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*** WBS 4.1.5 CALORIMETER (N. Johnson)

4.1.5.1 CAL Management

Extensive schedule update.
Cost update.
P3 setup activities (NRL)

Technical tele/video-conferences NRL/France

Meeting on the VM2 assembly and test schedule. Stress is put on procedures and documentation. (France)

4.1.5.4 CAL Design

- Prepared and sent first draft of requirements for FE Thermo-mechanical Analysis of CAL structure
- Start modification and translation into compatible format of CAD files for FE model

4.1.5.5 Crystal Detector Elements

Continued PIN bonding tests, thermal cycling of optical adhesives. (NRL)

4.1.5.5.1 CDE Design :

- Crystal Wrapping concept has been working out, in order to get very simple and reproducible wrapping compatible with a simple tooling. Possible concepts for wrapping tooling are still evaluated.
- Connexion has been taken with appropriate department of 3M St Paul for cooperation on GLAST crystal wrapping (product optimization or selection, schedule, ...) . It is foreseen that NRL quality insurance colleagues will join further steps of discussions.

4.1.5.5.1.1 Bonding process

After Dow Corning 93-500 have demonstrated its ability to survive (without any problem) 80 cycles and more, and demonstrated its good resistance to shear stress, its evaluation continues. We had teleconfs with experts at CNES on proposed bonding qualification plan. Additional tests are foreseen, actually cleavage test, that are more strict than shear stress. Very good results have already been obtained on cleavage measure with +DC 93500.

Prototypes of bonding tools have been evaluated and improved for VM2 crystal bonding. The whole tool setup has been ordered and is being manufactured.

In addition to this work on VM2 and DC93-500, we are still working out an epoxy solution (back up). Discussions with the manufacturer lead to a new choice of mixing, driven by the Young Modulus of the glue. This should have a Young Modulus which is half the one of EP 37. 8 samples have been manufactured using the new product with glass and diodes, and put in the thermal machine.

4.1.5.5.1.3 Crystal performance and wrapping study

- All Amcryst new crystals have been studied, using original wrapping and Visible Mirror materials.
- A very impressive set of data have been collected. Report on the July to august measurements on the Saclay Cosmic bench in progress.

4.1.5.5.3 Dual Pin Photodiode

- Starting of a technical evaluation plan for the DPD
- Measurement of the DPD+ kapton +Soldering: capacitance and dark courant.
- report in progress

4.1.5.5.4 PIN Interconnect:

- Work on the design of the EM flex form , soldering , gluing.
- make-up of a little part of the calorimeter to find the lenght and form of the flex.

4.1.5.5.5 CDE A&T

Packaging of VM2 crystals & deliveries to CdF .

4.1.5.5.5.4 CDE test GSE

Begining of the adaptation of the cosmic test bench for VM2 testing.

4.1.5.6 CAL Pre Electronics Module

4.1.5.6.1 PEM Structure

-Structure GSE: first test of structure realisation using the new tooling, have been completed.

VM2 structure fab starts.

4.1.5.6 Pre-electronics Module(PEM)

- Preparation of the VM2 environmental tests.

- PEM Cosmic GSE.

Hodoscope elements have been manufactured. The custom preamplifier-shaper-amplifier electronics is in test. Some bugs fixed. Acquisition software works in present small scale configuration. Waiting for additional CAEN modules.

4.1.E.3 CAL Balloon Flight

Continuing work on energy calibration algorithms. (NRL)

4.1.5.4.5 CAL Software/Design Verification

Work is in progress on accounting for energy loss in cracks between towers and energy loss in TKR (CdF). Bordeaux is searching for nuclear interaction code for GEANT4 simulation of GCR in the CAL. NRL is methodically working through CalRecon, searching for bugs.

See summary at <http://gamma.nrl.navy.mil/glast/CalSW/Sep01/status27.htm>

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