Minutes of the 29th FOM meeting held on 03.08.2010

Agenda:

1) Follow-up of the last meeting (B. Mikulec)
2) Status of the machines (Supervisors)
3) Schedule (B. Mikulec)
4) AOB
5) Next agenda

1. Follow-up of the last meeting

The minutes of the 28th FOM meeting were approved.

Follow-up from the last FOM:

a) Status of the PS B-field fluctuations.
An MD took place after the technical stop on 19 July. R. Steerenberg reported that no further studies have been carried out after the MD, awaiting the data analysis. S. Gilardoni added that the beam trajectory data have already been analysed, as mentioned in one of the last FOMs. The magnetic data, instead, should be still analysed by the experts.

b) Status of the cooling of the AD target. B. Mikulec reported that the temperature alarm of the AD target is part of the safety chain. The experts had to intervene last week to adjust the temperature regulation, with the alarm threshold being increased to 35 degrees. The alarms were probably due to the high environmental temperatures of the last week.

c) ISOLDE watchdog status. See PSB report.

e) Status of AD bunch length. P. Belochitskii reported that the bunch length is still too long, even if some improvements could be reached last week. An MD took place on Monday during which, amongst other studies, the bunch length was again investigated. T. Eriksson mentioned that a RF signal generated by the GSM repeater in the zone, at a frequency of about 960 MHz, could be clearly identified on the stochastic cooling. SUNRISE has been contacted to try to reduce this noise, which might have an influence on the cooling efficiency.

f) Status of saving beam references in INCA. K. Sigerud reported that there is still one issue with saving the references. A solution will be implemented soon. Then OP should be able to re-save properly all the PS users in references.

The beam statistics can be found here.
The AD statistics are not yet presented. CO has by now developed a solution for calculating them also for AD, but the data has still to be verified.

2. Status of the machines

Linac2 (D. KUECHLER):
The Linac was running without any particular problems until Tuesday morning when there was a problem with the LA1.QDN11. The power piquet had to change a 15 V power supply. The beams were stopped for about 45 minutes.

PSB (J. TAN):
On Wednesday, the OASIS signal of the BR.SAQDE was found with the wrong polarity. The OASIS expert fixed the problem.
The measurements of the beam trajectory in the extraction line are now available also for the STAGISO beam. A new ADC has been installed. Unfortunately the load on the acquisition CPU exceeds the capacity of the system. The acquisition has been limited to 1000 samples while the BI experts are investigating a possible solution.
On Wednesday night the C02 cavity of ring 1 dropped out for 20 ms during the acceleration. The too large beam loading required the adjustment of the amplifier gain. This cavity needs high current for high intensity beams. The same night, the DPSBKSU1 lost the network connection and it was no longer possible to extract any of the beams. This problem was solved by resetting the DSC.
On Thursday, the beams were lost due to a scheduled reset of some DSCs. The operation should have been transparent to operation, but in fact it was no longer possible to execute any of the users. The beam loading on the C02 cavity appeared again. The intensity on ring1 was then limited to 11.5 injected turns and the missing intensity was re-distributed amongst the other 3 rings.
On Friday, a fine-tuning of the C02 cavity set the maximum intensity without beam loading to 860-910E10 p.
On Saturday night, all the C16 cavities powered off, with a non-resettable fault. A remote reset was tried, but the expert had to be called to fix the problem. In total, a bit more than one hour was lost due to this fault.

Concerning the ISOLDE watchdog, the problem has been understood and a solution is under investigation. The transformer used by the watchdog has an integration time window of about 2 mus. This window should be long enough to accommodate all the extracted bunches. During this period, the transformer has an offset of about -50 mV, which is recognised as a virtual loss. This offset cannot be corrected with the old acquisition electronics. The STAGISO beam has three bunches spaced by 16 mus: in this case the time gate is repeated three times. The virtual loss due to the offset is thus integrated three times, giving a fake beam loss of about 150 10^{10} p. Moreover, the watchdog is not ppm: if there is the STAGISO beam played with the HRS or GPS beams, the virtual loss is large enough to trigger the watchdog. BI and CO are working to make the watchdog ppm.
The new transformer electronics is also in preparation for the final renovation of the system.
S. Hancock asked why this problem appeared only now. B. Mikulec replied that most probably the problem was already there in the past, but passed unnoticed since the STAGISO beam was requested only rarely. Moreover, the calibration of the transformer changed, and this has also an impact on the problem.

