



Minutes of the LIU-PSB Technical Coordination Meeting 2 on 19th February 2019



Agenda (<https://indico.cern.ch/event/797391/>)

1. *Approval of Minutes and Communication (G.P. Di Giovanni)*
2. *PSB LS2 Shutdown Activities: Brief Status and Issues (J. Coupard)*
3. *Injection Area 1L1 (W. Weterings)*
4. *Roundtable*

Present: M. Atanasov, T. Birtwistle, F. Chapuis, J. Coupard, L. De Mallac, A. Findlay, E. Fortescue-Beck, M. Haase, M. Hourican, A. Miranda Fontan, B. Moser, S. Pittet, F. Pozzi, J. Roday, A. Santamaria Garcia, W. Weterings

1. Approval of Minutes and Communication (G.P. Di Giovanni)

The minutes from the previous meeting have been approved.

The last couple of weeks have been mostly dedicated to the preparation and attendance of the LIU Workshop in Montreux, <https://indico.cern.ch/event/774181/>

Open actions:

- **L. Soby** and **J. Tan** have been informed about the requested removal of the phase BPMs in 1L5 and 1L2 and are working on it.
- **F. Antoniou** is working on the simulation of the PSB to devise a proposed alignment post-LS2. The deadline is currently set for the beginning of March.

2. PSB LS2 Shutdown Activities: Brief Status and Issues (J. Coupard)

J. Coupard reported orally that the work in the surface (cabling, BRF1 and BRF2) is ongoing according to the schedule. The activities in the tunnel are also proceeding as planned and in some areas they are in advance.

This is all very good news, but the removal of equipment is always easier than installation. The decabling is now a major topic and has to be followed closely, because as an area is freed from cables then the installation of the equipment can start.

3. Injection Area 1L1 (W. Weterings)

Presentation available in [Annex 1](#)

- The present and future injection schema in the PSB were presented.
- The LS2 activities are ongoing according to plan.



- Several foil materials were tested during the last Linac4 reliability runs, with general good performance, i.e. stripping efficiency > 98% (most of them > 99%). It is still unknown how they would react to operational stress with painting and more consecutive turns (up to 150, maximum limit in the current PSB configuration)
- The full mock-up of the region has been assembled and is ready for installation in the PSB.
- For the PSB commissioning in 2020, each foil loader will be charged with 2x GSI-200 (~800 euro each, as produced by GSI. They could be cheaper if ordered in USA, ~250 \$ each. Still there is a preference to have a European supplier), 2x DLC-23-1000-S (from Canada for ~250 \$ each) and 2x MLG-250 foils (1500-2500 \$ each. More expensive, but more robust and easier to handle. Produced in Japan and currently ABT looking for a European supplier). The efficiency are high enough for all the 3 options and there is no specific preference. Probably it would be good to start the PSB beam commissioning with the MLG-250 as they seem more robust.
- **W. Weterings** requested to continue the testing of the foils in the upcoming LBE run in 2019 if possible. In particular for the GSI foils to understand if the observed deformation is standard or an un-lucky shot.
- For the installation of the new 1L1 one has to make sure about the decabling work, as the area has to be cleaned up before installation. Another potential issue comes from the fact that between the bending magnets (BHZ) and the new injection equipment there is not much margin, only few mm, so it will be a delicate procedure. About 3 months have been allocated in the planning for the installation and it is the reason that there is no a day-by-day detailed planning.
- For the future, if the BSW1 or BSW2 magnets break then the whole injection 1L1 should be dismantled for the replacement.

4. Roundtable

- **W. Weterings** presented a status of the vacuum leak for the tank of KFA10, see [Annex 2](#)
 - In principle KFA10 will only update the ferrite, so an identical vacuum tank to the currently installed one was ordered.
 - The leak was discovered about 2 months ago. Despite the tank being re-machined and re-assembled, it still leaked.
 - A full detailed plan was presented on how to tackle the issue.
 - The current baseline is for an installation in July 2019. For the time being it was agreed to retain the baseline installation date. In about 5-6 weeks we should have more information following the vacuum test, which will be performed after the polishing of the seals, the clean-up and re-assembling.
 - A possible mitigation could be to install the tank in September 2019, but it will have an impact (delay) on the vacuum activities as the mechanical closure is planned before. In that case a possibility would be to perform all the closing but for the gap in the KFA10.



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- **T. Kramer** is investigating if and how the current KFA10 could perform under the LIU conditions.
- The same company which produced the KFA10 is also producing the tank of the KFA14L1.

- **M. Atanasov** showed a few photos of the ongoing dismantling in the PSB injection area, in the BI line and extraction line.

Minutes by [G.P. Di Giovanni](#) on 19th February 2019