Weekly Cal Status - 10 Nov 2000

CALORIMETER SUBSYSTEM (WN Johnson)

CAL Management

Continued development and understanding of calorimeter work plan. The key problems and concerns are

1. Development schedule for the analog ASIC. Current plan does not permit design results for PDR and more importantly does not provide parts for EM testing prior to CDR. Development schedule for ASIC will impact development of AFEE boards since testing will be limited by availability of ASICs.

2. Development path for the PEM (pre electronics module == C-Cell mechanical structure) does not focus on flight dimensions until after PDR. All demonstrations thru VM2 will be at proposal dimensions. This brings into question the sensibility of procuring CsI crystals of the wrong dimension to partially / (fully) populate VM2. The issue is cost and schedule to produce tooling for flight concept and dimensions. Work arounds are being considered. My recommendation is to produce a prototype of sufficient number of layers to demonstrate all mechanical/optical concepts proposed for the flight unit prior to PDR. This unit would be populated with sufficient number of CsI crystals procured from proposed vendor with proposed specs to demonstrate light collection performance using lab electronics. Proposed PINs and bonding techniques would be used.

3. To meet desired objective in #2, PIN diode spec and procurement needs immediate attention and designs need to be frozen.

4. We need to reschedule the review to freeze the key design parameters. The proposed meeting in December was clearly premature. I would like to freeze the key elements prior to the Lehman review.

Note: The above list of problems and concerns represent the opinion of wnjohnson and are not necessarily universal in the calorimeter team.

Communicated with Dino Fasci of GSFC on need and content of financial reporting - 533M and Q. Working with Kent Wood and his Branch Head to incorporate NRL/DAQ activity into the 533 reporting.

CAL CsI Crystal Elements

Created draft specification for CsI crystals and began purchase planning. (KTH)
Reviewed and commented on Swedish Crystal procurement specification. (NRL)

Continued investigations into bonding PIN diodes and wrapping of crystals - bought soft epoxy and new 3M reflective material for light yield tests (NRL)

Created drawings and cost estimates for CsI crystal test stations and sent to Swedes for planned discussions at NRL on Nov. 20th.(NRL)

PIN diode spec : in progress (IN2P3)

CsI light : decay time measured with Rouger

CAL PreElectronics Module (Bogaert)

Finding funds for shake test and urgent work : Authorities asked to realease instantly necessary money

Base line model : investigations in good shape.

CEA test bench : task planed for optical shake test.

CAL Analog Front End Electronics

Continued evolution of analog front end electronics concepts - communications paths, allocation of functionality.

CAL Balloon Flight

Created drawings with proposed psedo-grid for balloon flight and submitted to SLAC for consideration.

Completed draft ICD describing communications between BFEM calorimeter and command/data system. Power, mechanical and thermal issues still need to be added.

BTEM thermal cycling -- We have completed thermal cycling of the BTEM calorimeter to stabilize the PIN diode optical bonds. We are in the process of studying the noise performance at 35-40C, near the top of the possible envelope of balloon flight temperatures.

CAL Software/Design Verification

A meeting was held at CdF to iterate T. Hansl-Kozanecka's Raw Data Definition (Monte Carlo) document, version 0.5, dated 11 Nov 2000. NRL,IN2P3 participated in a lively discussion by email and vrvs. The goal is to improve the definition of Hits (the MC truth) and Digi (the data readout) classes.

We continue to modify and exercise the AO version of GLASTSIM to log energy depositions in passive material. The goal is an improved understanding of the low energy calorimetry corrections. (NRL)

Initiated coordination of analysis of GSI beam test data with Bordeaux

---