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# Summary of the 9<sup>th</sup> FOM Meeting

Held on Tuesday 23<sup>rd</sup> May 2017

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Agenda (<https://indico.cern.ch/event/640676/>)

1. *Follow-up of the last FOM*
2. *Status of the machines*
3. *Technical stop activities*
4. *AFT for injectors*
5. *Schedule update*
6. *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 8<sup>th</sup> 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

**M. O'Neil** reported the status of the linacs ([Annex 2](#)).

It was a good week for Linac2 with only few minor issues. On Monday at noon the issue with the start/stop timing of LT.BCT20 re-occurred and triggered the watchdog. The problem was solved in half hour and reappeared at 7.00 PM but solved then in few minutes.

Linac3 also had a pretty good week. The only issue that is worth mentioning concerned the beam stopper that got stuck in for 1h45 on Friday, following an INCA update.

### LEIR

**D. Manglunki** reported on the LEIR status ([Annex 3](#)).

It was a good week with good progress on the machine start-up. There are still some issues with the ITE.BHN30 power supplies. The EI.BCT10 inverted cabling will be corrected during the technical stop.



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The first beam extraction attempt towards the PS took place last night. Unfortunately, it was unsuccessful due to an issue with the SMH26.

## PSB

**JF Comblin** presented the status of the PS Booster ([Annex 4](#)).

The Booster had little downtime, around 2h15 in total with no major problems. The wire scanner of ring 4 vertical plane is broken and needs to be replaced.

The high intensity version of the MTE beam is now available with correct emittances. STAGISO beam has been taken by ISOLDE both to HRS and GPS, after a re-steering of the ISOLDE transfer lines. The BCMS25ns has been prepared and is available for the LHC recommissioning.

The ISOLDE Vistar configuration application should have been updated during the shutdown, which was not done. It was a FOM open action last year. **B. Mikulec** asked **M. Lozano** to remind **E. Fadakis** to proceed with the update as soon as possible. The FOM action could be reopened if needed.

## ISOLDE

**M. Lozano** reported the status of ISOLDE ([Annex 5](#)).

It was an excellent week for ISOLDE.

GPS started delivering Mg beams to GHM on Thursday night and has been running smoothly since then. The target was replaced yesterday. Some re-steering of the BTY transfer line was needed for both GPS and HRS.

On HRS the week was dedicated to RFQ investigations and ISOLTRAP stable beam tuning.

**M. Gourber-Pace** commented that the issue with the empty knob for controlling the GPS separator is due to a hardware problem.

## ISOLDE Users

**K. Johnston** said it was a good week for physics. The Emission channeling experiments using 27Mg to explore the role of Mg in nitride semiconductors ran very smoothly from Thursday until yesterday. Apart from some retuning of the RILIS lasers over the weekend, there were no interruptions; the experiment completed their program and the data look interesting.

## PS

**D. Cotte** reported the status of the PS ([Annex 6](#)).

It was a good week for the PS with an overall availability of 87%. The PS delivered EAST beams (IRRAD normal and blow-up version), EAST NORTH (now on Target1), the dedicated and parasitic beams for TOF (~720E10ppp / ~300E10ppp) and the AD beam (1.4E13ppp). LHC PROBE and LHC INDIV beams were also available for LHC.



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On Wednesday morning, TE-EPC and EN-CV adjusted the water supply pressure and flow of the 365 building's cooling system, putting an end to a series of tripping of these power supplies.

The main downtimes were related to the power supplies installed in Building 365, the quadrupole magnet ZT9.QFO04, ZT10.QFO03 (only affecting EAST beams) and FTN.QDE430 (only affecting nToF). The PS also suffered from several problems of high level on the cavities 10 MHz. The intervention of the specialists was necessary during the week-end.

The integrated intensity delivered to nToF is conform with the expectations.

