

Minutes of ATLAS Level-1 Calorimeter Trigger Phone Conference – 24th November 2005

Birmingham: Richard Booth*, Steve Hillier, Gilles Mahout, Richard Staley

Heidelberg: Victor Andrei, Florian Föhlich, Paul Hanke, Eike-Erik Kluge, Kambiz Mahboubi, Karlheinz Meier, Frederik Rühr, Klaus Schmitt, Hans-Christian Schultz-Coulon, Pavel Weber

Mainz: Uli Schäfer

QMUL: Eric Eisenhandler*

RAL: Bruce Barnett, Norman Gee, Tony Gillman, Weiming Qian, Dave Sankey

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

*at RAL

1. Birmingham

- The first ten AMP-manufactured LVDS cables shipped from Stockholm have been tested successfully. In runs of five minutes no parity errors were observed, corresponding to a BER $<10^{-12}$. A plan for production testing is now needed, although it was felt that this need not be exhaustive as AMP already carry out basic pre-delivery continuity checks.
- A buffer chip was damaged in one of the new CPMs due to loading an incorrect configuration file for the Serialiser FPGAs. Replacing the buffer has fixed the problem, and a new foolproof method for loading these files has been established to prevent this happening again.
- The first pre-production RPPP (type 4) is due for delivery to Birmingham ~now, and a type 1 is due ~December 7th. (These will be the only pre-production modules manufactured, as all of the other four types are very similar variants of these two basic types and it was decided that the high cost of producing another four one-off modules could not be justified.)

2. Heidelberg

- Preparations are under way for the next PPM tests with calorimeter signals from ATLAS next week. A second PPr crate will be taken to CERN and installed in USA15, and two PPMs will be used. A technician (Alexander Leonhardt) will also travel to CERN next week to assist with analogue cable assembly.
- The Interim Design Review for the PPM will be held in Heidelberg on December 13th. The documentation currently available on the web is the specification v2.x (October 2003), for which some further updates are required before a Final Design Review can be held next year. In the meantime, Paul *et al* are preparing a report which outlines the design and implementation changes that have been made to the module, and this document will be released about a week before the IDR itself.
- Assembly of the fourth batch of MCMs has been completed, although no lids have yet been mounted, and the test results are available in the database.

3. Mainz

- The recent JEM test week at RAL was very successful. Three JEMs were tested together, including the new version 1.2 module. One faulty Input daughter-card was the cause of errors, but was fixed and an overnight run was then error-free using LSMs. Tests of FIO data integrity and the interface to CMMs were also tested successfully.

- Preparations for the JEM PRR on December 14th in Mainz are now under way. Bruno is completing the schematics for the Control Module daughter-card, which will incorporate the “reference” CANbus controller design from Adam. The daughter-card will then be sent for manufacture.

4. *RAL*

- The D-sub 50-way connectors for the TCPPs are being modified by adding metal mounting brackets to provide a ground connection to the input cable connector hoods. They are due to be delivered from Germany to the assembly company (CEMGRAFT) on December 1st, and the final 65 production TCPPs are expected at RAL on December 12th.
- The order for 30 (pre-production?) TTCdec cards has been placed, and the boards are due at RAL on December 12th.
- The ten new CPMs are due at RAL on December 5th. No disasters have been reported at the PCB stage and the modules should now be on the assembly line.
- Two pre-production CMMs are due at RAL on December 5th.
- Two new RODs are also due to be delivered to RAL on December 20th.
- There will be an informal FDR for the VMM on 24th November. There still remains a need to identify a suitable 19 x 5 male right-angle connector for the J0 location on the module – all suggestions will be gratefully received!
- The design/implementation changes identified at the TCM Final Design Review will be carried out next week, and it is hoped to place the pre-production order for the TCM-VME64x version in early December and then to work on the CP/JEP version.
- The Synchronicity Production Vault has been installed at RAL with a temporary licence until the requested full version is available. Users should inform Viraj if any further problems arise.
- Ian is currently working to fix a bug in the ROD Switch firmware (in the trigger-type timeout logic), which should be ready for Bruce to test tomorrow.
- Ian has given Weiming, Adam & Dave a tutorial in how to build System ACE collections for the ROD, and also a brief introduction to the Switch FPGA firmware. They now have access to a recent copy of this firmware so they can further familiarize themselves with the design. The intention is to share knowledge around to cover periods when Ian is absent.
- Adam has now fitted the missing section of backplane to the ROD crate in the Electronics Lab, so that the problem with ROD S-link 4 can be investigated.

5. *Stockholm*

- Attila will implement the recently received updated FIO remapping matrix.
- Saturation errors in the Jet firmware have now been fixed.
- The error found and corrected in the simulation software will be communicated to Rainer.
- The production of the Processor Backplane (PB) boards will start next week. The power pins will not be delivered until 14th January, and there may be a problem with delivery lead time for the 9-pin CANbus connectors.
- The PB boards should be complete by ~mid-January, when they will start to be assembled into the CP and JEP crates. The first two complete crates should be ready for shipping from Stockholm (to Mainz and to the UK?) by the end of January.
- In December, Sam will work on simulation software for the CMM firmware. There will be a CMM test week in January, when Sam will arrange to visit RAL.
- Sten has ordered 17 new Concurrent processor modules, for delivery to CERN in 8-12 weeks.

6. *CERN*

- The first six measured short analogue cables will probably all be finished by the Kosice technicians by the time Simon and Xen return to CERN next week. Between five and ten 14m cables have been finished, but progress is slow. Only one of the Kosice pair is doing the soldering and the other just does cable preparation.
- Murrough has given Alain le Coguie a list from Steve's spreadsheets for our cable numbers. They will put the TC label plus "Bill" label in their cable tester database.
- The two VP315s from the loan pool will not boot in USA15 – the sysadmin team need to build a suitable kernel. Murrough has not yet collected the three VP315s ordered by Mainz which apparently have now been delivered.
- One of the two previously functional PCs in the 3150 office has a hard disk problem. Murrough tried to set up the third, so far untouched, one, but neither of the available CD drives seems to be usable. It is not possible to do a network installation as the network in Bat 3150 only supports DHCP machines for which we need the MAC addresses but these are only available after an installation as they aren't written on the machines – a classic Catch 22 situation! Consideration should perhaps be given to buying new machines to replace these old ones...
- The PC (of the same vintage) in USA15 now runs X-Windows. It may need to be shifted slightly now that Chaouki has moved his equipment out of our racks and needs more space where the PC had been initially put.

Next Phone Conference – Thursday 8th December 2005 at 11:00 (UK), 12:00 (Germany, Sweden)

Tony Gillman