



Summary of the 19th FOM Meeting

Held on Tuesday 1st August 2017

Agenda (<https://indico.cern.ch/event/656392>)

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

B. Mikulec chaired the meeting.

The list of presence can be found in [Annex 1](#).

1. Follow-up of the last FOM

Minutes of the previous meeting were approved.

2. Status of the machines

Linac2&Linac3

R. Wegner reported the status of the linacs ([Annex 2](#)).

Linac2 availability was 97.1%. Tank 2 amplifier had to be changed (3h downtime) as well as amplifier of DB10 (2h). Spark rate at the source was higher this week and counted 75 sparks. The reason is not understood.

Question from **B. Mikulec**: Do you plan to do some more investigations?

A.: All the known sources of the sparking were verified OK.

Question from **B. Mikulec**: During the next stop do you plan to do some local investigations?

A.: The investigations will be continued. There are some ideas and new measurements that are planned.

Linac3 was running quite well with 98.8% availability. An amplifier tube was exchanged that took 1h. Another tube exchange is in preparation. There were a few trips of the source RF system. The source and LEBT was retuned what gave more beam current and much less current jitter.

LEIR

S. Jensen reported for LEIR ([Annex 3](#))

Availability was 80%, but it was only due the Linac3 issues.

Activities:



- Tue: NOMINAL study: inj. eff. optimization
- Wed: NOMINAL study: quality of multiple injections
- Thu: NOMINAL study: e-cooler setup (high losses @ 2nd injection)
EARLY to SPS for RF setup
- Fri: EARLY to SPS for RF setup

PSB

B. Mikulec presented the status of the PS Booster ([Annex 4](#)).

Good week for the booster with 96.4% availability. Main downtime:

- Linac2 problems on Wednesday night.
- PS switchyard access
- Several resets for extraction and recombination kickers

Beams:

- All operational beams available
- Van der Meer beam prepared for LHC
- 2 dedicated cycles set up for ISOLDE beams with Finemet cavity for h=1 or h=2 replacement
- MD cycle prepared for h=2 user with h=1 synchronisation; first tests done in PS
- BCMS 1.5 eVs cycle has been optimised and is available for dispersion matching and transverse blow-up studies at PS injection

Since Thursday running Linac4 24/7, babysitting and fault follow-up by PSB operators and Linac4 ABP team.

ISOLDE

E. Matli reported the status of ISOLDE ([Annex 5](#)).

Smooth operation with 95.4% availability. On Thursday, the source gave up and the run had to be interrupted. Another major issue was an RF FEC that had to be locally power cycled. New targets are installed and ISOLDE is ready to restart.

ISOLDE Users

E. Matli: The 144Ba run was successful. Ba142 run was interrupted and now the experiments are preparing for Sm measurements. HRS is delivering 35Ar to VITO experiment.

PS

M. Fraser reported the status of the PS ([Annex 6](#)). Average beam availability 93.4%. Setting-up LHC BCMS 1.5 eVs. For R3 there is blow up at injection (C185), 100% in H and 40% in V.

Faults:

- Recurrent faults with PR.WFW due to a communication problem between FGC and VS state card. FGC will be changed during next beam stop.
- SMH16 electro-valve (replaced)

- RF 10 MHz cavities: C56/C86
- KFA45 tripped on maximum voltage

Over the weekend LHC reported satellites. Immediate mitigations:

- Tightened extraction kicker (KFA71) pulse around the batch.
- Second instance of kicker used to clean satellites after triple splitting.
- Losses seen at 26 GeV in PS (SS99) as machine ramps down.
- Fine-tuned KFA71 pulse with SPS (with second instance OFF).

Next steps:

1. Check/improve splitting, as 10 MHz RF system was not performing nominally over the weekend, but no obvious correlation with satellites.
2. Check implementation of second instance of KFA71 on 2.5 GeV intermediate flat-top: SPS reported that bunches were touched over the weekend.
3. Using PS internal dump after extraction, before machine ramps down, is an option.

