12GeV Trigger meeting notes:

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

22-Feb-2013: No meeting

15-Feb-2013: C. Cuevas, W. Gu, B. Raydo, A. Somov, N. Nganga,

8-Feb-2013: C. Cuevas, W. Gu, B. Raydo, A. Somov, N. Nganga, E. Jastrzembski

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1. *Trigger/Clock/Sync – TI/TD*

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 1st article.
→No questions/feedback on the new TI "link" method.

15-Feb-2013
→TS board ordered from ACE and Sierra Circuits will provide the assembly. Early March is the delivery plan. $4K at the current low quantity and the price will probably be the same for the production order.
→Switch slot to TI "LINK" firmware block was distributed to the proper switch slot developers.
50Mb/s at the present implementation plan, and this could be increased at a later time. Definitions for serial transmission are defined including data packet information.

8-Feb-2013
→8 boards received from CEM have been repaired. Even with these repairs the final delivery was ahead of schedule by two months!
→TS production revision board has been ordered. By April, the TS will return fully assembled and ready for testing. Existing TS boards have been modified so that they can function as a TI. The common signals are distributed to the SD as a regular TI.
→TS CODA driver is virtually complete, according to William.

1. *SUB-SYSTEM PROCESSOR (SSP)*

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.

15-Feb-2013
→Acceptance testing is progressing
→Front panels will arrive next week.
→Collaboration meeting discussions specifically for the SSP will happen next week.

8-Feb-2013
→All production boards have been received.
→Minor assembly has been completed in the lab and front panels will be delivered soon.
→Testing can begin at any time.
→Test firmware is a work in progress, and will be complete soon.

2. *CUSTOMERS*

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.

8-Feb-2013
→Some more discussion about the DAQ test in the counting house.

25-Jan-2013
→Discussion about setting up at least 10-12 VXS crates in the Hall D counting house to begin testing of a realistic DAQ system including the event building machines, and other network activities. A significant number of FADC250, SD and TI boards will be needed including TS=>TD and fiber optic links to simulate the trigger distribution path. No plans for using CTP, SSP or GTP for this setup, but it could be a useful setup to verify production CTP, SSP and GTP. For now CTP and GTP production boards will not be delivered for several months.

3. *"B" Switch - Signal Distribution Module (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.

15-Feb-2013
→New SD→TI link code has been distributed to the switch card developers. Implementation and testing is the next step. Probably more discussion on the specifics will be necessary before the final version is released.

8-Feb-2013
→Nick has loaded up the new version of the SD firmware to all boards. These changes include the remote programming feature and take care of the serial number loading.
→Some good email traffic regarding the SD→switch card link.
-Consider making the switch cards asynchronous to the TI for the one way serial pair "link".

-William, Nick, Bryan and Scott need to go to the mat and get this sorted out. Send the black box code to Hai and he will implement this on the CTP.

4. System Diagrams/Fiber Optics

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

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.
→2nd 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.

15-Feb-2013
→Production GTP for Hall D will be ready for fabrication file check next week.
→ECO to one of the pre-production boards will be sent for rework. Should get this by the wee of 25-Feb.
→Three crate Global testing in EEL109 is progressing at a glacier pace, and when Bryan returns he will be able to help troubleshoot the 'front end' CTP issue.
→2 production GTP will be ordered by end of March. The goal is to have these two final production GTP board assemblies tested by June-2013.

25-Jan-2013
→Discussion about the Ethernet connection on the GTP. Cmsg, UDP, DHCP, TCPIP, the normal network definitions need to be defined before beginning the implementation stage. Ethernet interface/hardware has been tested and is functional.
→Global (3 crate) testing is going well and problems are being handled as they show up. Only one FADC250 board in the 'front-end' crate.
→PCIe test boards are ready to send, and the PO boards have already been shipped for fabrication. The switch board will be ordered next week before Scott leaves on travel.

18-Jan-2013
→Scott has been preparing the GTP for production. All ECO will take another week or two.
→Global system test will take a higher priority until Scott leaves for Trigger School.
→PCIe test boards have been designed and the switch card will be ordered soon.

11-Jan-2013
→Global crate testing is progressing but will need Bryans help soon to complete the measurements.

Cuevas   8-March-2013

6. Crate Trigger Processor (CTP)

8-Mar-2013
→Need to confirm that board has been fabricated and assembly is on schedule for 1st article.
→Hai reports that there will be very few changes to firmware for the production units.
→Stand-alone acceptance test procedure for the 1st article and the 1st article can be used in the global test stand to verify full crate operation.
→Front panel design is almost ready for 1st 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 1st article board is delivered.
→Armen can begin the final front panel layout and prepare an order for the production panels.

15-Feb-2013
→Final fabrication files will be transmitted 18-Feb and these files include two new layers. We had a phone conference and Colonial Circuits recommended a different layer stack to maintain the 10:1 aspect ratio.
→Paste stencils have been ordered and BOM order is progressing. 1st article due a few weeks after board fabrication.
→A new CTP test board has been completed and is ready for ordering. This board is an improvement to the existing test board and will be used for automated acceptance testing of the production CTP boards. (<$2K)

8-Feb-2013
→Goal is to send updated (final) manufacturing files to MTEQ by Wed 13-Feb. If there are no new issues, the fabrication of the 1st production article can be started. The front panel needs to be sent soon to meet the delivery schedule of the 1st board.

ACTION ITEMS: **Next meeting - Friday 15 March 2013 @10AM in F224**

Cuevas   8-March-2013