



Summary of the 7th FOM Meeting

Held on Tuesday 9th May 2017

Agenda (<https://indico.cern.ch/event/637526/>)

- 1. Follow-up of the last FOM*
- 2. Status of the machines*
- 3. Schedule update*
- 4. AOB*

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 6th FOM](#) were approved.

There was one open action ([Annex 1](#)).

1. No update concerning the monitoring of the FGC power converters. **The action stays open.**

2. Status of the machines.

Linac2 & Linac3

JB. Lallement reported the status of the linacs ([Annex 2](#)).

It was a very good week for the Linac2 with 100% availability.

The Linac3 was running pretty well and currently producing a stable Xenon beam (~30 uA).

D. Manglunki and **R. Alemany** commented that the Linac3 team requested the beam this morning to complete the debuncher cavity setup.

LEIR

R. Alemany reported on the LEIR status.

Everything is on schedule. EPC is following up the issue that occurred yesterday with a power supply.



PSB

K. Hanke presented the status of the PS Booster ([Annex 3](#)).

It was a good week without major technical faults.

The Booster suffered still from RF problems in rings 1 and 4 which hampered also the setting up of high intensity. A broken feed-back was found on Wednesday morning. Its repair solved the ring4 issue. The ring1 issue persists...

The setting up continued with the MTE beam (1000E10 ppp will be requested by the SPS this week and are available; further ramping up intensity). The STAGISO beam setting up also started.

K. Johnston commented that there is no rush for the STAGISO beam. It will be needed in the coming weeks.

S. Albright commented that, following their investigations, the ring1 issue is most probably due to a problem with the high level and not the low level RF.

ISOLDE

E. Siesling reported the status of ISOLDE ([Annex 4](#)).

On the HRS side, the setting-up with stable beam from a new UC surface target started on Tuesday. The setting up through the ISCOOL buncher and cooler was difficult and new standard settings had to be found after repair and several changes within the ISCOOL during the shutdown. Wednesday-evening and night were used for RILIS laser optimisation and stable beam to the CRIS experiment. During the RILIS laser tuning it was discovered that the laser window in the HRS MAG90 separator magnet was dirty and the laser efficiency hence very low. An intervention was planned for Thursday to change the window. During the venting of the sector HRS20, the HRS10 (HRS Front-End) got unexpectedly also vented and it dropped the target and line heating. After discussion with vacuum team it was concluded that the valve between HRS 20 and 10 was leaking. This valve is on the Front-End side and can only be replaced with the entire front-end. Physics started right after window change and pumping and CRIS started taking beam in the evening. On Thursday evening the HT source broke and no beam could be extracted from the HRS target anymore. After the swap of the HT source from GPS the run could resume. As of Thursday-evening followed by the weekend the CRIS experiment has been taking radioactive Indium beam. The users are very satisfied.

On the GPS side, the radioactive run for IDS stopped on Wednesday-morning after a successful run. Some stability measurements were done on the GPS separator magnet 70 (no fluctuations found so far). The target change for a used target (#575) was foreseen on Friday however a few problems occurred: First the shutter would not give the closed ok signal on the previous target. It was recalibrated with the help of EN/STI after which the signals were ok. A huge leak occurred when trying to pump on the used (from last year) target 575 and pumping had to be stopped (probably due to the joint on the target cone). The target was exchanged for the previous one (595) to exclude a leak on the Front-End.

On HIE ISOLDE side, the beam commissioning at REX is advancing well. The beam passed the 7 Gap 2. Good progress and well on schedule. The installation work is completed and the hardware commissioning of the HEBT lines started yesterday.



B. Mikulec asked when the valve could be repaired. **E. Siesling** answered that the area being pretty hot, it cannot be repaired during the next technical stop. Situation will be evaluated during the next target change and the valve repair could be postponed to the end of the year or even to LS2.

ISOLDE Users

K. Johnston said that the decay station experiment finished their program on GPS last Wednesday morning, with excellent results from beta-delayed neutron emission of ^{133}In . The start-up for HRS was quite difficult but began on Thursday night and has been running fairly smoothly since then except for some interruptions due to the problems with the next GPS target. Laser spectroscopy, measuring quadrupole moments, charge radii etc - by the CRIS experiment on a series of In isotopes has been performed from ^{113}In to ^{132}In , almost all of which are new data. The users were quite satisfied with their run. The physics program for the next run on GPS has been altered due to the leaking target, and was being finalized at the moment.

All in all, not an easy week at ISOLDE, but the physics output has been still pretty good.

The STAGISO beam will be requested for the upcoming target test...

