

Minutes, 9/15/04 Tevatron BPM Upgrade Meeting
Stephen Wolbers

This set of minutes, and all future minutes, are or will be deposited in the Beams Document Database as document number 792.

The agenda as announced consisted of:

1. Report from Bob and Steve
2. Report from subproject leaders
3. Report from Technical Coordinator -- Jim Steimel
4. AOB

1. Report from Bob and Steve.

- Echotek Board census:

1 Recycler Board : This board has been returned by Echotek to Fermilab and will be returned to Peter Prieto. This board was used to debug the "transient" issue on the new Echotek boards.

3 June Boards : All three should be at FCC3. One of them was with Peter Prieto for a while to possibly modify the analog front-end. This was not done after Peter talked to Echotek and learned that his investigations were essentially the same things that Echotek has already done and implemented on the August boards.

4 August boards : 3 boards are working. 1 board has been signed out to Duane/Charlie. 1 board should be sent back to Echotek for diagnosis and repair. Mark Bowden is waiting to hear from Dehong before shipping the board back to Echotek.

1 Recycler board : There is one Echotek board in the test stand over at Feynman.

- 100 additional Echotek boards will be ordered for the transfer line BPMs (25) and the MI BPMs (55) + spares.

- Next Tuesday there will be a CD Accelerator Activities Coordination Meeting at 3:00 P.M. in FCC1W. There will be a talk by Bob Webber about the MI BPMs and a talk by Steve Wolbers updating the Tevatron BPM project.

- The DOE mini-review on September 8 went well, according to the feedback we're heard from Pushpa and others.

3. Reports from L2 Managers

Vince Pavlicek:

- The pilot timing board is in a full test crate and is functioning. Still need to decode TCLK. Steve asked how the project knows that the board is acceptable and can therefore give the go-ahead for production. Vince and Bill will come up with the information required to convince everyone that the board is ready. At the minimum sign-off will be required from Vince, Jim, Bob and Steve before production can begin.
- 5 pilot timing boards will be made + one half-board (solder sample) for Nathan Eddy and the transfer line BPM project. The transfer line is interested in approximately 10 boards. Bakul and others will investigate what is needed to order long lead time items for those boards.
- 27 matched filters have been measured and meet the specifications. The impulse response has been measured on one filter so far. 100 more pairs of filters have arrived. Some random sample of these filters will be tested. Tom Boes is working with John Chramowicz are working to set up a test facility for the filters.
- The filter board is functioning, has seen diagnostic signals from the timing board through the relays. Similar to the timing board a final sign-off will be needed before the board goes into final production.
- We have taken a decision for the attenuator pattern on the filter board. The pattern should be p-p-pbar-pbar-p-p-pbar-pbar for the 8 channels on a board. We are still discussing the Echotek board pattern, which depends on a better understanding of how we will trigger the Echotek and how we process in the Echotek and in the front-end.
- The Cable labels are being finalized and should be finished Wednesday or soon thereafter. This is needed to keep the cable order on track.
- The panels that go above and below the VME crate are being designed and will be fabricated soon.

Margaret Votava:

- Using the tracing/debugging tools and one of the August boards work has started to understand the rate limitation and capabilities of the system. So far the limitation is found to be about 300 Hz. Luciano and others are working to push that to 500 Hz with one board and then to

study the impact of reading out multiple boards in one crate.

- Discussing timing/trigger issues with Bill Haynes and others.
- Once the rate issues are better understood they will move on to TBT readout.

Mark Bowden:

- Both the schematics and the FPGA code are still being discussed with purchasing and Echotek. We expect both soon.

Tim Kasza:

- Tom Boes is working on the filters and will take over sample testing.
- Bill Barker and Jim McCormack replaced the A3 crate with a production crate.
- Signs have been placed in all service buildings in the locations of the TeV VME racks + panels. Doing so led to a better understanding of who actually assigns and controls the rack space in the buildings and we are now actively working with him (Rupe Crouch).
- Bill and Jim photographed and surveyed all the service buildings to look for space issues, rails in the spaces, etc.
- Working to set up the Echotek teststand for the Prep tests. This is needed in preparation for the arrival of the 150 Echotek boards and possibly the additional 100 boards. Hope to get the teststand set up by Friday.
- Stew is working with Ken on the filter boards, keeping up with any changes.

Back to Vince:

- The two original Dawn VME subracks will be modified here at Fermilab -- Dawn will send us the necessary parts.
- Nathan Eddy ordered 10 more Dawn crates for the transfer line project.
- The VME crate firmware mods need to be investigated. Reasonably confusing discussion here -- the original Dawn VME crate did not have the final readout for the crate diagnostics. Charlie needs it so some communication with Dawn needs to occur to sort this out.

Rob Kutschke:

- Rob is back. Asked about whether the phases in the A3 setup were understood and the problem solved. Answer was yes. Also asked about the I & Q data having different characteristics than the data-logged positions (fewer fraction of outliers). No new information about those so far.

Brian Hendricks:

- Charlie is working on the crate communication for the VME crate diagnostics.
- Working on the configuration database for the new system.

3. Technical Coordinator -- Jim Steimel

- Thinking about and working on timing diagram for the modes of operation of the system.
- Needs newest register diagram from Mike Martens. Mike will track it down.
- Working on getting all of the teststands established and working.
- TeV department would like the B0 and D0 BPMs to be "standard", meaning that they would be read out at both ends and would be treated the same way. Still investigating how to accomplish that.
- Tunnel work is finished so far (modulo the B0 and D0 BPMs).

4. AOB.

- Meeting Thursday 9/16/04 to discuss Echotek configuration and readout.