

## Minutes of ATLAS Level-1 Calorimeter Trigger Phone Conference – 9<sup>th</sup> August 2007

**Birmingham:** Dave Charlton\*, Stephen Hillier\*, Gilles Mahout, Richard Staley, Pete Watkins\*

**Heidelberg:** Hans-Christian Schultz-Coulon\*

**Mainz:** Uli Schäfer\*

**QMUL:** Eric Eisenhandler\*

**RAL:** Bruce Barnett\*, Tony Gillman\*, Viraj Perera, Weiming Qian

**Stockholm:** Christian Bohm\*, Sam Silverstein

\* at CERN

### 1. Birmingham

- There are now three full CP crates installed and working in USA15. Two CPMs that had been identified as faulty have been replaced with working modules, so there are a total of 42 fully-working CPMs installed.

The LVDS data that have been sourced from PPMs into CP crates CP2 and CP3 indicate that the LVDS cabling plant to these crates is correctly connected.

Timing-in of the LVDS and FIO signals has been completed satisfactorily.

As crate CP0 has a bent FIO pin, commissioning of its modules cannot yet be completed.

- Two new pre-production CMMs (serial nos 5 and 6) have been received at Birmingham from RAL. All tests so far, including operating for ~1.5 hours with ROD readout, have shown no faults. CANbus operation has also been verified.

These two CMMs will now be sent to CERN for installation in USA15.

- The four new CPMs from the final batch of eleven modules were sent to Birmingham on 8<sup>th</sup> August for system tests, after successfully passing JTAG tests at RAL.

### 2. Mainz

- All of the 32 JEMs installed in the two JEP crates in USA15 are now working correctly, except for two Input Modules with faulty channels, which will be swapped for spare IMs next week.
- A further five JEMs under test in Mainz will be available for spare modules.
- Further tests in USA15 are planned for next week, using LVDS signals from PPMs.

### 3. RAL

- Two pre-production CMMs were sent to Birmingham for system tests. The other two pre-production CMMs were returned to the assembly company for minor re-work on some of the fine-pitch connectors. Ian will re-test these two modules and then send them on to CERN early next week.
- Final production of the remaining twelve modules has been authorised.
- The first four “sample” CPMs from the final batch of eleven modules have successfully passed JTAG tests and have been sent to Birmingham for system testing.
- The assembly company will today supply a starting date for producing the remaining seven CPMs.
- Component procurement for the full ROD production has been authorised, and quotes are expected today for the manufacturing process.
- The first ten CMM-RTMs have been delivered to RAL and passed visual inspection. They will now be shipped to CERN.
- Ten of the final production batch of TCM-64s sent from RAL have been received at CERN; the remaining four modules will be retained at RAL for a while.

- The three pre-production TCM-CP/JEPs sent from CERN to RAL are having firmware updates applied by Adam. They will then be allocated for use in Test Rigs.
- All of the remaining S-RTMs are now available to be shipped to CERN (seven boards are already there).

#### 4. *Stockholm*

- Sam will travel to CERN next week, with three specific tasks:
  - Attempt a repair of the bent backplane pin in crate CP0. If this proves impossible, he will replace the faulty backplane in CP0 with a spare backplane that he will bring with him from Stockholm, and we will ask *Harting* in the UK to remove and replace the entire damaged connector.
  - If the ROD crate PSU oscillation has not been cured, and local sensing is chosen to bypass the problem, Sam will replace the power cables with *Silistrom* cables of greater cross-section to minimise voltage drop fluctuations.
  - Continue testing the Jet CMM firmware with Bruce and Andrea. The test-bench for simulating the real-time data path at CMM Crate-level is already working, and the System-level test-bench should be ready for next week.
- Bruce noted that the unwanted LVDS pins on the CP0 backplane to be repaired should be cropped before re-installation. Sam remarked that the corresponding pins on the spare backplane that he will bring from Stockholm have already been cropped.
- Sam has several of the *Wiener* crate temperature sensors which he will bring with him next week to CERN for possible installation in the CP/JEP crates.

#### 5. *CERN*

- The backplane from crate CP0 has been removed from the crate and is in Bat 3150 ready for replacement of the bent pin. It is unclear when CP0 should be replaced in USA15 and when the delicate work to reconnect the LVDS cabling should be carried out.

The next Cabling Week will be in September, during which the remaining optical fibres will be installed in USA15 (if they have been delivered by then).

For the M4 integration run, CP1 will be used instead of CP0.

- Current oscillations on the 5V ROD crate PSU were observed by Paul Harwood and Bruno Allongue using a current probe. The frequency was  $\sim 1.7\text{kHz}$ , and the threshold for oscillation was  $>2$  RODs powered in a crate. The oscillation was insensitive to the presence or absence of the TTC clock (or even of the TCM), and its amplitude increased with the number of RODs in the crate. For example, with five RODs the mean current at 5V was  $\sim 40\text{A}$ , with a sinusoidal fluctuation of  $\pm 20\text{A}$ .
- All of the non-*Nexans* D-sub 37-pin analogue connectors on the PPMs have been modified to reduce the risk of over-tightening, by adding spacing washers to the retaining screws. It is undecided whether the same modification should be carried out on all of the remaining (non-*Nexans*) connectors, as this would require significant effort and time.
- Rainer has been continuing his tests with the LAr signals, which have so far been successful. Hopefully, there will be opportunity for further such tests next week.
- Temperature profiles of MCMs throughout two full PPr crates have been measured. Using LAr signals to provide suitable data patterns, all MCM temperatures are seen to be below  $55^\circ\text{C}$ .
- Further optical fibre cables will be installed later today.

**Next Phone Conference – Thursday 23<sup>rd</sup> August 2007 at 11:00 (10:00 in UK)**

*Tony Gillman*