February 9, 2005.
 - Change Request AMS-02/P-009: Build Additional USS and Support Equipment will be presented for approval.
 - Change Request AMS-02/D-010: Baseline AMS-02 Structural Verification Plan for the Space Transportation System and the ISS will be presented for approval.
 - Change Request AMS-02/P-011: Modify the ROEU to be EVA Removable will be presented for approval.

Trent Martin adjourned meeting at 3:15 pm.

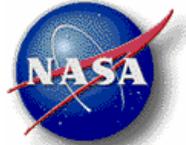
Minutes Approval: _____



Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes

January 19, 2005



National Aeronautics and
Space Administration

Attachment 1

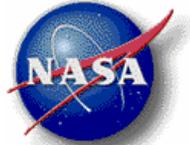
CCB Sign-in Sheet



Alpha Magnetic Spectrometer
NASA / DOE

Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes

January 19, 2005



National Aeronautics and
Space Administration

Attachment 2

Open Action Items Matrix



Alpha Magnetic
Spectrometer NASA / DOE

Open Paper Management Tool

Open Items Report



National Aeronautics and
Space Administration

Open Items Report

Open Item Number: 04-046

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Bill Hungerford

Phone Number(s):

Action Due Date: 1/30/2005

Action Completion Date:

Action: Build an integrated logic flow, assembly, and test (LFAT Schedule?) schedule and for the payload at CERN. Include a clear plan for Quality Control and MRB Authority for the payload integration and assembly at CERN. Ensure that an iterative electrical / functional test scheme is included to ensure adequate operation of hardware / software before access to that "installed" crate or detector is no longer possible.

Action Status: 12/10/04 - Discuss issue at KSC TIM in January 2005; splinter meeting of detectors

11/17/04 - To be discussed at the Integration meeting being held at CERN December 7-9, 2004

08/01/04 - Plan due by 09/18/04; Questionare sent to detector groups to initiate process. Meeting scheduled at CERN Sept 13 and 14, chaired by Giuliano Laurenti, to consolidate and refine inputs from various detector and sub-system groups. Should result in development of preliminary LFAT Schedule for review at October TIM

Open Items Report

Open Item Number: 04-051

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* OZ/Bob Miley

Phone Number(s):

Action Due Date: 2/28/2005

Action Completion Date:

Action: Finalize SSRMS requirements around the AMS-02

Action Status:

12/10/04 - ISS ICD to be released 02/05; question how to get into official documentation; New status to be provided in January

11/17/04 - Add PIRN/Waiver

09/29/04 - To be discusses at the CCB on 10/27/04

08/11/04 - Needs hazard report

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-055

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 1/30/2005

Action Completion Date:

Action: Review the composite panel strength testing results and requirements from the Structures Working Group with variability of data and relative paucity of data.

Action Status: 01/05/05 - Chris Tutt will get this done shortly

12/10/04 - Chris Tutt has met with Lockheed Martin SWG; acceptance needs to be by NASA SWG; requested meeting, but has received no response; send list of issues and what needs letter to Win Reid and John Stanford.

10/05/04 - Chris Tutt setting up meeting with SWG

08/01/04 - Plan due by 09/18/04

Open Items Report

Open Item Number: 04-056

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Chris Tutt
Bill Hungerford
Paul Nemeth

Phone Number(s):

Action Due Date: 2/28/2005

Action Completion Date:

Action: Provide the plan for Surveillance of Safety Critical assembly and test steps of Collaboration Hardware.

Action Status:

Open Items Report

Open Item Number: 04-059

RID Open Date: 8/1/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Tuesday, January 18, 2005

Open Items Report

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO
Mike Capell/AMS

Phone Number(s): 281-333-6116

Action Due Date: 3/1/2005

Action Completion Date:

Action: *Determine if the JSC EEE Parts Board needs to review the AMS P/L electronics parts / processes / documentation.*

Action Status: *01/05/05 - Per David Kaplan if we were building with standard GFE parts we would have a list of parts, but since we are using European components, a list of parts, material, screening process, testing at component level and testing at assembly level would be required to provide analysis for flight assurance/space readiness.*

Trent Martin/EA asked if the Parts Board really needed to review the parts list if they are already being screened?

Paul Nemeth/LMSO wants to get with Mike Capell/AMS about getting standard format for inside quality information and precisely define what data is needed from the AMS collaborators. Trent Martin/EA wants a write-up from Mike Capell/AMS by March 1, 2005.

