

Notes from the 02/21/06 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

- Project Announcements
 - All Experimenters Meeting Talk
- Tasks/measurements in MI40 before shutdown
 - Rob K.'s list
 - Alberto/Dave's wish list
 - Other
- Hardware status:
 - Combiner Board status
 - Transition Board
 - Transition Board I/O proposal
 - Timing Board
 - Cables, crates, other.
- Software status:
 - Front-end software
 - Online software
- Validation
- AOB

0. Project Announcements

- Bob and I have asked Rob Kutschke to give a talk at a future All Experimenters meeting. This will be scheduled and announced.
- The MI BPM MOU for support of the system (draft 1) has been mailed to everyone and is open for comment and suggestions.
- This year's Beams Instrumentation Workshop has been announced and people should be thinking of submitting abstracts to the conference. It will be held at Fermilab May 1-4, 2006. The deadline for submission of abstracts is March 15, 2006. If you are submitting an abstract please send it around to the mi-bpm-project@fnal.gov mailing list for comment.
- The weekly MI BPM meeting on March 14 will be in the cooler. Reminders will be sent out as we get closer to that date.

1. Tasks/measurements in MI40 before shutdown

- Rob K.'s list
- Alberto/Dave's wish list
- Other

- We had a long discussion of the current status of measurements and understanding of the new system in MI40 (house 44).

- Work was done to check cabling issues (looking for crossed cables), etc., putting split signals into various parts of the system to see whether expected behavior is seen on the fast time plots, swapping Echotek boards, etc. The 404, 406 and 408 BPMs were all looked at and some unexplained behavior has been seen.

- From the Main Injector Department point of view the offsets need to be understood and the new system should be included in the smoothing program operations. We agreed that a decision will be made at the latest on Friday whether the new system is sufficiently well understood and trusted that it can be kept cabled and the accelerator will be brought up with it included in June. Otherwise the old system will be reconnected.

- Alberto is satisfied with the resolutions that have been measured up to now. (More on resolutions in Peter's talk, see below.)

- Rob Kutschke showed his list of things to do both before, during and after the shutdown. His slides can be found in beams-doc-2158.

- Going through the list it was clear that some of the items are quite ambitious and the best we can do is to collect some data that we can use to study during the shutdown. The offset issues are high priority. Some things we won't get to before the shutdown begins. A few checks and measurements should definitely be made to get some idea of what this system is capable of and where the difficult problems are. See the slides for details.

- Bob Webber showed some data that he has been looking at from looking at 4 pbar bunches in the machine (part of a 1x1 shot). Looking at the timing using raw data there were a couple of anomalies that are not yet understood. On the whole the data was consistent with expectations and shows a clear way to getting the relative timing for the BPMs in a house. Marv is collecting data (cable lengths, position of BPM around the ring) and this can be used to get initial timing settings for a house. The house delay will be needed as part of timing in the whole system.

- All teststand BPM data (position as a function of A and B response) is in beams-doc-2153.

- Peter Prieto showed some nice data giving resolution as a function of gain for short and long cables as we try to understand how much gain variation we will need in the system around the ring. His data and plots can be found in beams-doc-2163.

- The data shows that saturation is reached at different gains for different cable lengths and for different beam intensity, as expected.

- It also shows that resolution depends on the gain and intensity, and plateaus at something like 25-35 microns. This is close to the requirements for TBT 53 MHz (33 microns, 1 sigma).

- Manfred showed some noise measurements from the transition board at lo and hi gain and these are consistent with Peter's resolution measurements.

2. Combiner Board

- Nothing new.

3. Transition Board

- Bids due at the close of business on Tuesday February 21. Bob Forster will keep people informed about the status of the bids.

4. Transition Board I/O

- Stefano gave a presentation on the comparison of the prototype transition board control module to the improved design of the transition board control module. His slides can be found in beams-doc-1526.

- The pros and cons were discussed by an expert subgroup with the requirement that the finished product be in hand, tested, and ready for installation and commissioning by June 1, 2006. They recommended that the improved design be built.

- The project accepts the recommendation and gives the go-ahead to proceed with the improved design.

5. Timing Board

- Bill has made improvements to the timing board to allow delays longer than one full turn (in fact up to about 3.5 turns). This is installed at MI30 and MI40.

6. AOB

- All other reports were delayed until next week. Time ran out and people had real work to do.