

Minutes, 4/06/05 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:

Report from Bob and Steve
Reports from subproject leaders
Report from Jim Steimel
AOB

1. Report from Bob and Steve

- We discussed the plans for stores and opportunities for installation this week.

- We also discussed topics for Thursday this week and decided on pbar measurements.

2. Reports from subproject leaders (with an emphasis on TBT/missing TCLK/first turn injection problems)

Vince Pavlicek:

- Filter testing is finished. 6 filter pairs failed and arrangements are being made with Lark to replace them.

- 20 filter boards were not stuffed by the assembly house. 5 have been stuffed since then (for B0, D0 and a spare). 15 boards remain to be stuffed and tested.

- 3 more CPUs are needed to finish construction of the 27 crates needed for the full system.

- The terminator boards are being built. So far 7 of the 11 installed houses have the terminator boards.

- Vince showed a plot of all of the gain and phase mismatches of all of the filter pairs on filter boards. This data and plot can be found on the CD server. There are some pairs with gain differences above 0.14 dB. The project can decide to try to replace them with better matches or leave them or correct the gain difference with

calibrations.

Bill Haynes:

- Bill described work on understanding/debugging the "missing TCLK" and other TBT problems, from the viewpoint of the timing board. He has seen some problems with the system not properly resetting after a reboot and believes that he has a fix for that. Other issues are under active investigation, in concert with Luciano, Jim, and others.

- At some point all of the installed timing boards will need to be updated with the newest firmware.

Mike Martens:

- There were problems with the data from the Tuesday evening shot preparations for the store that went in on Wednesday morning. Details can be found in the BPM logbook:

<http://www-bd.fnal.gov/MCRlog/machlog.html>

- Given the still unresolved problems with "missing TCLKs" and "late TCLKs" and other odd behavior Mike would not like to see further systems installed and connected until progress is made on understanding and resolving the problems.

- We agreed to take the next available opportunity to install as many crates as possible in the proper rack position and to connect pbar cables but not proton signals. The proton cables could be attached later when the go-ahead is given by Mike.

Tim Kasza:

- Four crates are ready in the service buildings and ready to be installed in the racks (E2,F2,A4,B4).

- All of the remaining crates are assembled except the final 3 (F3,F4,F1) are in need of MVME CPU's. One can be obtained from the timing board teststand. The other 2 will have to come from the 6 that are being used in various teststands, from other projects that can loan them, or some combination of short-term loans to replace CPU's in teststands. Tim, Jim, Bill and others will work out a plan to obtain the final 2 CPUs. (The CPUs we purchased were 2400-0361 with 512 MB of memory.)

Brian Hendricks:

- Brian fixed the frame 0 SDA errors. Still working on understanding the frame 15 SDA errors.
- Talked to Marc Mengel about the calibration database implementation (tables).
- Bob West is waiting for the specification for the diagnostic test to be controlled/viewed from W25. It is not clear yet how long this will take to code and implement once the specification is complete.
- There was a long-ish discussion of the fact that TBT requests get PENDING the first time it is issued for data that has not been viewed yet. The second request always gives good data.

Margaret Votava/Luciano Piccoli:

- Working on the various TCLK problems. There was some discussion about the TCLK/trigger board FIFO buffer and interrupts, as well as some discussion of recompiling the Alterra code with newer compilers, etc. Net result is that work continues on debugging.
- W25 has software versions and other new features for debugging.
- A few more alarms have been implemented in the front-end.

Mike Martens:

- Mike reported on some of the errors he has seen lately. As usual they can be found in the BPM logbook.
- Mike would like to push for tighter control on changes that are to be made in the front-end, timing board, etc. in the future as the system settles into production. The changes need to be announced and planned and presumably a plan to back them out on short notice if the requirements of machine operation demand it. (The usual stuff for a production system.)
- Mike has an application that reads 64 snapshots, records and averages the data, checks the validity, etc.

Rob Kutschke:

- Marc Mengel has talked to Bob Forster about getting hold of the measurements of differential gains, etc. for inclusion in the

calibration database. The plan is to get the data next week and to use that data to write to the front end (via ACNET devices/variables) the week after that.

- Rob is working on the TBT problems/debugging/analysis.

- Also working on pbar measurements and will present his ideas on Thursday April 7.

3. Jim Steimel

- Jim is focussing efforts on the debugging of the TBT and other problems.

4. AOB

- We will meet Thursday April 7 at 1:30 to discuss pbar cancellation.