

## **12GeV Trigger meeting notes:**

29-Mar-2013: C. Cuevas, N. Nganga, B. Raydo, J. Gu, S. Kaneta, B. Moffit, A. Somov

22-Mar-2013: C. Cuevas, N. Nganga, B. Raydo, J. Gu, S. Kaneta, B. Moffit, H. Dong; A. Somov

15-Mar-2013: C. Cuevas, N. Nganga, B. Raydo, A. Somov, S. Kaneta, B. Moffit, H. Dong

8-Mar-2013: C. Cuevas, W. Gu, B. Raydo, A. Somov, S. Kaneta, B. Moffit, H. Dong, E. Jastrzembski

1-Mar-2013: C. Cuevas, W. Gu, B. Raydo, A. Somov, D. Abbott, S. Kaneta, B. Moffit, H. Dong

---

### **1. Trigger/Clock/Sync – TI/TD**

#### **29-Mar-2013**

→Preproduction TS is still being used in the 3 crate global test station. It would be a good idea to use the production TS board as soon as possible to verify performance of the three crate system. Plan to move the production board today or next week.

#### **22-Mar-2013**

→The production TS has been tested and is ready to be installed in the 3 crate global trigger test setup in EEL-109.

→The firmware for the production board is the same as the previous version, so there should be no significant issues when testing in the global crate setup.

#### **15-Mar-2013**

→No issues identified with the 1<sup>st</sup> production TS board. Firmware is not completely updated, and the new receivers on the board that accept the signals from the GTP via the Rear-Transition-Module have been tested.

#### **8-Mar-2013**

→First TS production board has arrived and William will begin testing.

→It will be a good idea to test the production version in the 3-crate global trigger test station.

→New (final) TS firmware will need to be completed soon so Bryan can begin CODA library.

#### **1-Mar-2013**

→On schedule to receive the TS assembly next week. This is a production board 1<sup>st</sup> article.

→No questions/feedback on the new TI “link” method.

### **1. SUB-SYSTEM PROCESSOR (SSP)**

#### **29-Mar-2013**

→CTP to SSP fiber link firmware OK

→Diagnostics added to SSP for display readout of test results.

→SSP to GTP 5Gbps links are stable

→Acceptance testing for production units continues.

#### **22-Mar-2013**

→CTP to production SSP communications are working properly with updated firmware.

→VXS testing of SSP to GTP links is in progress. These links are defaulted to 5Gbps and no issues to discuss yet.

### **15-Mar-2013**

- 1 SSP is ready for the 3 crate 'global' test stand.
- Production boards can be tested in the next few weeks.

### **8-Mar-2013**

- All the production boards have front panels and transceivers populated. There will be some SSPs that do not need to be fully populated. These are stored in the EEL109 locker.
- Preparing one production board to be part of the global test station, and some firmware will need to be modified.

### **1-Mar-2013**

- Acceptance testing routines ready to use on the boards.
- Front panels have been received.
- Adjustments to firmware to conform to the DAQ output data format.
- Prepare a production SSP to be used in the Global Crate test station.

## **2. CUSTOMERS**

### **29-Mar-2013**

- At least 12 full crates have passed the FCAT station and have been moved to the Hall D counting house. D. Abbot et al. will begin the DAQ/CODA testing soon. Dave will need at least two TD and a TS to begin the counting house tests.

### **22-Mar-2013**

- The FCAT system is being used and there are a few issues that need to be investigated.
- The goal is to test the full crates and move them to the Hall D CH for the large scale DAQ testing. (D. Abbott, et al)

### **8-Mar-2013**

- I know there will be significant work activity for the Hall D large scale DAQ test plan that will take place in the Hall D counting room area. I think we should keep a section in these notes for any issues related to the trigger boards/firmware that are identified during the testing.
- FCAT activity continues in F112 with no significant issues reported.

### **1-Mar-2013**

- Crypto keys will be available for pick-up at the HelpDesk. DAQ subnet will be located behind the Hall firewall by next week.

## **3. "B" Switch - Signal Distribution Module (SD)**

### **29-Mar-2013**

- Talk with Bob M. about an SD board. I think they can use a pre-production unit for their experiment.
- The SD→TI link is on the back-burner,,

### **22-Mar-2013**

- Discussion about TI→SD and CTP 'link'. Sounds like its time for a requirements document before spending any time developing firmware.
- Hall A SD?

### **8-Mar-2013**

- No report this week, and no high priority activities exist for the SD board. The "SD to TI Link" firmware development and testing activities remain open, but not at a high priority.

