

# Minutes of ATLAS Level-1 Calorimeter Trigger Phone Conference – 20<sup>th</sup> September 2007

**Birmingham:** Dave Charlton\*, Chris Curtis, Stephen Hillier\*, Gilles Mahout, Richard Staley

**Heidelberg:** Paul Hanke, Eike-Erik Kluge

**QMUL:** Eric Eisenhandler\*, Murrough Landon\*

**RAL:** Norman Gee, Tony Gillman\*

**Stockholm:** Sam Silverstein

\* at CERN

## 1. Birmingham

- Richard reported that the first two CAMs were under test in Birmingham, and no problems had been observed so far. Hopefully, one of the modules will be sent to CERN next week to try in a full CP crate in USA15.
- The CPM that had developed a fault (non-functioning BC-Reset) whilst in use in USA15 had been returned to Birmingham for investigation, but visual and electrical inspection had not so far revealed the cause of the problem. Tests are continuing.
- Chris has modified the TCM CAN firmware and CP crate addresses can now be correctly accessed; similar checks will be made on the JEP crates.

## 2. Heidelberg

- Single-board tests of the production PPMs has been continuing, and Victor and Taylor have been operating sets of 16 PPMs in the full-crate test rig. A design error relating to clocking has been observed in the Readout Module, producing unwanted timeouts. The workaround is to operate the clocks at a frequency no higher than 16 MHz.
- The problem with from Flash memory configuration in the PPMs is not yet understood; the firmware is still being examined.
- Paul, Klaus and Ralf intend to continue PPr installation in USA15 during the week beginning 15<sup>th</sup> October. They hope to install up to 32 more PPMs and to connect the installed LVDS cables to a further one or two PPr crates.

## 3. Mainz

- Andrea has started performing final tests on the remaining JEMs, although there may possibly be some delays due to temporary software problems with the Mainz test bench.
- Software work for the M5 run is under way, and remote tests may take place at CERN before M5. Uli might also be available for another session of hardware, firmware and software tests. Suitable dates will be arranged with Bruce.
- Following M5, Uli would be interested to help set up and develop the CERN test rig in Bat 3150.

## 4. RAL

- The final seven CPMs are still at the assembly company. Five modules will be completed today (20<sup>th</sup> September), so Viraj and Richard will visit the company tomorrow morning to carry out JTAG tests on them.

*(Late news: four CPMs passed the JTAG tests successfully, but one requires some re-work on one of the fine-pitch TTCdec connectors.)*

The remaining two CPMs have not yet been completed because of a problem with some press-fit connectors, which are missing the bottom screens. The assembly company is looking for alternative suppliers for these parts to accelerate the schedule.

- The 12 production CMMs and 20 RODs should have by now completed the surface mount process at the assembly company. If so, then they should start to become available from ~10<sup>th</sup> October, and the assembly company will supply them to us in small batches as soon as they have completed the conventional assembly.

Viraj has stressed to the assembly company that the RODs should take priority over the CMMs, so that they might become available in time for the M5 run.

- Eric requested that all of the new CMMs and RODs should be fitted with TTCdecs before shipping to CERN.
- There is a problem with the nine RODs installed in USA15, where a module occasionally (>5% of the time) fails to configure correctly. Operating the front-panel Reset button appears to be a workaround, but cannot be regarded as a permanent solution. Ian will be asked to investigate this problem when he returns to RAL next week.

## 5. *Stockholm*

- Sam has fixed the recent firmware problem with the Jet CMM code. He will visit CERN during the second half of next week.
- One of our Backplane bus-bar assemblies is missing – believed to be somewhere in the RAL Trigger Lab. A search party has been convened.

## 6. *CERN*

- The final set of G-link optical fibres assemblies have still not been delivered to CERN, so their installation must now wait until the next cabling week.

To complete a sufficient installation for the M5 run, about another 24 “short” (3m) optical fibres will be needed. Enquiries will be made to check that they could be obtained quickly in the UK, if necessary, and then ordered if the current order has not been delivered within the next two weeks.

- Only eleven of the CMM RTM cable assemblies can be located; those repaired by CERN may not yet have been returned.
- During installation of the RTM into slot 20 of CP0, a pin was severely bent in the P4M0 Backplane connector – see [http://hepwww.ph.qmul.ac.uk/~efe/ATLASpitSep07/pages/page\\_2.html](http://hepwww.ph.qmul.ac.uk/~efe/ATLASpitSep07/pages/page_2.html). The crate was removed from the rack and P4M0 was removed and replaced by the spare Backplane, P2M0.

Some spare sacrificial *Erni* connectors will be sent from RAL to CERN to provide replacement pins, and Sam will attempt to repair the damaged P4M0 connector during his visit to CERN next week.

- The LVDS cabling into CP0 has now been completed.
- It has been decided to modify all of the retaining screws in the UK-sourced D-sub 37 analogue connectors to improve their mechanical rigidity and prevent over-tightening. Xen’s survey of the installed analogue cabling system shows that ~560 connectors are affected, so a total of ~1200 new screws will be purchased and shortened by ~2mm in Birmingham. They will be fitted to the D-sub 37 connectors during a future cabling week.
- **With all of the Trigger Processor modules (56 CPMs and 32 JEMs) now installed in the six CP and JEP crates ([http://hepwww.ph.qmul.ac.uk/~efe/ATLASpitSep07/pages/page\\_10.html](http://hepwww.ph.qmul.ac.uk/~efe/ATLASpitSep07/pages/page_10.html)) we have reached a significant Milestone, and so...**

*This was the final Hardware Progress meeting of the series; no further meetings are scheduled*

*Tony Gillman*