

Notes from the 03/21/06 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

Project Announcements

Beam Instrumentation Workshop abstracts (March 22 deadline)

All Experimenters Meeting talk (April 3)

Measurements around MI with injected signals

Peter, Marv, Bob D.

Hardware status:

Combiner Board status, plan for final installation

Transition Board: bids, filters, delivery, checkout and testing.

Transition Board I/O status

Timing Board

Cables, crates, backplanes, Optilogic, other.

Software status:

Front-end software

Online software

Installation and Commissioning

Validation

AOB

0. Project Announcements

- Abstracts for Beam Instrumentation Workshop (3 of them) are either submitted or will be soon. Deadline is March 22.

- Rob Kutschke will give an All Experimenters Meeting talk about MI BPM upgrade on April 3. He will give a preview to us next Tuesday, March 28.

0.' MI Status - Dave Capista

- Dave will give a weekly status of the Main Injector shutdown work. The first large aperture quad (222) went in. There was some discussion of the BPM pickups on that particular quad and how well they are attached and surveyed. The intent is to have them at 0/90 degrees to measure x and y directly. The tolerances are thought to be about 1 mrad in angle and about 10 mils (250 microns) w.r.t. the center of the magnet (or at least to the survey points).

- We then had a discussion about the cables that connect the BPM pickups to the non-combiner combiner boards. Marv will look into that. There was some question about whether both dimensions will be measured

at each of the 7 new quads. It certainly can be done - but we need to check about what was requested/required.

- Shutdown is scheduled to end in late May and that is still on schedule for the Main Injector.

1. Measurements in MI40 with injected signals

Peter, Marv, Bob D., Bob W.

- Measurements around the ring ended late on Monday March 20. Analysis of the data is beginning. According to Marv there are some "crummy cables" out there. In any case we now have data to look at including peak-to-peak values, waveforms, phase at 2.5 MHz and 53 MHz. Also some scans across a range of frequencies (to check for any odd behavior at certain frequencies). The cables is thought to be all RG-8 Foam but is not necessarily well-matched everywhere.

- Bob Webber showed some preliminary analysis of the data. Comparison was made of the old electrical offsets vs. the new measurements (amplitude difference of A and B times a scale factor) and also the phase differences of the A and B cables. More analysis will be shown next time.

- No conclusions can be drawn yet. This certainly gives us data to work with and quite possibly values that we can use to initially correct the raw values when use them to compute positions (both at 53 MHz and 2.5 MHz, but with different correction factors at the two frequencies).

2. Hardware status:

Combiner Board status, plan for final installation

Transition Board: bids, filters, delivery, checkout and testing.

Transition Board I/O status

Timing Board

Cables, crates, backplanes, Optilogic, other.

- All of the combiner boards are installed! The 7 boards that go with the new quads will be installed as they quads go in or whenever it is convenient and certainly before the end of the shutdown. The spare boxes will be assembled and given to Marv to keep.

- Peter mentioned that since everything has been disconnected and reconnected at least once during the cable testing a group needs to check that all the connections are correct. This will be organized and done.

- All of the transition board parts were delivered to LACE last week.

- All of the cables (about 1500 of them) should have been shipped by last Friday. The

cables that have failed in testing so far (mostly crimp problems with connectors) will be returned for replacement.

- The backplanes and airdam modules have been ordered.

- The first 3 transition boards will arrive soon (we need to check on when). The plan is to add the filters, test these 3 thoroughly and quickly to ensure that the boards are good or that some change(s) need to be made, and then to release the remaining 69 for assembly. We need all of them by the end of April at the latest.

- A test suite for the boards is being developed by Andrea.

- Stefano is working on the control module for the transition board. His report can be found in beams-doc-1526, along with the minutes. For this week there is "Work in progress on Electrical Schematic, Work on Printed Circuit Board Layout will start next week and Parts ordering will start next week". Everything is on schedule at the moment.

- Finally, Marv fixed BPM 127 (shorted cable between the pickup and the combiner box)!

3. Software status:

- Front-end software

- Online software

- No big changes.

- Alarms still need to be implemented. Some discussion about what is going to be alarmed and what will happen. Dave needs to think about it and discuss with Luciano/Steve/Brian.

- No progress on DAWN crate monitoring. Charlie is trying to talk to DAWN but has not had success. We will make one more attempt but rather than invest large effort here it probably makes sense to fallback to Optologic, a solution we know works. Decision will be made soon so we can order the necessary hardware.

4. Validation

- Rob is away this week.

5. AOB