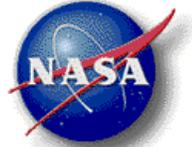




Alpha Magnetic Spectrometer  
NASA / DOE

# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes



National Aeronautics and  
Space Administration

December 8, 2004  
Building 1, Room 920L  
2:00 – 4:00 pm

## Attendees

CCB members and other attendees are listed in Attachment 1.

## Agenda Item 1: Change Requests

- [AMS-02/D-007](#): Baseline AMS-02 Experiment/Payload Integration Hardware Interfaces (C-ICD Part II), Rev. A – [Ross Harold/LMSO](#)
  - Mike Capell/AMS gave his approval as written via telephone.
  - Jack Keifenheim/KSC gave his approval as written via telephone.
  - Change request was approved and signed by Trent Martin/EA.
  - Official cover to be signed at next CCB.
  - Next CCB scheduled for January 5, 2005.

## [Agenda Item 2: Open Paper Management Tool \(OPMT\) – Trent Martin/EA](#)

- Trent Martin/EA putting together a “suggested” agenda for TIM; to call Jack Keifenheim/KSC
- OPMT attached as Attachment 2 is the updated version reflecting all updates and statuses provided at CCB

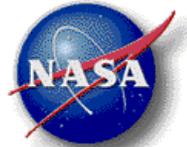
## Open Discussion

- Safety Items – Leland Hill/LMSO
  - 17 of 54 items have been closed



Alpha Magnetic Spectrometer  
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- Mike Capell/AMS requested to who "all" meant; wants more direction on what response is required.
- Paul Nemeth/LMSO – new list will be sent out
- Trent Martin/EA – wants to be provided status on remaining issues each week regardless of whether there is a CCB or Tag-up.
- Trent Martin/EA requested that Mike Fohey/LMSO to show status is weekly reports, how many closed, etc.
- MIP – Win Reid/OZ
  - Turned over to Launch Project Manager; on track
- ACOP Preliminary PIA
  - Distributed to the AMS team last week
  - Mike Capell/AMS provided comments
- Shuttle ICD
  - Trent Martin/EA – blank book received
  - Paul Nemeth/LMSO needs to get someone working on the document
  - Trent Martin/EA to start on the document

Trent Martin adjourned meeting at 3:22 pm.

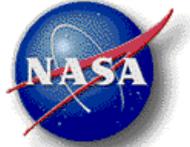
Minutes Approval: \_\_\_\_\_



Alpha Magnetic Spectrometer  
NASA / DOE

# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes

December 8, 2004



National Aeronautics and  
Space Administration

## Attachment 1

## CCB Sign-in Sheet



# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



Alpha Magnetic Spectrometer  
NASA / DOE

National Aeronautics and  
Space Administration

December 8, 2004  
2:00 – 4:00 pm  
Building 1, Room 920L

Position	Name	Phone Number	Signature
Chairman	Porter, Steve	281-244-7149	
Member	Martin, Trent	281-483-3296	
Member	Vaughan, Anne	281-244-0257	Anne Vaughan
Member	Conwell, J.J.	281-483-1178	
Member	Kaplan, David	281-483-3729	
Member	Reid, Winston	281-226-4809	
Member	Keifenheim, Jack	321-867-6028	via telecon
Member	Hungerford, Bill	281-218-7022	
Member	Nemeth, Paul	281-333-6116	
Secretary	Cox, Donna	281-333-6468	



# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



Alpha Magnetic Spectrometer  
NASA / DOE

National Aeronautics and  
Space Administration

Position	Name	Phone Number	Signature
Attendee	Arnold, Larissa	281-483-0623	
Attendee	Bailey, Chuck	281-244-5093	
Attendee	Caldwell, Steve	281-333-6263	
Attendee	Capell, Mike		
Attendee	Clark, Craig	281-333-6779	<i>via telecon.</i> <i>Craig S. Clark</i>
Attendee	Cook, Gene	281-244-8467	
Attendee	Corbin, Cheryl	281-244-1830	
Attendee	Cornwell, John	281-483-9164	<i>John Cornwell</i> <i>On Travel</i>
Attendee	Dennett, Peter		
Attendee	Donahoe, Stan	281-483-4256	
Attendee	Echols, Ray	256-544-5354	
Attendee	Elmore, Dave	281-333-7496	
Attendee	Farner, David	281-333-6481	
Attendee	Fohey, Mike	281-333-6115	
Attendee	Gibb, Margaret	281-244-0284	
Attendee	Hall-Farley, Kazuko		
Attendee	Harold, Ross A.	281-333-6134	
Attendee	Harris, Mary	281-483-82661	



# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



Alpha Magnetic Spectrometer  
NASA / DOE

National Aeronautics and  
Space Administration

Position	Name	Phone Number	Signature
Attendee	Harris, William		
Attendee	Hill, Leland	281-333-6539	<i>Leland Hill</i>
Attendee	Jeevarajan, Judith	281-483-4528	
Attendee	Lear, Dana	281-483-2984	
Attendee	Lewis, Ruthan	301-286-1694	
Attendee	Lear, Dana	281-483-2984	
Attendee	Lewis, Ruthan	301-286-1694	
Attendee	Miley, Bob		
Attendee	Miller, Herman	281-333-6342	
Attendee	Morgan, Susan	281-483-4935	
Attendee	Mott, Phil	281-333-6451	
Attendee	Munoz, Nancy	281-483-9015	
Attendee	Orndoff, Evelyne	281-483-9117	
Attendee	Petri, David	281-483-9622	
Attendee	Piatek, Irene	281-483-9043	
Attendee	Rains, George (Ed)	281-244-8111	
Attendee	Rybicki, Dan	281-244-5181	
Attendee	Sauceda, Tania	281-244-1612	

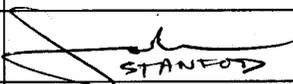
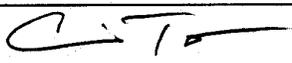


# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Sign-in Sheet



Alpha Magnetic Spectrometer  
NASA / DOE

National Aeronautics and  
Space Administration

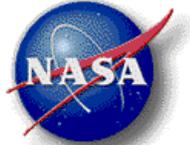
Position	Name	Phone Number	Signature
Attendee	Rybicki, Dan	281-244-5181	
Attendee	Sauceda, Tania	281-244-1612	
Attendee	Schoenberg, Rich	281-483-6437	
Attendee	Schwarz, Roger	281-483-2378	
Attendee	Stanford, John	281-483-1347	 STANFORD
Attendee	Stevenson, L. D.	281-244-8890	
Attendee	Tutt, Chris	281-333-7634	
Attendee	Dillard, Mark	281 244 8640	
Attendee			



Alpha Magnetic Spectrometer  
NASA / DOE

# Alpha Magnetic Spectrometer Configuration Control Board (CCB) Minutes

December 8, 2004



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

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## *Open Items Report*

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*Open Item Number:* 04-032

*RID Open Date:* 7/15/2004

*RID Closure Date:*

*Title:*

*Affected Document:*

*Intiator(s):*

*Intiator(s) Phone Number:*

*Description:*

*RID Disposition:*

*RID Status:*

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*Action Item Information*

---

*Monday, December 20, 2004*

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## Open Items Report

---

**Action Number:** 1    **Actionee(s):** MOD/OZ

**Phone Number(s):**

---

**Action Due Date:** 1/14/2005

**Action Completion Date:**

---

**Action:** *Level of detail for the contingency return planning needs to be discussed*

---

**Action Status:** *11/17/04 - redo presentation as part of the KSC TIM*

*09/29/04 - To hold splinter group on this issue at JSC TIM in October 2004*

*08/20/04 - Larissa Arnold spoke with DX/Jill Reisman and UF4.1 MAGIK/John Bussell, below is the following information that was received on contingency return planning. Nominally, the MAGIK analysis performed for a payload/object is for the trajectory of taking it out of the payload bay and attaching it to station. For payloads/objects that are left on orbit, it is often assumed that if the object would have to be put back in the bay it would use the reverse trajectory and therefore the MAGIK analysis is not performed. Pics and camera views for this reverse trajectory would be known but if any extra berthing cues were needed they wouldn't nominally be available.*

