# Summary of the 26th FOM Meeting

## Held on Tuesday 19th September 2017

Agenda https://indico.cern.ch/event/666609/



### 1. Follow-up of the last FOM

**B. Mikulec** chaired the meeting.

The list of presence can be found in Annex 0.

The minutes of the 25th FOM were approved.

### 2. Status of the machines.

#### Linac2 & Linac3

**R. Scrivens** reported the status of the linacs (Annex 1).

Linac2 had a very good week with 99.9% availability. The only fault was related to an issue with the first LEBT solenoid power converter.

The Linac3 tank1 amplifier repair was finished on Monday evening, and the beam was back to LEIR on Tuesday afternoon. The linac will be off most of the week for allowing for the ion source maintenance.

**B. Mikulec** asked if an RF tube replacement was planned in the Linac3. **R. Scrivens** replied that if any replacement, the tubes would be tested before. After the meeting, he informed that the RFQ driver tube was being replaced.

#### LEIR

**S. Pasinelli** reported on the LEIR status (Annex 2).

The beam was back to LEIR on Tuesday afternoon. There were many MDs during the week, ITE scrubbing run took place during the week-end and Xe EARLY beam was sent to the SPS for setting-up. There were also few faults related to EI.QFN20, samplers and temperature of several main quads. Because of the Linac3 source maintenance, LEIR will be off for all the week.

## PSB

**S. Albright** presented the status of the PS Booster (Annex 3).

It was a very good week for the PSB with an availability of 99.6% and no major faults or downtime. From the PSB standpoint the MDs for the LHC were very successful, all non-standard beams were produced on time and within specification. Work is on-going to increase the intensity of MTE on SPS request. The 8b4e was migrated to an operational user and its high brightness version is available if requested.

## ISOLDE

**A. Rodriguez** reported the status of ISOLDE (Annex 4).

It was a pretty good week from the operations point of view. The accelerators have been very stable and there has been barely any downtime due to problems with the equipment in the facility. The set-up for a new HIE-ISOLDE experiment (94Rb with an energy of 6.2 MeV/u from the GPS target to the Miniball experimental station) took place. It was the first experiment that required using all 15 superconducting cavities. Radioactive beam was delivered from Wednesday evening (stable beam a day before). The target, separator and the linac have behaved very well. However, the beam intensities originally planned were not delivered due to the radiation level in a couple of hot spots in the hall and the proton current during these days had to be lowered. The users have started seeing hints of new physics.

## ISOLDE Users

**K. Johnston** said that there was one experiment running last week on GPS taking 94Rb to the Miniball station at 6.2 MeV/u. This was a novel experiment using a strong primary ISOLDE beam to transfer neutrons to a stable Pb target in a bid to explore the excited states of exotic Pb isotopes. In spite of its novelty the proof of principle for the experiment was demonstrated after a number of hours with clear nucleon transfer visible in the spectra. Unfortunately the intensity of the beam was limited by radiation alarms which meant that the experiment couldn't run at its full capability. In the end good data were taken, but the full regime which was to be studied wasn't possible due to the limitations of the protons. In future more concrete procedures to allow ISOLDE to handle such instances will be put in place and this is currently being followed up.

**F. Pirotte** commented that with such radiation levels, the hall becomes classified as limited stay area and that RP asks fencing off such areas. She added that ISOLDE is presently setting up a procedure, which was unfortunately not fully ready last week, as the measured radiation level was kind of unexpected.

**E. Bravin** asked whether this hasn't been taken into account for the design of HIE-ISOLDE. **A Rodriguez** answered that the losses were not there, but in the low-energy beam lines.

## PS

**K. Hanke** reported the status of the PS (Annex 5).

It was a difficult week for the PS. There were repeated trips of the PFW power supplies (issue still on-going). On Wednesday-Thursday a long stop (mainly affecting the AD) was due to an incompatibility at the hardware level between the normal PC and the spare one (it will be looked at during the YETS). There were many trips of different power converters during the week. The wire-scanners 65H and 85V got stuck on several occasions. An access was needed to move the 85V in parking position. On the positive side all beams requested by the LHC MD were delivered without problems. The MTE intensity was being ramped up. The fault classifications (mainly the ones affecting only the AD user) will be discussed with the AFT team.

**C. Mugnier** confirmed that EPC was investigating the issue related to the PFW power supplies.

### East Area

**B. Rae** said that there was nothing special to report.

### East Area Users

**H. Wilkens** said that everything went fine and that last week they returned to a standard distribution of spills. The CLOUD experiment is starting this week.

