



Summary of the 33rd FOM Meeting

Held on Tuesday 7th November 2017

Agenda <https://indico.cern.ch/event/678374/>

- 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 32nd FOM](#) were approved.

2. Status of the machines.

Linac2 & Linac3

G. Bellodi reported the status of the linacs ([Annex 1](#)).

The Linac2 had an excellent week with no issue to report.

On the Linac3 side, there were a few trips of the RF Thomson generator at the beginning of the week. The source was retuned on Wednesday afternoon to gain in beam stability (though at the cost of a couple of mA decrease in intensity on BCT41, and slightly worse shot to shot variation). Performance was very stable in the second part of the week.

LEIR

S. Jensen reported on the LEIR status ([Annex 2](#)).

The machine availability was 85% over the last week. The list of the various faults that occurred over the week is given. There were few trips of the CRF41 cavity, which required RF expert intervention. A phase shift between LEIR and PS was observed on Wednesday (OK after FECs reboot, but being investigated). Since yesterday, there is an issue with the ER.KFH34 kicker and the machine was presently running in degraded mode. Since this morning, the beam is lost right after injection. This issue might be related to a problem with the e-cooler.



PSB

B. Mikulec presented the status of the PS Booster on behalf of **JF. Comblin** ([Annex 3](#)).

It was a very good week for the Booster with 99.4% availability and few short downtimes due to few needed resets and an intervention of RF specialists for a beam loading problem. For the first time, the new B Train distribution with White Rabbit was tested on an LHC25ns type beam with very promising results.

ISOLDE

L. Fadakis reported the status of ISOLDE ([Annex 4](#)).

It was a very interesting week with 4 different experiments sharing the beam from GPS (target #619). MINIBALL required the lasers to minimize contamination while the remaining 3 experiments needed to run in VADIS mode. 206Hg46+ beam was delivered since Thursday night to MINIBALL (IS547). The REX RF cavities were pushed more than ever to provide beam and they performed greatly (only 5 trips over the week). 199Hg beam was sent to GLM for both Biophysics and Solid State Physics (IS585, IS515, IS602), since Tuesday night.

The Pb target used last week needs approximately 450A to heat up, melt and produce the beam. The temperature inside the target needs to remain quite stable at ~480Deg. Depending on the intensity of the STAGISO beam, the target heating system has to be regulated from 0-500A. This means that every change of the Supercycle composition has to be compensated by an increase or a decrease of the target heating (if the target cools down, the Pb will solidify, which could be problematic for the remaining of the run). The PSB operators were aware that they should inform the ISOLDE team as soon as the Supercycle gets modified.

There were few issues over the last week. On Tuesday the proton scan could not be performed because the two wire grids used to steer the protons onto the target were not working properly (FEC reboot solved the issue). Due to field emissions, the SRF05 cavity had to be operated at a smaller gradient than originally set up. During the setting-up on Thursday, the extraction electrode moved in by itself and got stuck (expert was called).

B. Mikulec asked whether one could think of an automated feedback system for keeping the Pb target at the correct temperature. **L. Fadakis** answered that such a target is only used once a year and the investment in time to build such a system is not really worth it.

ISOLDE Users

K. Johnston could not be present at the meeting and sent the following information.

There were several experiments taking Hg beams last week on GPS: 206Hg for MINIBALL and 199Hg for collections (solid state and biophysics). For MINIBALL it was realized relatively recently that 206Pb would also come from the target (and would be a problem for their measurements). This affected the setup with the planned plasma ionization needing to be complemented by laser ionization. Setting this up required more time than expected with great efforts from the operations, lasers and target teams to allow two separate tunes of HIE-ISOLDE. In the end we settled down to lasers for MINIBALL and plasma for collections. Instead of being able to operate fully in parallel the two groups had to run in series and the run was less efficient than it should have been. Although good new data were collected by MINIBALL



on the excited states of ^{206}Hg and numerous experiments were possible for biophysics/solid state, the reduction in overall time has led to reduced statistics and more time may be required to complete the experimental program.

PS

I. Efthymiopoulos reported the status of the PS ([Annex 5](#)).

It was a very good week for the PS with 97.7% availability. The main downtimes were mainly due to transient faults related to RF cavity and power converters (including POPS). Since Thursday, the AD and nTOF beam are run with the upgraded B-train. Some missing signals from the B-train to execute the programmed cycles are still observed on the other beams (good hope that this will be sorted out once all beams will be transferred to the new system – hopefully this week). Among many MDs, one aimed at accumulating statistics in view of the decision later in the year to dismantle the CT equipment from the ring (a MTE SFTR0 cycle @ $2.4\text{E}13$ was used to continue the studies and accumulate statistics). The yearly scheduled protons on target for nTOF was reached on Thursday.

