

Beam Commissioning Working Group

Minutes for 29 November 2019

Present: V. Kain, G. Rumolo, A. Huschauer, S. Albright, H. Bartosik, S. Cettour Cave, D. Cotte, J. Coupard, H. Damerau, G. P. Di Giovanni, E. Genuardi, B. Goddard, M. Gourber-Pace, O. Hans, G. Kruk, K. Li, B. Mikulec, F. Pedrosa, J. Ridewood, R. Steerenberg, F. Tecker, F. Velotti, C. Wetton, V. Baggiolini

Meeting objectives

Approval of Minutes and Matters Arising - V. Kain

The minutes of the meeting of the 6th of November are approved without comment.

- V. Kain reiterates the request from CO to have the dry run planning as well stored in a central online location
- V. Kain says that if there are cross-complex conflicts in terms of personpower, there needs to be a planned approach to adjusting the schedules. The first instance of this has been identified with EPC already, and will be discussed in an upcoming meeting.

YETS 20/21 - F. Tecker

Presentation

- The Christmas story is reviewed, along with the Christmas wishes and desired Christmas presents.
- The two critical beams required by the SPS in week 3 of 2021 are LHCIndiv and MTE low intensity (core only), which sets the requirements for the PS restart.
- The AMS restart in 2010 is discussed for comparison, where beam was delivered to the PS in February.
- The 2013 restart had beam starting early January, and the Linac2 source was kept running over the Christmas shut down.
- For the 2013 restart a large number of specialists were required, even with the machine being kept in standby over the shutdown, which should be considered for the 2021 restart as well.
- Up to 1 or 2 days are expected to recover full electrical performance after the Arrêt d'Urgence General (AUG) and diesel tests. These tests are legally mandatory.
- The CO annual maintenance will be required immediately after the Christmas break, typically about 4 days is required. It would potentially be beneficial to move or shorten the CO annual maintenance, but it could cause more disruption. The proposal is to use the CO update period to restart and debug other systems where possible. For those cases where there are no control problems the equipment debugging can start, whilst the rest of the CO systems are being recovered.

- The prediction is that the critical PS beams will be available before the shutdown, so should be quickly recoverable afterwards. Currently a week is estimated. This estimate will have to be reviewed.
- Linac4 will require some maintenance, the details are to be checked because it could delay the PS restart.
- A proposed schedule for the recovery after the shutdown is given, which is to be discussed with interested parties to reach an agreement on schedule interventions and restarts.

Discussion

- H. Damerau specifies that during the AMS year there were effectively two start ups, with relaxed specifications for the AMS beams, and then restarting with nominal specifications afterwards.
- B. Mikulec says the impacts of the electrical tests on the Linac4 source must be considered, as it can take time to recover performance after an electrical stop.
- B. Mikulec specifies that the requirements for Linac4 maintenance are to be investigated, some things will be required. For example, the RF will have been running for nearly a year so some maintenance will be essential. B. Goddard suggests checking how the maintenance can best be scheduled to minimise the impact on the restart.
- V. Kain says the most critical point is likely to be Linac4, as running the source of the Christmas break may be necessary. B. Mikulec agrees and says this means source experts will be required over Christmas.
- B. Mikulec proposes that, if the LHC restart will be delayed, it may be better to reserve the full week for restarting rather than rushing to try and save a day or two. F. Tecker asks if there is an official restart date from the LHC, R. Steerenberg says it is to be discussed, for now the baseline schedule should be assumed. Only after the next council meeting the assumptions might change. B. Mikulec suggests that the equipment groups should be contacted, to get the specifics of what is required so the minimum time needed for the restart can be defined.
- R. Steerenberg says the impacts of CO updates should be discussed, if it is likely to trip the Linac4 source there is no point running it over Christmas. E. Genuardi says that the electrical tests are more likely to impact the source as the CO updates will affect a lot fewer systems.
- V. Kain asks if it can be decided that running the Linac4 source over Christmas is worth while, R. Steerenberg says the source appears unlikely to survive the electrical tests and proposes shifting the tests to before Christmas instead. D. Cotte says when the AUG tests are made it is not every single chain that is checked, so it would be worth discussing with the organisers if they can test some this year and not in 20/21 to avoid disrupting Linac4.
- V. Kain says it should be discussed if 1 week will be sufficient to recover everything, because it may not be sufficient. B. Mikulec says an official request should come from management level to each of the equipment groups to study exactly what will be required.