S. Hancock asked few clarifications about the meaning of the beam statistics. B. Mikulec replied that the aim of the presented statistics has been defined to present the

duration of beam unavailability for specific destinations taking into account the presence of the beam request. The aim was not to calculate machine availabilities; this would be nice to have, but up to now CO has not provided a beam ID that would offer the possibility to clearly identify each beam from the source until the experiment. This is also the reason why the statistics of PS complex is not separated for the different injectors.

ISOLDE (P. FERNIER):
HRS: On Tuesday-Wednesday, the REX setting-up was done with the Krypton beam. The physics started on Thursday. Unfortunately it was not possible to produce the isotope desired by the experiment. Instead, some measurements of the Radon yields took place. These were taken after the new REX setting up. Unfortunately, the target broke down on Sunday. A modification of the user schedule will be done to recover the time lost.

B. Mikulec observed that in the recent periods there were a number of problems related to the targets. In particular, the pollution of the beam is causing also this week the cancellation of a run. D. Voulot replied that some isotopes are very difficult to produce and their production can only be done at CERN. In any case, the users are aware of the difficulty at the moment they request some specific isotopes. So far, all the experiments could conclude at least a part of their physics programs.

GPS: GPS was running with the target 430 (Pb). The switchyard could be repaired during Monday-Thursday. The physics could restart this week between Monday-Tuesday. The target was going to be changed during the FOM.

PS (Y. PAPAPHILIPPOU):
The PS had a pretty good week, with only two minor problems.

The KFA45 was not pulsing from time to time. Thanks to the surveillance put in place, it was possible to realise that a RT task running on a DSC was blocking sometimes due to a wrong and too low priority. Once the correct priority was set back, the problem did not reappear.

On Friday morning, the beams could be delivered only intermittently. The septum SMH42 was not pulsing depending on the preceding user in the PSB supercycle. The investigation of various specialists, CO-BT-PO and timings, did not lead to a clear reason for the fault. The fault, however, disappeared without any apparent reason.

The TOF beam intensity has been increased to 850-900E10 p since Monday.

EAST AREA USERS (H. BREUKER):
IRRAD (T7): on Tuesday, a 2 hour long access has been scheduled in agreement with the other users.
DIRAC is running without any problem.
T9-T11 has been powered off.
T10: the ALICE test beam is ongoing with a different group.

TOF (H. BREUKER):

The experiment is moving to the second period of data taking, i.e., the neutron capture on Am.

AD (P. BELOCHITSKII):
The AD week was practically without any fault.

On Friday, the Schottky pickup had to be reset.

A drop of the transmission efficiency during deceleration was observed last week, with a loss up to 10%. A first gain was reached by tuning the cryogenics of the stochastic cooling. F. Casper finally found that a delay cable was damaged. After replacing the cable, the losses were reduced to the normal 2-3%.

AD USERS (H. BREUKER):
ALPHA announced the trapping of ultra-cold antiprotons.
ASACUSA continues to suffer from some internal technical problems.

SPS (D. MANGLUNKI):
A water leak in BA8 was repaired on Wednesday.
A tube was changed on the horizontal damper amplifier that now is back to normal operation.
On Wednesday and Thursday, an interlock cut MSE a few times. This appeared already in the past, and it seems to be related to the configuration of the MPS electrical network. The problem, in fact, disappeared by re-establishing a different electrical network configuration.

The RF transmitter TRX3 tripped a few times, but the downtime was limited thanks to the fast and efficient intervention of the RF specialists.

The nominal LHC150 was taken in the SPS.

