

Beam Commissioning Working Group

Minutes for 23 May 2019

Present: V. Kain, A. Huschauer, G. Rumolo, F. Antoniou, D. Cotte, M. Fraser, M. Gourber-Pace, K. Hanke, A. Lasheen, K. Li, B. Mikulec, F. Tecker

Meeting objectives

Presentation of the equipment integration for the PS.

Approval of Minutes and Matters Arising - V. Kain

V. Kain informed that the minutes of the previous meeting did not go out but they will soon. She also informed the attendees that for the next meeting (31/05) each machine representative should prepare a couple of slides on the status of the IST lists.

V. Kain informed that K. Li prepared a template to be filled in by the equipment experts, which could be a good idea for all machines to prepare something similar.

AOB - K. Li (link)

- K. Li presented the example that he prepared for the SPS.
- B. Mikulec informed that they already have something similar for LINAC4, including some extra information: responsible person and test procedures, giving the EDMS number in case it exists.
- F. Tecker also informed they have already done something similar for the PS as well.
- V. Kain commented that the final purpose of this document is to be given to J. Coupard for the master-schedule. For this reason, a very important information which should come out of this is which is the earliest time each activity can start.

Equipment Integration PS - D. Cotte (link)

Presentation

- D. Cotte went over the list of integration tasks for the PS
- On the new internal dumps, D. Cotte stressed that the installation will be in 03/2020, which is already late and very close to the start of the IST.
- The question came up from where external conditions would be set. D. Cotte mentioned this could be done in several ways, also via the SIS would be possible. This is still under discussion.
- V. Kain suggested that some protection should be foreseen in order to make sure that operational errors that could damage the devices are avoided.

- Concerning the BE-BI devices, V. Kain remarked that it would be good to try and uniformize applications for, e.g. the BGI across the injectors. One would need to look at the high level interfaces to see whether this is easily possible. CCC should investigate how this could be done across injectors. V. Kain asked about the status of the wirescanner in the PS. D. Cotte explained that the bunch-by-bunch acquisition is still under investigation. Due to the many RF manipulations in the PS it is important to provide the correct harmonic number at the moment of the wire scan. A. Huschauer suggested to use the data from the sampler to automatize this. A. Huschauer remarked that the optics should be taken into account directly from LSA rather than being hard-coded in the application. V. Kain asked whether also this application should be shared across the injectors as well. This question should be followed up. D. Cotte notes that we should come with a consistent requirement for all machines. CCC to decide how to proceed with the wirescanner application.
- Concerning the kickers and septa: DFA Moulinette is still being used for TT2, integration into YASP needs to be thought about. One problem is also the split of control and observation between the PS and the SPS for injection steering. This could be improved. K. Li to check with D. Cotte how to proceed with this.
- Concerning the TE-EPC equipment: power status can be monitored via dedicated application. V. Kain asked about the cycle preparation with the cycle editor - how the RF power is taken into account. A. Lasheen commented that it is not taken into account and that normally the RF power should not be a limitation apart from the very start of acceleration. B. Mikulec added that they had ongoing discussions with EPC towards the preparation of a cycle editor as well - the PSB functions are not realizable with PPPL. V. Kain stressed that again it would be good to have a generic application for cycle generation and the PS one has a number of advantages.
- Concerning the auto-Q application: A. Huschauer asked whether the LSA optics are updated when trimming Q_h and Q_v with the respective knobs. V. Kain replied that this currently is not the case, but should definitely be investigated to be included where required. In the SPS and LHC, the trims on Q_v and Q_h are small and are typically corrections towards the nominal tune, hence not necessary to update the model. In the PS however, trims with the low-energy quadrupoles can significantly distort the optics. To solve this correctly an extension of the current settings management is required.
- Discussion on the transverse feedback application: V. Kain commented that ultimately we need an application that allows setting up of the system for new cycles without the need of the equipment expert. Especially as the equipment expert is the same for the three machines.
- On the EAST Area renovation Project: V. Kain asked if YASP will be used to steer to the targets. Denis replied that this is not foreseen as only screens and no BPMs nor SEM grids are available. The upgrade of the EAST ares will not bring a new/optimised way of operating it. This was not among the main considerations for the project.
- V. Kain asked how the design of new beam types is done and whether online tools are available. A. Lasheen explained that everything is done offline. Even though everything is based on the same mathematical idea, it is very difficult to have a generic application which takes into account all possibilities.
- On the BPM turn-by-turn measurement and analysis system: A synergy is needed there to develop a new application for all machines.

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- Tune and Chroma measurement: A synergy there as well between PS/PSB/LEIR. Apparently the current application will not be further developed as the responsible moved to AD. A. Huschauer commented that this it would be a big job to rewrite this application. The existing application is already very good. The possible new developer is not very familiar with JAVA and would prefer to re-write the application in Python. B. Mikulec commented that a group of programmers is needed within OP to develop such generic applications.