

LIU-PSB Priority List for Beam Instrumentation

Top Priority (available before LS1):

- **Pickups for turn-by-turn measurement:** adequate acquisition of at least 3 consecutive PUs for MD studies with new electronics

Top Priority (available after LS1):

- **Fast transfer line transformers (consolidation):** new toroids and ceramic chambers to improve relative precision measurement between PSB and PS
- **H0/H- beam current measurements:** *mechanical drawings* have to be sent in 2012 to EN/STI and BE/ABT to avoid integration issues
- **Observation monitor at H0/H- injection foil:** design of screen insertion device in 2012; *mechanical drawings* have to be sent to BE/ABT to avoid integration issues
- **Wire scanners (consolidation):** improve optical calibration bench; if confirmed necessary, add 20 m/s
- **SEM grids in BTM (consolidation):** new acquisition chain, 10 new cables
- **BLMs in PSB rings (consolidation+LIU):** new LHC-type BLMs in parallel to old BLMs to validate the system incl. connection to the new interlock modules; new cables to be pulled
- **Pickups for turn-by-turn orbit measurement:** system with min. of 3 pickups per ring equipped with new electronics to allow optics measurements in all rings

High Priority (available for Linac4 connection with the PSB – ‘LS1.5’):

- **Ring DC transformer:** upgrade of acquisition chain and normalizer
- **Ring slow transformers (for injection watchdog):** new cables, new acquisition chain, new windings and spare ceramic chambers
- **H0/H- beam current measurement:** new system, new cables, new electronics (based on PS SEM integrator module)
- **Observation monitor at H0/H- injection foil:** production of 5 monitors, new cables
- **New housing for BTV screens in BI line (required with new BI.SMV)**
- **Pickups for turn-by-turn orbit measurement:** full deployment
- **Matching and emittance monitor:** new monitor, requires electronics development, new cables
- **BLMs in the new injection region, all transfer lines and to double coverage in PSB rings:** install new monitors (incl. special monitors for H0/H- dump loss monitoring and new BLMs to cover hor. aperture losses in PSB ring); new cables
- **Pickups in PSB transfer lines (consolidation):** replace 8 remaining capacitive BPMs with inductive ones to complete renovation

Lower Priority (available for LS2):

- **New housing for BTV screens in BT line (required with new septa BT.SMV10/20)**

Remark: Applications have to be developed and tested in parallel!

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