Action reassigned to Paul Nemeth/AMS and Mike Capell/AMS.

12/10/05 - Rspose required by 01/05/05.

09/29/04 - Trent Martin to discuss this action with Dave Kaplan

Open Items Report

Open Item Number: 04-069

RID Open Date: 8/4/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Leland Hill/LMSO
Chris Tutt

Phone Number(s): 281-333-6539

Action Due Date: 5/1/2005

Action Completion Date:

Action: Coordinate closeout photo tasks; Need to verify we get closeout photos before hardware is closed up; Need update the pre-flight imagery plan

Action Status: 10/05/04- final documentation must be done after Surveillance Plan for Safety Critical Structure

09/29/04 - Draft documentation is complete

Open Items Report

Open Item Number: 04-115

RID Open Date: 11/29/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Paul Nemeth
Mike Fohey

Phone Number(s): 281-333-6116
281-333-6115

Action Due Date: 12/10/2004

Action Completion Date:

Action: Investigate to see if we need a FEMA/CIL for AMS. If not, what are we doing in place of the FEMA/CIL?

Action Status: 01/05/05 - presentation to be given at CCB in March 2005

12/08/04 - presentation to be given at CCB on January 5, 2005

Open Items Report

Open Item Number: 04-117

RID Open Date:

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Craig Clark/LMSO
Joe Burger

Phone Number(s): 281-333-6779

Action Due Date: 3/31/2005

Action Completion Date:

Action: Extending Magnet Life - Make sure we have the capability to provide 150W of power into the cryo-coolers (-vs- the 100W nominal power).

Action Status: 01/05/05 - Craig Clark/LMSO staed that we have the capability to run at 150W per GSFC.

Tuesday, January 18, 2005

Open Items Report

Open Item Number: 04-119

RID Open Date:

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

*Action Number: 1 Actionee(s): Craig Clark/LMSO
Joe Burger*

Phone Number(s): 281-333-6779

Action Due Date: 3/31/2005

Action Completion Date:

Action: Extending Magnet Life - Explore what else we can do to bias the VC cold.

Action Status: 01/05/05 - Per Craig Clark/LMSO explored other options: 1) covering support ribs with MLI (currently being explored) and 2) cover exposed ribs with silver teflon (accepted as possibility right now). Note - silver teflon will not be near handrails.

Leland Hill/LMSO asked if we will need hazard report? Who do we need approval from?

Paul Nemeth/LMSO wants to get a defined amount of 'shiny surface' we can have.

Per Win Reid/NT EVA contact is Amy Hartzel.

Craig Clark/LMSO to supply drawings to Larissa Arnold/MOD and Win Ried/NT of surfaces to be covered by silver teflon with justification why it is needed.

12/08/04 - to be discussed at Cern week of 12/13/04; to be presented to CCB on 01/05/05.

Tuesday, January 18, 2005

Open Items Report

Open Item Number: 04-120

RID Open Date: 12/6/2004

RID Closure Date:

Title:

Affected Document:

Initiator(s):

Initiator(s) Phone Number:

Description:

RID Disposition:

RID Status:

Action Item Information

Action Number: 1 *Actionee(s):* Leland Hill/LMSO

Phone Number(s): 281-333-6539

Action Due Date: 1/31/2005

Action Completion Date:

Action: Work with all AMS experimenters to close out all open issues associated with the Phase II Flight Safety Review Safety Data Package.

Action Status:

Tuesday, January 18, 2005

Open Items Report

Open Item Number: AMS_02-CDR-01

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-10: Lack of Safety Information/ Documentation for the Thermal Control System (TCS)

Affected Document: JSC 28792

Initiator(s): H. Flynn/NASA-JSC

Initiator(s) Phone Number: 281-483-1198

Description: From the limited information provided in Table E2, it is not possible to determine the safety requirements compliance of the TCS. Missing information includes: a system schematic, quality and type of working fluid, brief explanation(s) of the subsystem Maximum Design Pressure (MDP) determinations, itemized list of each part number/component, etc

RID Disposition: Approved

RID Status: Closure Pending Documentation

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-6734

Action Due Date: 1/30/2005

Action Completion Date:

Action: Provide information in Phase II Safety Data Package and SVP will be updated.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-04

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-14: Lack of EVR Data in CDR Package

Affected Document:

Initiator(s): A. Mootty/Boeing PEI

Initiator(s) Phone Number: 281-226-4605

Description: The CDR package is lacking data (both design and analysis data) on the AMS-02 EVR accommodations for assessment of robotics compatibility with SSP 57003 requirements.

