Summary of the 28th FOM Meeting

Held on Tuesday 3rd October 2017

Agenda https://indico.cern.ch/event/669498/

1. *Follow-up of the last FOM*
2. *Status of the machines*
3. *Schedule update*
4. *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 27th FOM were approved.

2. Status of the machines.

Linac2 & Linac3

G. Bellodi reported the status of the linacs (Annex 1).

It was an excellent week for Linac2 with 100% availability.

On the Linac3 side, several resets of the Thomson generator were needed. The source conditioning is still on-going. On Wednesday, there was a 1h downtime to revert the RF PLC code to an older version in order to remove a pulse blocking routine, installed the week before, which did not work as expected.

LEIR

N. Biancacci reported on the LEIR status (Annex 2).

The LEIR had an availability of 83% with main blocking faults related to RF and Linac3.

R. Alemany commented that most of the RF blocking faults were due to the development of a new interlock scheme preventing having 2 injections per cycle in order to keep the visitor platform open (both on the L3 and LEIR side). The RF team is presently working on the L3 side. RP has blocked for the moment visits to the platform, and all the team is following up the quick deployment of this new interlock to reopen the platform as soon as possible.

PSB

JF. Comblin presented the status of the PS Booster (Annex 3).

It was an excellent week with 99% availability. The main fault occurred on Wednesday at 5AM when the 2 MHz cavity of ring 3 tripped. The high-level RF Piquet was called and the total downtime was 1h46. The priority this week was given to the reduction of the emittance of the operational 8b4e LHC beams, in order to increase their brightness. On the MD side, it was a busy week with triple harmonic capture, dispersion measurements, ejection septum aperture scan… The MD on MTE to increase the intensity was on-going.

ISOLDE

L. Fadakis reported the status of ISOLDE (Annex 4).

On the HRS side, the VITO experimental line stopped taking beam (26Na) on Wednesday morning.

On the GPS side, the beam (140Nd33+ E=4.62MeV/u) was send to MINIBALL in XT01 on Wednesday afternoon. On Friday early afternoon users requested to change isotope, since their yield of 140Nd was overwhelmed by 140Sm. The machine scaled wonderfully and 142Sm33+ was delivered by the end of Friday. The GPS availability was dominated by RF amplifier faults. Because of the last minute change of isotope requested by users, amplifier settings were suddenly changed while it would have required some conditioning.

ISOLDE Users

K. Johnston could not attend the meeting and sent the following report:

On GPS last week the main goal was to measure 140Nd using Coulomb excitation at MINIBALL. This was compromised due to Sm (the mother of Nd) being produced at higher rate than expected and in the end the experiment was forced to change. This happened on Friday when 142Sm – also part of the same experimental proposal – was set up and taken to the experiment. Since then the rates of 142Sm have been good with the experiment forced to take lower than usual proton rate (0.2-0.5uA) so as not to overload the detectors at MINIBALL. The initial data look promising on 142Sm and some of the new states which were looked for have been found. 140Nd remains a problem however and this will require some target development to see if it can be produced sufficiently pure for 2018.

PS

M. Fraser reported the status of the PS (Annex 5).

It was a good week with 98% availability. The 8b4e beam horizontal and vertical emittances were reduced to 1.1 and 1.0 mm.mrad, respectively, for an intensity of 1.3e11 ppb. After the CLOUD experiment reported low intensity, a T11 quadrupole was found with inverted polarity (cabling from the YETS). The intensity to T9 was limited to 3 spills per super cycle due to the reduced limits on RP alarm on PAXEA61N to protect the CLOUD work station. Investigations are on-going on the occasional POPS missing pulse occurring since Friday.

The nToF delivered integrated intensity is 10% ahead of schedule.

East Area

B. Rae said that the main issues were, as already mentioned, the CLOUD beam line quadrupole polarity inversion and the intensity limitation in T9. The wrong quadrupole polarity was not noticed earlier, as it was the first use of the CLOUD beam line since the YETS.

