

2012 MD#2 BI

LSWG 29-May-2012

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From MD Schedule

Day	Time	MD	EiC	MP
Sat	02:00	450 GeV → 4 TeV: High beta*		
	10:00	<i>Ramp down</i>		
	12:00	450 GeV → 4 TeV: Aperture		
	18:00	<i>Ramp down</i>		
	20:00	450 GeV → 4 TeV: Scraping, diffusion and Repopulation Study		
Sun	02:00	<i>Ramp down</i>		
	08:00	450 GeV → 4 TeV: Beam Instrumentation (BSRT, BGI, wire scan, BPM nonlinearities)		
	16:00	450 GeV → 4 TeV: Test ramp for emittance calibration		
	20:00	<i>Ramp down</i>		
	22:00	450 GeV: Dynamic Aperture MD		
Mon	06:00	Technical Stop		

MATCHING monitor – min 1 hour – inject and dump

- injection offset scan to check whether blow-up comes from inj. Error → filamentation
- 2 screens inserted to verify that the blow up from screens is negligible
- higher intensity → check detector response [Will Prepare MPP doc](#)

BSRT – xxx hours – 450 GeV - few nominal bunches

- ADT b-by-b blowup, compare w.r.t. WS
- Possibly commission new FESA server (bunch selection at server level, fast scan)

BGI – xxx hours, up to 600 bunches at injection

- Calibration measurements

BCT-FBCT – min 30 min – few bunches with max p/bunch – [stay within MPP Class A](#)

- Test SW Firmware for new ICT monitors to be installed next TS
- Scraping at injection

Wall Current Monitor – min 1h - 1 nominal bunch

- Calibration, 1h if at inj.
- Single bunch as short as possible (need 4 TeV? → > 1h)

BPM –

- off-axis non-linearity for the IR strip-line monitors 1-2h (1 nominal@450 GeV)
- k-modulation for the BPMSW.1L5 monitors to get the second measurement point - 2h (1 nominal@450 GeV)

BI Studies MD#2 2012 - Ramp for emittance calibration

Aim:

- WS absolute calibration
- WS-BSRT calibration
- Minimize uncertainty on IR4 betas and β^* for emittance determination

Procedure:

- Inject 2 nominal bunches with different emittances
- CO bumps at injection
- Ramp with COARSE collimator settings → no losses during the ramp
- WS during the ramp
- CO bumps for WS at Flat Top
- Squeeze
- Possibly meas. IR4 betas + β^* with K-mod (tbc)
- Possibly collide and compare with emittance from Lumi

Need to:

- verify with MPP k-mod of 2 nom bunches at 4 TeV
- realistically estimate how would take k-mod in IR4 and IP1/5
- verify with collimation team COARSE settings