PS

H. Damerau reported the status of the PS ([Annex 5](#)).

I was a busy but pretty good week with 90% availability and the first week of physics of the 2017 run with beams from the PS. A basic setting-up of the 25 ns variant (up to 48 bunches) for SPS/HiRadMat has been prepared. Horizontal emittance blow-up at the end of the flat-bottom is still observed though and the origin is being investigated. Beams for the EAST hall experiments (including the parasitic bunch for TOF), the dedicated cycle for TOF ($\sim 7\text{E}12$ ppp) and the AD beam ($1.1\text{E}13$ ppp) were delivered as requested, as well as low-intensity MTE beam ($3\text{E}12$ ppp) for setting-up in the SPS. The latter has now been prepared up to $1\text{E}13$ ppp. A 4 h downtime was caused by intermittent missing pulses of the injection septum which seems not yet fully solved. Various technical issues in the PS, notably a polarity inversion of a horizontal corrector, have been attacked in the shadow of the two scheduled accesses in the PSB.

H. Damerau concluded by asking for a better coordination of the beam requests that was not the case over the previous week. **B. Mikulec** answered that this will be discussed between the FOM and the LHC operation.



East Area

B. Rae said there was no major issue to report.

East Area Users

H. Wilkens said that the irradiation facility will start very soon with samples. A neutrino platform experiment takes place in T9 and Alice experiment takes beam in T10.

nToF Users

There was no report.

AD - ELENA

T. Eriksson reported the status of the AD ([Annex 6](#)).

On Sunday, a failure on a PLC CPU blocked all the communication between the vacuum subsystems. The pumps went off and the pressure rose. The PLC was replaced by the vacuum piquet and 3 hours were needed to recover beam intensity. Last night, some condensation water coming from the B. 196 triggers the AD Target emergency exit door water leak sensor. The Fire brigade intervened to dry out the area and few hours were needed to let the sensor drying-out. The condensation water was probably coming from a missing hatch door on the ventilation (will be checked by CV). The thyatron of the ejection kicker was failing and should be replaced (3h interventions to be scheduled today at the user meeting).

AD Users

H. Wilkens said the users were very happy that the AD started on time.

SPS

V. Kain reported the status of the SPS ([Annex 7](#)).

The slow extraction setting-up started on Tuesday morning, but was only finished in the evening. Due to an issue of the knob->k hierarchy, accidentally introduced during the hardware tests, the extraction sextuple strengths were wrong by a factor 2. And this took a while to figure out.

During the night the beam was steered to the three North Area targets. In the following days the beam line physicists were setting up the lines behind the targets. Frequent stops for radiation cool down were required due to cooling issues of North Area magnets which needed access in TCC2.

On Wednesday EPC managed to resolve the problem of the QD 6 Hz oscillation of 50 mA amplitude. The damper setting was finished then and the intensity increased to $\sim 5 \times 10^{12}$ with two injections. The transmission with this intensity is $> 97\%$. The cycle still needs further optimisation. Every so often the beam becomes unstable in the vertical plane at around 1700 ms during acceleration. The damper has been verified, chromaticity and octupoles have been increased.

The first set of ZS alignment has also been carried out. The losses at the TPST - the mask in front of the MST - could be significantly reduced.



LHC INDIV beam was prepared and extracted successfully towards the LHC. 25 ns commissioning has started with 12 and finally 48 bunches on the HiRadMat cycle. The transverse damper has been set up. The quality of the 48 bunches from the SPS injectors is however not sufficient yet. The experts have not been able yet to re-establish last year's longitudinal quality. The bunches are too long at injection. The beam dump team has started the cross-check of the temperature evolution model and the MKE4 has had its first scrubbing after the LSS4 septa exchange this shutdown (and subsequent trip on vacuum interlock). The coast cycle required for the MD on Wednesday has been commissioned this weekend.

Many commissioning steps have been carried out as well during this week. The beam dump kicker waveform on the dump block was measured with the SEM grids, the active filter 50 Hz correction for the spill ripple was re-commissioned. Without the active correction on, the 50 Hz modulation is about 100 %. No 50 Hz bursts have been observed so far.

The 519 wire scanner is operational again. A timing cable had been disconnected.

H. Bartosik confirmed that the vertical instabilities had gone.

B. Mikulec asked where the cooling issue in the NA magnet circuits was coming from. **V. Kain** answered that at least in some cases it was due to valves that were not fully open. **V. Kain** will discuss with **L. Gatignon** to include these tests for the next year start-up.

North Area

B. Rae said that all the beam lines were under commissioning. There was still an issue with the collimator in H4.

3. Schedule update.

B. Mikulec presented the new injector schedule version 1.1 ([Annex 8](#)).

The MD blocks on week 20 and 21 were removed. The second LHC MD block will take place in week 30. UA9 was replaced by a scrubbing run on week 41 and moved to week 42.

Concerning the next injector TS (31st May), the impact activities should be sent as soon as possible to the machine coordinators. Next week, a first draft of the intervention lists will be presented.

4. AOB

There was no AOB.

Next Meeting: Tuesday 16th May 2016.

Minutes reported by [JB. Lallement](#) on 13th May.