

Technical Infrastructure (TI)					
<b>Facility Coordinator last week</b>		Jesper Nielsen			
<b>Facility Coordinator this week</b>		Clément Pruneaux			
Statistics					
<b>Alarms</b>	3239				
<b>Phone calls</b>	676	<b>Incoming</b>	394	<b>Outgoing</b>	282
<b>ODMs</b>	132				
Facility Status					
<b>Summary</b>					
<b>Issues</b>	Thu 01/06/23 09:45: Unable to start the SPS BA6 septum magnet cooling circuit making injection not possible in LHC. Start interlock on CV circuit coming from SY-ABT equipment (faulty valve status on a magnet). Problem fixed by ABT at 10:46.				
	Fri 02/06/23 13:56: LHC beam dump and Alice magnet trip due to a faulty circuit breaker on LHC2 (ESD301/2E feeding ESD3/2E busbar). The faulty circuit breaker has been isolated and the busbar re-powered by another line. An intervention remains to be planned to replace the faulty circuit breaker.				
	Sat 03/06/23 00:10: New problem of injection not possible in LHC due to failed restart of SPS BA6 septum magnet cooling circuit. Problem fixed at 00:53				
	Sat 03/06/23 16:20: Electrical disturbance causing LHC, PSB and Linac 4 beams dump. LHC beam dump leads to quench which took time to recover cryogenics conditions OK. French feeder RTE confirmed short fault on their network.				
<b>Plans</b>					
Intervention Request					
<b>Yes / No</b>	<b>Duration</b>		<b>Preferred date/time</b>		
<b>Reason</b>	<ul style="list-style-type: none"> <li>- Continuation of interventions for upgrading the GSM networks to be compatible with 5G. IT will contact CCC-TI before the intervention, if no access is ongoing the green light will be given for the intervention.</li> <li>- EN/EL maintenance of Preveessin BE91 diesel generator. (Shutdown of one diesel at a time to keep 2 in service when needed. Automatism in service for reconfiguration, taking into account 1 stopped machine).</li> </ul>				
<b>Impact</b>	Bat. 157: <a href="https://impact.cern.ch/impact/secure/?place=editActivity:211803">https://impact.cern.ch/impact/secure/?place=editActivity:211803</a> Bat. 2001: <a href="https://impact.cern.ch/impact/secure/?place=editActivity:211804">https://impact.cern.ch/impact/secure/?place=editActivity:211804</a> Bat. 852: <a href="https://impact.cern.ch/impact/secure/?place=editActivity:211805">https://impact.cern.ch/impact/secure/?place=editActivity:211805</a> Bat. 839: <a href="https://impact.cern.ch/impact/secure/?place=editActivity:211806">https://impact.cern.ch/impact/secure/?place=editActivity:211806</a> BE91: <a href="https://impact.cern.ch/impact/secure/?place=editActivity:211532">https://impact.cern.ch/impact/secure/?place=editActivity:211532</a>				

## Linac 4

<b>Machine Coordinator last week</b>		E. Gousiou	
<b>Machine Coordinator this week</b>		JB. Lallement	
<b>Statistics</b>			
<b>Availability</b>	99.7%		
<b>Facility Status</b>			
<b>Summary</b>	Excellent week		
<b>Issues</b>	[30min] On Friday evening, the Adaptive Feed Forward, AFF, of the CCDTL1 line was causing issues on long pulses: instead of flattening the pulse it would generate oscillations and the pulse energy would become too large to be digested by PSB. The RF team took 30min to investigate and finally decided to disable the CCDTL1 AFF for high intensity beams (ISOLDE), which made the oscillations disappear. Further investigation will follow this week.		
<b>Plans</b>	Regular operation.		
<b>Intervention Request</b>			
Yes	<b>Duration</b>	3.5 hours	<b>Preferred date/time</b> 24h warning
<b>Reason</b>	<ul style="list-style-type: none"> <li>• Elevator repair.</li> <li>• In the shadow of a stop: power cycle of the DTL3 LLRF crate, due to some acquisition glitches (requires no beam).</li> </ul>		
<b>Impact</b>	All proton beams stopped.		