RID Disposition: Approved

RID Status:

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO
Paul Nemeth/LMSO

Phone Number(s): 281-333-6134
281-333-6116

Action Due Date: 1/30/2005

Action Completion Date:

Action: AMS will provide all design and analysis data required to meet EVR requirements per SSP 57003.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-05

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-15: AMS-02 Passive Payload Attach System (PAS)

Affected Document: N/A

Initiator(s): M. Whitworth/Boeing PEI

Initiator(s) Phone Number: 281-226-4234

Description: SSP 57003 para. 3.1.1.2.3 (Design Loads) requires that the PAS/UCCAS interface shall be designed to withstand the interface loads in Table 3.1.1.2.3-2 combined with the preload defined in paragraph 3.1.3.1.3.1 and the thermal loads derived from the environment defined in paragraph 3.5.1.12. Paragraph 3.5.1.12 states to use 0.2G and 0.4G on orbit load factors. This analysis used the interface loads and back-calculated the on-orbit load factors which were less than 0.05 G's. This calculation method is not appropriate.

RID Disposition: Approved

RID Status: Open due to pending action

Action Item Information

Open Items Report

Action Number: 2 *Actionee(s):* C. Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 10/20/2004

Action Completion Date:

Action: Update SVP and complete analysis.

Action Status: 01/05/05 - Per Chris Tutt/LMSO the SVP is updated. Talked to PEI and they refuse to closed the RID with no justification. Note: M. Witworth has left the company so V. Sanders has taken over RID.

Chris Tutt/LMSO to send PEI responses to Win Reid/NT and Win will work it through his contact at PEI.

RID and OPMT item will be closed as soon as the Change Request and document have been approved.

12/08/04 - currently in internal review cyle at Lockheed Martin; to be sent out within 2 weeks to be approved at CCB on 01/05/05.

10/05/04 - SVP updated, still needs signature

Open Items Report

Open Item Number: AMS_02-CDR-06

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-17: Meteoroid/Orbital Debris Shielding

Affected Document: AMS-02 CDR Version 2

Intiator(s): E. Christiansen/NASA

Intiator(s) Phone Number: 281-483-5311

Description: Shielding from meteoroid/debris impact is inadequate to meet protection requirements. Shielding of pressurized vessels on AMS-02 such as the vacuum case and TRD (as well as any other pressure vessel) is required to prevent catastrophic rupture of these tanks in the event of meteoroid/debris impact which would release high-velocity fragments creating a potentially serious safety issue for on-board crew. The assessed probability of no penetration (PNP) using specified environment models is 0.97 which is far below the specified 0.997 PNP requirement. Updating ballistic limit equations and models as described in the forward work plan does not appear adequate to show compliance with requirements. Additional or significantly enhanced shielding will likely be necessary to meet safety requirements.

RID Disposition: Approved

RID Status: Open - Deferred to next cycle review

Action Item Information

Action Number: 1 **Actionee(s):** D. Lear/LMSO

Phone Number(s): 281-483-2998

Action Due Date: 7/1/2006

Action Completion Date:

Action: Complete analysis and coordinate design of debris shields. To be completed by Phase III Safety.

Action Status: Open - Deferred to next cycle review

Open Items Report

Open Item Number: AMS_02-CDR-07

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-1-23: Design Reflects Out-Of-Date EBCS Configuration

Affected Document: SEG39135720

Initiator(s): T. J. Urban/LMSO-ER3

Initiator(s) Phone Number: 281-333-6008

Description: Top level AMS assembly does not show EBCS connector guard and EBCS MLI blanket.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 12/1/2005

Action Completion Date:

Action: Update AMS-02 assembly drawings.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-08

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-2-07: Bolt in Sloppy Holes Assured to Take Shear

Affected Document: N/A

Initiator(s): B. Ritter/GSFC

Initiator(s) Phone Number: 301-286-9022

Description: Bolts attaching the support ring to the conical flange were assumed to transfer shear, even though they are in sloppy holes this is non-conservative.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 1/30/2005

Action Completion Date:

