

## Beam Commissioning Working Group Meeting, 15 June 2018

### [Indico Link](#)

#### Minutes approval (Verena, Giovanni)

- The minutes from the last meeting were approved without comments.
- Verena informed that the requirements for the checklist tools were compiled by her and circulated already to some people. Feedback will be given to Emanuele once it is approved by all relevant people.

#### LINAC4 Actions Follow Up (Alessandra Lombardi) ([link](#))

- Alessandra gave a follow up from an older presentation of Giulia (BCWG meeting [9/03/2018](#)).
- One of the subjects to be discussed further was the setting up of the RF phases. A system has now been put in place by the RF group to avoid losing the RF settings in the future.
- Alessandra showed a comparison between measuring the energy with time of flight versus beam loading. Measuring through the beam loading is simpler. An automated procedure based on beam loading was written by ABP, setting the whole linac in 1h. OP should turn this procedure into an application. The measurement through beam loading is not as precise as ToF, however, for the RF phase calculation it is accurate enough. The beam loading method will be used for fast calculations while the ToF will be used for more detailed studies.
- Reyes asked if there was a systematic crosscheck between the two methods verifying that they always give the same result. Alessandra replied that this was checked only once. If the method does not work the beam will not go out with the correct energy. The comparison of the two methods will be repeated.
- During the September run the method will be tested. The phase will be chosen based on the beam loading and then fine tuning with the ToF.
- Gian Piero commented that the initial plan was to have the phase setting up through beam loading scheduled for 1 day and then 3-4 days for fine tuning. Will this still be the case or the fine tuning will be done during an MD? Alessandra replied that the full procedure will be retained for the startup.
- Verena acknowledged the big progress in making this operational. She also informed that during the BE-retreat it was clarified that the operation and recommissioning of LINAC4 will be OP responsibility. There are still manpower questions that need to be clarified.
- Bettina reported that they started working on the hardware commissioning checklists. They should still sit together with Alessandra for the beam commissioning check lists.
- **Action to Bettina and Alessandra:** AOB final status of checklists.

#### Ion Beam Commissioning for LEIR (Reyes Alemany Fernandez) ([link](#))

- Reyes went through the LEIR re-commissioning schedule. LEIR operation is not 24/7 but only during working hours, except the periods that LEIR serves the users where the SPS OP crew takes over.
- Detailed procedures for setting up and reference data are not yet available. This is work in progress.
- A very nice injection efficiency was achieved due to the automatic way to optimize steering at injection. The source of tune ripple was also found and corrected with a positive impact on the extracted intensity.
- Many new diagnostic tools are available. Software commissioning is still ongoing.
- Reyes stressed that check lists, procedures and reference measurements are key. Being systematic and documentation is of great importance for efficient recommissioning.

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- Reyes went through a list of improvements during this year's start up.
- Verena commented that in fact the checklists for LEIR are not ready yet. **Action to Reyes:** AOB to present the final checklists.
- Discussion on the approach of rough setup at the beginning in order to provide some beam (even though with reduced quality) to the downstream machines. Heiko commented that this is very efficient. Hannes agreed but commented that the schedule and planning should be done based on realistic goals.
- Verena asked if the software priorities have been addressed. Reyes replied that this has to be discussed first internally as there are manpower problems.
- Marine asked if Reyes is the main link person in OP for LEIR. Reyes replied that the SPS crew will be the main link in CO meetings.

### General Discussion

- Verena discussed the way the meetings will proceed from now on. Many of the subjects that have been addressed will now be followed up in the background.
- One of the main items for now is to start putting together the planning. Bettina commented that in order to do this we need to have an idea of what the planning from physics is for post-LS2 operation.
- Reyes asked the other machines if they have an idea of where the reference measurements will be stored. Verena replied that this will be the subject of the next meeting.
- Reyes asked which kind of format the reference measurements should have. Verena replied that both snapshots and data should be stored. The logbook probably will be the place to store everything, which is supposed to have dedicated new features for that purpose.