

LHC and LHCb status

From the Run Meeting of 2 June 2017

Last 24 hours

- 08:00 - 15:00 Technical stop in injectors and EDF intervention
 - Access BI UX451
- 15:00 - 24:00 Recovery. RF detuning aborted as only pilots available
 - PSB RF cavity problem, ring 2 out of order
 - PS PFW and 40MHz cavities problems
 - SPS TI8 BLM interlock stuck
 - LHC XPOC, PCinterlock problems
 - JMS broker problem (cause of some of the above)
- 24:30 - 2:30 Cycle for loss maps and asynch dump in collisions with tight TCTs
- 2:24 Lost cryo in IP4

PSB problem

- RF power for ring 2 out of order
- 3 thyristors broken, but only two spares available
- Looking for possible spares at CERN
- Order new thyristors
- Can remain off for several days



Consequences of PSB problem

- PSB and CPS promptly reacted to the PSB problem and prepared the standard 72b and 48b using only 3 PSB rings
- BCMS beams can not be produced!
- OK for scrubbing run
- Physics will be affected until spare found


Cryo problem - outlook (from EiC)

- Cryo cold box lost around 2:30
 - Automatic shutdown due to level of oil in the coalescer above limit
 - Not understood where the oil comes from
 - Oil accumulated rapidly
- Recovery first estimate is during the night (~24 hours stop)

Plan... list of activities

- Saturday
 - RF detuning setup
 - Loss maps at 120 urad
 - Physics with 300b
- Sunday
 - Optics measurement at 30cm
 - Physics with 600b
- Monday
 - BSRT calibration
 - Physics 600b
- Tuesday
 - Long trains injection, blindable BLMs, scrubbing

Guess of schedule for next days (discussed with machine coordinators) – VERY PRELIMINARY!

M	T	W	T	F	S	S
22/5 commissioning	SB 3b*	commissioning (72bpi)	commissioning (VdM)	commissioning (spare 72/VDM?)	commissioning (VdM MP)	commissioning
	commissioning	12b SB*	12b SB*	72b SB (12bpi)	72b SB (12bpi)	72b SB (12bpi)
29/5 24hr of scrubbing (72bpi)	commissioning	Injector TS (~30hr without being able to inject)		commissioning	commissioning	commissioning
	300b (48bpi)			300b (48bpi) 	300b (48bpi)	600b (96bpi)
5/6 600b (96bpi)	6 days of scrubbing with mostly 288bpi					

* = For first fills do an EOF test of the crossing angle changes in ADJUST

Very preliminary schedule for next 3 weeks.
 Highly dependent on machine availability and problems that arise.
 Commissioning to do: VDM cycle, 72b/28b trains, x-ing angle changes

Plan for next steps

- Next steps:
 - Scrubbing needed to improve LHC vacuum
 - SPS needs to be commissioned for more bunches per injection (bpi)
 - Now limited to 72 bpi
 - Increase to 144 bpi

May

June

17	18	19	20	21	22	23	24	25	26	
24	1st May 1	8	15	22	scrubbing	Whit	12	19	26	
				3b			900b ?	2400b ?		
Machine checkout				Ascend 12b	access	(288 bpi)	1200b ?	2550b ?		
					★		1800b ?			
				Recommissioning with beam	75b		600b			MD 1
					300b					
						Scrubbing				

LHCb: towards routine operation

- Routine operation after only few days:

Date	Fill	Nb	Nb coll	L	Activity
23 May	5698	3	2		Calo/Muon/RICH TAE time alignment Herschel clock scan OT ageing scan
24 May	5699	3	2		Online alignment machinery
25 May	5704	12	8	10^{20} pot	p-He SMOG: elastic p-e events
26 May	5710	12	2	$2.4 \cdot 10^{20}$ pot	p-He SMOG: elastic p-e events
27 May	5717	75	60	0.2 pb^{-1}	VELO/ST timing scan SPD threshold scan
27 May	5718	75	60	0.3 pb^{-1}	Routine physics operations
28 May	5719	75	60	0.2 pb^{-1}	Routine physics operations
28 May	5722	336	275	1.8 pb^{-1}	Routine physics operations
30 May	5730	336	275	2.4 pb^{-1}	Routine physics operations
31 May					ACCESS
3 June	57xx	336	275		Magnet off for y-alignment trackers
4 June					MUON check M1-C alignment
4 June					VELO/ST CCE scan

Problem Database

Active problems

[Print](#)

#	Problem	System	Severity	Started	Ended
9694	Hole in M4 C-side	MUON	Minor	2017-05-22 21:02	

Reports

#	Problem	System	Severity	Started	Ended
9798	Peak at around 130 in the Cluster ADC Values distribution.	IT	Report	2017-05-31 15:24	
9797	At least one VELO sensor has 0% occupancy	VELO	Report	2017-05-31 00:53	
9814	Alarm : fraction of ports which sent error banks	IT	Report	2017-05-31 00:44	
9796	PV left-right delta x is a little bit high (from Presenter page /Shift_New/TRACK: Velo Alignment)	Alignment	Report	2017-05-30 18:38	
9795	Error banks in > 50% of the events, reset TT.	TT	Report	2017-05-30 10:22	
9794	Error banks from > 50%	IT	Report	2017-05-30 10:21	
9776	VELO	VELO	Report	2017-05-28 11:09	
9714	ECAL Alarm (from Presenter page /Shift/ECAL: Ecal Status Overview)	ECAL	Report	2017-05-25 05:12	
9674	ECAL desynchronization errors	ECAL	Report	2017-05-19 08:16	
9654	high SPD mult. rate	LO	Report	2017-05-14 07:14	
9479	Velo Error banks in HLT1 went up (from Presenter page /Shift/HLT: 1a- Error Banks in HLT1)	HLT	Report	2016-11-27 04:17	
9534	Noisy channel in IT (from Presenter page /Shift_New/IT: Clusters)	IT	Report	2016-11-26 14:12	

Subsystems

- Infrastruct: Magnet switch ON after next fill; work above spare VELO?
- VELO: CCE scan planned for Sunday
- ST: LV maraton thresholds **adjusted**
- RICH: Calibration Online Brunel ok now
- OT: Investigate HV OT-C T3 “glitches”
- CALO: π^0 calibration; HV adjustment?
- MUON: **Changed** service boards + M1C +4mm shift
- HERSCHEL: **Changed** control board
- L0: (Ready for change of TCK with 900b on Sunday)
- HLT: Trend plots for sumET?
- Online: Moni+Reco problems on Tue
- Ali&Cali: Machinery in good shape; RICH calib ok, MUON alig adjusted
- Offline: Wait with HLT2; iron out few issues (e.g. monitoring)