### East Area

**B. Rae** said that the blown up beam profile at CHARM was improved on Tuesday morning at the cost of some radiation alarms. On Wednesday morning First Line intervened on ZT9.QFO4 and on F61S.DHZ1 in the evening. The ZT10.QFO3 magnet stayed off over the whole night without seriously affecting the user. It was repaired by the specialist on Wednesday morning. Apart from these few issues the run was very smooth.

### East Area Users

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

### nToF Users

**D. Macina** said that the week was very good.

### AD - ELENA

**B. Lefort** reported the status of the AD ([Annex 7](#)).

It was another good week for the AD, except for the major blackout that occurred on Saturday.

On Saturday morning around 2 AM one of the main AD transformers tripped due to a failing temperature probe. The TE-EPC piquet was called immediately by the CCC to restart the transformer. When the power came back, the cooling station automatically restarted creating a quick variation of pressure that triggered one of the overpressure safety valves in ELENA. The valve, due to a malfunction, stayed open and a large amount of water was released in the ELENA area. The fire brigade had to pump a few centimetres of water out from the ELENA / GBAR area.

Thanks to the help of many different teams (piquets, supervisors, operators, fire brigade...) the beam was back for physics at 13:20.

**B. Lefort** added that it would be nice if TI could set up a mailing/SMS list to inform the relevant people when a major issue occurs on a machine. **J. Nielsen** answered that TI is already looking at such a procedure.

**S. Deval** said that he was aware of the issue with the cooling system and will follow it up.



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**J. Nielsen** said that there are, at CERN, 51 similar transformers to the one that failed during the weekend. The issue is understood and the communication modules will be replaced on all the transformers during their next maintenance.

**T. Erikson** added that the ELENA beam permit should be ready for next Monday, in order to restart the commissioning with anti-protons.

### AD Users

**H. Wilkens** said that ATRAP prolonged their apparatus tests (had to be warmed up). The ASACUSA experiment took the beam last week.

### SPS

**Karel** reported the status of the SPS ([Annex 8](#)).

Besides providing FT beams, pilot and INDIV beams to LHC and HiRadMat, the SPS continued its dense start-up program. The 25ns LHC filling cycle was commissioned with 12 bunches nominal and BCMS. The 12 bunches were taken by the LHC on Saturday. Four nominal batches were accelerated on the HiRadMat2 cycle and used for scrubbing and beam dump commissioning. The AWAKE cycle was commissioned since it is programmed to be used the next weekend. The Fixed target intensity was doubled last Thursday (now with 15e11, 30e11, 100e11 on T2, T4 and T6). There was a problem with the cooling on the north extraction septa, which would overheat in the high duty cycle (1 cycle/18s). It was fixed last Thursday, and since then, this duty cycle was used whenever possible.

### North Area

**B. Rae** said that it was a good week. The setting up of P42+K12 beams successfully completed at 50% of nominal intensity (NA62 requests at this stage to run at 60% of nominal for most of 2017). There are still some flat tails on the beam profile at T4, which affect the transmission to T10, which is nevertheless acceptable (at least as good as in 2016) at higher T4 fluxes. The angle at T4 had to be changed much more than usually by changing the horizontal reference position of the BSM upstream of T4 by 5 mm (from 57 to 62 mm, theoretical 65 mm). Not understood why, as in principle this section was not realigned. The spill is quite good, but there are occasionally some spikes at the beginning and/or 50 Hz, which requires regular attention from the operators.

On Thursday evening an intervention on ventilation dampers for ECN3 became urgent (very high temperature in TCC8 and ECN3, affecting electronics), requiring an access to BA81 (cutting the whole NA). It took less than an hour.

### North Area Users

**H. Wilkens** said that the COMPASS and NA61 experiments were happy with the beam intensity and quality.



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## AWAKE

**E. Gschwendtner** confirmed that they will start to take the beam on Friday.

## LHC

**R. Steerenberg** reported very good progress over the last week. LHC will go to stable beam today and will then interleave commissioning, physics and scrubbing for the rest of the week. A scrubbing run is scheduled for 24 hours on next Monday and will then resume for 6 days the following week. The beam request for the scrubbing run concerns a LHC25 beam with nominal intensity and 72 bunches.

