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# Summary of the 36<sup>th</sup> FOM Meeting

Held on Tuesday 28<sup>th</sup> November 2017

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Agenda <https://indico.cern.ch/event/683788/>

1.1. ....	Follow-up of the last FOM
2.2. ....	Status of the machines.
3.3. ....	Schedule update.
4.4. ....	Draft 2018 Injector Schedule
5.5. ....	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 35<sup>th</sup> FOM](#) were approved.

## 2. Status of the machines.

### *LHC*

**M. Zerlauth** reported on the LHC status.

It is the last week of operation. The high intensity MDs are about to finish and a bit of radiation cool-down started. **J. Uythoven** has prepared all the beam requests for the injectors. All high intensity beams will be finished on Wednesday and after that, the maximum number of bunches will be 144. No specific new beam type requests were demanded. On Monday, there will be one or two days of powering tests.

**M. Gourber Pace** asked if the powering test would last until Tuesday afternoon.

**M. Zerlauth** answered that it is still under discussion, since there are also a couple of powering tests for high current as well. He said powering phase two normally means maintained patrols in the LHC, which are planned for Monday night. Maybe it can be done on Monday morning and delay the people entering the tunnel by a few hours, but at least on Tuesday it should be over.

### *Linac2 & Linac3*

**F. Di Lorenzo** reported ([Annex 1](#)).

Linac2 had a very nice week with 100% availability.

Linac3 was also fine apart from minor problems with an RF generator, which was solved by a reset from the operators.



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#### LEIR

**M.E. Angoletta** reported on the LEIR status ([Annex 2](#)).

LEIR had a very good week. The RF cavity CRF43 tripped three times and the beam was dumped on Wednesday for security reasons because the number of injections was too high.

An MD was dedicated to study the RF cavity CRF41 and CRF43, without much success (see question below). During another MD, the intensity was increased on the EARLY cycle by 10% by shaping the voltage with the CRF43. Additionally, the setup of  $h=3+6$  was accomplished, which will be sent next week to the PS for an injection test. Several MDs on orbit system deployment, setup and calibration took place.

**B. Mikulec** asked if all issues with the cavity were solved.

**M.E. Angoletta** answered that there was a combined high and low level RF MD to understand the problems of CRF41, which aroused Saturday night two weeks before, but unfortunately the problem could not be triggered anymore. Additional diagnostic tools were installed. The problem did not reappear in the meantime – the problem is neither solved nor understood.

#### PSB

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

A very good week was reported. Reported issues were the repeated tripping of TFB in R1H, an intensity instability of the EAST-type beams, which was tracked back to inhomogeneous setting of BI3.KSW across beams, and the noise on the R2 phase loop, which has to be understood.

#### ISOLDE

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

It has been a very good week at ISOLDE with 97% availability.

Only a problem with the power supplies of RF, which is known, caused eight hours of beam downtime.

#### ISOLDE Users

**K. Johnston** reported a very good week for the users at ISOLDE.

From the machine side it was a very smooth run with very little downtime. The goal of the week was to measure the  $g$ -factor of 28Mg at Miniball using a newly commissioned plunger device to 5% precision. However, the beam from ISOLDE proved to be too strong for the data acquisition system to handle and the intensity had to be reduced by a factor of 4. As a result, although the run was very smooth the users will probably struggle to achieve the necessary statistics for this 5% precision for the final measurement.

#### PS

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

It was an average week for the PS with a beam availability of 96%. There is still suffering from trips of POPS started around the third of October when the FGC card was changed. Experts are working on this issue, but unfortunately it is not yet understood. 1h20 stop for all proton beams was caused by a power converter issue (BSW43), another beam stop was caused by two accesses for gap



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relays of 10MHz cavity C10-86. The fast extracted beam was interrupted by a magnet fault interlock of the magnetic septum SMH16. Also, the problem of the KFA71 is followed by experts. A 50 ns and lower intensity ( $\sim 8 \cdot 10^{10}$  ppb) variant of BCS 8b4e for the LHC MD was prepared.

#### *East Area*

**B. Rae** said it was a very good week, nothing special to say.

#### *East Area Users*

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

#### *nToF Users*

**D. Macina** said there was nothing to report. Data is being taken and on Monday morning the beam will be stopped for this year.

#### *AD - ELENA*

**L. Bojtar** reported the status of the AD ([Annex 6](#)).

Only minor problems were reported.

**T. Eriksson** said that this was the last week for ELENA with beam commissioning; next week it will be stopped for the year and the e-cooler will be installed. The ion source has been useful and is more stable; taking a certain amount of p-bars from AD. Friday will be the last p-bar shift.

**H. Wilkens** asked when first physics will be available for ELENA and **T. Eriksson** answered that this will happen only after LS2.

#### *AD Users*

**H. Wilkens:** nothing special to report.

#### *SPS*

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

It was a very good week for the SPS with 95.8% availability without hardware faults.

On Monday, the energy was changed to 71.7 ZGeV/c and the next energy change is foreseen for Wednesday. A dedicated MD Wednesday studied the slow extraction loss reduction through extraction with a dynamic bump. Towards the gamma factory, partially stripped ions were accelerated to several energies and with EARLY as well as NOMINAL beam from LEIR. On Thursday, the e-beam permit was signed for AWAKE. The commissioning is ongoing and electrons were seen at the first screen. Since Sunday afternoon the LHC is in MD. FT cycles are used in parallel with single bunch LHC cycles.

