# End Week 41 (October 14th 2012) – Status of Accelerators

## Statistics

**nTOF:** https://espace.cern.ch/be-dep/OP/PS/default.aspx

**CNGS:** https://accstat.web.cern.ch/accstat/statistics/charts/2012/SPS/CNGS_Target_Cumul2012.jpeg

**LHC:** http://lhc-statistics.web.cern.ch/LHC-Statistics/index.php

## TI (Peter Sollander)

The TI stats are in the usual place: http://wikis/display/TIOP/2012/10/15/TI+summary%2C+week+41+2012

No major events stopping physics or MD this week.

## ISOLDE (Didier Voulot)

An interesting week at ISOLDE.

The target (#484 UC) is blocked on the GPS front-end since Monday. It is believed that the retractable extraction electrode is blocked in its out position preventing the target from closing. A number of tests were carried out on Monday and Tuesday all pointing in the direction of a blocked extraction electrode. It is proposed to force the unclamping of the target and to remove it open from the front-end with the robot. However to avoid the risk of ripping out and dropping the (highly contaminated) electrode an access is required to block open the target valve. If approved by safety and RP the intervention could go on on Wednesday. In this case the protons (on HRS) would have to stop on Monday morning to keep two full days of cooling down. Once the target is removed, and if the front-end cannot be repaired, a plug-target (under preparation) will be mounted to seal off the front-end.

On Tuesday we had further flooding of the REX RF room. Water is coming from the roof since a few weeks (maybe connected with the construction of the adjacent HIE service buildings). The fire brigade was called in to pump the water. First line checked that the electrical equipment was safe. Some short term and medium term actions (plastic cover, patch up of the roof) will be taken by GS until the roof can be repaired in spring.

The REX run for Miniball was reschedule on HRS using target #490 (UC). After quite a bit of discussion the users decided (on Friday afternoon) that they were going to run 48K. REX was swiftly set-up and Miniball is taking 48K at 2.86 MeV/u since Friday night.

Meanwhile LA1 and ISOLTRAP took Au isotopes in the nights from Tuesday to Thursday.

## AD (Bruno Dupuy)

Quiet week for the AD.

This week the beam was used by two customers, ASACUSA and ATRAP.

A single failure in the AD. Injection power.supply "fault PREMAG" FTA.DVT9029 from 6:00 p.m. to 7:00 p.m. Friday.

Several beam interruption during this week due to problems at PS or Booster (Main Power Supply or Radio Frequency).

ADE efficiency is optimal with a cycle length lower than 100 seconds. Extraction is greater than 3.5 E7 anti-protons by shot. And the bunch length is stable at 170ns

## Booster (Jocelyn Tan)

### Tuesday

At 10AM, all of a sudden the BLMs were triggering for tha AD user. There bunch spacing at extraction was found set to one revolution period instead of half this value. The PICO was called and identified DPSBRF4 as the culprit : we had to cut the beam for all users so that he could fix it. The down time for AD was 45mn, and 6 mn for the other users.

In the afternoon the beam was cut for 38 mn for an intervention on a Linac2 water pump.

### Wednesday

At 9AM there was no beam accelerated (TG8 vector in bad position). The problem was fixed after the operator had rebooted DPSBRF1. Down time 38mn.

CO gave a prompt support on OASIS so that the FINEMET MD could go on.

### Thursday

Early in the morning the operator reported an issue with the 2nd SEM grid of the PSB extraction measurement line. The specialist has been informed and needs a machine acces.

### Friday

At 4PM, no beam could be injected into the PSB. The LASER application spotted an "NMR out of window". The PIPO and the B-train specialist have been called. The latter confirms the B-train was operational as it followed the MPS current. The MPS team has observed no change in the MPS reference function they receive, and called the PICO. The GFAS for BR.GSIMPS was the culprit. A temporary fix was found by the PICO (additional cable pulled to give the STOP timing of the GFAS) but this is to be followed up. Down time : 1h35mn.

### Saturday

At 8H30 the LLRF piquet was called for some instabilities during the bunch splitting and affecting only CNGS. Unfortunately meanwhile the problem has wanished. Despite a long investigation, he couldn't identify the cause of the instabilities.

### Sunday

At 2:15PM, the beam was cut for an hour for a PS intervention (cavity C56).

At 7:15PM the PSB BLM display was lost. A reboot of the DSC DPSMBLM did not help and the PICO was called. He has changed a power supply.

At 2AM the BTY.QFO153 has tripped, triggerring the watchdog. It was an unresetable fault, so the piquet FL was called and fixed the problem. Down time for Isolde : 1hour

### MD beams

*Finemet_test : a busy week with on going studies

*MTE : resurection the flat beam E_h/v = 12micron/7micron upon PS' request.

*caracterisation of the new stripline BPM (Linac4 type) installed in the LTB line.

## PS (Simone Gilardoni)

The PS had a nice week with very few problems.

Two weeks ago we suffered from few trips of POPS due to IGBTs faults. Finally the problem was found on Monday and solved on Tuesday. The problem was related to a water leak in one of the power modules. The leak was very small, but some water was dripping on one of the electrical contacts, causing the triggering of the IGBT faults. The issue was identified on Monday evening, and it was decided to operate POPS in degraded

mode until Tuesday afternoon since it was not possible to fix the small leak immediately. In the meanwhile, we could still provide the beams for the LHC MDs and serve almost all the users, except TOF on the dedicated cycle. We had to reduce the number of EAST cycles due to the limited available total power.

As requested Steve adjusted the splitting on the 50 ns to enhance in a controlled way the ghost bunches for ALICE physics. It would be important to have some feedback from ALICE to validate what was done.

On Sunday we needed an access to change the gap relay of the 10 MHz cavity 56.

## SPS (Edda Gschwendtner)

All week lots of beams with different intensities and bunch schemes were provided for the LHC MD.

On Monday the SPS transformer was repaired, causing a beam stop of 6hrs.

On Wednesday the LHC beam quality in the SPS was tested at the new settings of the extraction bumps in the PS. No measurable influence was seen.

During ~1hr a heater of an amplifier tube of the MKP was exchanged.

On Saturday there was a nearly 3hrs beam-stop due to a short-circuited tube of TRX1.

On Sunday CNGS and SFTPRO suffered from PS extraction perturbations.

## LHC

MD all week followed a rocky weekend.

http://lhc-commissioning.web.cern.ch/lhc-commissioning/