

Notes from the 12/06/05 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

Project Announcements : Bob and Steve
Timing Board : Bill
Front-end software : Luciano, Steve, Margaret
Combiner Board status : Marv, Tim, Bob Forster, Vince
Transition Board: Manfred, Stefano, Vince, Bob Forster
Signal cables : Manfred, Bob Forster
MI40 status : Marv, Peter, Luciano, others
Online software : Brian
Validation: Rob Kutschke
AOB

0. Project Announcements

- Bob will be away December 12-15.
- Steve will be away December 14-28.
- The Tuesday meetings will continue during the holiday period unless they are explicitly cancelled. It would be good to have at least one meeting during the last two weeks of the year.
- There was a discussion of what we want to have functioning in MI40 by January 15. The goal is to have one "house" (about 12 BPMs) read out with the new system. This requires 3 transition boards, software that gives functionality equivalent to the current system.
- We also began the discussion of what can be done during the shutdown. No decisions can be made now but it is clear that we need to push to get as much as possible on the new system to understand its functionality, performance and reliability compared to the present system. Also we need to evaluate the risk to the accelerator schedule if we install the new system during the shutdown. Consultation with accelerator operations, MI department, etc. will all be part of the process of deciding how to proceed.

1. Timing Board : Bill

- Work on the board is proceeding. Some bugs have been found and fixed during the past week. New functionality has been added to accommodate the measurement needs in MI40.

- One board is fully fabricated and is in MI40. A second board is almost fully ready. The remaining boards will be fabricated as quickly as possible.

- The card that communicates with the transition crate is being designed and reviewed and then will be fabricated.

2. Front-end software : Luciano, Steve, Margaret

- Luciano showed a slide of tasks needed for a complete working MI BPM upgrade FE system (beams-doc-2042). Highlighted in yellow are the things needed for the January 15 functionality. They include flash, ACNET devices, TBT support, some state dependent support (see the document for details). This is based on prioritization done by Dave and Alberto.

- Luciano also discussed diagnostic applications, restarting in a known condition after reboot, alarms, transition module support, etc.

- Steve Foulkes mentioned that work has been done to sort out the TBT and CO interference and this is believed to be solved.

3. Combiner Board status : Marv, Tim, Bob Forster, Vince

- 30 more combiner boards were installed last week during an access. 30 more are ready for the next access.

- There is one BPM that has problems and not with the combiner board. It may have other issues that can only be addressed on a longer shutdown or access.

- A test procedure is needed for the non-combiner boards.

4. Transition Board: Manfred, Stefano, Vince, Bob Forster

- The first 5 PCB's arrive on Monday. Enough parts exist to stuff one complete board. The analog part will be done first, the digital part later. This board will be thoroughly tested.

- Manfred asks for help in building the front panels for the transition board. Vince's people will work on it.

- The order for the transition boards should be pushed as hard as possible so that the order can be placed as soon as possible.

- Work continues on the interface and controller boards as well as the VME backplane for the transition board.

5. Signal cables : Manfred, Bob Forster

- Requisition still in purchasing.

6. MI40 status : Dave, Bob Validation: Rob Kutschke

- Much activity in the MI40 BPM. Dave showed some plots of BPM beam position and it looks reasonable. Some question about the 999 points and what they mean.

- Rob Kutschke showed some TBT data and some analysis of that data. his work will be released as beams-doc-2030. The data in general looks quite reasonable and the analysis shows expected behavior (synchrotron and betatron oscillations, etc.)

- Bob Webber showed some plots and analysis (beams-doc-2043). TBT data is shown and analyzed. The FFT of the data shows tunes and the synchrotron frequency. Bob also made a measurement of the resolution of the system (there are lots of caveats I am leaving out here) and gets a resolution of 51 microns (1 sigma) for TBT data. This is more or less an upper limit (as well as coming from a non-ideal setup) but is encouraging in any case.

- Rob K went on to discuss CO measurements and showed things such as the phases of the A and B channels, the difference of phases, etc. Further results will be written up in 2030.

7. Online software : Brian

- The W14 and W27 pages will be migrated to I pages soon.

- Some thinking about how we mix old and new systems (in the same building for example) and how we make the transition from old to new systems is in order at this time.

8. AOB

- Rob K would like to see some data from a vertical BPM at MI40, even if for only a short time. BPM 413 will be used for this test.