



Summary of the 2nd FOM Meeting

Held on Tuesday 27th February 2018

Agenda <https://indico.cern.ch/event/708220/>

- 1. Follow up the last FOM*
- 2. Status of the machines*
- 3. SPS - YETS activities report*
- 4. Schedule updates*
- 5. AOB*

1. Follow up the last FOM

B. Mikulec chaired the meeting.

The list of presence can be found in [Annex 0](#).

2. Status of the machines

Linac2 & Linac3

D. Kuechler reported the status of the linacs.

Linac2

On Tuesday 20th February morning, the beam stopper LI.STP de-condemnation was promised, but only done at the end of the afternoon meaning a whole day was lost.

On Wednesday 21st February morning time was lost due to the central timing upgrade (RF had to be stopped and restarted), and on the same day during the study of a problem, it was realised that the wrong power converter for LT.BHZ20 was condemned. After the condemnation of the correct power converter, a watchdog problem occurred (as the electronics gets no power, no information is published, but the watchdog needs this information). It is the same problem as last year with the old converter, which should have been sorted out.

On Friday 23rd February (after a discussion with **B. Mikulec**) it was decided to wait for the Switchyard beam permit, which would solve problem automatically. At the moment (of the FOM) it is still not signed.

Linac3

The re-commission of the ion source was started.



All tests of sub-systems were successful, meaning the repair of the main insulator done during the YETS was a success.

B. Mikulec said that there are three points to be followed up. First, she will contact the EPC group to get feedback about the LT.BHZ20 issue. Second she will ask EN-STI why the lock-in of the beam stopper took a whole day. Moreover, third, for the next central timing interventions, RF experts have to be warned in advance.

Gourber-Pace M. asked if the problem was that the distribution list for the timing intervention was incomplete.

B. Mikulec answered that it was mentioned in the FOM, but not sent out to a larger community, which should be done the next time, as the impact is now known.

F. Pirotte clarified that the LT.BHZ20 had to be condemned first, so the delay of the beam stopper lock-in was not an issue of EN-STI.

Linac4

S. Schuh reported the status of Linac4 ([Annex 1](#)).

A lot of activities during the YETS: The real beam stopper replaced the Iris, the LLRF system (hardware, firmware, FESA 2 => 3, Inspector panels) was upgraded, the high-power RF system was maintained, new type of RF pickups (CCDTL3) were installed, and the commissioning of the debuncher amplifier started.

The source is in operation since February the 2nd. The DSO test on February 13th was successful, and the beam permit was received. Up to 20 mA were transported through the RFQ on February 19th. The re-establishing of the reference phases was needed due to the work which was done on the LLRF. Phase-scans are proceeding with difficulties (some sparking).

On February 26th, the beam went through the DTLs and the next cavities, and good phases till CCDTL1 were found. The source restarted very stably, and very few HV trips occurred (manual operation, no automatic source restart). During the weekend the source stopped pulsing due to problems with the vacuum and the L4L.VPGR.0126.6 turbopump and gas injection valve voltage system had to be exchanged.

The plans for this week are the re-establishing of a stable RF operation and the continuation of the phase scans (testing ToF application, better precision) up to 160 MeV if possible. Also, work on optimal settings for pulse flatness on 3 MeV beam is planned.

B. Mikulec asked if there was a problem with the autopilot application.

S. Schuh negated and added that there was just not sufficient time yet to implement some changes for the autopilot.

B. Mikulec asked if the schedule has to be adapted.

S. Schuh answered affirmatively that a lot was changed for the RF, which is still in debugging mode.



PSB mid-HW commissioning status

F. Chapuis reported on the PSB hardware test activities.

Until now, there were no real problems found during the Booster hardware tests and the end of the period is scheduled for March 1st end of the day. Details are available in ASM: [ASM hardware commissioning](#).

