

# Alpha Magnetic Spectrometer - 02 (AMS-02)

## Critical Design Review (CDR) Process Overview

## Purpose of CDR

- **Provide for NASA a review of the Alpha Magnetic Spectrometer – 02 (AMS-02) Payload Integration Hardware (PIH) design**
  - System Implementation Approach
  - AMS Payload Configuration
    - Mechanical/Avionics
    - Design Analyses/Documentation
  - Safety, Reliability, and Quality Assurance
- **Obtain NASA Concurrence on the AMS-02 PIH design**
- **Obtain NASA approval to proceed and continue with the manufacturing, assembly, & tests as planned**

**Notes: PIH + AMS Experiment Hardware = AMS-02 Payload**

**This is NOT a Design Review of the AMS Experiment mission success or science. However, Review Item Dispositions (RIDs) on the AMS Experiment hardware safety are acceptable. Any RID's written against the AMS Experiment mission success or science will be disapproved at the Pre-Board Screening.**

## **Secondary Purpose of CDR**

- **Review of the AMS Project by:**
  - **Agency Program Management Council Team (NASA HQ Review)**
  - **NASA Integrated Action Team (NASA Langley Review)**

## CDR Procedures

### • Review Items Presented

- Data Packages sent out for pre-CDR Review on April 15, 2003  
site: <ftp://ams2400r@lmsso.external.lmco.com>,  
userid: ams2400r password: ams4u2r#o
- Delta Data Packages available at CDR and on ftp site
- CDR presentations also on ftp site
- Review data located in each team area
- One complete set of data at Review Item Disposition (RID) Control Station

### • Participation/Responsibilities

- Discuss technical issues and submit RIDs if discrepancy or disagreements still exist
- All RIDs must be submitted to RID Control
- Team Leader will review, coordinate, and sign RIDs
- LMSO Team Leaders will prepare contractor response
- Team Leaders will present RIDs to Pre-Board Screening Review
- RIDs not dispositioned at Pre-Board will be presented to the Board

## CDR Procedures (Cont'd)

- **Participation/responsibilities (cont'd)**
  - **Team leaders will prepare and sign team minutes**
    - Document items discussed
    - Agreements reached
    - Attendees
    - RID summary
    - CDR minutes can not include action items – all action items must be via RID process

## RID Review Teams:

### **Team 1: Structural Design**

**Flight & Ground Structural Design, Fab, Assy, & Fluid Systems**

**Team Leads: Ross Harold, Phil Mott, Stephanie Hicks, Ken Bollweg**

### **Team 2: Structural Analyses, Magnetic Field Analyses, Tests, & Cert**

**Stress, Fracture, and Dynamics Analyses, Welding, Certification**

**Testing, MM/OD, Test Plans, & Test Reports**

**Team Leads: Trent Martin, Chittur Balasubramanian, Phil Mott,  
Dan Rybicki**

### **Team 3: Thermal Design, Analysis, and Testing**

**Team Leads: Craig Clark**

### **Team 4: Power, Avionics, Command, Data, Software**

**Team Leads: Paul Nemeth, Peter Dennett**

## RID Review Teams (continued):

### **Team 5: Flight and Ground Operations**

**Team Leads: Paul Nemeth, Ken Bollweg**

### **Team 6: SR&QA**

**Team Leads: Tom Tinsler, Trent Martin, Mike Fohey**

### **Team 7: Program Management and Documentation**

**Team Leads: Ken Bollweg, Trent Martin, Mike Fohey**

### **Team 8: AMS Crew Operations Post (ACOP)**

**Team Leads: Peter Dennett, Andrea Bertoli/CGS**

## TEAM LEADS CONTACT INFORMATION:

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## Ground Rules

- **AMS Experiment mission success or science NOT subject for RIDs**
- **AMS Experiment safety issues are acceptable for RIDs**
- **Analysis and design data is at critical phase (~90% Complete)**
- **RIDs to be prepared for**
  - NASA/LMSO/AMS Collaboration actions
  - ISS/STS actions
- **All RIDs will be processed through RID Control**
  - All STS related RIDS to be coordinated with J.J. Conwell
  - All ISS related RIDS to be coordinated with Bob Miley

# RID Preparation/Processing Flow

