COMPASS Alignment Procedure

Important Note: Use the Slow Control to monitor, set-up and control the HV and dead zone of the GEM detectors. Use 'group operation' where applicable.

Alignment Procedure:

1. Swich off online filter ('tagging mode only' is fine, too)
2. Go to low intensity: target head in 'EMPTY POSITION',
   Obstacle status → click on T6 → select position 0: Air
3. Switch off HVs from GEM1 to GEM11 (HV system off in DCS)
   GEM 1-10 central region should be already off; see also GEM instructions, DCS
4. reduce Micromega HV: run "`protectMicromegas SM1`" on a DAQ machine
5. Ramp down SM1 (B10) and SM2 (B11) to 0 A; switch off the power supplies
   magnet → B10 → set current; rectifier status → select B10 → off
6. Switch SM1&SM2 interlock to 'without' (small switch on SM2 current panel located on the green rack)
7. Switch on GEM1 to GEM11 (HV system in DCS) and central region (centre V)
8. put back Micromega HV to nominal: run "`unprotectMicromegas SM1`"
9. Activate DC central region (type '`activateCentralDCs`' on one of the DAQ machine); check voltages (saclayHVcontrol)
10. choose custom trigger; select beam, VetoIN, VetoOUT, Outer; set Outer prescaling to 1 and other prescaling such that we get twice as much VetoOUT as VetoIN and beam (with a total rate of 30,000 or 40,000)
11. Run for 50 spills and carefully check all COOOL histograms
12. Switch off GEM1 to GEM11 HV (HV system off)
13. reduce Micromega HV: run "`protectMicromegas SM1`"
14. Ramp up SM1 and SM2 to nominal value (2500 A and 4002 A, resp.), check NMR and hall probe reading
15. Switch SM1&SM2 interlock to 'with'

16. Switch on GEM1 to GEM11 (HV system in DCS) and central region (centre V)
17. put back Micromega HV to nominal: run "`unprotectMicromegas SM1`"
18. Select trigger 'align_SMon_trigger' and type of run 'alignment'
19. Run 50 spills, check COOOL

Back to standard data taking:

1. Switch off the central region of GEM1 to GEM10 (centre V off)
2. **GEM11 central region HV stays ON during physics data taking!**
3. Deactivate DC central region by typing 'deactivateCentralDCs';
   check voltages (saclayHVcontrol)
4. Go to high intensity: target head 2
   Obstacle status → click on T6 → select position 2 : Be 500 mm
5. Select type of run 'physics' and trigger 'Physics Trigger'
6. Enable online filter (if it was enabled before)
7. Set maximum number of spills to 200 and resume data taking