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# Summary of the 32<sup>nd</sup> FOM Meeting

Held on Tuesday 31<sup>st</sup> October 2017

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Agenda <https://indico.cern.ch/event/676462/>

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 31<sup>st</sup> FOM](#) were approved.

## 2. Status of the machines.

### LHC

**W. Hofle** said the LHC was currently in access to fix several issues. They will continue taking the 8b4e beam, which gives good luminosity performances, until the end of the week. Next week, they will certainly request a VdM beam with 150 ns spacing. **B. Mikulec** said that they should give a pre-warning few days before they ask a beam that was not prepared yet. **K. Cornelis** added that, if possible, they should ask for already existing beams.

### Linac2 & Linac3

**D. Kuchler** reported the status of the linacs ([Annex 1](#)).

The Linac2 had an availability of 97.8%. There were two main problems. On Tuesday, there was an issue with the feedback loop of tank1, which could be partially cured with some tuning, but still requires some time for an intervention. During Friday night, a power glitch stopped some equipment and the reference amplifier needed to be replaced (2h13min downtime). Over the weekend the PSB suffered from unstable pulses for long beams. It was solved by retuning the RF amplifiers on Monday.

There is a request from the linac RF team to have some tests for 4-8 hours at the end of the run. **A. Berjillos** said that these tests could be scheduled on the 18/12.



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Concerning the glitch on Friday, **C. Wetton** said that RTE and SwissGrid were contacted and they did not see any glitch on their networks. It appears that it was an internal glitch, possibly caused by the equipment trip.

The Linac3 had a pretty good week with 99.7% availability. There were few source RF generator trips. The source stability was improved and the beam current at the end of the linac is between 30 and 35  $\mu\text{A}$ .

### LEIR

**N. Biancacci** reported on the LEIR status ([Annex 2](#)).

It was a good week for LEIR with 98.3% availability. There were several trips of BHN30 that required an intervention from EPC. They fixed the problem by resetting the interlock and communication card controls. The ER.KFH32 trips were investigated by specialists. Some noise coupled on the main switch pickup triggered an interlock. Masking has been done, but it will need further investigations. The ETL.BHN10 ripple issue requires an intervention that will take place on Wednesday during the SPS MD.

### PSB

**G.P. Di Giovanni** presented the status of the PS Booster ([Annex 3](#)).

It was a good week with 97.4% availability and main downtimes due to Linac2.

On Friday lower efficiency at capture in R1 was observed for all high intensity beams with  $I > 500 \text{E}10$  ppr. No issue was found with the PSB equipment or its setting and the Booster could anyway supply all physics users with nominal performances. Over the week-end the PSB operators noticed losses of intensity along the Linac2 pulse and the linac RF settings were adjusted to recover good transmission. On Monday morning, linac RF experts re-set the original configuration, as the modified settings were found not to be optimal, and **A. Findlay** reworked the PSB settings (qstrips, injection pos./angle,..). While in theory the Linac2 and the PSB should have been back to the configuration when the issue was observed, the PSB recovered its initial performances. The origin of the problem remains unknown.

### ISOLDE

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

On REX-HIE, the issues experienced last week with RF cavity trips continued this week. A new target was installed on GPS and the next HIE experiment is being prepared.

On HRS a new target was installed on Monday and the line was set up during the week. COLLAPS had a bumpy start due to a series of problems: no He gas in RFQ, no protons from PSB, interruptions for interventions in HT room and RILIS issues. The run finally started on Saturday and went pretty well all over the weekend.



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## ISOLDE Users

**K. Johnston** said that the HIE-ISOLDE run taking 9Li to XT03 finished on Thursday morning. As discussed at last week's FOM this was a difficult run, but some new data were nonetheless collected, whether they have sufficient statistics remains to be seen in the post analysis.

On HRS, laser spectroscopy was performed on a wide range of neutron rich and neutron deficient Sn isotopes at the COLLAPS experiment. The start-up for this run was difficult with many overlapping small problems, but once the beam was delivered on Saturday afternoon the conditions were quite stable and the yields and purity from the target were very good. The hyperfine parameters of Sn from  $^{108}\text{Sn}$  –  $^{134}\text{Sn}$  were successfully measured and the collaboration is very satisfied; they completed their experimental program.

