TT40 High Intensity Collimator Test

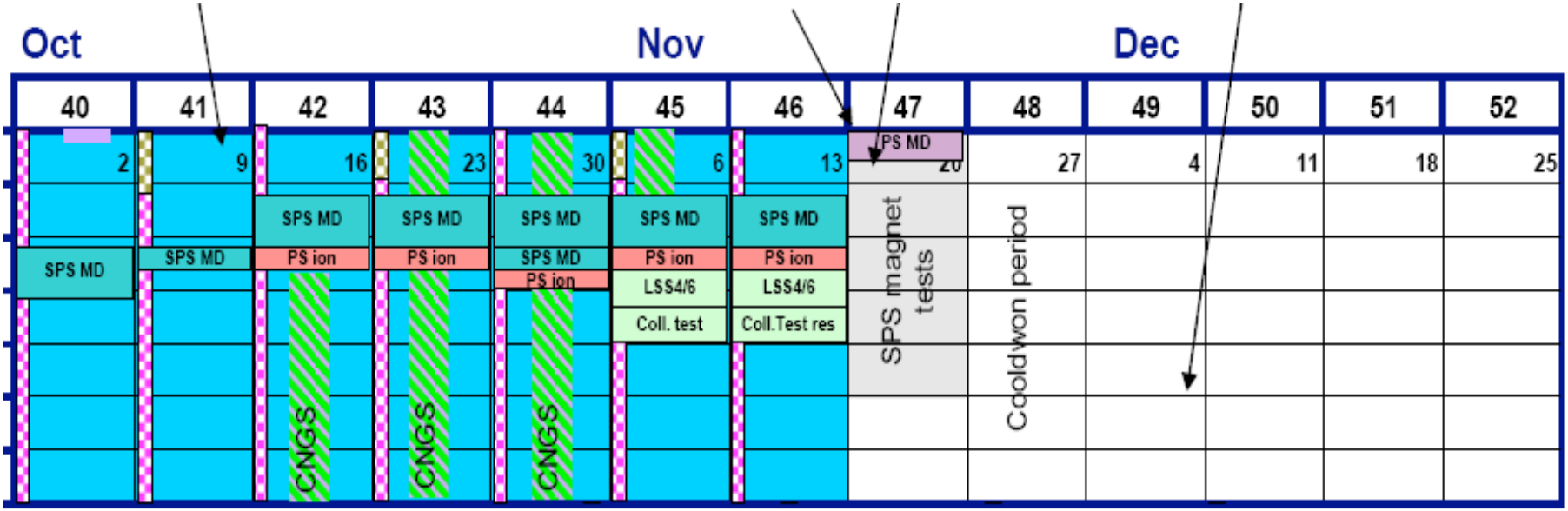
https://proj-lti.web.cern.ch/proj-lti/LTIcoordination/RelatedMeetings/TT40col/TT40col.htm

- Preparations
- Input for MD program

Installation – Preparation – MD

Dates

- Final installation of equipment: week 42 (October 18th, PS ion MD)
  - low intensity CNGS beam on TED (5×10^{12}) from week before.
- Kicker and logging testing: week 43 (October 25th, PS ion MD)
- Final access: week 45 (November 8th, PS ion MD)
  - after CNGS high intensity run
- MD: week 45 (November 9th), 12 h, starting at 8:00am



Installation date (18th of October)

- Shielding for vibrometer laser sensor head into ECA4
  - 16 blocks
  - Has 300mm x 400mm window for laser. Sufficient for laser removal in case of emergency (tested this week)?
  - Laser sensor head at 23m or 18m from collimator (tested this week)?
- Collimator issues: retro-reflector tape survival test?
  - Bake-out not required (according to Ilias)
  - Cooling pipes pressure tested to 60 bar (is this sufficient?)
- Planning to be finalised:
  - Including collimator installation/survey/vacuum, accelerometers… and also
    - BLMs installation (remote testing should not be required)
    - vibrometer installation, alignment
    - installation of RP dosimeters and online radiation dosimeters
- MKE BETS for LHC settings
- **Collimator jaw has to be out (it has auto-retraction springs) and motors locked off after installation and testing.**

Issues

- Retro-reflector tape: temperature resistant?
  - should be OK in vacuum
  - decision: we take the risk, that tape comes off
    - » possible consequences: if happening before alignment, alignment more difficult
- BLMs:
  - 4 or 2 BLMs?

Rough MD plan

TED cooled

- TED needs to be locked in place (already for LSS4/LSS6 test)

- **We need to foresee at least 8 h for beam & interlock set-up and tests**
  - re-set up with pilot intensity (~ several 100 shots)
    - steering, interlocking checks, quality checks, rough collimator alignment…
  - intermediate intensity (~ 20 shots)
    - check coherency with pilot references and settings
    - fine collimator alignment – reference trajectory
  - 1 batch (~ 3 shots) …1 shot at max impact parameter on collimator
  - 2 batches (~ 3 shots) …1 shot at max impact parameter on collimator
  - 3 batches (~ 3 shots) …1 shot at max impact parameter on collimator
  - 4 batches (~ 3 shots)
  - collimator test (~ 20 shots)

8.3e+14p

  - …

LIMIT: ~ 50 high intensity shots:
~ 2 · 10^{15} protons for the whole MD