*However the additional analysis for contingency return could be performed if the MAGIK personnel were directed to do that. Also, since it is currently baselined that AMS will return on a shuttle flight, whatever shuttle flight is named for AMS return would perform the analysis of putting it back in the payload bay. John Bussell did say that in the past this reverse analysis hasn't been performed much but recently they worked with the ESP-2 personnel to create any extra berthing cues needed if ESP-2 would have to be placed back in the bay on LF-1. DX said, if deemed necessary, for the flight we can have a contingency procedure that shows pics and camera views for berthing the AMS back in the bay. Nominally this would be the reverse trajectory of taking AMS out of the bay.*

*08/11/04 - Larissa Arnold will confirm*

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

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## 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

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## *Open Items Report*

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*Open Item Number:* 04-049

*RID Open Date:* 8/1/2004

*RID Closure Date:*

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*Title:*

*Affected Document:*

---

*Initiator(s):*

*Initiator(s) Phone Number:*

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*Description:*

---

*RID Disposition:*

*RID Status:*

---

*Action Item Information*

---

*Monday, December 20, 2004*

---

## Open Items Report

---

**Action Number:** 1    **Actionee(s):** Donna Cox/LMSO  
Jack Keifenheim/KSC

**Phone Number(s):** 281-333-6468  
321-867-6028

---

**Action Due Date:** 12/30/2004

**Action Completion Date:**

---

**Action:** Present a plan and coordination for AMS TIM's at KSC; FIT test at KSC

---

**Action Status:** 12/10/04 - Jack Keifenheim/KSC will send list of times for training; videos to take about 2-3 hours possibly on Monday at 5pm; pre-badging on Sunday until 9pm

12/08/04 - Status for email from Sherry Lazado/KSC

Everyone's visit request has been submitted except for the ones listed below where visa information hasn't been provided. Unfortunately, I don't receive a confirmation until closer to the visit date. As soon as I receive the confirmations, I will forward to you. To date, there have been no issues brought to my attention that would delay any visit requests already submitted from being approved. Should anything like that happen, I will let you know immediately.

1. Grechko, Alexander
2. Guo, Kaihua
3. Jinch, Hao
4. Kong, Li
5. Kounine, Andrei
6. Li, Tibe
7. Lin, Yue-Lan
8. Lu, Yusheng
9. Meng, Qiao
10. Mihul, Alexandru
11. Ni, Jiang
12. Wang, Qiuliang
13. Yu, Yunjia
14. Zhuang, Honglin

Also, I have submitted extensions to cover the FIT for the names submitted by Donna earlier this week. That extension will be until 01/28/05.

10/04/04 - Still waiting on list of CERN international visitors from L. Barrin; S. Lazado at KSC looking into status of NAC Packages completed in 02/04

---

Monday, December 20, 2004

---

## *Open Items Report*

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*08/01/04 - Plan due by 09/18/04; Currently working on list of international visitors with L. Barrin at CERN; Goal is to have requests submitted to KSC no later than 11/12/04*

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## *Open Items Report*

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*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*

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*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

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## *Open Items Report*

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*Open Item Number:* 04-052

*RID Open Date:* 8/1/2004

*RID Closure Date:*

*Title:*

*Affected Document:*

*Initiator(s):*

*Initiator(s) Phone Number:*

*Description:*

*RID Disposition:*

*RID Status:*

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### *Action Item Information*

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*Action Number:* 1    *Actionee(s):* Steve Porter  
Trent Martin

*Phone Number(s):*

*Action Due Date:* 10/29/2004

*Action Completion Date:*

*Action:* Begin the discussion with regards to AMS-02 PAO Effort.

*Action Status:* 10/04/04 - To be added to TIM Agenda as a splinter meeting

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## *Open Items Report*

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*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*

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*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:* 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

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## *Open Items Report*

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*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:*

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## *Open Items Report*

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*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*

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*Action Number:* 1    *Actionee(s):* Dave Kaplan

*Phone Number(s):*

*Action Due Date:* 9/30/2004

*Action Completion Date:*

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

*Action Status:* 12/10/05 - Rspnse required by 01/05/05.

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

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## *Open Items Report*

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*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*

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*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

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## *Open Items Report*

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*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*

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

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---

# Open Items Report

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*Open Item Number:* 04-116

*RID Open Date:*

*RID Closure Date:*

---

*Title:*

*Affected Document:*

---

*Initiator(s):*

*Initiator(s) Phone Number:*

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*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 nothing is dumping heat energy into the vacuum case (is the CAB dumping rejected heat into the VC?) / helium cooling supply.