Action: Work bolt concerns with the SWG.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-09

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-2-15: Missing Documents - Structural Analysis

Affected Document: N/A

Initiator(s): Murthy Pinnamaneni Structures/Boeing

Initiator(s) Phone Number: 281-226-5665

Description: The following items were not available in the Data Package: design load factors, dynamic analysis procedure and results. From 2.2.1, AMS Report Outline.doc, Magnetic Strap Analysis and the Coupled Loads Analysis, which are identified to be in "separate sections." Reports/documents that include: Dynamic Loads Analysis Description; Payload/Shuttle Interface Loads; Trunion Deflection; Trunion Misalignment Loads; and Uncertainty Factors Used in the Analysis.

RID Disposition: Approved

RID Status: Closure Pending Documentation

Action Item Information

Action Number: 1 **Actionee(s):** Chris Tutt/LMSO

Phone Number(s): 281-333-7634

Action Due Date: 7/1/2006

Action Completion Date:

Action: Update stress report and dynamics analyses reports. To be completed by Phase III Safety Data Pack.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-10

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-3-01: Evaluation that Passive UMA Remains Within Its Temperature Range

Affected Document: AMS-02 TCS Presentation

Initiator(s): V. Sanders/Boeing-PEI

Initiator(s) Phone Number: 281-226-4266

Description: SSP 57003 requirements 3.1.3.2.3.1 D is not listed as an applicable section. This section requires that the UMA passive half be maintained within its allowable temperature range of -90 to +190 degrees F.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 2 **Actionee(s):** C. Clark/LMSO

Phone Number(s): 281-333-6779

Action Due Date: 1/30/2005

Action Completion Date:

Action: Perform thermal assessment.

Action Status:

Open Items Report

Open Item Number: AMS_02-CDR-11

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-3-05: Interface Based on Out-Of-Date EBCS Configuration

Affected Document: SSP 57213

Intiator(s): T. J. Urban/LMSO-ER3

Intiator(s) Phone Number: 281-333-6008

Description: Thermal design/analysis based on old EBCS configuration. Impacts:

1. EBCS keep alive heater 5-2 buses @ 50W ea., not 25W.
2. EBCS MLI blanket.
3. EBCS avionics box optical properties.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Tim Urban/LMSO

Phone Number(s):

Action Due Date: 2/15/2005

Action Completion Date:

Action: Provide updates to SSP 57003. Update SSP 57003 and issue.

Action Status: 01/05/05 - Reassigned to Tim Urban/LMSO. He has joined the LMSO AMS Project Office. Action due date changed to 02/15/2005.

10/05/04 - Paul Nemeth to check to see if ICD has been updated

Open Items Report

Action Number: 2 *Actionee(s):* C. Clark/LMSO

Phone Number(s): 281-333-6779

Action Due Date: 3/1/2005

Action Completion Date:

Action: Perform analysis.

Action Status:

Tuesday, January 18, 2005

Open Items Report

Open Item Number: AMS_02-CDR-12

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-18: Presentation Issues

Affected Document: Avionics & ACOP Presentati

Intiator(s): H. Hoang/PEI
J. Fu/PEO

Intiator(s) Phone Number: 281-226-6054

Description: The presentation for avionics is not adequate for documentation purpose to show compliance with SSP 57003 requirements.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Tim Urban/LMSO

Phone Number(s): 281-333-6008

Action Due Date: 1/30/2005

Action Completion Date:

Action: Supply document listing EMI/electrical specs.

Action Status: 01/05/05 - Paul Nemeth/LMSO to ask initiator if this RID can be rolled into RID AMS-CDR-4-18 and Open Action Item AMS_02-CDR-13.

Open Items Report

Open Item Number: AMS_02-CDR-13

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-20: Power Compatibility and EMC Testing

Affected Document: Avionics Overview

Initiator(s): H. Hoang/PEI
J. Fu/PEO

Initiator(s) Phone Number: 281-226-6054

Description: The EME Control Plan (or equivalent) used to establish the plan for how AMS will be compatible with the ISS EMI requirements is lacking in the CDR package.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Tim Urban/LMSO

Phone Number(s): 281-333-6008

Action Due Date: 10/30/2004

Action Completion Date:

Action: Supply EME control plan.

Action Status: 01/05/05 - Tim Urban/LMSO to provide status March 2005.