<b>PS Booster</b>			
<b>Machine Coordinator last week</b>		F. Roncarolo	
<b>Machine Coordinator this week</b>		G. P. Di Giovanni	
<b>Beam Scheduled</b>			
<b>ISOLDE</b>	Yes	<b>PS</b>	Yes
<b>Beam Availability by Destination (AFT)</b>			
<b>ISOLDE</b>	99.2%	<b>PS</b>	99.2%
<b>Facility Status</b>			
<b>Summary</b>	<ul style="list-style-type: none"> <li>All operational beam delivered as requested.</li> <li>Optimized HRS beam extraction (tuned extraction line correctors to minimize BT.BLM signals and reassess reference orbit to target, via YASP).</li> <li>Test of GSM and TETRA networks new coaxial cable (PSB, PS , TT2) (was transparent to OP)</li> <li>Quad water leak stable. Next access for inspection on June 8th</li> </ul>		
<b>Issues</b>	<ul style="list-style-type: none"> <li><b>Thu: BR34.BHZ21 WIC interlock</b> due to 'OVERTEMP alarm' <ul style="list-style-type: none"> <li>Caused POPS-B to stop, as expected</li> <li>'known WIC false alarm' cleared after double checking with experts (30min downtime)</li> <li>Possible fix during TS1</li> </ul> </li> <li><b>Fri: losses along the cycle</b> observed on different users <ul style="list-style-type: none"> <li>Traced back to <b>B-train wrong regulation</b> following a distortion of the 'marker signals'</li> <li>Already sporadically happened last year</li> <li>mitigation implemented by regulating the RF signal used as input for the B-train regulation</li> <li>Problem fixed, source of problem being studied</li> </ul> </li> <li>Sat: electrical glitch, 3 quads lost for 5 min.</li> </ul>		
<b>Plans</b>	Deliver beam to downstream machines and facilities		
<b>Intervention Request</b>			
Yes/No	<b>Duration</b>	60 min	<b>Preferred date/time</b> June 8 @ 7:30
<b>Reason</b>	QFO11 water leak checks		
<b>Impact</b>			

ISOLDE					
<b>Machine Supervisor last week</b>		Lefteris Fadakis			
<b>Machine Supervisor this week</b>		Erwin Siesling			
Beam Scheduled					
<b>GPS</b>	Yes	<b>HRS</b>	Yes	<b>HIE-ISO</b>	Yes
Beam Availability by Destination (AFT)					
<b>GPS</b>	100%	<b>HRS</b>	95%	<b>HIE-ISO</b>	100%
Facility Status					
<b>Summary</b>	<p><b>HRS</b> Tackled many issues while setting up the beam for HRS users (CRIS)</p>				
	<p><b>GPS</b> Liquid metal target #534 Sn was used to provide beam to users. Stability of the supercycle was imperative. Many thanks to the PSB team for the collaboration. Target change #818, for brief GLM collections.</p>				
	<p><b>REX-HIE</b> -EBIS beam used to verify most of the HIE BI devices. Work ongoing -N. Bidault performed A/q-scans from REXEBIS. -40Ar gas connection for injection into the EBIS</p>				
<b>Issues</b>	<p>-HRS</p> <ol style="list-style-type: none"> <li>YHRS.BFC0600 causes a vacuum issue when moved. BI physically removed the possibility to move it. An intervention is being planned. <a href="https://logbook.cern.ch/elogbook-server/GET/showEventInLogbook/3776711">https://logbook.cern.ch/elogbook-server/GET/showEventInLogbook/3776711</a></li> <li>Broken power supply in the HRS cooler buncher (YHRS.RFQEXT1) First line replaced it. <a href="https://logbook.cern.ch/elogbook-server/GET/showEventInLogbook/3776588">https://logbook.cern.ch/elogbook-server/GET/showEventInLogbook/3776588</a></li> <li>The High-Tension power supply was tripping. Equipment owner was contacted, and issue was resolved.</li> <li>CRIS users reported noisy signal on their set up. Exchange voltage divider on the cooler buncher and issue solved. Thanks Erwin.</li> <li>RFQ HT was not arriving at requested voltage. A few power cycles recovered the situation.</li> <li>The UPS system of the tape station failed. Experts had to plug the tape station to normal power in order to recover it.</li> <li>HRS Separator 90 lost its field and was in error. A power cycle in situ was needed to recover the beam for the users.</li> <li>Issue with our fixed displays for both GPS/HRS. Owners were contacted, and issue was resolved</li> </ol>				
	<p>-GPS</p> <ol style="list-style-type: none"> <li>During the target change for #818 the clamps would not open. Called the expert that took 20 minutes to get them to open.</li> <li>During the target change, the clamps that hold the target had a malfunction. Although the signal that the target was in place was given, the water cooling started. Then the signal was removed. In reality the target was not properly clamped. This caused the vacuum</li> </ol>				