The new LHC3 cycle to accommodate 4 LHC injections has been prepared.

The intensity delivered to CNGS has reached 2 10^{19} p, with 1.8 10^{19} p expected.

North Area Users (H. BREUKER):
NA61 was progressing with the physics run at 31 GeV/c. The experiment is trying to reduce the number of accesses to less than one per day to minimise the down time due to the TAX positioning.
On H4, the CMS ECAL run has been extended. The RD51 experiment could profit from an empty time slot to start the installation.
On H6-H8, the beam sharing had to be adjusted to privilege the AMS run.
COMPASS is running fine.

L. Bruno asked what were the beam parameters for the 400 GeV/c AMS run. H. Breuker replied that the requests were not yet clear.
S. Mataguez replied that the maximum flux is limited to 2 kHz.
H. Vincke added that, a full shot of the primary beam would induce a dose of 0.5 Sv in the experimental area and mentioned that a meeting will be held to discuss the topics.

B. Mikulec asked if the problem with the access system of NA61 has been understood and followed-up. H. Breuker replied that the problem has not really been understood, but is followed up.

CTF3 (D. MANGLUNKI):
D. Manglunki wanted to thank the CCC OP crew for watching the CFT3 klystrons during the nights.

Two weeks ago the first probe beam has been accelerated. The test was done with only 1/8 of the drive beam since it was not recombined in the Delay Loop nor in the Combiner Ring.
The beam could be accelerated by 1.5 MeV.

The operation now will be dedicated to 1.5 GHz operation with recombination and delay-loop operation.

LINAC3 (D. KUECHLER):
The preparation of Linac3 for the LEIR operation was finished on Monday.
The Linac can deliver 22-24 muA.

B. Mikulec asked if the beam intensity was stable. D. Kuechler replied that the beam is more stable than last year thank to the stainless-steel plasma chamber.

LEIR (S. PASINELLI):
The last week was dedicated to the start-up, in particular with a number of control tests.
The control mezzanine cards of the ETL line power converters were changed.
The beam references could finally be saved by INCA.
The trim of the GFAs is not possible via the trim editor application, but only via the GFA editor.
The new GFA editor does not allow having an internal stop on the first vector. A temporary fix has been included in the RF FESA class, while CO experts are investigating the problem with the GFA editor.

During the middle of last week the beam could be injected, cooled, accelerated and extracted. The work of the following week will be dedicated to the optimisation of the physical beam parameters.

PS-IONS (D. MANGLUNKI):
The dedicated injection elements for ions have been powered on and the magnetic cycle prepared.
Seen the good progress of the LEIR start-up, it would be advisable to start the setting up in the PS before the scheduled date.

B. Mikulec said that a discussion about the schedule will take place after the FOM.

TI (P. SOLLANDER):
The only problems of the week were related to the LHC demineralized water.

LHC interface with injectors (M. LAMONT):
The multi-bunch filling was a great success. The physics will continue until the end of August with 25x25 bunches.

3. Schedule / Supercycle / MD planning

The current version of the 2010 official schedule (V1.7) is available at:
https://espace.cern.ch/be-dep/BEDepartmentalDocuments/BE/2010-injector-schedule_v1.7.pdf

The current week foresees normal operation. The MD of next week is considered floating and might be postponed.
In week 35 there will be a 36 hour technical stop. M. Lamont mentioned that some discussions were ongoing to postpone it.
However, it is important to notice that this technical stop has been scheduled to change the PS-MPS brushes and do the regular maintenance of the SPS RF.
E. Metral added that during the technical stop, a MBB should be installed with a new coating to be tested during the e-cloud MDs.

All the colleagues should provide as soon as possible the activities for the next technical stop.

All planned interventions for the injector complex are available via the on-line agenda:
https://espace.cern.ch/be-dep/FOM/Lists/Agenda/calendar.aspx.

4. AOB

5. Next meeting

The next meeting will be held on Tuesday, 10 August at 10:00 in 874-1-011.

Preliminary Agenda:

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Minutes edited by S. Gilardoni