East Area Users

H. Wilkens said that users were happy and they had good time with Beam Line For School.

nToF Users

F. Macina said that users were happy.

AD - ELENA

P. Freyermuth reported the status of the AD (Annex 6) and ELENA (Annex 7).

It was a pretty difficult week for the AD with 3 main issues. One of the main power supplies tripped on Wednesday and required the intervention of the First Line. On Thursday night, the horn power supply tripped because of an interlock on the target area due to a drift of a position sensor, which was fixed on Friday morning. The recapture on the 300 MeV plateau started to degrade on Sunday, it was probably due to an issue with RF cables.

The ELENA H^- source was refurbished and a Pbar beam circulated last week at 35 MeV.

AD Users

H. Wilkens said that there was no issue to be reported from the users.

SPS

F. Velotti reported the status of the SPS (Annex 8).

It was a pretty good week for the SPS with an availability of 97% with no major faults. On Tuesday, a change of an insulation transformer on the 800 MHz cavities caused a stop of 45 minutes for all LHC beams, this should theoretically solve the incompatibility of certain cycles (e.g. LHC4) with other LHC beams, to be verified. Also, the BCS version of the 8b4e was taken in view of the LHC possible requests for week 40. On Thursday, following the NA users request, the SFTPRO intensity was raised in order to guarantee the requested sharing of 55-35-150. The intensity before extraction is now up to 3.6e13 p. During the night, a problem on SM2 came back and there was no possibility to deliver beam to COMPASS until the following morning, when the experts finally managed to solve the problem.

North Area

B. Rae said there were serious issues with the SM2 power converter and almost 2 days were lost for COMPASS, in spite of very massive support from TE/EPC. Finally it was solved without full understanding of the problem. Otherwise after the SM2 problem has been solved COMPASS also suffered from a scraper jaw positioning error that caused a significant increase of the beam halo. Fixed after diagnosis from STI and running again from Thursday 16:00. STI was asked to consign the motor until end of the data taking, repair will be done during the YETS. On Friday afternoon a 2.5 hour stop for the whole NA was due to a power converter fault after a wobbling change.

North Area Users

H. Wilkens confirmed that the COMPASS experiment had a difficult week. Na64 will finish on Wednesday and the intensity request on the T2 target will therefore be reduced.

HiRadMat

K. Cornelis said they were starting today.

AWAKE

There was no report.

LHC

J. Wenninger said it was one of the best weeks ever with up to 1.25e11 in collision with the 8b4e beam and 4 fb^{-1} delivered (Annex 9).

CLEAR

There was no report.

TI

J. Nielsen said it was a good week with no major issue to report.

3. Schedule update.

B. Mikulec presented the new injector schedule version 1.5 for approval (Annex 10).

For what concerns the radiation survey during week 43, NA proton physics will be stopped at 6.00 on Monday 23/10.
From 23/10, 6.00 to 24/10, 10.00: most of the proton beams stopped except LHC production beam during LHC fills (with minimum number of beam dumps!).
From 24/10, 10.00 to 24/10, 16.00: All proton beams stopped.
From 24/10, 11.30 to 24/10, 16.00: All beams stopped (including ions).
24/10, 11.30: Machines in access mode.
24/10, 12.00: RP access for radiation survey.
24/10, 16.00: End of access, normal beam schedule can restart.

The main changes to the schedule wrt. the previous version are:

The LHC MD4 was moved from week 43 to week 47 and consequently, the Wednesday injectors MD was moved from week 47 to week 43. The indication of "Xenon ions to LHC" that will take place on Thursday October 12th has been added.

After a comment from **R. Alemany**, it was agreed that the week 43 injector MD could take place in week 49 instead, as no high intensity is needed.

The new 1.5 schedule version has been approved with this modification.

F. Pirotte added that DSO tests will take place on the 16/10 AM in the North Area for the ion interlock and on the 23/10 on the AWAKE electron gun.

4. AOB

B. Mikulec gave details on the van der Meer beam request. The LHC experiments requested to have a VdM scan at injection energy as part of the physics program for the 900 GeV high beta star run. Therefore, the injectors should prepare injections of 8 bunches into the LHC with a bunch spacing of 525 ns that would require the use of the 4 PSB rings. The run is planned for the last week of the 2017 LHC run (week 49). The beams should be as Gaussian as possible, with slightly higher intensity than usual (around 1.2e11).

Next Meeting: Tuesday 10th October 2017.

Minutes reported by JB. Lallement on 5th October.