	<p>system to stop for the whole facility. Both target heating was lost. We had to call the expert to ensure a proper clamping took place. Then we could re start the procedure</p> <p>REX-HIE</p> <ol style="list-style-type: none"> <li>1. Intervention inside the HIE tunnel to recover the vacuum of the 9GAP. Successful tightening of the lower bolts reduced the leak by a factor of 1000.</li> <li>2. Issue with REXTRAP. Investigation ongoing by expert</li> <li>3. SRF cavities XLH1-CAV2 was not starting. Expert was contacted.</li> </ol>		
<b>Plans</b>	<p>-GPS Target change on Monday -HRS Users will stop on Monday most probably</p>		
<b>Intervention Request</b>			
no	<b>Duration</b>		<b>Preferred date/time</b>
<b>Reason</b>			
<b>Impact</b>			

PS							
<b>Machine Coordinator last week</b>		Denis Cotte					
<b>Machine Coordinator this week</b>		Alexandre Lasheen					
Beam Scheduled							
<b>East Area</b>	Yes	<b>nTOF</b>	Yes	<b>AD</b>	Yes	<b>SPS</b>	Yes
Beam Availability by Destination (AFT)							
<b>AD</b>	98.9%	<b>EA N</b>	98.8%	<b>EA T8</b>	98.8%	<b>EA T9</b>	98.8%
<b>nTOF</b>	98.9%	<b>SPS</b>	98.4%				
Facility Status							
<b>Summary</b>	<p>A good week for the PS, providing beams to different clients without major issues.</p> <p>The investigation of the phase jitter at extraction on LHC beams made possible to find a temporary solution to reduce the jitter from 800ps to 300ps (peak2peak) on an MD cycle. This week we will propagate this change on the operational cycle. (36bunches)</p> <p>High intensity (80e10) EAST_T8 beam has been sent to IRRAD/CHARM with reasonable losses, a nice spill shape and a beam that remains centered on IRRAD BPMs.</p> <p>nTOF bunch with 28 ns bunch length (4sigma) sent to nTOF as well as a high intensity parasitic TOF at 550e10ppp.</p>						
<b>Issues</b>	<p>Throughout the week, the PS suffers from frequent trips of the KFA71 modules or 10MHz cavities.</p> <p>On Saturday, the same problem occurred on KFA45 injection kicker preventing any beam production for 15 minutes.</p> <p>The SMH16 sometimes pulses with the value of another user which is a source of frequent radiation alarms. (Around 2 minutes without beam each time)</p> <p>MTE beam stopped on Thursday due to KFA13 oil interlock (45 minutes).</p> <p>The longest failure came from timing that prevented the 40/80MHz high-frequency cavities to pulse on LHC beams. A local restart of the front-end solved the problem.</p> <p>East extraction septum PE. SMH57 tripped with a FAST_ABORT (WIC temperature) We observed a strange bump on incoming temperature to be investigated by CV.</p> <p>NA users requested PS to have a look on spill shape. The core part was too high with respect to islands. Correction performed with TFB settings.</p>						
<b>Plans</b>	Parallel MD for high proton flux (up to 2.2e12 pps) on nTOF target on Friday						
Intervention Request							
No	<b>Duration</b>		<b>Preferred date/time</b>				
<b>Reason</b>							
<b>Impact</b>							