Open Items Report

Open Item Number: AMS_02-CDR-14

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-24: No Cable List and Derating Analysis of Cables

Affected Document: N/A

Initiator(s): D. Beverly/EEE

Initiator(s) Phone Number: 281-483-0250

Description: There is no evidence of wiring or external cable list. The derating of the wire and cables has not been performed.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 10/30/2004

Action Completion Date:

Action: Supply wire list and derating details.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

Open Items Report

Open Item Number: AMS_02-CDR-15

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-25: Connector Designator in AMS-02 Wiring Diagram

Affected Document: SIG39136082

Intiator(s): Y. Jaurigue/AG-92-J34B

Intiator(s) Phone Number: 281-226-5634

Description: I/F Panel A P6/J6 should be P7/J7 to interface from the Standard Switch Panel (SSP), using the standard mixed cargo harness, to AMS-02 control electronics per earlier agreement between the customer & USA/NASA ("Proposed STS cabling requirements for AMS-02" agreed to October 30, 2001: Danny Irvin, Mariella Hartgerink, Michael Gerlach, and Ed Walters).

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

10/05/04 - Paul Nemeth to check on status of action

Open Items Report

Open Item Number: AMS_02-CDR-16

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-26: AMS-02 Wiring Schematic

Affected Document: SIG39136082

Intiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description:

1. On sheet 3, i/f panel a connector p6/j6 should be p7/j7 to interface to the ssp via smch cabling per earlier agreement (''proposed sts cabling requirement for ams-02'' agreed in october 30, 2001: danny irvin, mariella hartgerink, michael gerlach, and ed walters). Also the emc classification for interface wiring through j6/p6 appears to be rf. Change the shielded pair wires to twisted pair wires for eo, ho, or ml class wiring - where appropriate. Redlines will be given @ ams-02 cdr avionics splinter.
2. On sheet 3, the interface wiring through i/f panel a connector p5/j5 has two return line when there is only one available on p5 pin 35. Also, the 3 discrete output low signals from the mdm pf1 are available on pda connector p5 pins 32, 33 and 34.
3. On sheet 3, the interface wiring through i/f panel a connector j4/p4 is missing a pair of shielded ground wires for rs-422 #1 and #2. Pin 9 of pda connector p4 is assigned for rs-422 #2 gnd and pin 10 of pda connector p4 is for rs422 #1.
4. On sheet 3, interface wiring from ams-02 rs-422 #1 and #2 through i/f panel a connector j4/p4 to pdip2 p103 / j103 is different from the ''proposed sts cabling requirement for ams-02'' provided to paul nemeth via e-mail from d. Irvin on 12/07/2001 and boeing control schematic vs72-config 1 last revised on 11/24/2002. A unique cable will have to be built to support ams-02 rf requirements.
5. This drawing should show the ams-02/gfe cable required to provide connectivity between ams-02 rs-422 service and t-0 connector j59.

RID Disposition: Approved

RID Status: Open

Action Item Information

Tuesday, January 18, 2005

Open Items Report

Action Number: 1 Actionee(s): Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

Open Items Report

Open Item Number: AMS_02-CDR-17

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-28: SPHe Electronics to I/F Panel A, GPC Cable Assembly, W11

Affected Document: SEG39136103

Intiator(s): Y. Jaurigue/AG-92-J34B

Intiator(s) Phone Number: 281-226-5634

Description: Sheet 2 of the above documents has two return lines when there is only one available on J5 mating Connector P5 Pin 35. Interface from the MDM PF1 which provides 3 discrete output low signals to the AMS-02 control electronics are available on connector P5 Pins 32, 33, and 34.

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** D. Nguyen/LMSO

Phone Number(s): 281-333-6119

Action Due Date: 1/31/2005

Action Completion Date:

Action: Implement recommendation.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

Open Items Report

Action Number: 2 *Actionee(s):* Bill Hungerford

Phone Number(s):

Action Due Date: 1/31/2005

Action Completion Date:

Action: Interface definition for control electronics to Vacuum Vent Valve

Action Status:

Tuesday, January 18, 2005

Open Items Report

Open Item Number: AMS_02-CDR-21

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-32: Missing Documents - Avionics

Affected Document: N/A

Intiator(s): Y. Jaurigue/AG-92-J34B

Intiator(s) Phone Number: 281-226-5634

Description: From the Flight Avionics Drawing Index, the following items were not available for review in the data package: 39136117 ROEU Connector Panel (Panel A), 39136118 ROEU Connector Panel Bracket (EW, YJ).

