

Minutes, 1/12/05 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:

1. Report from Bob and Steve
2. Report from subproject leaders
3. AOB

1. Report from Bob and Steve

- The TeV BPM Upgrade project will report to the All Experimenter's Meeting Monday Jan 24. If there is anything people would like to see in the talk please mention it to Steve.

- Steve showed three commissioning "scenarios" -- they are repeated here. We obviously have to make sure that we can build and install and commission crates at the rates stated and that we can get started the week of Jan 24 to do B3. The move to B3 will depend on "finishing" A3 and we will have to make a list of things that are required (see Mike Martens' report below) and check them off.

Scenario I:

Start to ramp up the week of January 24. Increase to two crates/week the week of Feb 7. Increase to three crates/week the week of March 7 and keep up that rate until the end.

January 24 B3  
January 31 C3  
February 7 D3,E3  
February 14 F2,D0  
February 21 D0,A2  
February 28 B2,C2  
March 7 D2,E2,A4  
March 14 B4,C4,D4  
March 21 E4,A1,B1  
March 28 C1,D1,E1  
April 4 A0,F3,F4  
April 11 F1

### Scenario II:

Start to ramp up the week of January 24. Increase to two crates/week the week of Feb 7 and keep up that rate until the end.

January 24 B3  
January 31 C3  
February 7 D3,E3  
February 14 F2,D0  
February 21 D0,A2  
February 28 B2,C2  
March 7 D2,E2  
March 14 A4,B4  
March 21 C4,D4  
March 28 E4,A1  
April 4 B1,C1  
April 11 D1,E1  
April 18 A0,F3  
April 25 F4,F1

### Scenario III:

Start to ramp up the week of January 24. Increase to two crates/week the week of Feb 7. Increase to three crates/week the week of February 21 and keep up that rate until the end.

January 24 B3  
January 31 C3  
February 7 D3,E3  
February 14 F2,B0  
February 21 D0,A2,B2  
February 28 C2,D2,E2  
March 7 A4,B4,C4  
March 14 D4,E4,A1  
March 21 B1,C1,D1  
March 28 E1,A0,F3  
April 4 F4,F1

- Bob gave a nice report about work that he is doing with Luciano on understanding the TBT measurements. Bob and Luciano and Bill are working together on the FCC3 teststand. Test signals that mimic a beam in motion are fed into the teststand. Because of the problem with the Echotek in TBT mode work has been done to present the data in a form that W25 can report and analyze.

- Results so far show mostly correct and expected behavior. However, there are bad points that show up and though they are intermittent it still points to some sort of problem. A study was made with CW input and in that case no bad points were seen. There is no conclusion yet about what could cause the problem (timing?, triggering?, bugs in software?). Work continues to debug it.

- Craig McClure and Bill Haynes are meant to be working on an agreement for the timing/trigger termination on the Echotek boards. For long-term maintenance of all of the systems it makes sense to require that all boards have the same impedance.

## 2. Reports from L2 Managers

Rob Kutschke:

- Rob has analyzed the TBT data that was taken recently by Luciano. Rob's slides will be found in Beams DocDB #1500.

- The data in general looks good but there are outlier points (presumably the same as Bob's bad points mentioned above) that show up. There also is a strange structure in the summed signal. But once Rob iterates to correct the bad points he sees an oscillation in the horizontal position and a slope in the vertical position. The frequency of the oscillation is being investigated but is expected to match the synchrotron oscillation of the beam.

- Resolutions of 5.4 microns (horizontal) and 5.9 and 5.7 microns (vertical) were measured from the data.

- Comparison of TBT and Closed-orbit positions shows agreement at the 25 micron level.

- Further analysis to see if there is any position dependence on the bunch length was requested from Vladimir.

Tim Kasza:

- Tim's slides can be found in AD doc 1381-v15.

- Echotek testing continues. All boards will be upgraded to the current latest firmware and will be tested. At the moment 4 boards are in the category of "failed DNL" and will likely go back to Echotek for repair.

- 64 filter boards have been received. 4 are tested and ready to issue. The test plan (Beams docDB 1499) has been updated and people should look at it. Bob asked if the filter boards in A3 should be replaced with production boards. It is something we should consider.

- 47 timing boards have been received - 10 for transfer line BPM and 37 for TeV BPM. Testing is just starting on those boards.

Brian Hendricks:

- Brian has fixed the profile 0 bug and all profile frames should work now. The SQL access bugs have also been fixed for SDA.

- Charlie is working on the crate diagnostics data. A bug was found in the software that turns individual power supplies off and on. This is not a critical functionality.

Vince Pavlicek:

- Bill is working on the timing card and some noise issues related to it. We discussed the plan to agree on an impedance for the Echotek and the need to have something before we install the B3 crate.

Margaret:

- Most of Luciano's work was mentioned above.

Mike Martens:

- Mike is thinking about what is needed to declare the A3 is "commissioned" from the perspective of the Tevatron department. He will write something down and circulate it.

- There was a question about the "safe" mode that does not require precise timing. We do not need that to commission A3 but it probably will be required before the entire 27 houses are moved to the new system.

- There was also a question of how reliable the system has to be and how reliable the current system is (i.e. how long does it stay up and report correct information).

4. AOB.

- We will discuss calibration Thursday Jan 13 at 1:30 P.M. in the Penthouse. Rob Kutschke will lead the discussion.