## TI

**J. Nielsen** said there was nothing else to report than what was already mentioned.

## 3. Technical Stop activities

**R. Steerenberg** said that it was agreed by management not to postpone nor shorten the technical stop. At the same time one should make as best as possible use of the LHC during the TS. Meaning that the LHC should be filled as close as possible to the TS starting time with 72 bunches and go for a long pilot run.

### Linac2

**C. Mastrostefano** presented the list of Linac2 TS activities ([Annex 9](#)).

The cabling work between the Linac2 and Linac3 will take up to 9 hours. If the Linac2 has to be restarted at 4.00 PM, beam should be stopped around 6.00 AM.

**R. Scrivens** added that the Survey team will make a scan in the Linac2 (no yet on the IMPACT list).

**B. Mikulec** said that, unfortunately, as no one from RP is present, the exact beam stop times cannot be fixed during the FOM.

### Linac3

**C. Mastrostefano** presented the list of Linac3 TS activities ([Annex 10](#)).

The installation of the pepper pot is still pending for vacuum group green light.

### PSB

**D. Hay** presented the list of PSB TS activities ([Annex 11](#)).



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The connection of the BSW power converters to the cooling circuit requires work under the false floor, for which a VIC was organized. It was agreed that the intervention could take place during the TS. **S. Deleval** confirmed after the meeting that the flexible water pipes that will be installed are not of the same type as the ones that induced flooding earlier this year in the Linac4 building.

2 wire scanners will be replaced on ring 1 and 4, requiring around 24h for vacuum recovery.

#### LEIR

**D. Nicosia** presented the list of LEIR TS activities ([Annex 12](#)).

The list is similar to the one presented last week. There is no especially lengthy intervention that could delay the restart.

#### PS

**S. Mataguez** presented the list of PS TS activities ([Annex 13](#)).

The repair of the BLM could take up to 6 hours (still difficult to estimate, as the issue is not precisely known). The aim is to start POPS tests from 3.00 PM. C. Mugnier confirmed that the POPS tests could start only once the machine accesses are over. In case of problems after restart with beam it would take about 1h to return to the current configuration.

#### SPS

**D. Mcfarlane** presented the list of SPS TS activities ([Annex 14](#)).

The present list is still smaller than what one could expect for a technical stop (only 52 IMPACTS) and it will certainly still grow in the coming days. The main intervention is the MBB13350 replacement (~4h intervention plus 24h pumping). The lift and monte-charge maintenance schedule was adapted to fit the magnet replacement activity constraints. It could also be modified (even on short notice) if needed.

### 4. AFT for injectors

**C. Roderick** gave an introduction to AFT for the injectors ([Annex 15](#)).

AFT is operational for the injectors since early April and still under development. Its architecture is described and its main inputs are coming from the elogbook. **C. Roderick** gave a demonstration on how to use the different functionalities of the dashboard, statistics tools and cardiogram.

**B. Mikulec** acknowledged the AFT and elogbook team for their excellent work.



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## 5. Schedule update.

**B. Mikulec** presented the injector schedule version 1.1 ([Annex 16](#)).

AWAKE will start to take the beam this week. The 24h UA9 run is scheduled for next Tuesday starting at 8 AM – exact beam stop times for the last fill still have to be defined by RP.

The technical stop will start on Wednesday (30<sup>th</sup>) morning and will last at least 24 hours (28h for SPS). Beam stop times will be communicated once information will be provided by RP.

## 6. AOB

There was no AOB.

**Next Meeting: Tuesday 30<sup>th</sup> May 2016.**

Minutes reported by [JB. Lallement](#) on 23<sup>rd</sup> May.