Beam Performance Tacking Status - V. Baggiolini

Presentation

- Beam Performance Tracking (BPT) can be split by machine and by beam, as well as into live and aggregated analysis. Phase 1 will cover the aggregated tracking, phase 2 the live measurements.
- There has been a lot of knowledge sharing between OP and CO to define the requirements for BPT and discuss existing efforts, which informs the functionality that will be offered by CO.
- The phase 1 part of BPT, to be available mid 2020, has been specified. The CO contribution will be to share best practice and assist in integration with existing systems. The proposal is to have regular meetings to gradually develop the system that will be used.
- The required machine data is to be made available in NXCALS, so that the analysis scripts can be run at any time.
- The existing acc-py python ecosystem, which is supported by CO, should be used for the analysis and content generation.
- Scripts should be stored on gitlab and will be monitored 24/7, they will be run on CO hardware.
- A webserver can be run on a CO machine, with a proxy used for public access. This would allow the webserver to directly interface with the python script.

Discussion

- R. Steerenberg asks how what is shown will relate to the LHC statistics page. V. Kain says this will have to be discussed with the LHC at a later date, but what's shown is aimed at the injectors because the LHC statistics page didn't cover everything the injectors needed.
- R. Steerenberg suggests merging the LHC and injector's approach may be a good idea, V. Baggiolini says that in the long term that is of interest to CO as well.
- B. Mikulec asks about the timeline, as the first machines restart in the middle of 2020 OP should get involved soon. V. Kain agrees and suggests those writing the code for analysis should be involved as soon as possible.

Check List Tool - M. Braeger

Presentation

- The purpose of the tool is to provide a system to organise the tests, give a timeline, and provide useful statistics.
- The most urgent needs for the tool will be met by BE-ICS, long term the support will return to BE-OP.
- A list of improvements to be made by March 2020 has been agreed.
- Maintaining the check list tool in house will be expensive, it may be worth investigating what commercially available software there is that could meet the requirements instead.

Discussion

- M. Gourber-Pace asks if the tool is to be used for the dry runs. V. Kain says yes, as well as the ISTs, but in principle only the dry runs that are to be repeated on a regular basis.
- V. Kain asks for confirmation that OP can request support at any time, but only 1 month of time will be available. M. Braeger says yes, 1 month of time in BE-ICS has been blocked for this.
- B. Mikulec asks to be informed when a stable version is available, which can then be used for the Linac4 tests.
- B. Mikulec says there are other tools that are orphaned, such as the eLogBook, and long term support for them should be discussed. V. Kain agrees.
- V. Kain says that if there are any requests for the check list tool that come up they should be entered into JIRA.

AOB: Status of ISTs and Next Steps - J. Coupard

Presentation

- The group level extraction of IST schedules has not yet been done, but is scheduled to be done by the end of the year.
- The group level data available has already highlighted a conflict for EPC, which emphasises the need to have all the information available so it can be checked for other groups as well.
- Before the other groups can do their extraction it is necessary for all the plans to be online - including HWC.
- The "group" field in the template must be filled in, without it the group level planning cannot be done.
- An e-mail will be sent to all the group leaders with instructions on how to extract the data relevant to their group. In the event of a conflict between the needs of multiple machines, the group leaders are asked to contact J. Coupard and V. Kain to allow discussion of how cross-complex conflicts will be handled.

Discussion

- B. Goddard asks what the revised schedule is for extracting the information, J. Coupard says end of the year so there is feedback available for the LIU workshop.
- V. Kain says it is very important that the schedule is sorted as soon as possible, because the ISTs start soon or have started. For example the EPC clash applies in March/April.
- B. Goddard asks when the e-mail will be sent to group leaders, J. Coupard says probably today after it has been checked that all information is available.

Next meeting will be on the 6th of December discussing the status of Dry Run planning in the PS.