RID Disposition: Approved

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 11/15/2004

Action Completion Date:

Action: Implement recommendation.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

11/18 - check status of action item on 11/29/04

Open Items Report

Open Item Number: AMS_02-CDR-22

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-33: RS422 DDRS-02/PDIP Cable Assembly

Affected Document: SED39136111

Initiator(s): Y. Jaurigue/AG-92-J34B

Initiator(s) Phone Number: 281-226-5634

Description: 1. The "GND" Pin for PDIP2 on connector P105 will mate with connector J105 pin 7.

2. Please see RID (boeing tracking number) "Boeing-14 RID AFD AMS-02 wiring Schematic" against SID39136110. The communication flow in the above document is unclear via the end to end interface nomenclatures. The RS-422 transmit and receive signal can be misinterpreted by the payload (AMS-02) and result in a last minute payload wiring.

Please note there is a concern regarding the second RS-422 interface from PDIP2 P105 to PDIP1 J4 which can potentially interfere with a shared use of the ku-band signal processor. It is preferred that only the required signal interface to PDIP1 J4 is used. If the high data rate digital data input of the ku-band signal processor is required per SIG39136083, use connector J4 (mating connector for P4) on PDIP1 Pin 15 and 16.

RID Disposition:

RID Status: Open

Action Item Information

Action Number: 1 **Actionee(s):** Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Supply EME control plan.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

11/18 - check status of action item on 11/29/04

Open Items Report

Open Item Number: AMS_02-CDR-23

RID Open Date: 5/1/2003

RID Closure Date:

Title: AMS-CDR-4-34: RS422 T-0/PDIP Cable Assembly

Affected Document: SED39136112

Intiator(s): Y. Jaurigue/AG-92-J34B

Intiator(s) Phone Number: 281-226-5634

Description: 1. The "GND" Pin for PDIP2 on connector P105 will mate with connector J105 Pin 7. Also, the gnd wire routed to connector P4 is inconsistence with drawing SID39136110, which routes the same wire to P103.

2. Please see rid for SID39136110. The communication flow in the above document is unclear via the end to end interface nomenclatures. The RS-422 transmit and receive signal can be misinterpreted by the payload (AMS-02) and result in a last minute payload wiring.

Please note there is a concern regarding the second RS-422 interface from PDIP2 P105 to PDIP1 J4 which can potentially interfere with a shared use of the ku-band signal processor. It is preferred that only the required signal interface to PDIP1 J4 is used. If the high data rate digital data input of the ku-band signal processor is required per SIG39136083, use connector J4 (mating connector for P4) on PDIP1 Pin 15 and 16.

Also, it is recommended that pin to pin interface from PDIP2 P105 to P103 be as follows:

PDIP2 P105 - 3, 7, 6, 5, 12, 13, 10, 9, 2, 1

PDIP P103 - 3, 7, 13, 12, 5, 6, 10, 9, 2, 1

RID Disposition: Approved

RID Status: Open

Action Item Information

Tuesday, January 18, 2005

Open Items Report

Action Number: 1 *Actionee(s):* Paul Nemeth/LMSO

Phone Number(s): 281-333-6116

Action Due Date: 10/30/2004

Action Completion Date:

Action: Implement recommendation.

Action Status: 01/05/05 - Changes have been submitted and is under review by Shuttle Avionics Integration.

11/18 - check status of action item on 11/29/04

Open Items Report

Open Item Number: AMS_02-Doc_Review-67

RID Open Date: 6/24/2004

RID Closure Date:

Title: Updates to JSC 29202

Affected Document: JSC 29202

Initiator(s): T. Martin/LMSO

Initiator(s) Phone Number: 281-333-6114

Description: Vacuum Case ICD changes (JSC-29202B)