## PS

**M. Fraser** reported the status of the PS ([Annex 5](#)).

It was another smooth week for the PS with an availability of 97%. Special LHCINDIV beams set up in the PSB were delivered to, or prepared for set-up in the SPS, including the multi-bunch VdM beam and a low emittance (0.5  $\mu\text{m}$  injected, 0.7  $\mu\text{m}$  extracted) and low intensity ( $10\text{E}10$  ppb) version. The NOMINAL LHC ion beam (2b, 100 ns) was set up in the PS and is ready for the SPS to take at about  $6\text{E}10$  charges. The bug observed on the WR transmission of the B-train measurement appears to have been fixed on Tuesday by TE-MS-C-MM with no further missing POPS cycles (to be confirmed). The new B-train measurement system was also tested on clones of most of the operational beams with success. Very promising tests of the BGI were made in the PS on Friday. The LLRF settings issues with transverse feedback causing problems to MD users is being followed up by the RF team. The integrated intensity delivered to nToF is 9% ahead of schedule (already 98% of the 2017 request).

## East Area

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

## East Area Users

**H. Wilkens** said the users were happy.

## nToF Users

**D. Macina** said that nToF users were fully satisfied.

## AD - ELENA

**L. Bojtar** said it was a very good week for the AD.

There was an issue last night with the C02 cavity that could not be understood, as all checks done did not highlight any issue. The operation resumed this morning at 8.00 with the problem not understood.



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**T. Eriksson** said they still had some issues with the ELENA H<sup>-</sup> ion source. They will take a pbar shift on Friday.

#### AD Users

**H. Wilkens** said there was no issue to report.

#### SPS

**H. Bartosik** reported the status of the SPS ([Annex 6](#)).

It was a good week with 96.5% availability. The Xe run for the North Area started on Monday and the Xe beam extraction at 358 GeV/z was set up. The beam reached the T2 target in the evening and was ready for the secondary beam line physicists to set up for the experiments. Since Wednesday night, the users of H2 (NA61) keep reporting vertical drifts of the beam position, while the TT20 transfer line trajectory up to the T2 target seems stable. Despite investigations from both the SPS side and from the secondary beam line specialists it is not yet understood what is causing this drift. For the moment, the work-around consists in vertical steering before and after the T2 target until the beam is found back in H2. Apart from this, beam availability in the SPS was rather good with only minor interruptions. The biggest downtime (2 hours) was caused by a parallel MD cycle, which triggered the primary ion interlock on Thursday afternoon. The ZS extraction septa suffered from high spark rates when the 8b4e beam is put into the sequence in preparation for LHC filling. After a few cycles, the spark rate is back to normal levels. However, the ZS tripped a couple of times during the weekend. LHC filling itself went rather smooth. In addition to the normal physics fills with the 8b4e BCS beam, a special version of the INDIV beam with 2x4 bunches was sent to the LHC for a 150 bunch calibration run requested by ATLAS. The spill quality was affected by quadrupole ripple. As the 50 Hz compensation is not available, the chromaticity was increased in order to minimize the spill sensitivity to QF ripple.

#### North Area

**B. Rae** said that the only problem of the week was due to the issue of beam drift already mentioned.

#### North Area Users

**H. Wilkens** said that the spill quality issue was solved in time for the experiment start. As NA61 is a bit late on the statistics they will continue until Monday and the change of momentum will be delayed. As a consequence, the other experiment schedule will be affected. The nucleon experiments needing lowest energy, their rescheduling will be discussed.

#### HiRadMat

There was no report.

#### AWAKE

**K. Cornelis** said that the electron gun DSO test took place on Friday.



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## CLEAR

There was no report.

## Linac4

**G. Guidoboni** reported the status of the Linac4 ([Annex 7](#)).

The Linac4 was restarted last week, on Monday, and the second phase of the reliability run started yesterday. It will last until the 30/04/2017 (with a stop in January-February) under the supervision of BE-OP with support from BE-ABP.

**M. Gourber-Pace** asked whether the Linac4 control room was still in use. **JB. Lallement** answered that this control room has to be kept operational for occasional debugging.

## TI

**C. Wetton** said there was nothing worth mentioning.

## 3. Schedule update.

**B. Mikulec** presented the new version of the [injector schedule](#) (version 1.6).

The LHC MD4 block will start at the end of week 46. An extra 3-day MD block (LHC MD5) was added at the end of the week 49. The new Injector schedule version 1.6 was approved.

**H. Bartosik** commented for the Wednesday Injector MD block that besides the dedicated MD in the SPS there is no special disturbance expected for the physics users of the other injectors.

## 4. AOB

The maintenance of the door YEA02.PSR=352 from Thursday 02/11 - 8.30 to Friday 03/11 - 17.00 was approved.

**Next Meeting: Tuesday 7<sup>th</sup> November 2017.**

Minutes reported by [JB. Lallement](#) on 2<sup>nd</sup> November.