East Area

B. Rae said there was nothing special to report.

East Area Users

H. Wilkens said users were happy.

nTOF Users

D. Macina said users were VERY happy.

AD - ELENA

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

The AD had a pretty good week with 96% availability. On Monday, the HLRF on C02 and C10 had an unexpected behaviour. The normal situation recovered although the issue was not understood. On Wednesday, e-cooler power supply and water cooling issues perturbed the operation. On Friday, some adjustments on the extraction kicker timings improved the ejection efficiency.

The ELENA ion source was repaired, but the beam is very unstable. Some basic setting-up was performed last week taking a pbar shift. The e-cooler installation is still scheduled for the two first weeks of December.

AD Users

H. Wilkens said there were some hiccups with the ATRAP helium delivery.



SPS

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

It was the second week of Xe run at the highest momentum (360 ZGeV/c). The problem of the vertically drifting beam in H2 for NA61 was understood and could be mitigated. It was due to the change of field with temperature of one of the vertical bends in H2. As soon as it had been switched into DC no more issues were reported. Due to the ZS sparking with ions in the supercycle during 8b+4e filling, the LHC filling supercycle was changed and does not include any fixed target cycle anymore. The low emittance Roman pot beam was taken on the INDIV cycle in the SPS. 0.5 mm.mrad in V and 0.8 mm.mrad in H were measured for $\sim 1e+11$ p+ per bunch.

The SPS had a very good availability of 95% of availability despite the 6 hour stop due to a LOKN configuration issue on a power converter card in the North Area.

North Area

B. Rae said that it was a very good week. The switch to lower momentum took place yesterday and went very smoothly with beam available to users at 6.00 PM.

North Area Users

H. Wilkens said that the NA61 users were very happy with the fast switch in energy.

AWAKE

There was no report.

LHC

J. Wenninger reported on the LHC status ([Annex 8](#)).

On CMS request, the LHC run was shortened by one week and will end on Monday 4/12. The medium energy run will take place on weeks 46-47 and the MD4 block on the last week (week 48). In order to help LHCb in collecting more data, the LHC is now run with long fills up to 24 hours and 50 fb⁻¹ integrated luminosity since the beginning of the run should be reached by the end of the week. The beam requests for the coming week are the following:

- Standard INDIVs of $\sim 1E11$ ppb for Wednesday (high beta* at injection commissioning) and Friday (2.51 TeV run commissioning).
- Beam for VdM scans on Saturday (could be early morning): Gaussian VdM beam with 3 to 3.5 mm.mrad emittance and 0.7e11 to 0.8e11 ppb, INDIVs and TOTEM beam (1e11 ppb / 0.8 mm.mrad).
- Later on Saturday back to 8b4e of ~ 1.25 ppb for at least 10 days.



CLEAR

There was no report.

Linac4

G. Guidoboni reported the status of the Linac4 ([Annex 9](#)).

It was a pretty good week with 90% availability with downtimes mainly due to trips of the RF and of the pre-chopper. Work in progress on RF software upgrades, instrumentation debugging and full ppm operation. An access will be given to the tunnel on Friday.

TI

J. Nielsen said there was nothing worth mentioning.

3. Schedule update.

B. Mikulec presented the new version of the [injector schedule](#) (version 1.7).

The LHC run will stop on Monday 04/12 at 6.00 AM.

On **H. Wilkens** request and in agreement with the participants (to ease installation work in H8) the injectors MD on Wednesday 6/12 was moved to Monday 4/12.

S. Montesano said that UA9 people were not available on the 15/11 and asked whether the UA9 run could be moved one week later. **J. Wenninger** said that the LHC will be in high beta run during that week, and there might be many fills affecting the protons availability for UA9. Discussion on UA9 rescheduling will take place offline and the decision reported to one of the coming FOMs.

The Injector schedule version 1.7 was approved with the modification brought forward by **H. Wilkens**.

4. AOB

The maintenance of the door YEA01.LN2=363 from Thursday 09/11 - 8.30 to Friday 10/11 - 17.00 was approved.

The intervention on the access point EA2-IRRAD – YEA01.EA2=157 on Wednesday 08/11 from 9.00 to 10.00 AM was approved. It will require a patrol of the first sector and an RP survey. Beam will be stopped at 6.00 AM.

H. Bartosik said that tomorrow's MD is dedicated in the SPS and will affect the NA. He also added that between 1.00 PM and 6.00 PM no beam will be sent to East Area users.



Next Meeting: Tuesday 14th November 2017.

Minutes reported by [J.B. Lallement](#) on 9th November.