### **1-Mar-2013**

→The SD-link firmware will be propagated to the TI boards in the EEL109 test setup area and switch card developers can begin to test.

## **4. System Diagrams/Fiber Optics**

### **15-Mar-2013**

→No action until cable trays are installed in the halls.

### **8-Mar-2013**

→No report.

### **8-Feb-2013**

→Patch panels and patch cables are being checked in now, and will be distributed to the hall groups

→START procurement for trunk cables in D and B by May??

## **5. Global Trigger & Trigger Distribution Testing**

### **29-Mar-2013**

→Document 3 crate global crate discussion

→GTP register map is closer to final draft

→Price quotations have been delivered from procurement. Scott is evaluating these quotes and will need to coordinate with the buyer.

### **22-Mar-2013**

→GTP is sitting in procurement office.

→New SSP to GTP configuration is being worked on, and the Ethernet development is taking a lower priority.

→2<sup>nd</sup> prototype board is ready to run and has been tested. Currently used as a development board in Scott's office.

### **15-Mar-2013**

→GTP purchase req has been signed and approved. Waiting for quotations from selected vendors. Three contract manufacturers were suggested, so hopefully some action by procurement will happen soon.

→2<sup>nd</sup> prototype GTP has been repaired and Scott is working on finishing GUI and other firmware features.

→Ethernet interface work is progressing nicely, and there will be further discussions Im sure. Methods to handle the GigE data need further definition also.

### **8-Mar-2013**

→GTP production board has been reviewed. Procurement specification and other fabrication documents have been completed. The PR will be sent for signature approval next week.

→2<sup>nd</sup> prototype board is at the rework vendor. Expected delivery next week.

→Global test station work will resume next week.

### **1-Mar-2013**

→Production board fabrication and assembly files have been reviewed.

→Scott shows the O'scope picture of the full latency of the three crate global crate test. There are a few issues that need to be verified, and the test can be performed again. The total latency for the setup is 3.0us. There is a wide distribution though, and this should not be the case.

→PCIe test boards have arrived and tests can be arranged.

20-JAN-2012 (Keep this date to reference full DAq crate procedure)

3-June-2011

→ Successful testing with the two crates each with a single FADC250-V2, CTP, TI, SD and one SSP!!

16-July-2010 (Keep this note because it needs to be implemented and tested at some point) See older notes for the list of items.

## **6. Crate Trigger Processor (CTP)**

### **29-Mar-2013**

→ Cost increase was approved and layer stack-up verified. New delivery of 1<sup>st</sup> article is 29-April-2013.

→ CTP acceptance test board is complete and ready for purchase. This board is <\$1500 and is required to fully test the production CTP boards.

### **22-Mar-2013**

→ Cost adjustment and updated delivery for the 1<sup>st</sup> article was transmitted to us by MTEQ on Wed 20—Mar. The cost increase is \$77/board and the full assembly will be at JLAB on 19-April!

→ CTP Acceptance test board will need to be sent out soon. There is a backup plan to verify the 1<sup>st</sup> article board, and we have 15 business days to send approval.

### **15-Mar-2013**

→ We are expecting a final cost adjustment from the CM. The reason for the cost adjustment is due to the extra layers. Vendor reports are due today 15-March-2013.

→ Initial front panel has been ordered

→ Acceptance test board (B-Switch card) will be completed soon, and ordered ASAP.(Jeff)

### **8-Mar-2013**

→ Need to confirm that board has been fabricated and assembly is on schedule for 1<sup>st</sup> article.

→ Hai reports that there will be very few changes to firmware for the production units.

→ Stand-alone acceptance test procedure for the 1<sup>st</sup> article and the 1<sup>st</sup> article can be used in the global test stand to verify full crate operation.

→ Front panel design is almost ready for 1<sup>st</sup> article and after approval the remaining panels can be ordered.

→ New CTP acceptance testing support board (B-Switch card) needs to be finalized and sent for fabrication. Assembly and test will be completed at JLAB.

### **1-Mar-2013**

→ No news is good news, and the BOM has been ordered. No feedback from the CM or circuit board fab house, so the latest files are error free!!

→ The new CTP test board is not ready to order yet, but there is time before the 1<sup>st</sup> article board is delivered.

→ Armen can begin the final front panel layout and prepare an order for the production panels.

**ACTION ITEMS: Next meeting - Friday 5 April 2013 @10AM in F224**