---

*Action Status:* 12/08/04 - to be discussed at Cern week of 12/13/04

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## *Open Items Report*

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*Open Item Number:* 04-117

*RID Open Date:*

*RID Closure Date:*

---

*Title:*

*Affected Document:*

---

*Initiator(s):*

*Initiator(s) Phone Number:*

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*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).

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*Action Status:*

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## *Open Items Report*

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*Open Item Number:* 04-118

*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  
Susan Brion

*Phone Number(s):* 281-333-6779

*Action Due Date:* 12/31/2004

*Action Completion Date:*

*Action:* Extending Magnet Life - Explore the possibility of providing more than the 150W of power to cryo-coolers and the cost-to-benefit trade.

*Action Status:* 12/08/04 - needs Susan Brion; Craig Clark needs to send her an email

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## *Open Items Report*

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*Open Item Number:* 04-119

*RID Open Date:*

*RID Closure Date:*

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*Title:*

*Affected Document:*

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*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:* 12/31/2004

*Action Completion Date:*

---

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

---

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

---

---

## *Open Items Report*

---

*Action Number:* 2    *Actionee(s):* Steve Harrison/SCL

*Phone Number(s):*

---

*Action Due Date:* 1/31/2005

*Action Completion Date:*

---

*Action:* Extending Magnet Life - 10 degree change to VC nominal

---

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

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## *Open Items Report*

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*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:*

---

---

## 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 accomidations for assessment of roboticss compatability 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

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

**Phone Number(s):** 281-333-7634

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**Action Due Date:** 10/20/2004

**Action Completion Date:**

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**Action:** Update SVP and complete analysis.

---

**Action Status:** 12/08/04 - currently in internal review cycle 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

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## Open Items Report

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**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:**

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

---

**Action Status:** Open - Deferred to next cycle review

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## *Open Items Report*

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*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 Configuraiton

*Affected Document:* SEG39135720

---

*Intiator(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*

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

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

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*Action Due Date:* 12/1/2005

*Action Completion Date:*

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*Action:* Update AMS-02 assembly drawings.

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*Action Status:*

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## *Open Items Report*

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**Open Item Number:** AMS\_02-CDR-08

**RID Open Date:** 5/1/2003

**RID Closure Date:**

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**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*

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

**Phone Number(s):** 281-333-7634

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**Action Due Date:** 1/30/2005

**Action Completion Date:**

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**Action:** Work bolt concerns with the SWG.

**Action Status:**

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## *Open Items Report*

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**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

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### *Action Item Information*

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**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:**

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## *Open Items Report*

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**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*

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**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:**

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---

## Open Items Report

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**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

---

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

**Initiator(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

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### Action Item Information

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**Action Number:** 1

**Actionee(s):** G. Le/NASA-OM  
V. Sanders/Boeing/PEI

**Phone Number(s):**

---

**Action Due Date:** 10/18/2004

**Action Completion Date:**

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

**Action Status:** 10/05/04 - Paul Nemeth to check to see if ICD has been updated

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---

## *Open Items Report*

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

*Phone Number(s):* 281-333-6779

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*Action Due Date:* 3/1/2005

*Action Completion Date:*

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*Action:* Perform analysis.

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*Action Status:*

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## *Open Items Report*

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**Open Item Number:** AMS\_02-CDR-12

**RID Open Date:** 5/1/2003

**RID Closure Date:**

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

**Affected Document:** Avionics & ACOP Presentati

---

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

**Initiator(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*

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

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

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**Action Due Date:** 1/30/2005

**Action Completion Date:**

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**Action:** Supply document listing EMI/electrical specs.

**Action Status:**

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## *Open Items Report*

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**Open Item Number:** AMS\_02-CDR-13

**RID Open Date:** 5/1/2003

**RID Closure Date:**

---

**Title:** AMS-CDR-4-20: Power Compatability and EMC Testing

**Affected Document:** Avionics Overview

---

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

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

---

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

---

**RID Disposition:** Approved

**RID Status:** Open

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### *Action Item Information*

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

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

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**Action Due Date:** 10/30/2004

**Action Completion Date:**

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**Action:** Supply EME control plan.