### nToF Users

**F. Mingrone** said that they were commissioning the second experimental area and one could expect many accesses in the next days. They asked for intensity limitations, as the two experiments are rather sensitive.

### AD - ELENA

**L. Bojtar** reported the status of the AD.

Apart from the beam production issues in the PS, it was a very good week with only 0.5h downtime.

### AD Users

**H. Wilkens** said that the ALPHA experiment had to warm up.

### SPS

**V. Kain** reported the status of the SPS (Annex 6).

It was a relatively good week for the SPS with an overall beam availability of about 90% for the North Area experiments. Since Thursday the intensity on the Fixed Target cycle was further increased following the user requested sharing on the targets. Presently the beam intensity at flat top is about 3.5e13 p with an excellent transmission of about 95% in the SPS. The major part of the downtime was caused by the injectors (about 12 hours). Apart from that, the beam had to be stopped for about an hour on Monday for an intervention on the 800 MHz RF. Furthermore it was realized that the active

filter on the QD circuit was not working, which resulted in significant ripple at 600 Hz. This was fixed by an intervention on the PLCs controlling the active filters on Tuesday, which lasted also one hour. Since then the ripples at 600 Hz and at 70 Hz on the QD circuit are gone. Besides the 8b4e beam presently used for LHC physics production, the SPS delivered a variety of different beams for the LHC MD block #3 which took place from Wednesday morning until the end of the week. This went rather smoothly, the only exception being the high intensity 8b4e beam with 1.6e11 p/b as requested for the high pile-up studies: The ZS voltage had to be reduced in order to avoid sparking in the extraction septa and consequently the North Area physics had to be paused both during the preparation of this beam on Tuesday and during the actual delivery to the LHC on Wednesday. Worth mentioning is that the BCMS variant of the 8b4e beam was prepared for potential use in the LHC after the technical stop. The SPS measured transverse emittances of about 1.3 um for 2x32 bunches with 1.2e11 p/b at flat top. Finally, first tests with partially stripped Xe (39+) took place on Thursday and Friday on a parallel MD cycle in preparation of detailed lifetime studies. So far it seems the lifetime due to stripping on the residual gas is of the order of 1 s.

**E. Bravin** commented that as the new BCMS beam was ready, the LHC would take it soon.

### North Area

**B. Rae** said it was a good week as well.

### North Area Users

**H. Wilkens** said that NA64 asked to increase the protons on target last week. They returned yesterday to nominal intensity.

### HiRadMat

There was no report.

### AWAKE

There was no report.

### LHC

**E. Bravin** said that the machine was presently in technical stop. They will take the beam Thursday. They will then proceed to the usual intensity ramp up aiming at 1900 bunches. They will most likely start with normal BCMS and try the new BCMS during the week-end. The present integrated luminosity is 23 $fb^{-1}$ (40-45 being scheduled for the 2017 run). Due to the intensity limitation, they will probably re-schedule and postpone some test runs for next year and will certainly take the PILOT Xe beam on week 41 or 45.

### CLEAR

**F. Tecker** reported the status of the CLEAR (Annex 7).

The plasma lens experiment was installed. They are still debugging some control issues and the beam was scheduled for today.

### TI

**J. Nielsen** said that the SPS and the LHC operations were perturbed by a glitch on the SIG network on Saturday morning.

## 3. Schedule update.

**B. Mikulec** presented the injector schedule version 1.4 (Annex 8).

The injector TS was on-going. The UA9 run took place yesterday. The COLDEX run will start at 8.00 tomorrow morning for 24 hours (including the access for the removal of the experiment).

**R. Froeschl** said that during the survey, they found the Linac2 dose rate to be higher than usual. R. Scrivens will investigate and discuss with PSB operation whether the beam was properly stopped in the morning.

Remark: It was confirmed after the meeting that OP stopped the beams according to the instructions; the issue was that due to the presence of the COAST beam for UA9 the beam for all remaining ZERO cycles was sent to the Linac2 dump. For the future it was decided to put the low-energy beam stopper IN each time after the SPS has been filled (in case of a preceding UA9 run).

**A. Bland** reminded that CO maintenance was taking place during the TS with server updates and reboots. All the controls consoles will be rebooted before 5.00 PM.

## 4. AOB

There was no AOB.

**Next Meeting: Tuesday 26th September 2017**.

Minutes reported by JB. Lallement on 21st September.