

Notes from the 08/08/06 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

- Project announcements - Steve and Bob
- MI operation status - Dave
- Discussion of recent installations
- Remaining work:
 - Transition board controller status - Stefano
 - Board by board gain control - Stefano
 - Gain settings for 53 MHz - Bob Dysert
 - Diagnostic mode
 - Alarms
 - RF pickup
- Software - Steve, Luciano, Brian
- Validation
- AOB

- The official installation order (now complete) is:

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*   MI40, MI30, MI20, MI60S, MI60N, MI10, MI50   *  
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0. Announcements.

- Bob W. says "congratulations" on getting all of the hardware installed.

- We will continue to meet once/week for time being. The meetings may be shorter and not as well attended but there is still work to do to complete the system.

1. MI operation status - Dave

- Dave gave a list of things that are either not yet understood or are not working properly. The list is fluid - things that work some days either don't work on other days or somehow things are misinterpreted or some other effect is at work.

- Ming-Jen is working on some measurements with the new system. Dave showed a plot with resolution at location 102 (Horizontal) and 103 (vertical) which show resolutions of 28 micron and 36 microns respectively. There was a lively discussion of I44, I42 and how the TBT

is set up and used.

- Dave has been looking at the old-new system differences in positions reported. In some cases the differences are too large to ignore. Three in particular were referenced : 410, 418 and 634. It looks like the electronics is working properly - equal signals gives the expected position measurement. It may be the case that the offsets applied are incorrect or of the wrong sign. Some further checking into this is required.

- There were problems seen in the pbar FLASH data, especially in MI50 and MI10. Timestamps were incorrect, data was crazy. Still needs work.

- I39 still needs work.

2. Remaining work:

Transition board controller status - Stefano

Board by board gain control - Stefano

Gain settings for 53 MHz - Bob Dysert

Diagnostic mode

Alarms

RF pickup

- Gain settings for 53 MHz (Bob Dysert)

- Bob's slides can be found in beams-docdb-2380-v1.

- Measurements have been made with different beam conditions to see whether the gains LOW, MEDIUM and HIGH (\$3305, \$A005, \$CC05) are proper for the conditions expected in the Main Injector. The goal is to avoid saturation on the input of the Echotek while preserving as much dynamic range as possible. Preliminary measurements were shown - further investigations and measurements will be made and reported in future meetings.

- Transition board controller and board by board gain - Stefano

- Stefano reported (http://www-ese.fnal.gov/mi_bpm_tb_ctl/) on progress in firmware and hardware modifications required to allow board-by-board gain settings, as well as readback. Upgrades of the boards will need to be scheduled once the changes are ready.

- Once the capability of setting gains (L,M,H - 2.5MHz and 53MHz) is available we will need a plan to decide on the gain settings for all the boards, an implementation and test, and a final commissioning and maintenance of the settings. Weekly updates will be required.

- Alarms

- Dave Capista is organizing the discussion of alarms and their implementation.

- RF pickup. Four locations have significant RF pickup that affects the position measurement at low beam intensity (603, 604, 605 and 620) (see beams-docdb-2370). Marv checked the cabling for all of these BPMs.

- The 620 cabling routing is problematic and it may make sense to reroute it (can be done without a shutdown). 603, 604 and 605 had some "funny" features and Marv made a few changes that may help reduce the pickup. More measurements should be made to see if any of the changes helped reduce the pickup.

- Diagnostic/test procedure for maintenance. Marv will talk to Manfred when Manfred returns from his world travels.

3. Software - Steve, Luciano, Brian

- Steve is chasing problems as they come up and are reported to him.

- We had a discussion of how to properly determine which features and capability of the system are working and which need more work. At the moment the process is a little bit random and it would make sense for Dave, Steve and others to collect a systematic list (maybe following the requirements and/or cycles) of what is functioning, what is not functioning, and making some prioritized list of how to proceed. That list could be shown every week with progress on finding and fixing problems.

4. Validation

- Rob Kutschke is back and ready to work.

5. AOB

- Still some trouble with the remote reboots of the crates. Work continues there.