



University
of Glasgow

Instrumentation Global Commissioning Plan

MICE CM39

St Catherine's, Oxford, 26 June 2014

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Commissioning Plan



- We need to provide an instrumentation commissioning plan before October to report to the MICE Project Board (and for our sake)
 - We need to define any remaining hardware that needs to be carried out in each detector
 - We need to define any calibrations, alignments ...
 - We need to specify what software still needs to be implemented to be able to commission
 - We need to define the commissioning tasks for each detector
 - I will give examples of items that might go in

- Remaining hardware:
 - Might need to shield with Armco plates TOF1 – need to carry out simulations to check field
 - Make more permanent support structure
- Software:
 - Already in good shape
- Calibrations:
 - Procedures well defined: ~10 hours data
- Commissioning:
 - No special commissioning required since already working routinely

- Remaining hardware:
 - No expected changes to hardware
- Software:
 - Need to implement digitisation
- Calibrations:
 - Need pedestal run
 - Typical pion calibration $P_{D2}=280$ MeV/c
 - Electron runs for 1PE and multi-PE distributions
- Commissioning:
 - Equalise gains of PMTs
 - Might need to monitor gains during data taking

- Remaining hardware:
 - No expected changes to hardware
 - Support EMR, KL – remove iron channel plates
- Software:
 - Need to implement digitisation and compare data
- Calibrations:
 - KL pedestal stability with cosmics (trigger TOF2)
 - Electron runs for energy calibration?
- Commissioning:
 - No special commissioning since operational
 - Might need to monitor pedestals and gains during data taking

- Remaining hardware:
 - Change PMTs in October
 - Support EMR, KL – remove iron channel plates
 - Move electronics to approved rack in hall
- Software:
 - Need to implement digitisation and compare to data
- Calibrations:
 - Three weeks of continuous cosmics running to calibrate 2832 channels
 - Electron runs for energy calibration?
- Commissioning:
 - Detailed commissioning plan required

Tracker



- This is the detector that requires the most work
- Remaining hardware:
 - Installation of tracker in spectrometer and hall – detailed plan developed
- Software:
 - Validation reconstruction ongoing
- Calibrations:
 - Need to develop detailed calibration and alignment plan
 - Running with cosmics for a few weeks
 - Running with straight and curved tracks for alignment
- Commissioning:
 - Detailed commissioning plan required

Commissioning Plan Document



- I will set up a document that will become the commissioning plan document for each detector, with relevant sections:
 - TOF: Maurizio?
 - CKOV: Lucien?
 - KL: Domizia?
 - EMR: Alain/Francois/Yordan (assume Ruslan left)?
 - Tracker: Melissa/David Adey/Alan Bross/Adam Dobbs/
- General editor: PS (you will hear from me)
- Timeline: ~August?