

Minutes, 4/27/05 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

- The PAC2005 is coming up. Please be aware of the deadline for paper submission and the need for copyright transfer, etc.
- Steve reviewed some of the major tasks remaining for the project before we complete. These include:
 - Solve TBT problems (done?)
 - Solve missing TCLK problems (done?).
 - Solve 6 phase problem (done?).
 - Implement safe mode.
 - Implement pbar measurements.
 - Implement calibrations and calibration DB.
 - Determine and implement overall scale and corrections for higher order terms or off-axis terms).
 - Implement diagnostics.
 - Documentation.
 - Closeout project.
 - Party (proposed for June 2 at Users Center, 4:30 P.M.)
- Commissioning status is:
 - 23 houses installed and connected and 18 commissioned (5 were connected on 4/27/05)
 - 4 houses to install (F3,F4,A0,F1)

2. Reports from subproject leaders

Mike Martens:

- Mike reported on the errors and problems that he has seen as new systems have been installed and as firmware and software has been updated in the houses.
- The F0 BPMs need to have the proper scale. This is known and should be implemented soon.
- Overall the system is working well and gives good resolution. Orbit oscillations are seen clearly. Orbit smoothing is working well.
- There were some problems seen in store 4111 in SDA data in the B0 and B2 houses.
- For the 7 houses connected in the past week Mike sees shifts in position of under a mm in most cases but some are off by about 2 mm and one (HC11) is off by 3 mm. Some of this could be the electrical offsets.
- The D0 house may be indexed in the wrong order in some cases. This may be related to the filter boards, which are different for the short BPMs at the interaction regions and this leads to an order possibly different from the beam order of the BPMs. This needs to be sorted out.
- At this point there was a discussion of the timing board firmware and the front end software. A request was made to update all of the houses with new firmware and software. The agreement is that this is approved and Bill, Ken, Marv, Jim, Luciano will decide on when to do this and will make the changes. Jim requested that it be done in the middle of a store (so that signals can be seen as soon as the system is re-enabled).
- Mike mentioned that a study plan has been proposed to measure beta functions and other quantities. Bob reminded us that the question of the Lebedev effect should be studied if possible.

Rob Kutschke:

- Rob is looking at the data and checking for self-consistency and for problems. He uses Roger's program and has found and reported problems that for the most part have been addressed.
- A couple of houses have been in odd states during the past week or so. One of them is understood and has been fixed (trying to set delays on an Echotek channel that doesn't exist) and the other is a mystery.
- The C4 house has network problems that are under investigation.

Brian has asked Dan Stenman to look into it.

- Rob will contact Marc Mengel to see if his questions about BPM nomenclature, calibration information, etc. have been answered and where we are at getting this information into the database and used by the front ends.

- Rob checked the fast and slow abort buffers when the beam was lost and found that they looked correct (docDB #1787).

Luciano Piccoli:

- Luciano reports that they are currently cleaning up code and preparing to install the latest software (along with timing board firmware) to fix the 6000-turn problem. He will send an email with the details of the understanding of the problem and the fix. Congratulations to everyone who worked to sort this out!

- Next on the list of things to do is "safe mode".

- Also FTP at 500 Hz.

- Brian asked about the array of status values. There also was a question about the threshold value for valid measurements.

Brian Hendricks:

- Lin has modified T39 to get additional PROFILE frames that Mike requested.

- Finished scripts for the conversion of the remaining houses to the new system.

- Bob West is waiting for the specification for the diagnostics program.

Vince Pavlicek:

- There are a few tasks to be finished up in the service buildings. There are 4 prototype filter boards in A3 that need to be replaced. There are 5 terminator boards that need to be installed.

Tim Kasza:

- Helping with installs.

- 3 Echotek boards came back from Echotek. They need to be tested to see if they now pass our tests. Mark Bowden is talking to Echotek to understand why our testing sometimes disagrees with their evaluation of the boards.

- The final filter boards need to be assembled at some point. The problems loading firmware is still not solved.

3. Jim Steimel

- The 6 phase problem is a race condition between the SYNC and A/D and can be solved by applying the appropriate half-bucket delays. The A and B houses have been adjusted so far to fix that problem.

- Jim is using the diagnostics program to check the current installations to find swapped cables, etc.

- Next up is work on the "safe mode".

- The order of final installation is F3, F4, A0 and F1.

- The scale factor of 26, multiplied by $(A-B)/(A+B)$ is something we have to make some final decisions about, as well as the need (or not) of higher order terms in the conversion of Echotek output to position.

4. AOB

- No meeting Thursday April 28.

- Weekly meetings on Wednesdays unless special topics or problems come up.