The remaining scheduled interventions are the installation of the new LIU-Wire scanner and the access to the Switchyard to adjust the compressed air pressure of LBE.MSG10, on February 27th morning. In the afternoon, it is planned to perform a dry run with the new TRIM1+4_Zero and a parallel intervention on the transverse feedback system (PLC interface was not ready) including a dry run. An e-mail has been sent as a last call for the equipment specialists informing them about the end of the HW commissioning period.

PS mid-HW commissioning status

M. Delrieux reported on the PS HW commissioning activities ([Annex 2](#)).

More than half the commissioning is achieved. Excellent progress has been made so far. The Switchyard commissioning is completed and the beam permit signed this morning. Most of the power supplies are already tested. POPS and rotating machine have successfully pulsed. The heating issue with MU31 was fixed on February 26th. Things to be followed up are the cable that was accidentally cut for septum 42 and the MTE kickers 4 and 13. The RF 10 MHz is ready to be remotely tested on Thursday, March 1st and the East area has to be tested. The PS ring magnet audio-visual patrol and the CT equipment are also pending. So far, no showstopper was found.

H. Damerou added that about 40-50% of the low-level equipment had been checked in the central building with only minor damages detected due to the de-cabling and that the 10 MHz cavities have been pulsed with signals from the LLRF.

B. Mikulec asked for the duration of the outstanding magnet polarity measurement in the Switchyard.

M. Delrieux answered that this would not take long.

B. Mikulec proposed to do it as soon as possible in order not to impact the LBE/LBS beam tests and the PSB beam commissioning.

CLEAR report

A. Curcio reported on the activities of CLEAR ([Annex 3](#)).

The intervention of the photocathode laser alignment took place. The beam commissioning started and the first emittance characterization of the year was done. No major issues occurred. The beam commissioning will continue as planned.

D. Kuechler asked about the email which was sent around concerning the grounding of the magnets.

B. Mikulec answered that she tries to get more information.



3. SPS - YETS activities report

D. Mcfarlane reported on the SPS YETS activities([Annex 4](#)).

The beam was turned off at 06:00 on Monday the 18th December. The closure of the SPS was on Friday the 23rd February 2018 at 16:00. Three weeks were foreseen for EPC tests and cold-checkout by OP. The DSO tests on Chain 1 will take place on Monday the 12th March. SPS will receive the beam from the PS on Friday the 16th March 2018, followed by two weeks for beam setup. The SPS will be ready to give beam to the LHC on Monday the 4th April 2018.

There were 7.4 weeks of access, but one day per point was lost due to AUG tests, 1.5 days per point were lost to Access tests and 0.5 days per point were lost due to lift maintenance, which is in total three days. There should be no shortening of the YETS.

Many activities took place in BA1 to BA6. In TT20 due to the bad weather the water came through and civil engineering had to do repetitive repair works.

For the magnet replacement campaign, 13 magnets were replaced or moved. Measurement and alignment of quadrupoles were done. A new GSM cable was installed between BA3 and BA5. An aC coating was done in Arc 5-.

The main LIU Beam Dump activities are finished. A list of the preparation work of LS2 can be found in [Annex 4](#). The crab cavities were installed in BA6. The team fitted a ten-week work into 7.4 weeks.

D. Mcfarlane wants to thank all the teams involved in the successful YETS.

4. Schedule updates

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

No changes happened since the last meeting. This afternoon there will be beam to the LBE/LBS lines to complete the commissioning of Linac2. The beam will then be sent to the PSB, which is planned for Friday. One week later the beam goes to the PS.

5. AOB

B. Mikulec finally mentioned changes concerning AFT. The AFT was improved during the shutdown. The FOM dashboards for the FOM reports were altered. Now the predefined plot is not a pie chart, but a bar plot, which should give a better overview of the downtime. Only blocking faults are shown. All graphics can be downloaded easily. A suspended state fault can be added to avoid being counted in for the statistics if the downtime happens during the night where there is no piquet coverage, as for Linac4.

Next Meeting: Tuesday 6th March 2018.

Minutes reported by [S. Hirlander](#) on 1st March.