PS East Area							
<b>Facility Coordinator last week</b>		N. Charitonidis					
<b>Facility Coordinator this week</b>		J. Bernhard					
Beam Scheduled							
<b>T8</b>	Yes	<b>T9</b>	Yes	<b>T10</b>	No	<b>T11</b>	No
Beam Availability by Destination (AFT)							
General: 70.9%							
<b>Running T8</b>	70.9%	<b>T9</b>	70.9%	<b>T10</b>	N/A	<b>T11</b>	N/A
Facility Status							
<b>Summary</b>	T09: ATLAS MATLA switch to low momentum configuration. Beam aligned and tuned for the requested energies.						
<b>Issues</b>	No issues.						
<b>Plans</b>	<ul style="list-style-type: none"> <li>• T09: ATLAS MALTA → ALICE FOCAL in normal beamline configuration.</li> <li>• T10: No user → ALICE MUON ID.</li> <li>• T11: No user.</li> </ul>						
Intervention Request							
Yes / No	<b>Duration</b>	2h		<b>Preferred date/time</b>	Wednesday 09:00		
<b>Reason</b>	Access in mixed area (stop of East extraction) to change over to normal configuration in T09.						
<b>Impact</b>	Standard user change. If not done, user cannot take data.						

PS n_TOF			
<b>Facility Coordinator last week</b>		N. Patronis	
<b>Facility Coordinator this week</b>		N. Patronis	
Beam Requested			
Yes			
Facility Status			
<b>Summary</b>		Progressing with physics programme according to planning	
<b>Issues</b>		No issues	
<b>Plans</b>		<ul style="list-style-type: none"> <li>• General comment: Since Friday 02.06.2023 n_TOF is running with 28 ns (<math>4\sigma</math>) protons pulses, instead of 40 ns (<math>4\sigma</math>). Many thanks to the PS teams!</li> <li>• EAR1: <math>^{181}\text{Er}(n,g)</math> measurement (C6D6, sTED)</li> <li>• EAR2: <ul style="list-style-type: none"> <li>○ Preparations for the <math>^{243}\text{Am}(n,f)</math> reaction study.</li> <li>○ Replacement of the capture (3 cm) to fission (6.7 cm) collimator on Wednesday (07.06.2023)</li> </ul> </li> <li>• NEAR: no irradiation in the activation area (a-NEAR). In the irradiation area (i-NEAR) different material irradiation hardness studies are on-going.</li> </ul>	
Foreseen Beam Stop			
Yes	<b>Duration</b>	8-10h	<b>Date/Time</b> Wed 07.06.23 9h-16h



