

MICE Experiment Management Office

10th January 2017; 15:30 GMT

Present: KL, SB, CW, AK, DR, PMH, PH, CR

Invited: MU, AD, PK

Notes

1. Introduction: KL

M.Uchida, A.Dobbs and P.Kyberd invited to explain situation of investigation of inefficiency in tracker reconstruction. Will move spotlight across those issues that impede analysis.

2. Minutes and actions: All

Notes accepted. Status of actions:

- **SB:** discuss BLOC arrangements with H. Nebrensky
 - **Superceded.** New arrangements are in place and BLOC coverage remains “just OK” at the moment.
- **CW:** Work with magnet group to work out what tests need to be done to ensure smooth operation of trims/end-coil power supplies on SSU, to recover quench/trip history of SSU in the MICE Hall as part of the review of SSU(E) powering, and identify which magnet PSUs have h/w current limits so that these can be set appropriately.
 - **Done.** Test still needs to be scheduled, but, it is clear what has to be done.
- **DR:** invite representative of tracker group to next meeting to discuss tracker efficiency.
 - **Done.**
- **PH:** talk to D. Adams seeking half a shift of data taking in the February 2017 run up.
 - **Stands.**

3. Tracker efficiency; progress report: AD, MU, PK

See slides uploaded to the meeting page. Points noted:

- Helical tracks:
 - In the helical-track presentation the distribution of pulse-height in the downstream tracker for hits on reconstructed tracks looks “odd”. There are a number of shoulders in the distribution that may be related to the different gains of the VPLC cassettes in use. **Tracker group to clarify.**
 - Efficiency substantially increased when chi2 cut on pattern-recognition s-z fit was increased. However, absolute efficiency remains low and details need to be understood.
- Straight tracks:

- Analysis of efficiency of straight-track data indicated a high track-finding efficiency that was constant with run number. Geometrical affects seem to cause the downstream tracker efficiency to be lower than the upstream efficiency. The cause of the loss of tracks was classified. Further investigation, including the projection of tracks measured upstream into the downstream tracker is now required.

4. Operations: SB

See notes uploaded by SB to the meeting wiki page. Principal issue:

- Sign-up for shifts remains slow. Urgently need to decide whether the LH2 installation will be made for Cycle 2017/01. Assuming a positive decision, it is then urgent to define the start of work in the Hall to prepare for the installation and therefore the effective end of data taking in Cycle 2016/05.

PMH noted the progress on the automatic sending of sms messages by the Alarm Handler. He expressed the opinion that when this had been demonstrated to be robust it might make it possible to remove the requirement for 24/7 cover in the MLCR.

5. Update on CAM: AK

Yesterday progress had been made on the test of channel magnets with the new GUIs. The new GUIs allow SSU, SSD and FC to be ramped from one GUI; the order in which the magnets are ramped remains as in the previous Cycles.

The stability setting in the SS quench-detection system was set to a value inappropriate for operation in to shorts, so that the ramp-test was unsuccessful. Plan is to repeat the test on Thursday.

DR and AK have investigated detector systems, primarily the HV systems. A test on the operation of these systems will be made once the MEMO has ended. In addition, a test restart of the state-machines will be carried out.

6. Controls and monitoring review: KL, DR

Progress in the rolling review of the autonomous ramp review may be found on the review page on the wiki:

- <http://micewww.pp.rl.ac.uk/projects/memo/wiki/Wiki#Reviews>

During the review the mechanism by which a stale value can be entered in the "SET VALUE" had been identified. The "SET VALUE" will be set to 0A every time the contactors are either opened or closed. P. Owens (DL) will make the relevant changes in the control code.

While it was not possible to state definitively that the cause of the autonomous ramp had been determined, a plausible chain of events had been identified and mitigations put in place to prevent a recurrence.

7. Status of papers: CR

There had been no scattering-paper meeting this week as R. Bayes had moved to a new job.

The demo paper had been delivered as a RAL preprint and submitted to the arXiv. The document was now being prepared for the journal (PRAB). **CR** will prepare the Wiki entry.

Emission paper: continued progress is being made on the details of the analysis.

Field-on scattering paper: progress is being made by S. Wilbur and A. Young.

Magnet alignment (Y. Song): the hard-edge model is being replaced by a soft-edge model.

8. Settings for 2016/05: **CR**

Settings for Cycle 2016/05 are being developed. Analysis group has a starting point that could be used for data taking. The deadline for passing a set of currents to the Magnet Group is 31Jan17.

9. S/w&C issues: **DR**

- Track-reconstruction:
 - Hall probes:
 - Issues related to the Hall probes had been discussed at the Ops meeting and was not discussed here.
 - Efficiency
 - Presentations and discussion noted above.
 - Momentum scale
 - Need more information to resolve disagreement between tracker and TOF. P. Franchini was preparing to remeasure the field in D1 and D2.
- Magnetic alignment
 - Work in progress.
- Beam-line libraries
 - DR has a phone meeting with D. Maletic on Friday. Intention is to move production to the GRID to remove CPU bottle neck.
- Speed of simulation
 - Close to getting to addressing this.

10. DONM

- 07Feb17

11. AoB

- KL reminded all of the importance of making a good job of the documentation for the next RLSR and MPB documentation.

Summary of actions

- **PH:** talk to D. Adams seeking half a shift of data taking in the February 2017 run up.
- **Tracker group (via DR):** clarify the cause of the “odd” shape of the pulse-height distribution in the downstream tracker.
- **CR:** prepare the wiki entry for the demo paper.