

# Accelerator Complex Status

## End week 5 (Monday 7 February 2022)

---

### Technical Infrastructure (Ronan Ledru):

Statistics:

- About 7'000 alarms.
- 835 phone calls (623 incoming, 212 outgoing).
- 103 ODM created.

Events worth mentioning:

- Thu. 03.02, Power cut in EHN1 during the de-cabling campaign  
EN-EL fixed the issue without assistance of TIElectrical maintenance :
- Today : UPS redundancy test in LHC 3-4
- Tuesday : AUG test LHC33-32
- Wednesday : UPS redundancy test in LHC 8-1
- Thursday : Test secours BE91
- Thursday, Friday : commissioning of EMT409/2R

Details: <https://wikis.cern.ch/display/TIOP/2022/01/31/TI+week+summary,+Week+4>

### LINAC 4 (Piotr Skowronski)

Hardware commissioning was successfully completed on Wednesday.

- EPC team successfully completed installation and regulation of passive anode stabilization for LEP klystrons
- All RF lines were restarted and phases tuned to restore 2021 operational configuration FGC gateways were regularly losing subscriptions; investigation pointed out that particular type of FEC shows the issue (KONTRON PCI-760) and their exchange to newer KONTRON PCI-762 fixed it.

Beam commissioning started on Thursday

- It was not possible to achieve better than 65% transmission through the RFQ. 2 MHz RF system was the main suspect because beam pulse had a peculiar shape and was not very stable. After many checks it turned out the synchronization between the amplifier and LLRF was lost for some reason, and after retuning RFQ transmission quickly reached 82%, as it was in 2021.
- On Friday, after checking the interlocks and beam profiles in MEBT, the beam was successfully sent through the linac. Bunch length profile was measured to be the same as at the end of 2021 with r.m.s. of 2.8 degrees of 352 MHz
- Unfortunately, FESA class for Time of Flight (TOF) measurements produced clearly wrong results, and it is needed to find corrections for cavity phases. Rollback of the FESA class version did not help.
- Another encountered issue is inverted polarity of one BCT in L4P.
- On Saturday the beam pulse from the source was found changed. Autopilot attempted to raise the amplitude, however, for some reason the measured value and the beam intensity did not follow. The expert managed to recover the normal situation. It will be further investigated during the following days.

Over the weekend the TOF FESA class issue was fixed.

### PS Booster ():

Machine was patrolled on Friday and Hardware commissioning has started

### ISOLDE (Eleftherios Fadakis):

#### **PAST**

- A doublet target change took place on both front ends, on Thursday the 3<sup>rd</sup>. The procedure went just fine. C. Mitifiot calibrated all the moving parts of the front ends (clamps, extraction electrode).
- On Friday the 4<sup>th</sup> we unlocked all the power supplies and got cooling water back.
- We also performed a preliminary test with cycling the HRS magnets. Everything looked functional but a more thorough test campaign will take place the following days.

#### **PRESENT-FUTURE**

- Today we will:
  - Start heating up both targets.
  - Turn on all electrostatic elements.
- After everything is prepared we will:
  - Verify that all essential applications are functional.
  - Start performing beam set up, throughout the facility.

### PS (Marc Delrieux):

So far, everything is going according to plan

- Switchyard
  - Successfully tested remotely all the hardware for which the electrical lockout has been removed, namely 2 MTE kickers KFA13 and 21, ions injection kicker KFA28, ejection septum 16, ions injection septum 26, slow extraction electrostatic septum 23, dummy septum 15 and 10 MHz cavity 36.
  - All remaining interventions and accesses have been performed on Monday 31/01, the switchyard was then set to BEAM mode on Tuesday 02/02 to finalize POPS-B tests in the frame of the joint DSO tests.
- PS ring, TT2
  - The HWC officially begins today Monday 7. First with high voltage test on the PS main units, then POPS commissioning, then audio/visual inspections of all magnets (main units and auxiliary magnets). EPC will proceed with the lockin of all converters, which we will also test remotely as soon as possible. There are a few polarity checks scheduled (on 3 systems only, since they have been modified during the YETS).

From the CCC, we already checked as much as possible our controls environment (ccm, applications, working sets and knobs, timings, oasis, front-ends...). We had a few minor issues, quickly fixed without delays.

### PS - East Area ():

YETS.

### AD - ELENA ():

YETS.

### SPS ():

YETS.

### SPS North Area ():

YETS.

[AWAKE \(\):](#)

YETS.

[LINAC 3 \(\):](#)

YETS.

[LEIR \(\):](#)

YETS .

[CLEAR \(\):](#)

YETS.

[LHC \(\):](#)

YETS.