SPS							
<b>Machine Coordinator last week</b>		Kevin Shing Bruce Li					
<b>Machine Coordinator this week</b>		Michael Schenk					
Beam Scheduled							
<b>LHC</b>	Yes	<b>NA</b>	Yes	<b>AWAKE</b>	No	<b>HiRadMat</b>	No
Beam Availability by Destination (AFT)							
<b>LHC</b>	97.3 %	<b>NA</b>	91.3 %	<b>AWAKE</b>	-	<b>HiRadMat</b>	-
Facility Status							
<b>Summary</b>	<p>A reasonably quiet week for the SPS. Main items on the program were the crab cavity MD, high intensity run, empty bucket channelling test and filling the LHC after last week's intervention.</p>						
	<p>The machine came out of the long weekend with an issue on the QF showing a fault on the I_rms; a switch to the QS revealed the inability to correct for the 50/100 Hz noise on the spill which turned out to be due to the input card missing for this circuit. The QF circuits could be repaired early during the week which allowed to quickly switch back to the QF circuit and have noise cancellation fully operational. An input card was prepared and was planned to be installed for the QS circuit on Friday. To be clarified with EPC whether this really took place; in addition, a quick test together with the machine should be carried out to ensure noise cancellation can easily be applied also for the QS circuits in the future. Empty bucket channelling was also deployed on Thursday morning and has been running until Friday noon. The feedback will be collected from the experiments. Also, potential side effects on the machine need to be addressed once more (spill duty factor, auto-spill,...).</p>						
	<p>LHC beams have sometimes still been suffering from slow injection progress, still mainly due to injection of beam 1, which needs a lot of scraping (~10%) to make it through. On the weekend, in addition, a relatively large energy offset was registered between the SPS and the LHC. Several issues combined seem to significantly impact the injection efficiency for some fills. The plan is to do some dedicated tests during filling in the coming weeks to help understand the origin of the sometime tedious injection process. The crab cavity MD could take place without any perturbation (LHC off after dilution kicker spark) with very good machine availability.</p>						
<b>Issues</b>	<ul style="list-style-type: none"> <li>• QF I_rms fault due to faulty card</li> <li>• QD missing noise input card</li> <li>• Cavity 1 trips still coming in bursts</li> <li>• MSE-6 problem with valves – needs inspection (2h)</li> <li>• LHC filling with very high scraping and still very delicate</li> <li>• Spill duty factor stuck at below 90% after EBC</li> </ul>						
<b>Plans</b>	A week of MDs (short parallel + dedicated); tests for LHC injection; QD tests after noise input card has been deployed; investigation of reduced spill duty factor since EBC						
Intervention Request							
Yes / No	<b>Duration</b>	2h		<b>Preferred date/time</b>	Before TS		
<b>Reason</b>	MSE-6 valves check for potential implementation of mitigation during the TS						
<b>Impact</b>	No beam in the SPS						

SPS North Area							
<b>Facility Coordinator last week</b>		<b>N. Charitonidis</b>					
<b>Facility Coordinator this week</b>		<b>J. Bernhard</b>					
Beam Scheduled							
<b>H2</b>	Yes	<b>H6</b>	Yes	<b>K12</b>	Yes	<b>P42</b>	Yes
<b>H4</b>	Yes	<b>H8</b>	Yes	<b>M2</b>	Yes	<b>TT20</b>	Yes
Beam Availability by Destination (AFT): 90.8%							
<b>H2</b>	88.1%	<b>H6</b>	90%	<b>K12</b>	90.8%	<b>P42</b>	90.8%
<b>H4</b>	90.8%	<b>H8</b>	90.8%	<b>M2</b>	82.1%	<b>TT20</b>	90.8%
Facility Status							
<b>Summary</b>	<p>H2/4/6: Smooth operation.  H8: Beam ready and waiting for users to finish their installation and start data taking.  M2: Operation ongoing.  P42/K12: Continuing with lower intensity for NA62. No issues running the lines.  Sharing: 100-105 (T2) - 50 (T4) - 60 (T6)</p>						
<b>Issues</b>	<p>H2/4: No issues.  H6: Beam stop for 1hr on Thursday evening due to missing safety clearance for the main user on demand by EP Safety.  H8: Downstream access door issue, no downtime for the user.  M2: SM2 issues Monday and Wednesday (~20 hours downtime total). On Monday was an issue with the power converter and on Wednesday a plug was removed from one of the doors of the magnet racks in the area, which caused an external interlock. Some instabilities in the number of the units on target.</p>						
<b>Plans</b>	<p>Continue physics in EHN1, EHN2 and ECN3.</p> <ul style="list-style-type: none"> <li>H2: No change, continue MUonE.</li> <li>H4: Continue NA64.</li> <li>H6: ATLAS BCM Prime (main), ATLAS AFP TOF, ATLAS HGTD (parasitic) → EP Pixel, ALICE ITS3.</li> <li>H8: SND (main), STRAW Tracker (parasitic) → PROTOV (main), GALORE (parasitic).</li> </ul>						
Intervention Request							
Yes / No	<b>Duration</b>			<b>Preferred date/time</b>			

