12GeV Trigger meeting notes:

19 July 2013: C. Cuevas, A. Somov, N. Nganga, B. Raydo, S. Kaneta, J. Wilson, E. Jastrzembski

12 July 2013: C. Cuevas, A. Somov, N. Nganga, B. Raydo, S. Kaneta, J. Wilson, E. Jastrzembski, B. Moffit

5-July-2013: No meeting

28-June-2013: C. Cuevas, A. Somov, J. Gu, N. Nganga, H. Dong, B. Raydo, S. Kaneta

14-June-2013: C. Cuevas, A. Somov, J. Gu, N. Nganga

7-June-2013: C. Cuevas, B. Raydo, A. Somov, J. Gu,N. Nganga, H. Dong, B. Moffit, S. Kaneta, E. Jastrzembski

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1. Trigger/Clock/Sync – TI/TD

19-July-2013
→Assembly kits have been sent to the CM for the production TS boards.
→RTM boards and kits have been sent out also.
→No significant issues with the testing in the Hall D CH so far.
→TI Master boards have been configured, tested and distributed to the hall groups.

12-July-2013
→TS production boards are on schedule.
→Rear transition boards have been received. These boards can be assembled here, and are the interface between the Densi-shield cables from the GTP.
→No update on the final firmware changes that will be needed for the initial Hall D commissioning.

28-June-2013
→Trigger Supervisor production components will be received in July. Sierra won the CM award and assembly will begin as soon as components are sent to Sierra.
→TI Master boards have been reworked and received. We are waiting for front panels and then they will be fully tested.
→Discussion about 'final' firmware changes to the DAq/Trigger boards that will need to be completed soon. Testing continues in the Hall D CH and no issues are noted. We (FE Techs) will modify the WIENER power supplies to eliminate the output oscillation.

14-June-2013
-->TS production order includes the rear transition board for the GTP inputs, and the order has been approved.
→TI Master boards are expected to be received soon from Sierra. These boards were modified from original TI boards for applications where multiple crates will be controlled from a TI Master.

7-June-2013
→Conversion rework for TI Masters is complete for Hall B boards. (10) The Hall D folks need four boards converted from TI to TI Masters. The TI Master boards will require a few days to test before distributing to the groups.
→TS production order needs an account number from Hall B

1. SUB-SYSTEM PROCESSOR (SSP)

19-July-2013
-->Firmware development progresses and new features for scalers will be added. There will be CODA driver work to be completed also, but this work will need to be done anyway.
→Configure the Hall D global trigger crate in EEL109 with 8 SSP and the production GTP.

12-July-2013
→Supporting Alex and the Hall D global test stand testing. Alex has two of the pre-production CTP and a single SSP. Plenty of development work in progress.
→Hall A will receive their SSP in the near future. Not a priority, but Ben will deliver a board soon.

28-June-2013
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14-June-2013
→Latest firmware revision has been released for the various boards that have been distributed to Physics detector groups.
→CEA Saclay group has received their SSP for continued development of the readout/control of the MicroMegas detector. (DREAM chip)

7-June-2013
→Final firmware? This is a trick question but the Hall D SSP firmware is ready and there will be updates for the data streams coming from the Tagger crates. The specification document is in good shape, so the development work will continue whenever the Tagger CTP application is done.
Additional features for scalers and diagnostics are forthcoming.

2. CUSTOMERS

12-July-2013
→Still waiting for DOE approval to send the SBC to CEA Saclay.
→PCAL for CLAS12 will be testing the new Mode 6 firmware for the FADC250 board. TDC and pedestal information is captured for every pulse and is included in the data stream as Vmin.

14-June-2013
→We are waiting for approval from DOE to send the SBContoller to CEA Saclay. Bryan has the SBC and will have it ready by the time approval is received.
→No news from detector groups regarding the detector testing with the new Mode 6 FADC250 firmware. Mode 6 will be used for high rate Physics production running because the data will only include the integral value plus the high resolution threshold crossing time. (LSB=62.5ps)

7-June-2013
→Discussion about boards NOT in the Level 1 trigger started, and there are some concerns. The basic trigger/sync/token functions should be checked for all of these boards in a full crate. The FCAT development for these boards is an activity in progress.
→Mode 6 will be tested on several detectors. Mode 7 (Raw and TDC only) has been stable for over a year, so we know it works.

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

19-July-2013
→PLL testing firmware is still in progress. We will have to coordinate which crate to use for this PLL test.

12-July-2013
→PLL testing in progress.

14-June-2013
-->Nick will have some time to run a test to measure the effects of running the clock distribution with the PLL ON for the SD. Present testing uses the default SD setting which is PLL OFF.

7-June-2013
→GTS testing with PLL can be started soon. Presently other projects take priority.

4. System Diagrams/Fiber Optics

14-June-2013
→Create a PR and the goal is to submit a purchase order before the end of FY13!!
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

19-July-2013
→A few I/O ports still need to be functionally tested.
→Densi-shield cable test should be completed with the production TS.
→16 payload board test for 5Gbps has been built. We can use one of the crates to perform this test and characterize the backplane and check BER. There are a significant number of parameters that Scott's firmware will measure and record.

12-July-2013
→DC power testing is complete for both boards!
→Complete functional testing is progressing well.

28-June-2013
-->Two production boards fully assembled!! (And Green)
-->Acceptance testing is progressing nicely and will continue in the GTS. At some point near the end of summer, we can move this hardware to the Hall D CH for testing with the dozen front end crates.

14-June-2013
→The production GTP boards have been received and will need the backplane connectors and a few other hardware peripheral components. Luckily these items are stock and Scott has prepared an order.

7-June-2013
→No news is good news and the two production assemblies are still on track to meet delivery.
→Acceptance test routines ready for bench testing and then Scott can check it on the GTS.
→Advanced Trigger Processor – ATP is the new acronym for the CLAS12 trigger processor.

Design concept and details presented at the HPS collaboration meeting and there is 'approval' to begin the board design to produce prototypes by end of 2013.

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 note dates for the list of items.

6. Crate Trigger Processor (CTP)

19-July-2013
→All indications from the PCB and assembly companies are positive so we expect the CTPV2 boards to meet the delivery schedule.
→Automatic testing firmware and remote firmware download routines are complete. Hai is documenting the test routine procedure for the acceptance testing activities.

12-July-2013
→Remote firmware download is 95% complete. All other acceptance test firmware is ready for the production boards.

28-June-2013
→Deliveries start 9-Aug.
→Loop back testing with 14 P0 boards and all is well.
→Remote firmware download development is 60% complete.
→PCIe is another (low priority) activity that can be started because the SBC order was awarded to Concurrent.
→Production CTP passed the FCAT test!

14-June-2013
→No update but activities are progressing on schedule.

7-June-2013
→Approval is ratified and delivery will begin end of July. 32 production boards will be delivered by 23Aug2013!!
→Acceptance testing will need to be added to the schedule.
→Hall D firmware is loaded and runs in FCAT
→Fiber transceiver link works properly and has been tested in the GTS with the SSP.
→Peripheral components can be ordered now!
→Development of firmware to manage the remote download of new firmware is the highest priority. Automatic acceptance testing firmware is the next priority, then the scalers, then the tagger application, and last but not least, is the diagnostic firmware.

***ACTION ITEMS*: Next meeting - Friday 19 July 2013 @10AM in TBD**