



Summary of the 16th FOM Meeting

Held on Tuesday 11th July 2017

Agenda (<https://indico.cern.ch/event/652329/>)

- 1. Follow-up of the last FOM*
- 2. Status of the machines*
- 3. ITS2 report*
- 4. Schedule update*
- 5. AOB*

1. Follow-up of the last FOM

V. Kain chaired the meeting.

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

The [minutes of the 15th FOM](#) were approved.

V. Kain asked about the issue concerning AD beam request perturbations when too many changes in the supercycle. **M. Gourber-Pace** said that this is not really an issue and it has been like that since always. She will ask **JC. Bau** to present a slide at the next FOM.

2. Status of the machines.

Linac2 & Linac3

D. Kuchler reported the status of the linacs.

Both linacs had an excellent week (Linac2 100% uptime, Linac3 some resets). TS2 was finished without problems in time. The new SAIREM generator was installed during the technical stop.

LEIR

M. E. Angoletta reported on the LEIR status ([Annex 1](#)).

The week starts well with 2E10 charges extracted from LEIR. Studies took place on LINAC3-LEIR with Ecooler ON/OFF, Schottky measurements, various debuncher and ramping cavity settings. The LLRF was setup to work with the newly repaired CRF43 but after setting everything up it was discovered that the CRF43 cavity had in the meantime gone out of service again. The cavity CRF43 was back to operational state on Tuesday. After the end of the technical stop the element EI.BHN10 did not restart and remained in fault. It was quickly fixed by EPC piquet on Friday. The electronics was stuck and did not get any command through, so a local reset was needed. The LLRF was once more setup to work



with the CRF43 cavity. Beam was successfully captured and accelerated with the CRF43 but this cavity went in standby state when the unused CRF41 was switched OFF. It was not possible anymore to switch the CRF43 ON. So the LLRF was once more set to work with the CRF41 and the CRF43 was switched OFF. The HLRF experts are informed and keep working to understand and solve the problem.

PSB

G. Di Giovanni presented the status of the PS Booster ([Annex 2](#)).

It was a good week with 95.2% availability. After providing beam to COLDEX on Monday the high-intensity, high-loss cycles were stopped on Tuesday at 4pm and all remaining beams on Wednesday at 5am. Main interventions in the PSB were: Repair of ring3 C16 cavity, exchange of ring3 vertical wire scanner, powering test of a repaired BI.DIS10 module and repair of a vacuum leak in the BT line. All interventions were successful.

The main issue of the week were: Monday evening no more beam from ring 1 due to a broken CPU of the RF frontend cfv-361-allr1bc (2h30 repair time), a long-lasting INCA/LSA issues where the settings were not propagated correctly to certain equipment after cycle mapping could be solved. At beam restart after ITS2 Thursday afternoon several problems occurred with synchronization and later on with dying RF processes, related to LL-RF SW changes deployed during the TS (migration of ALLPSBDSPA, ALLPSBDSPB and ALLPSBDSPC to FESA 3). In addition the blow-up of all rings had to be adjusted after the recalibration of all C16 cavities. Operation went back to cruise speed from around 4 AM on Friday after interventions from the RF team, the LL-RF piquet and **M. Jaussi**.

ISOLDE

J. Alberto Rodriguez reported the status of ISOLDE ([Annex 3](#)).

It was a very busy week at ISOLDE, most of it dedicated to prepare and deliver the first HIE-ISOLDE beam of the year (^{72}Se at 4.4 MeV/u). A complicated radioactive molecular beam ($^{72}\text{SeCO}$) in the GPS target was generated, transported it to the REX-TRAP and the REX-EBIS where the molecules were broken and the charge state of the Selenium to $^{72}\text{Se}^{19+}$ was boosted before accelerating it to 4.4 MeV/u. On Friday evening the radioactive beam was sent to the Miniball users for the first time. The machine (specially the REX-TRAP, REX-EBIS and the REX/HIE-ISOLDE linac) was very stable during the whole week. Unfortunately, the target production rate of the molecular beam has been steadily decreasing since Friday (~a factor 2 every 12 hours) and on Monday it was too low for the users. Therefore it was decided to go for a target and Laser MD and send the beam to users for background and calibration measurements. The target will be replaced.

ISOLDE Users

K. Johnston said that it was a disappointing week at ISOLDE from the user's side. The first experiment for HIE-ISOLDE (IS597) had the aim of probing shape coexistence in ^{72}Se at Miniball. This should be a relatively straightforward beam for ISOLDE to produce, but some as-yet unknown problem with the target resulted in yields being low at the beginning of the experiment and they continued to drop over the weekend. By Sunday, insufficient production of ^{72}Se meant that the experiment effectively ended



2 days early. An early estimate from the spokesperson was that only about 3% of the experimental program was possible. Now to be checked why the chemistry of the target did not work as expected.

PS

K. Hanke reported the status of the PS ([Annex 4](#)).

All in all good week with only a few faults and an availability of 93.3%. The first part of the week before the technical stop was extremely quiet. On Tuesday beams were stopped for the 36 h technical stop. Access started on Wednesday with the RP survey followed by the various interventions. All planned interventions were completed timely. The PS was closed on Thursday 15:00, followed by the patrols. The Power and Kicker Piquets were needed to start some of the equipment. Beam was taken as from 19:00 slightly ahead of schedule but the PSB had still some RF problems. The only major fault of the week was a stop of the EAST beams for more than 6 h on Friday due to a faulty power supply, fixed by First Line. The PS was not affected by the power glitches during the weekend. However there was a fire alarm in b.151 on Sunday (some electronics burnt in the power rack of the 24 kV final amplifier for PR.C40-77). On the beam preparation side, a 12b BCMS with 160E10 ppp was set up for the LHC on Sunday morning.

