

Minutes, 7/14/04 Tevatron BPM Upgrade Meeting  
Stephen Wolbers

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The agenda as announced consisted of:

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

1. Report from Bob and Steve.

- Filters. There continues to be progress on acquiring analog filters for the project. Vince is talking to Jeff Larkin of Arrow, who is working with Lark Engineering. We have questions to them about the packaging of the filters (we like the packaging of the samples that they sent), the central frequency (why was the central frequency of the pair different from the single), the cost for 1200 vs the cost for 1320 (we only need 1200, not 1320), and the schedule. Lark is in the area and will meet with the TeV BPM Upgrade project on Thursday at 4:00 P.M. (Later it was learned that they were in the area on Wednesday at 4:00 P.M. and so the meeting was hastily rescheduled.)

- FPGA. There is a requisition to add extra money to cover the cost of exchanging the FPGAs for the timing board. The new FPGAs should arrive soon.

- Cable requisition. Vince has the cable requisition and will get it to Bakul/Steve/Bob soon.

- Bob has used the matched pair of filters from Lark to make short gate mode measurements in the accelerator. The measurements are consistent with other filters that we have used in making short-gate mode measurements. Bob will write up the results of his investigation.

2. Reports from L2 Managers

Dehong Zhang:

- Dehong is working on testing the new EchoTek loaner boards and has made progress. He performed the A to D converter test on the three boards that we have in hand. The results are:

= One board has channel to channel variations of about 3-4% in the worst cases.

= One board is much better with less than 1% channel to channel variation.

= The third board does not function properly. This is still being investigated.

= The experience from the Recycler boards shows that the channel to channel variation can be small.

- Ken Treptow is looking at the return loss/input impedance. He sees -14db from these new boards. The old Recycler boards were at -13.5db. We are hoping for -20db but this is negotiable.

- Dehong showed some results from the filter test. He and Jim Steimel worked on this and saw differences from the Recycler EchoTek boards. Investigations continue -- they will talk to Peter Prieto to see if they can understand this.

- Dehong showed a summary of the issues with the EchoTek loaner boards:

1. Board 1 has large channel to channel variations.
2. Turn on effect in the filter test is different from Recycler.
3. Need to get DMA's to work with linked list.
4. Board #2 doesn't work.

Vince Pavlicek:

- Working on a test plan for the filter board.

- A test plan for the timing board is being developed but is not as far along.

- Two filter boards are assembled. They are being checked out and cross-talk tests are being run.

- The timing module is proceeding. The PLL circuitry is stuffed and has been run. Shows 4 ps jitter, which is good.

- Some cable labels have been made and were shown. They are a bit "light" and may fade over time. All agree that good legible labels are important.

Brian Hendricks:

- Brian has received the manual for the VME crate monitoring. It has an ethernet and an RS232 interface and he and Charlie are looking at the approach they want to use.

- Brian is looking at the library code and how to modify it. It looks like 5 days work but Brian promises to have it ready when the project needs it.

Margaret Votava:

- Luciano is busy coding. TBT and closed orbit simulation is working. Need the ADC class to make the connection to the EchoTek boards and the real data.

- Some discussion of the number of crates/cards that we have for test stands and integration tests.

- Diagnostics are important and we will have to work to integrate R25 into the TeV BPM system (or vice versa).

Tim Kasza:

- People are available for testing, installation, etc.

Rob Kutschke:

- Has a few documents to write/complete.

Mike Martens:

- Mike is not on a boat. He has talked to Vladimir about spending substantial amounts of time on the TeV BPM project and he will be able to do so. This is good.

### 3. Technical Coordinator -- Jim Steimel

- 90% finished preparing the service buildings for the new crates. There are still a few cable TV moves and a few other things. There is some work to do in F1 to get the pbar cables back into the main electronics room. F3 and F4 extension cables will be needed to reach the location of the new electronics. In B0 and D0 the system will likely replace the current BPM system and the collision point monitor. If so the location will not be much of an issue. Still need to verify that the new system can give the functionality previously provided by the collision point monitor.

- Working to understand the EchoTek, filter parameters, etc. Starting to think about what is required to do an integration of the new system in August before the beam goes away.

4. AOB.

- Meeting with Lark Wednesday July 14 at 4:00 P.M.
- Meeting of the project/task force on Thursday at 1:30 P.M. in the Penthouse.