12GeV Trigger meeting notes:

14-Feb-2014: C. Cuevas, W. Gu, B. Raydo, B. Moffit, H. Dong, A. Somov

7-Feb-2014: C. Cuevas, W. Gu, B. Raydo, B. Moffit, E. Jastrzembski, H. Dong, A. Somov, J. Wilson

24-Jan-2014: C. Cuevas, W. Gu, B. Raydo, B. Moffit, E. Jastrzembski, H. Dong, A. Somov

10-Jan-2014: C. Cuevas, W. Gu, B. Raydo, A. Somov, B. Moffit, E. Jastrzembski, H. Dong, J. Wilson

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1. *Trigger/Clock/Sync – TI/TD*

14-Feb-2014
→Will move two crates from EEL109 to Hall D on Monday 17-Feb-2014
→Still need SBC and other boards, but Sergey or Alex will provide these (TID)
→TD <->TI Link Identification feature is being tested.

7-Feb-2014
> TI Masters working well for FCAL and BCAL south.
> Move trigger crates to the hall as soon as trigger racks have power.
> TD, TS and SD crate will be installed, and the boards will be provided by Alex
> Will need to configure a few more TI to work as TI_Masters.
> TD <-> TI Link Identification feature tested and complete? Work in progress,

24-Jan-2014
- TI-Master configuration is working on FCAL. This configuration will remain permanently and the global link will occupy one port on the TI's. Other detector crates may be organized with the TI-Master mode as well. This will require additional fiber transceivers and fiber patch cords.
- TD <-> TI ID feature tested with CODA3? Will be ready for future CODA 3.0.release.

10-Jan-2014
FCAL TI-Master configuration is progressing and as soon as the trigger fiber is installed the CTP boards and TI can be hooked to the global distribution crate. 14-Feb-2014 is my predicted installation date.

1.   *SUB-SYSTEM PROCESSOR (SSP)*

14-Feb-2013
- Ben has updated the SSP firmware with the latest features.
- Bryan will test the latest firmware with his library soon.
- Hall D SSP installed in the Global Trigger crate and will be moved on Monday 17-Feb.

7-Feb-2013
- SSP end is ready for testing, but CTP side is work in progress.
- CODA library for SSP will be tested and verified by Bryan before release.
- Started loan paperwork for additional SSP that will be loaned to Saclay (uMegas)

24-Jan-2014
- CTP → SSP ID link firmware has been updated. Library development in the queue.
- Hall A application is work in progress, and a meeting is planned.
- Send at least 4 SSP to Saclay.

10-Jan-2014
- Ben and Hai have settled on the method to transfer the information that will identify the CTP through the SSP link.
- Some changes will be needed to the driver libraries for the SSP. (CTP too?)
Testing and library verification can be completed in the EEL109 test stand.
- Hall A application for the SSP! Need to get details from Alexandre and J. Musson.

2. *CUSTOMERS*

14-Feb-2013
- ➢ No feedback from Users regarding the latest release of the FADC250 firmware.
- ➢ Firmware development priorities on track.
- ➢ Details of BCAL cosmic ray trigger functions released and explained by Alex. Firmware changes will affect FADC250 and CTP. New features will allow control of each channel that is summed to the CTP from each board.

7-Feb-2013
- ➢ Mode 6 is RELEASED! Hai and Ed have made it bullet proof!
- ➢ Firmware Priorities:
  - CTPV2 testing - Complete (30 of 33 boards passed)
  - Mode 6 repair - Complete
  - BCAL cosmics
    - Changes to the CTP for 'hit bits'
    - These bits are already defined for the SSP
    - BCAL/FCAL (FADC250 changes to trigger output data)
  - Tagger Hit bit application
  - TOF application
  - Pair Spectrometer
  - CTPV2->SSP ID

24-Jan-2014
- Hai said (with witnesses) Mode6 will be ready by end of January 2014.
- CTPV2 contract is in the process of termination. 30 of 33 boards were completed.
Hall D has all the boards they need for commissioning.

10-Jan-2014
→Mode 6 even closer to release! Bug fixes are in progress.

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

7-Feb-2014
- ➢ Not a high priority but Ed has compiled Nick's project, so testing will progress as time permits.

24-Jan-2014
- Still a few bug issues with the A5 release.
Maybe William and Ed can investigate??

4.   System Diagrams/Fiber Optics

14-Feb-2014
- ➢ FCAL fiber has been installed and connected to FO patch panel ports
- ➢ Short (1m) cables have been ordered. Procurement slows the process but these will be here soon enough
- ➢ Fiber spool for Tagger building (380ft) will be here soon. Not a priority to install yet.
- ➢ UPDATE drawings!

7-Feb-2014
- ➢ 3 more spools delivered for FCAL run. Tagger spool is on the way. Install week of 10-Feb.
- ➢ Order short patch cords.   Plenty of 2m cables for crates to patch panel connections.

10-Jan-2014
- 5 of 11 trunk lines are installed and tested.
- PR signed for 4 more trunk lines for the FCAL and Tagger.

5.   Global Trigger & Trigger Distribution Testing

14-Feb-2014
- ➢ No update, but Ben mentions that the new document is released.
- ➢ CODA3 Library driver status? (I do not have any notes)

7-Feb-2014
- ➢ Version 1.0 has been released for the GTP firmware. Document is updated and includes all the latest register definitions as well as a new section that describes the embedded Linux addition.
- ➢ CODA3 Library driver development will begin.

24-Jan-2014
- Linux OS is stable and ported to the GTP NiosII processor. Chris H. has completed the sections relevant to the embedded code and has updated the GTP manual.
- Ben has signed off on the release and is using the embedded Linux OS on the production GTP boards.

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.

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6.   Crate Trigger Processor (CTP)

14-Feb-2014
- ➢ New PR approved for 4 more CTPV2 boards. See below:
  - Hall A – 1
  - Hall C – 2
  - Hall D – 1
- ➢ 3 boards that never passed acceptance testing will be returned to MTEQ
- ➢ Verify BOM and fabrication files for new order.

7-Feb-2014
- ➢ Contract has been cancelled and new PR issued for replacement of 3 boards
- ➢ Discussion with procurement and 12GeV PM to find funds for an additional 2.
- ➢ See 'Customer' section for activity priorities for CTPV2 firmware.

24-Jan-2014
- 3 of 33 still have a few issues. Hall D has 30 boards!
- Two of the boards will need additional rework to swap parts to the correct location. MTEQ is working with their sub-contractor to get these two boards finished.
- One board has significant issues and will take sequential rework to identify which BGA is the problem.

ACTION ITEMS: **Next meeting -Friday 28-Feb 2014@10:30AM in L210A**