

Minutes, 5/04/05 Tevatron BPM Upgrade Meeting
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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. There are 4 papers due May 11, 1 talk (due to be uploaded to the conference May 12) and 3 posters (need to be completed before people travel to the meeting).

- Also the Real Time 2005 conference is June 4-10. Luciano will be giving a presentation about the TeV BPM. He will circulate a draft well before the meeting.

- 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 (well along)
- Implement pbar measurements (in progress)
- Implement calibrations and calibration DB (in progress)
- Determine and implement overall scale and corrections for higher order terms or off-axis terms
- Implement diagnostics
- Documentation.
- Close out project.
- Party (proposed for June 2 at Users Center, 4:30 P.M.)

- Commissioning status is:

- 23 houses installed and connected and 23 commissioned
- 4 houses to install (F3,F4,A0,F1)

- There will be all day to install on Thursday May 5. Plan is to work on F3 and F4 and F1 if there is time. F3 and F1 are used in the closure program and some care has to be taken either that the system is up and available for closure for the first store after the houses are connected or that they are masked off from the program until they are ready. Mike and Jim will make the call as to how to proceed based on beam and BPM electronics status, both of which are hard to predict in advance.

2. Reports from subproject leaders

Mike Martens:

- Mike reported that the new BPMs are working well. He showed some plots (and has sent some mail out) showing real orbit motion and other effects.

- No missing TCLKs have been seen. SDA data has been collected. All BPMs are passing the diagnostics. There is a problem with HE19 that has been reported. There is also a problem with the diagnostic program SNAPSHOT measurements.

- From 64 snapshots taken during a store the RMS value of deviations are found to be about 10 microns in the vertical and about 15 microns in the horizontal.

- Some odd behavior is seen in HA49, as well as some odd differences in uncoalesced vs coalesced beam positions when comparing two stores (coalesced in one store vs coalesced in the next and uncoalesced in one store vs uncoalesced in the next). HA49 is way off.

- Mike showed some work he has done to try to understand the BPM positions compared to CDF vertex positions to see if the pbar intensity may be affecting the p position measured by the BPMs. The plots can be found in the BPM elog.

- Mike has a program to capture I and Q data before and after the helix opens to use for proton cancellation and pbar position calculation. Rob asked for some more points and this will be used to calculate coefficients that will be loaded into the front ends.

- Monday night beam was kicked in a special study to take TBT measurements to measure beta functions.

Vince Pavlicek:

- Mark Bowden has looked at the Echotek boards that failed our testing but were declared good by Echotek. It was decided that they just barely fail our tests in linearity and that they can be declared working and will be put into the pool.

- A group of people is working on the question of reloading firmware/FPGA on the Echotek.

- Lark has the 6 failed filter pairs, has asked a few questions about them, and they will get back to us.

- Vince asked about Gustavo's filter for Tevatron use. At the moment the filter used in the Tevatron is good enough and we will continue with it through commissioning.

Brian Hendricks:

- W25 phase plot was changed to show discrete points.

- T39 intensity plot problems (hardcoded limits) were solved.

Luciano Piccoli:

- A bug was found and fixed in reporting I and Q values.

- Working on safe mode coding. The program collects 8000 points with a single trigger. The next step is to search through those points to find the beam.

- Fixing various other bugs. Will be working again on the FTP at 500 Hz.

Tim Kasza:

- Three Echotek boards came back from Echotek and checked out OK.

- Two boards came out of the service buildings with bad channel 8. They check out fine on the bench. More investigation required. It might be a bad connector or connection.

Rob Kutschke:

- Rob continues to look at TBT data as it is available and as new systems are installed. There are fewer problems but he will continue to send out the information that he sees.

- Some of Rob's tools could be (should be?) automated. He will talk to Mike about possibilities along those lines.

- Working on pbar measurements. Should be able to produce some coefficients to download relatively soon.

Marc Mengel:

- Calibration and calibration DB work is moving forward. Emails have gone out with some details and request for some advice. Some of the details will be worked out Wednesday afternoon with Brian, Rob and Luciano.

3. Jim Steimel

- Four houses left to install -- F3,F4,F1,A0.

- A0 is difficult because there are output signals from the analog boxes that are used for abort kickers and other things. Jim is thinking about different strategies for dealing with A0 - finding rack space, adding a rack, other ideas.

- The 6 phase problem is mostly solved with changing delays or in some cases combinations of delays.

4. AOB

- No meeting Thursday May 5.

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