Minutes of ATLAS Level-1 Calorimeter Trigger Phone Conference – 13 Oct. 2005

Birmingham: Gilles Mahout
Heidelberg: Florian Föhlisch, Paul Hanke, Kambiz Mahboubi, Karlheinz Meier, Frederik Rühr,
　　　　　　　Klaus Schmidt, Pavel Weber
Mainz: Uli Schäfer
Queen Mary: Eric Eisenhandler (at RAL; chair and minutes)
RAL: Bruce Barnett, Richard Booth, Ian Brawn, Weiming Qian, Dave Sankey
Stockholm: Christian Bohm, Sten Hellman, Sam Silverstein

Note that people at the Mainz TDAQ Workshop could not phone in. Viraj Perera could not attend but sent a status report that was presented by Ian Brawn.

Birmingham

Gilles reported that they are still waiting for the two delayed CPM pre-production modules, see RAL report below. Meanwhile he has been working on software for production tests. This uses scripts from Murrough to scan several CPMs and seems to work well.

Work on design of the patch-panel tester continues.

Heidelberg

Karlheinz reported that tests on the PPM that had problems at CERN revealed a number of things wrong. The module had not been tested before taking it to CERN, and there were shorts on some connectors; this is now repaired. The firmware and software being used needed modifications. Two of the MCMs were also faulty; there is some concern since they used to be ok, although that is probably be less serious because they are early ones with gel filling. Kambiz will circulate a full written report on the test results on this module.

The PPM, now working satisfactorily and with 'modern' MCMs, will be tried again at CERN next week. Kambiz, Florian and Frederik will go there on Tuesday, and Norman and Murrough on Wednesday.

Mainz

Uli said that JEM 1.2 has arrived from the manufacturer again, with the two big FPGAs reworked so they are now in the correct locations. So far it looks good: checking noise with a scope, it is a factor 2 better on merger lines. On the FIO lines the aim was not so much to improve the noise/crosstalk but to have better noise immunity on signal receivers. So far that looks good. However, only some of the board has been checked so far, and some of the checks need firmware modifications, so this will continue.

The jet firmware must be re-targeted at the new jet FPGA, XC2V3000.

Tests of JEM 1.2 are planned at RAL for the week of 24 October.

On the JEM daughter cards, the input card needs minor re-design and then enough for four JEMs will be made. The control card still needs to have the CANbus monitoring added. The G-link card is the final design.

The situation regarding TTCdec mounting holes was mentioned; see the RAL entry below.

We should now discuss the date for the JEM PRR, since it can be held if tests continue to go well.

RAL

Ian went through Viraj's report plus some other points. The two pre-production CPMs have been slightly delayed due to queries from the manufacturer regarding assembly instructions for heatsinks and strengthening bars; they should arrive tomorrow.

The orders for the two pre-production CMMs and the two additional prototype RODs (with slightly modified designs) have now been sent out.

The VMM design is now almost complete, and outstanding mechanical issues (guide for the 6U card on the 9U VMM) resolved. As soon as documents are completed and people are available a review can be held; Viraj proposed next week but availability of people seems to delay that.

The pre-production TCPPs are on hold until Tony returns, next week. The RPPPs are being laid out in the Drawing Office.

As discussed at the last meeting, there is a problem regarding mounting holes on the TTCdec card. This affects the PPM and the JEM. Viraj has not yet discovered how this went wrong, but since the card is ok on the CPM, CMM and ROD we have to make sure the PPM and JEM get the correct information for their next iterations.

Ian said there is a small problem with the TTCdec when JTAG testing is being done; it can be fixed by making a minor modification to the TTCdec design.

Bruce said that he has been continuing with ROD tests using the CPM chain. This has run reliably in hard testing, including overnight runs. Some header information gets lost at very high rates but otherwise everything is stable. The next step is to run using several CPMs at once with improved firmware in the Switch FPGA.

For the PPM readout, it looks as if RODs could be used for the TileCal tests at CERN fairly soon. Readout of more than one PPM at a time should be tested first, and also readout of more time slices. Kambiz added that the uncompressed PPM format should also be tried, since tests so far have only used the neutral format.

Dave said that the ROD S-link format is being revised (except for neutral format), and the simulation will have to be updated accordingly.

Weiming reported that since his measurements on analogue calorimeter cables (both LAr and Tile) show rather lower impedance than expected, he has tested his measurement methods in several ways and they do seem to be correct.

Stockholm
Sam said that the new offers for backplane manufacture had been opened. There were three offers, with a clear winner on price, so preparations to place the order are going ahead.

One small problem is that the high-current power pins needed have just been made obsolete. Sam has found a company that can make some specially for us.

Sten said that a first small batch of 185 LVDS cables had arrived at the distributor. When they arrive the boxes will be opened to check the right item has been sent, and 20 assemblies will be sent to RAL to check that they work. We will have to discuss testing of these cables: how much, who and where.

Christian reported that although delivery of the 1 km of Swedish TileCal cable is still imminent, it is delayed until next week. The rest could come by 27 October if there are no problems.

Eric mentioned that the TileCal now has a new cable test rig, built by the Rio group. They have checked some old LAr-type cable that just arrived from the manufacturer (1.7 km) and found that two drums are fine (no differential skew, high speed) but one has problems – shorted drain wires and two pairs with very high attenuation. (See talk at TileCal Commissioning meeting yesterday.)