

12GeV Trigger meeting notes:

18-Apr-2014: C. Cuevas, B. Raydo, B. Moffit, H. Dong, E. Jastrzembki, A. Somov

28-Mar-2014: C. Cuevas, B. Raydo, B. Moffit, H. Dong, E. Jastrzembki, A. Somov

21-Mar-2014: No meeting

14-Mar-2014: C. Cuevas, W. Gu, B. Raydo, B. Moffit, H. Dong, E. Jastrzembki, Sergey

7-Mar-2014: C. Cuevas, W. Gu, B. Raydo, B. Moffit, H. Dong, E. Jastrzembki

1. Trigger/Clock/Sync – TI/TD

18-April-2014

→What were the repairs for the 'TI Transceiver #5' issue?

--This was determined to be a software problem and was fixed.

→Request for spare TI boards in progress and these requests will be consolidated.

--Avago transceivers will be obsolete soon, so spares need to be purchased soon. Ben points out that the transceivers are available from other sources.

28-Mar-2014

-->Still some issues with the TIs on FCAL and BCAL

→William is on travel so these issues will be investigated later.

→The test with 25 TI running from the TS-TD crate was 'stable' but there were eventually CODA crashes. The 1st fiber port on the TI appears to work properly.

→One of the TIs on the FCAL had a jumper setting at 31.25MHz. The board was swapped out and now the crate works properly.

14-Mar-2014

→Continue testing more TD↔TI links in Hall D. Tests are progressing well and initial measurements are reasonable and understood.

→Discussion on measuring the fiber length and downloading the delays to the TI. Presently the measurement resolution is 4ns.

→Discussion on LED pulser system and we need a simple block diagram to show the important interconnections from the 1495 boards to the TI-M and TS.

7-Mar-2014

→TD, and TS boards were located and installed in the TS crate in Hall D.

→Fiber patch cables have been installed and tested

→Initial testing is progressing well and so far no surprises!

→Good discussion on how to transmit signals from external pulsers on FCAL(or any other detector area) to the TS crate. Best method is to keep it simple and avoid the L1 transmission path because of serialization issues etc. Ben identified a commercial VME module solution and PR is submitted.

2. SUB-SYSTEM PROCESSOR (SSP)

18-April-2014

→TOF CTP↔SSP full playback test is ready. All boards and optical cables installed.

--Dave and Bryan can run the DAQ testing on this crate for performance measurements. These tests will include all global and TS boards and functions.

28-Mar-2014

→CTP←→SSP test in EEL109 appears to work properly. Still a few strange pulses on the O'scope measurements need to be understood. The CTP firmware version is for the BCAL and includes new features to subtract the 'baseline noise' from the sum information.

→The CTP←→SSP link ID is working well.

→Hai will be away from the lab, returning Thursday, but the new CTP firmware can be used in the hall test next week.

14-Mar-2014

→Week of 17-March we can start connecting FCAL CTP and establish fiber links to the SSP (Global crate)

→CTP←→SSP link ID has been completed but will need test time.

7-Mar-2014

-->Proposed optical to electrical VME boards have been identified and a PR has been submitted. These modules should work well for transmitting logic signals to the TS crate from remote locations using the fiber optic trunks. Will need to purchase MTP←→ST type cable assemblies, but once we know the length, we can receive these cables quickly.

→No other report regarding the SSP. Boards and crate have been ready for commissioning tests.

2. CUSTOMERS

18-April-2014

→Check the Hall B folks regarding test results using the latest FADC250 firmware.

--Last time I checked with Dan Carmen (FTOF) he said that they are close to finishing all their installation checks. They should be able to provide data from a long cosmic run to check the new "Mode 6" firmware performance.

28-Mar-2014

Follow up with Sergey and other Hall B detector folks regarding data results from cosmic operations.

14-Mar-2014

→No report

7-Mar-2014

-->Request sent to the Hall B detector groups to use Mode6 (TDC) when testing their detectors. Hopefully soon we will receive results. I talked to Dan Carmen briefly and he said that at least one sector of the FTOF should be ready soon for a few days of cosmic data.

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

18-April-2014

→Ed and William have been working on the TI←→SD link firmware and there are a few issues to resolve.

→Several spare SD will be ordered soon. (Before end of FY14)

28-Mar-2014

→Nothing to report.

14-Mar-2014

-->No reports of issues with production SD boards. Spare SD boards for the Physics 'pool' will be ordered before the end of the fiscal year.

7-Mar-2014

→Need to create a list of additional modules to purchase for a spare 'pool'. We(Physics) have a substantial number of FADC250 boards and will need to have enough peripheral boards on hand to support small test stations and low channel count experiments that are planned for the near future.

4. System Diagrams/Fiber Optics

18-April-2014

→Still need to install the Tagger Fiber trunk line.
→All other subsystems are connected to TD and SSP as listed in the diagram.

28-Mar-2014

-->CDC and FDC TIs have been linked to their respective TD ports. Not clear when the BCAL cosmic test will be setup to run the FDC and CDC chambers.
→The CTP to SSP fiber optic patch cords have been connected to the Global Crate. The Global Crate map has been posted.

7-Mar-2014

→Armen has been keeping the Hall D fiber drawings up to date and the drawings reflect the existing installation of all the trunk lines and patch panels in Hall D to date. Sergey B. has requested that we begin the planning for the fiber trunk lines in Hall B. We have preliminary drawings that need to be updated, so we should plan a meeting to discuss the details.

5. Global Trigger & Trigger Distribution Testing

28-Mar-2014

-->The fiber optic patch cables for the CTP →SSP links have been connected. The latest mapping for the SSP has been updated on the wiki and this will need to be checked in the hall. Fortunately the CTP→SSP ID link is working so the link can be identified. Ben has explained the SSP port assignments and the patch cables will be verified 7-April-2014.
→Hopefully deterministic "Play-Back" testing will be running by the week of 7-April-2014 to verify and measure alignment of multi-crate and multi-detector trigger signals. Presumably, we can also test trigger rates (Trig2) without having to worry about the status of the detector signals.

14-Mar-2014

→Start with the FCAL crates next week. Start with a goal of using "Playback" to deterministically set a global L1 trigger and analyze data alignment from each CTP. Consider rate testing as well.
→Cosmic testing will be next.

7 Mar-2014

→Initial TD←→TI testing looks very good and BCAL south and FCAL north appear to be in working order and there were only a few issues. Not sure what else needs to be added to CODA3 to support the CTP←→SSP testing that we can begin the week of 17-March.

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)

18-April-2014

→ New order is moving along and there are a few manufacturing questions to resolve.

→ Tagger application (hit bits) is ready for FCAT tests.

28-Mar-2014

→ FCAL and BCAL firmware is ready. Testing continues in the EEL with a test in the hall next week.

→ 4 additional CTPV2 boards will be ordered soon. Cost is almost ridiculous and contract has not been awarded.

14-Mar-2014

→ No report

7-Mar-2014

→ Bids received and the total for 4 boards is higher than what was expected. NRE and other charges were inflated somewhat and I think the manufacturer added some margin for this job.

ACTION ITEMS: Next meeting -Friday 2-May 2014@11AM in F226