The nTOF beam is still ahead of schedule. The nTOF beam was steered to be centred on the MTV screen, but this made the neutron rate drop, so it was brought back to the old settings.

East Area

N. Charitonidis: Nothing special to report.

East Area Users

H. Wilkens: Happy users.

nTOF

F. Mingrone presented the status of nTOF ([Annex 7](#)). There was an issue with the beam steering (reported above in PS section). Conclusions:

- Significant effect on the neutron beam of EAR2 (i.e. neutron production per proton pulse intensity) due to the displacement of the proton beam on the target: 6-7% decrease per 5 mm shift
 - If any intervention is necessary from the PS side, it is important to communicate it in advance so nTOF can tune the data taking without spoiling the operation of the facility
 - Need few more details: distance of the screen and position of its center
 - Would it be possible to measure the position of the proton beam at the beginning of each experimental campaign (every 1-2 months)?
- Would be very interesting from nTOF side to do a complete scan on the horizontal axis to find the maximum of the neutron flux in EAR2, both for TOF and EAST beams: possible to plan during a PS MD session?

Comment from **K. Hanke:** Scans at the beginning of a run can be arranged as it is done for the ISOLDE beams.

AD



P. Freyermuth reported on the AD status ([Annex 8](#)).

It was a good and stable week at AD with 99% availability. Only 90min of machine downtime due to an RF amplifier trip. Daily extracted intensity fluctuations of ~10% (correlated to the outside temperature) are still present and are investigated.

Comment from **T. Eriksson**: For a few weeks ELENA was down for installation of the GBAR extraction line. It has finished and ELENA was restarted.

AD Users

H. Wilkens: BASE experiment is scheduled for the next week.

Comment from **M. Fraser**: Often the AD experiments reported movement of beam position. The AD supervisor trimmed the extraction kicker delay by some 100's of nanoseconds to correct the beam position. It is bizarre because the kicker is horizontal, but the movement on the target is vertical. ABT experts report stability of a few nanoseconds with respect to the extraction timing event. The expert needs to be called next time it happens.

A: There is indeed vertical position movement observed. To be followed up.

SPS

K. Cornelis reported on SPS status ([Annex 9](#)).

Availability was 90.1%. Downtime was mainly due to the injector complex problems and an issue with the power converter for the MST septa (3h46min).

HiRadMat run (Rotating Collimators) finished last Tuesday. Van der Meer bunches provided for LHC until Friday. Difficult LHC filling on Saturday (satellites due to problems with 10 MHz cavities in PS). Fixed as of yesterday. Xe ions accelerated on prototype FT cycle.

North Area

N. Charitonidis: In H2 line a collimator got stuck and as a workaround optics was adapted. Radiation monitors show sometimes 20-22 uSv corresponding to the first warning level. Still being investigated.

Question: Are there any changes in the spill quality? Are there any observations from the user side?

Answer by **H. Wilkens**: On the last users meeting the operation team was complemented.

Comment from **K. Cornelis**: The beam is drifting, which seems to be related to the power consumption of the complex. There is a semi-automatic procedure to correct for these effects. The operation team should be called whenever a degradation is observed.

North Area Users

H. Wilkens: A new super-conducting magnet in the H8 line was tested successfully.

HiRadMat

K. Cornelis: The run was completed and currently another experiment is being installed.



AWAKE

No report.

LHC

R. Steerenberg: Past week there were MD and VDM scans, which were very successful. Over the weekend there was intensity ramp-up. Now LHC is in regular physics run again. The issue with elevated losses at 16L2 is still present what occasionally provokes beam dumps.

TI

C. Wetton: Nothing to report.

3. Schedule Updates

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

Question: Any remarks concerning the MD tomorrow?

H. Bartosik: There will be no beams to the North Area.

Question from T. Eriksson: Will the AD beam also be affected?

Answer by **H. Bartosik:** No, but it might be that it will be slightly less frequent.

AWAKE and HiRadMat runs need to be moved to one week later on the schedule. Otherwise nothing special for August.

4. AOB

No AOBs.

Next Meeting: 8th of August.

Minutes reported by P.K. Skowronski on 2nd of August.