#### *North Area*

**B. Rae** said that it was a very good week for the North Area.

#### *North Area Users*

**H. Wilkens** said that accumulated statistics for the current energy is so good that it was decided to anticipate the change to the next energy, which will be done on Wednesday instead of Thursday. Next week concerning the new AWAKE cycle, because the period is rather short - especially if the LHC MD continuous - it has to be seen if one or two more cycles will be available for statistics.



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## AWAKE

**B. Mikulec** said that the E. Gschwendtner sent a report:

*The electron and laser beam permit was signed last Thursday, we started with electron beam commissioning then on Friday with electrons measured on the first screens after the electron source. Commissioning of the electron source, its control system, SW, etc... continues during the week.*

*We plan to have the proton beam permit during this week, so that we start setting up the experiment with protons over the weekend and interrupt the electron commissioning during that time.*

## CLEAR

**A. Curcio** reported on the CLEAR status ([Annex 8](#)).

There were no major issues.

## Linac4

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

Linac4 had not the best week mainly caused by several interventions. One issue was an intervention on the pre-chopper. Another issue was the contamination of oil in a tank by aluminium for the RFQ modulator.

**V. Kain** asked if Linac4 was still meant to be in a debugging phase or if it is already in a reliability run.

**B. Mikulec** answered that Linac4 is still not fully operational and e.g. not all final RF software and hardware, is available. This arrives hopefully over Christmas. In addition, there are still some issues with the instrumentation and the chopper.

**J. Ferreira** asked if Linac4 should continue to be covered by piquets.

**B. Mikulec** answered that OP has to come up with a realistic availability numbers and therefore piquet coverage during daytime should be guaranteed.

## TI

**G. Langlois** said there was a minor ISOLDE problem cornering the mineralized water of a magnet on Monday, which already has been solved.

## 3. Schedule update.

**B. Mikulec** presented the [injector schedule](#) (version 1.8).

Concerning the MD block on Monday, **H. Bartosik** said that on Monday there will be a coasting beam in the SPS and the SEMgrids in the PS to study the injection from Booster to PS. It will be a fully dedicated MD thereby effecting all physics users.

**D. Macina** asked if for nToF the intensity will be normal till Monday 8<sup>00</sup>. **B. Mikulec** confirmed, but said that that the beam will already stop at 6<sup>00</sup>.



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**B. Mikulec** asked all supervisors of the week to show at the next FOM an overall availability statistics of the whole year at the beginning of the physics run with an analysis of the three most popular faults if possible.

#### 4. Draft 2018 Injector Schedule ([Annex 10](#)).

**B. Mikulec** presented on behalf of **R. Steerenberg** the Draft 2018 Injector Schedule.

**V. Kain** pointed out that there were still open points concerning the SPS DSO tests and that it was difficult to plan them so far in advance.

**T. Eriksson** said the AD closing date and DSO test clashes with the mineralized water availability and the bake-out planning, so the start has to be shifted. The closure will be delayed by at least one week.

**J. Ferreira Somoza** said that the PS closure was not possible because septum 16 will not be ready.

**B. Mikulec** suggested to give restricted access.

**V. Kain** said that if the patrol is done the machine has to be clean.

**F. Dos Santos Pedroso** answered that crates and the system for the bake-out have to be removed.

**J. Ferreira Somoza** added that the test could be done with the material in the machine, and if the bake-out stops on Friday, the septum 16 will be ready on Monday afternoon.

**J. Ferreira Somoza** meant that after the cabling campaign they cannot confirm that the signals given to the users are all present. This has to be tested.

**A. Berjillos Barranco** asked if beam beam commissioning to the Switchyard is confirmed and takes three days.

**B. Mikulec** replied that she was not aware of an answer.

**R. Froeschl** added that the 30 hours' radiation survey should be indicated.

**B. Mikulec** mentioned an email from R. Froeschl concerning the AWAKE and AD beam extension request for 2018. The question was if this extension would be compatible with the work on the interface between LINAC2 and the LINAC4. This seemed to be the case.

**B. Mikulec** asked the same question for potential works in the AD target area. This has to be checked.

**J. Coupard** added that the booster in January quickly starts with the dismantling of the transfer line. It is important to keep the same baseline, which means at least six weeks for cool-down.

**A. Berjillos Barranco** mentioned that the dismantling of LINAC2 is planned for the 3<sup>rd</sup> of December.

**B. Mikulec** said that all open points should be clarified before Friday and transferred to **R. Steerenberg**.

**B. Mikulec** mentioned a question to **R. Scrivens** and **D. Kuchler** concerning the minimization of the protons on the LINAC2 dump. For the Zero-user the pulse length can be reduced, but then the source current given for the others might be smaller and would need to be adapted.



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5. AOB

No AOB's.

**Next Meeting: Tuesday 5<sup>th</sup> December 2017.**

Minutes reported by [S. Hirlaender](#) on 29<sup>th</sup> November.