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**Action Status:**

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## *Open Items Report*

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*Open Item Number:* AMS\_02-CDR-14

*RID Open Date:* 5/1/2003

*RID Closure Date:*

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*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

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### *Action Item Information*

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

*Phone Number(s):* 281-333-6119

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*Action Due Date:* 10/30/2004

*Action Completion Date:*

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*Action:* Supply wire list and derating details.

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*Action Status:*

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## Open Items Report

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**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).

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**RID Disposition:** Approved

**RID Status:** Open

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### Action Item Information

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**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.

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**Action Status:** 10/05/04 - Paul nemeth to check on status of action

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## Open Items Report

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**Open Item Number:** AMS\_02-CDR-16

**RID Open Date:** 5/1/2003

**RID Closure Date:**

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**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

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**Action Item Information**

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Monday, December 20, 2004

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## *Open Items Report*

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

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

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*Action Due Date:* 10/30/2004

*Action Completion Date:*

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*Action:* Implement recommendation.

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*Action Status:*

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## *Open Items Report*

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**Open Item Number:** AMS\_02-CDR-17

**RID Open Date:** 5/1/2003

**RID Closure Date:**

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**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

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### *Action Item Information*

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**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.

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**Action Status:**

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## *Open Items Report*

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

*Phone Number(s):*

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*Action Due Date:* 1/31/2005

*Action Completion Date:*

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*Action:* Interface definition for control electronics to Vacuum Vent Valve

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*Action Status:*

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## *Open Items Report*

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**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

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

**Initiator(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).

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**RID Disposition:** Approved

**RID Status:** Open

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### *Action Item Information*

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

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

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**Action Due Date:** 11/15/2004

**Action Completion Date:**

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**Action:** Implement recommendation.

**Action Status:** 11/18 - check status of action item on 11/29/04

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## Open Items Report

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**Open Item Number:** AMS\_02-CDR-22

**RID Open Date:** 5/1/2003

**RID Closure Date:**

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**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

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**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

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### Action Item Information

---

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

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

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**Action Due Date:** 10/30/2004

**Action Completion Date:**

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**Action:** Supply EME control plan.

**Action Status:** 11/18 - check status of action item on 11/29/04

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## Open Items Report

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**Open Item Number:** AMS\_02-CDR-23

**RID Open Date:** 5/1/2003

**RID Closure Date:**

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

**Affected Document:** SED39136112

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

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

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**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

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**RID Disposition:** Approved

**RID Status:** Open

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**Action Item Information**

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Monday, December 20, 2004

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## *Open Items Report*

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

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

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*Action Due Date:* 10/30/2004

*Action Completion Date:*

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*Action:* Implement recommendation.

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*Action Status:* 11/18 - check status of action item on 11/29/04

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## *Open Items Report*

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*Monday, December 20, 2004*

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# Open Items Report

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**Open Item Number:** AMS\_02-Doc\_Review-67

**RID Open Date:** 6/24/2004

**RID Closure Date:**

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**Title:** Updates to JSC 29202

**Affected Document:** JSC 29202

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**Initiator(s):** T. Martin/LMSO

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

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**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.

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## *Open Items Report*

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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)

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**RID Disposition:** *Approved*

**RID Status:** *Open due to pending action*

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### *Action Item Information*

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

**Phone Number(s):** 281-333-6451

**Action Due Date:** 9/30/2004

**Action Completion Date:**

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**Action:** *Update as indicated*

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**Action Status:**

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## Open Items Report

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**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

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

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

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

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**RID Disposition:** Approved

**RID Status:** Open due to pending action

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### Action Item Information

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

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

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**Action Due Date:** 10/29/2004

**Action Completion Date:**

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**Action:** Update as recommended.

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**Action Status:** 11/17 - Paul Nemeth to contact the initiator

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## Open Items Report

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**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

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**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)

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**RID Disposition:** Approved

**RID Status:** Open due ot pending action

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### Action Item Information

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

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

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**Action Due Date:** 8/30/2004

**Action Completion Date:**

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**Action:** Update ICD

**Action Status:** 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

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