East Area

B. Rae said that apart from the power converters fault. It was a good week

East Area Users

H. Wilkens said that the users were happy.

nToF Users

F. Macina said that nToF ran smoothly.

AD - ELENA

L. Bojtar reported the status of the AD ([Annex 5](#)).

The AD ran quite well, although the start-up was a bit problematic after the technical stop. Beam came from PS at 10 PM as planned, but it was delivered to AD experiments only at 2 AM, due to 3 different problems. The injection kicker timing had to be adjusted because of some HW change during the TS (this was expected). Ejection timings were missing due to a modification made for Elena during the TS. And there was an orbit jump (it happens generally after the e-cooler drops or an access is given to the ring). The BASE and AEGIS experiments asked then to re-steer their beam line.

ELENA is in transfer-line installation phase.

AD Users



H. Wilkens said that the ATRAP experiment being still warm, beam was rescheduled to AEGIS and ALPHA experiments.

SPS

V. Kain reported the status of the SPS ([Annex 6](#)).

The week was rather smooth with excellent beam availability of 95%. The North Area beam was stopped as planned on Monday evening for a 24 h dedicated run for COLDEX. The cool down time before the technical stop was used for MDs with low intensity single bunch coasts (crystal assisted slow extraction and emittance growth studies in Q20 optics). Some issues were encountered after the 36h Technical Stop on Thursday evening. About 1 h downtime was caused by a problem on a few TT10 magnets which tripped and could eventually only be restarted by the Piquet. Furthermore, there was a problem with the intensity on the T2 target despite the fact that the transfer line trajectory had not changed as compared to before the Technical Stop. Eventually it was found on Friday morning that the target intensity monitor TBIU had lost its reference position in the FESA class and therefore was offset by 25 mm. Until that moment the North Area beam was delivered with reduced intensity to the other targets. An aperture scan performed on Friday confirmed that the exchange of the dipole MBA13370 during the Technical Stop indeed resolved the aperture bottle-neck in location 133.

L. Jensen commented that the fault on the TBIU should not be assigned to the BI group but to the EN/STI as it is not an instrumentation problem. **V. Kain** answered that fault are not assigned according to groups but to systems. This can be further discussed.

J. Ferreira asked whether the aperture restriction in 133 was understood. **K. Cornelis** answered that there was no clear clue as nothing clearly visible.

North Area

B. Rae said they had a difficult restart on T2 but it went well once intensity issue was solved. T4 and T10 were suffering from transmission degradation. Investigations on the cause were on-going.

North Area Users

H. Wilkens said it was a very productive week-end. A field mapping of the GOLIATH magnet took place during the TS. It was a bit tricky as it was the first time the magnet was powered. Users are happy.

HiRadMat

B. Rae said there was nothing special to report.

AWAKE

There was no report.



LHC

K. Cornelis said the LHC was restarted on Saturday after the technical stop.

TI

J. Nielsen reported on the week events.

On Saturday the chilled water distribution stopped for NA61. TI was notified by the users since no new alarms were active. Alarms were already present because of a maintenance on-going on the other pump. The pump tripped due to the high temperatures in the hall. 2 hours later the chilled water and pumps on the production unit for NA61 tripped again. It was still very warm in the hall. The doors were opened wide, to let more air circulate.

During the night from Saturday to Sunday an electrical perturbation tripped the SPS.

On Sunday there was a fire alarm in the PS. PS operator confirmed a problem with a RF cavity in building 151 at the same time. There was an Intervention with fire brigade and electrical power supply was consigned.

3. Report on ITS2

Linac 2 & 3

C. Mastrostefano said that everything went well with Linac2 and Linac3. Beam was back at 16.00 on Thursday. The vacuum intervention on the first DTL tank could not be completed. The L3 source new SAIREM generator was commissioned.

J. Ferreira commented that a leak was found on the secondary vacuum of intersection of tank 1. Due to the short distance between drift tubes at the beginning of the LINAC this leak is not accessible to repair, but it was reduced. The objective of this secondary vacuum is not to mitigate a leak but to avoid the progression of the corrosion found. As an alternative solution a tube was prepared to install a N2 bottle close to the RFQ (out of the tunnel) to keep the corroded volume under N2 atmosphere. The position of this bottle needs to be agreed.

LEIR

D. Nicosia could not be present at the meeting. He sent a mail saying that everything went fine.

PSB

A. Berjillos Barranco reported on the ITS2 for the PSB ([Annex 7](#)). Everything went well. The C16 was repaired and the wire scanner replaced.

PS



A. Berjillos Barranco reported on the ITS2 for the PS ([Annex 8](#)). As already mentioned by **K. Hanke** in the PS report, everything went well.

SPS

D. Macfarlane reported on the ITS2 for the PS ([Annex 9](#)). There were half the number of intervention usually planned for a technical stop (certainly due to the proximity of the previous one). The BA5 lift maintenance did not take place because the team did not get the correct access rights. It is reschedule to the next TS. The magnet was successfully exchanged in 133 but there was an accident during the transport and a staff got injured. The event is being followed-up by HSE. Several doors were forced without permission.

4. Schedule update.

V. Kain presented the injector schedule version 1.2 ([Annex 10](#)).

There will be a dedicated MD in the SPS tomorrow. The LHC MD beams requirements will be discussed next week.

5. AOB

The maintenance of the AD door YEA01.ADT=853 (13/07 to 14/07) was approved.

Next Meeting: Tuesday 18th July 2016.

Minutes reported by [JB. Lallement](#) on 13th July.