1. Change JSC Directorate.
2. Remove Ken Bollweg, J.R. Bates, J. Ross, and Professor K. Lubelsmeyer on signature pages. Add Trent Martin, Steve Porter, Robin Stafford Allen, and (?? for Aachen).
3. Update Figure 1.2-1, AMS-02 Payload and Experiment
4. Update Figures 2.1-1 and 2.1-2, AMS-02 Payload and Experiment Coordinate Axis and Origin (Note: There are no changes to the dimensions. These models are over 2 years old and out of date)
5. Update Figure 2.2.1-2, Vacuum Case Cross-Section. Dimensions have not changed but figure already exists that contains a better representation of the magnet and helium tank.
6. Update Figure 2.2.1-5, O-Ring Groove Detail. Remove o-ring or show compressed. Remove "Note: All dimensions are TBD pending the results of the small scale o-ring test."
7. Update strap port details in Figures 2.2.3-4 through 2.2.3-7 based on assembly issues during the Denver dynamic tests. (These changes were already made on the Vacuum Case drawings)
8. Update the feed thru port callouts on Figures 2.2.4-1 through 2.2.4-3. The locations have not changed.
9. Rename section 2.2.7 from Cryo Service Port to SFHe Tank Fill Port. Update text to remove references to Cryocoolers in this section.
10. Update section 2.2.8 and figures to reflect the new SFHe Tank Fill Port. This will include both flight and ground configurations. All other keep in/out zones have not changed.

Open Items Report

11. *Update section 2.2.9 and figures. Several generic holes were removed due to redesign after weight increase.*
12. *Update section 2.2.11.3 and figures. Several generic holes were removed due to redesign after weight increase.*
13. *Update section 3.1 to add more detail on the assembly of the cold mass/cmr to the vacuum case.*
14. *Update section 3.1.2, Strap System.*
15. *Update section 3.2, Assembly procedure between VC and ACC.*
16. *Update section 3.3, Assembly procedure between VC and Tracker.*
17. *Update section 4.0, Vacuum Case vacuum and test requirements.*
18. *Update document per the attached changes (Vacuum Case ICD Changes.doc)*

RID Disposition: *Approved*

RID Status: *Open due to pending action*

Action Item Information

Action Number: 1 ***Actionee(s):*** *P. Mott/LMSO*

Phone Number(s): 281-333-6451

Action Due Date: 9/30/2004

Action Completion Date:

Action: *Update as indicated*

Action Status: *01/05/05 - The above suggestions have been incorporated into the document. Document currently in internal review at LMSO. Change request (CR) and document will be going through the AMS Configuration Control Board (CCB) for approval. Once CR and document have been approved, the RID and action will be closed.*

Open Items Report

Open Item Number: AMS_02-Doc_Review-68

RID Open Date: 6/24/2004

RID Closure Date:

Title: Update to 8.2.1 Operations Procedures Description

Affected Document: JSC 29095 Part I

Initiator(s): L. Arnold/NASA-DO5

Initiator(s) Phone Number: 281-483-0623

Description: Inadequately describes the procedures that will be developed for flight operations.

RID Disposition: Approved

RID Status: Open due to pending action

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO
P. Nemeth/LMSO

Phone Number(s): 281-333-6134
281-333-6116

Action Due Date: 10/29/2004

Action Completion Date:

Action: Update as recommended.

Action Status: 01/05/05 - The above suggestions have been incorporated into the document. Change request (CR) AMS-02/D-008 and document are currently before the AMS Configuration Control Board (CCB) for approval. Once CR and document have been approved, the RID and action will be closed.

11/17 - Paul Nemeth to contact the initiator

Open Items Report

Open Item Number: AMS_02-Doc_Review-78

RID Open Date: 6/24/2004

RID Closure Date:

Title: ICD/Roles and Responsibilities

Affected Document: JSC 29095

Initiator(s): R. Schwarz/NASA-EA2

Initiator(s) Phone Number: 281-483-2378

Description: Organizational roles and responsibilities defined in the ICD JSC 29095 parts I and II do not match draft update of the AMS Project Management Plan JSC 27296. ICD Section 3 - JSC PIB is referenced - needs updated (check other references of PIB)

RID Disposition: Approved

RID Status: Open due to pending action

Action Item Information

Action Number: 1 **Actionee(s):** R. Harold/LMSO

Phone Number(s): 281-333-6134

Action Due Date: 8/30/2004

Action Completion Date:

Action: Update ICD

Action Status: 01/05/05 - The above suggestions have been incorporated into the document. Change request (CR) AMS-02/D-008 and document are currently before the AMS Configuration Control Board (CCB) for approval. Once CR and document have been approved, the RID and action will be closed.

12/08/04 - to be sent out for review in two weeks; to be presented at CCB 01/05/05

11/17 - Review Part I of ICD
