

Minutes of ATLAS Level-1 Calorimeter Trigger Phone Conference – 15th June 2006

Birmingham: Richard Booth, Chris Curtis, Gilles Mahout, Simon Pyatt, Richard Staley, Peter Watkins

Heidelberg: Florian Föhlich**, Björn Gosdzik**, Kambiz Mahboubi**, Frederik Ruhr**

QMUL: Eric Eisenhandler*, Murrough Landon**

RAL: Bruce Barnett**, Ian Brawn, Norman Gee, Tony Gillman, Viraj Perera, Damien Prieur, Weiming Qian**,

Stockholm: Attila Hidvégi, Sam Silverstein

*at RAL **at CERN

1. Birmingham

- The first production CP/JEP crate (test-variant) sent by Sam to Birmingham last week experienced a PSU failure almost immediately. The fault is with the PSU-based RS232 communications link between it and the Fan-Tray/Controller unit, preventing the PSU from powering up. The PSU has been returned to Paul Harwood at CERN for repair.
- Unfortunately, the replacement PSU sent by Sam won't work in this crate, as there is a "personality" EEPROM card plugged on to every crate that is programmed to demand a customised set of voltages from the attached PSU. The failed PSU had a +/-12V brick in addition to the 5V and 3.3V bricks (it was the original sample crate/PSU ordered by RAL), whereas all other CP/JEP crate PSUs omit this brick, so in its absence the crate EEPROM generated an error. Sam will send the correct EEPROM card urgently to Birmingham to allow the new PSU to be powered up.
- In the meantime, Richard and Gilles will temporarily use the PSU from the ROD crate with its crate EEPROM "personality" card. Although this is limited to 200A at +5V, this will at least allow the work with the JEMs to start next week.
- A small mechanical problem was also discovered with this first CP/JEP crate, where the power bus-bars are slightly too long and are uncomfortably close (~0.5mm) to the crate side wall on one side. An insulating shim has been added as a temporary solution for this particular crate, but for the remaining crates in Stockholm the bus-bar lengths should be reduced.
- The Type 4 RPPP pcbs have arrived in Birmingham, and can now be assembled with their mechanical support bars.
- The Type 2 RPPPs still need some connector modifications.
- The TCPP screwlock replacement work is continuing, with Simon's "Loctite" technique appearing to work well.
- The longer screwlocks required for the TCPP input connectors, where there is no metal panel, have been ordered and will be sent to Birmingham as soon as they arrive next week.

2. Mainz

Uli sent the following report of progress in Mainz:

- Four pre-production JEMs and 16 pre-production Input Modules are currently being tested.
- As reported earlier, three of the Input Modules had errors during boundary scans and LVDS synchronisation tests.
- Since the test adapters are still unavailable the JEMs could not be scanned, so the modules were tested in the crate as they were. One broken FIO line on one JEM is currently suspected.

- If the broken FIO line is confirmed, and if no other problems are found, the yield is roughly 75% for both the Input Module and the JEM motherboard.
- It is hoped that a minimum of three new JEMs will be available for the Birmingham tests next week.

3. *QMUL*

- Eric noted that the agenda for the forthcoming RAL Joint Meeting is largely complete, and accessible on the web for comments at:

<http://agenda.cern.ch/fullAgenda.php?ida=a062538>

4. *RAL*

- The two pre-production TCM-VME64x modules have been fully tested, and one has already been sent to CERN for use in the ROD crate in USA15.
- The schematics and layout of the TCM-CP/JEP module are finished and manufacture will begin at the end of this week. After some discussion, it was agreed to increase the number of pre-production modules from two to four, in order to ensure that all users could be accommodated efficiently.
- Four pre-production Auxiliary Backplane pcbs for the VME64x(P) crates are scheduled for delivery on 23rd June, two of which will already be assembled.
- The first batch of 50 production TTCdecs have a new quoted delivery date of 24th July, which seems too late. Viraj will check if this is correct.
- A total of ten GIO cards are due for delivery on 26th June.
- The two new pre-production CMMs have had small errors corrected by hand, the schematics and layout revised and a quote for a further two modules requested.
- Four pre-production RTMs for the CMMs have been ordered; delivery is expected soon.
- The ROD in Birmingham has a problem where the TTC Ready signal is not seen. It is believed not to be a firmware issue, so the module has been returned to RAL for further investigation.

5. *Stockholm*

- The CP/JEP crate in Birmingham has two broken Backplane pins, but the repair has so far been unsuccessful. Sam will send a spare connector to Birmingham for more trials and the problem will be discussed further at the Joint Meeting.
- The problem with the geometry of the CP/JEP crate power bus-bars identified by Richard and Gilles will be corrected in Stockholm by cutting 3mm from the offending ends of all remaining crate bus-bars before shipping.
- The remaining CP/JEP Crate Backplane pcbs were sent to Erni in Germany last week for assembly, and delivery back to Stockholm is scheduled for next week.
- The second crate to be assembled in Stockholm will be a water-cooled PSU variant, the work for which will take about one week. Shipment to CERN, for immediate installation in USA15, should be in early-July.
- The third crate, an air-cooled PSU variant, is also destined for CERN, for use in the Bat 3150 Test Rig.
- In answer to a question from Bruce, Sam noted that the recent PSU problem could not be caused by the Backplane, as it was entirely passive, with power being carried solely by the external bus-bars. It seems that it is only the communication link that is damaged on the PSU, the wiring to which remains unmodified from the Wiener original.

6. CERN

- Two of the three ROD PSUs in USA15 had failed. The causes had been identified as mechanically damaged D-sub connectors on the crates, and it was noted that these connectors seem especially vulnerable so extra care should be taken when moving the crates. They will be repaired under warranty at CERN.
- The 6U VME crates were ordered with incorrect PSU voltages: no 12V, and 2.5V instead of 3.3V (not wired to the backplane). One crate will be used temporarily in USA15, while the other two are returned for exchange.
- Kambiz reported that there had been discussions with the TileCal group regarding plans to look at their signals. With their agreement, we would like to start checking out signals for a few hours each day starting in the next few days.
- A total of four TCPPs – one more than currently available - will be needed for the TileCal signals test programme.
- USA15 is currently a very busy work area, with large areas of the flooring removed for installation of SCT cabling, and access is therefore very restricted. Also, some of our racks are inaccessible at present because internal services are being fitted.
- There is steady progress with commissioning the LAr barrel, and operating voltages have been raised from 400V to 1200V.
- Bruce reported that the package of hardware (ROD, etc) from RAL had been received at CERN. Basic tests had started, and this work was continuing.
- All but two of the CMM-CTP cables had been delivered, and all of the necessary hardware for the interface tests now exists (except for the water-cooled CP/JEP crate).
- Murrough summarised the current status of the analogue cabling, where last week all of the C-side TCPP cables were pre-installed, measured, cut and then delivered to Cegelec for fitting of the second connector.

As it is unlikely that the assembled A-side TCPP cables will be available from Cegelec in time, next week the final A-side upper tray cabling will be installed. In addition, a start will be made on measuring the first RPPP cable lengths.

It appears that there will be plenty of spare cable from LAr long cable offcuts. The original cable-cutting spreadsheet does not therefore need to be followed absolutely.

A CD-ROM had been written with all of the Cegelec test data from the Saclay Tester.

A minimal-latency cable route from the CP/JEP crate CMMs on USA14 level 2 to the CTP on level 1 has now been agreed, and the necessary floor hole will be cut.

Next Phone Conference – Thursday 13th July 2006 at 12:00 (11:00 in UK)

Tony Gillman