## SPS AWAKE

<b>Facility Coordinator last week</b>	Giovanni Zevi Della Porta		
<b>Facility Coordinator this week</b>	-		
<b>Facility Status</b>			
<b>Summary</b>	Started work on Density Step Plasma Source: installed overhead cable trays and assembled dedicated racks  Restarted electron beam, ready for trajectory/optics commissioning and Cherenkov Diffraction Radiation BPM tests		
<b>Issues</b>	-		
<b>Plans</b>	Survey and transport for Density Step Plasma Source. Continue commissioning the electron and laser beams whenever time allows.		
<b>Foreseen beam stop</b>			
Yes / No	<b>Duration</b>		<b>date/time</b>

<b>LHC</b>			
<b>Machine Coordinator last week</b>		David Nisbet	
<b>Machine Coordinator this week</b>		Enrico Bravin	
<b>Statistics</b>			
<b>Availability</b>	55.1%	<b>Stable Beam Ratio</b>	33.8%
<b>Facility Status</b>			
<b>Summary</b>	<p>The week has been characterised by recovery from an intervention by the vacuum team (replacing “RF fingers” interconnection module) in the region 4L1.</p> <p>The week began with the machine recovering from a vacuum intervention in 4L1, where a significantly shortened bakeout was performed (12hours instead of 10days). Following final x-rays to confirm the successful fix of the RF flange, 705b of circulating beams were successfully ramped to stable beams. Information from this ramp indicated that the losses due to beam gas and e-cloud in 4L1 (measured on the BLM in 3L1) would limit maximum intensity to 1200b, thus a subsequent fill was ramped to 1163b. Unfortunately at the end of this fill a flashover on the MKBHA.B2 beam dump dilution kicker stopped operations and required a 24hr conditioning cycle. In the meantime after discussion with BLMTWG and MPP, the threshold of BLMQI.03L1.B2 was increased from 0.16 to 0.25, allowing some margin for operation while the 4L1 area continues to condition.</p> <p>The BLMQI.03L1.B2 threshold (close to the inner triplet in IR1) significantly limits average bunch intensity and total beam intensity as it is dynamic and drops continuously during the ramp. During the weekend we operated with a constant 1.5E11 and gradually increased the number of trains injected to avoid reaching the threshold (monitoring the BLM signal closely at injection) until we reached a full machine with 2358b on Sunday.</p> <p>The LHC Machine Committee has requested that the machine does not operate beyond 1.6E11 until the reason for the failure of the vacuum flange in 4L1 is better understood, and the losses at injection (particularly the large scraping required in the SPS) are better understood and mitigated.</p>		
	<b>Issues</b>	<ol style="list-style-type: none"> <li>1. TDIS 4R8 (A) has dumped the beam a few times at injection on a temperature interlock. Thresholds or other mitigation to be reviewed asap.</li> <li>2. Temporary electrical bypass in place at Point2 following an overheating circuit breaker – to be repaired during TS1</li> <li>3. Large number of quench heaters fired during electrical perturbation on Saturday – needs further investigation as to what this happened.</li> </ol>	
<b>Plans</b>	<p>Physics production in Stable Beams with 2358b, with gentle increase in average bunch intensity to 1.6E11.</p> <p>Preparation of post-TS1 activities (eg High Beta 120m optics).</p>		
<b>Intervention Request</b>			
No	<b>Duration</b>		<b>Preferred date/time</b>

## CLEAR

<b>Facility Coordinator last week</b>	P. Korysko
<b>Facility Coordinator this week</b>	P. Korysko
<b>Facility Status</b>	
<b>Summary</b>	<p>Last week was be dedicated to four experiments:</p> <ul style="list-style-type: none"><li>- AWAKE ChDR BPM studies with CERN BI.</li><li>- Medical research: irradiation of ZFE with VHEE at UHDR for RT studies with CHUV.</li><li>- Bunch Length Measurement with ChDR-EOSD with CERN BI.</li><li>- Characterisation of ChDR buttons with CERN BI.</li></ul>
<b>Issues</b>	No major issue.
<b>Plans</b>	<p>This week is dedicated to two experiments:</p> <ul style="list-style-type: none"><li>- Bunch Length Measurement with ChDR-EOSD with CERN BI.</li><li>- Characterisation of ChDR buttons with CERN BI.</li></ul>