

Summary of ATLAS Level-1 Calorimeter Trigger Hardware Phone Conference – 8 February 2007

Birmingham: Dave Charlton^H, Chris Curtis*, Gilles Mahout, Richard Staley

Heidelberg: Victor Andrei, Paul Hanke, Eike Kluge, Florian Föhlich*,
Hans-Christian Schultz-Coulon, Rainer Stamen

Mainz: Carsten Handel*, Andrea Neusiedl*

Queen Mary: Eric Eisenhandler^R (chair and minutes), Murrough Landon*

RAL: Bruce Barnett*, Tony Gillman^H, Viraj Perera, Dave Sankey

Stockholm: Christian Bohm, Sten Hellman, Attila Hidvégi, Sam Silverstein

Actual location: *CERN, ^HHome, ^RRAL

Birmingham

Gilles reported on CPM production testing. Including pre-production, he now has 46 CPMs tested ok and one with a (hopefully) minor fault to test. We need 65. (More on CPM production in the RAL report.)

He has installed 10 new CPMs at CERN, giving a full crate of 14. They are not yet completely set up, so still a few parity errors, but things look promising. One CPM from the earlier batch seems to have a CPLD problem, but the fault is not obvious and it will be sent back to Birmingham for diagnosis. So far, and with remote sensing still connected, there are no problems with power-supply oscillations in this full crate. Next week at CERN more demanding tests will be done. Note also that the tests so far have used playback, and have not included the load from the LVDS links. But for the power-supply situation this is a very promising start.

Heidelberg

Paul reported further progress on the PPMs. Thirty are now assembled. MCM connectors were inspected optically for problems, and two have possible solder faults that can be repaired. Eight of the thirty were power tested, but with no daughter cards plugged in, and there were no problems. Then three of these were tested thoroughly with daughter cards plugged in (the LCDs were not final ones), and there were no problems. The full production of LCD cards is to arrive today. *Just as the meeting ended, a further 40 PPMs arrived as expected.*

Victor has been putting together various pieces of test software to make a very 'serious' test package, including checks on the LVDS outputs. In addition to the real-time path, the G-link readout is being compared with VME readout.

More TTCdec cards are needed as soon as possible, in order to avoid having to plug them in and then remove them.

Mainz

There was no report.

Queen Mary

See CERN report.

RAL

Viraj presented the status of a long list of items:

CPM: No real progress on the remaining modules (17 failed with BGA problems, 2 returned for minor re-work of connectors, and 2 untested) since mid-January. A letter from the project leadership will be written.

CMM: Three pre-production modules (a fourth was written off in production) have finally arrived, after a delay due to continuing lack of handles. They will be JTAG-tested today (*later in the day they passed this test*) and old handles put on to allow them to be tested in the full crate.

There have been problems with the PCB manufacture of both the CMM and the ROD due to problems with gold finish at the subcontractor; currently getting the assembly firm to look at other PCB manufacturers and try a 'scout batch' of PCBs to get the CMM track impedance right.

TCM-VME: Four pre-production modules are now being built, on 10-day turnaround due to urgent need (Heidelberg needs two).

TCM-CP/JE: Obtaining price quotations for the full production.

ROD: Four pre-production RODs are now being built; the timescale was seven weeks and attempts to shorten it have not succeeded. Assembly starts 19 February.

VMM: Two of the four pre-production VMMs have been sent to CERN for testing.

CMM RTM: The new version with improved mechanics will be assembled at STI on 12 February and sent directly to Birmingham to help with design of the crate mechanics.

Stockholm

Sam reported that cable assembly for the last two crates is going a bit slower than expected, and they should be ready by next week.

CERN

Murrough led off a summary of the work last week on the processor crates, followed by comments from Bruce, Dave and Tony. Of the two installed processor crates, one is powered and being used for tests and the other is mainly being used for mechanical development. Production of the mechanics for LVDS cable supports and the improved power connections has been going slowly due to the Birmingham workshop being heavily loaded with other work.

The LVDS cable support system needs a few refinements. However, these refinements do not need to be done immediately in the first two crates; they can wait until the crates are removed to fit the CMM-rear-transition module supports. These supports have been sketched out but the workshop needs to do a proper design.

A further shortening of the power cables seems possible; this can be done in situ. The modified power tabs seem ok – it would help if the copper power tab extensions could be farmed out to another group or a company, so that the Birmingham workshop could concentrate on design work.

Next week is mainly for CPM full-crate tests. Later in February Uli wants to test JEMs – we need to discuss which crate to use. Possibilities are the one being used for mechanical work, or a third crate – possibly without the mechanical modifications depending on how the mechanical production goes. We should wait until the week of 19 February to decide.

There are 10 of the 4-slot LVDS cable-support blocks at CERN. The remaining 20 are due tomorrow and will be shipped to CERN.

The rear DCS connector for the CANbus is hard to access. Since it is very useful for diagnostic purposes, it would be better if an extension (~20 cm) could be provided.

Facilities for discharging LVDS cables before connecting them up were discussed. Richard is starting to build a dummy CPM as well as a small plug-on block. Paul would like to know what

caused the problem seen by the muon-trigger people before doing anything at the PPM end. It was suggested that we try to find out from Thorsten Wengler and/or Philippe Farthouat.

Chris said that the new Wiener crate firmware seems to lose some remote access to the cooling fans. Paul Harwood is away, but he will talk to Helfried. He also said that they can see and read CANbus messages from JEMs, but there is still some confusion about the content of the messages and which sensor is which.

Florian reported on a test of the channel mapping of the TileCal input signals. About 1/8 of the TileCal was examined (most of the bottom half of the A-side barrel) with help from Luciano and Monica of the TileCal group and incorporating software from Victor into Florian's ppmwatch. This worked well. Although some problems with PMs not being on were found, all active channels were in the correct location and it was easy to see what was missing. The test was also useful in indicating how to refine the pulser patterns to make the results more unambiguous. This verifies a lot of cabling work that was done 'blind' and is very encouraging.

Gilles will send a TCM and a VMM to CERN.