

# Beam Commissioning Working Group

Minutes for 14 June 2019

**Present:** V. Kain, G. Rumolo, A. Huschauer, S. Albright, R. Alemany Fernandez, F. Antoniou, H. Bartosik, D. Cotte, J.-C. Dumont, G. P. di Giovanni, A. Lasheen, B. Mikulec, A. Rey, J. Ridewood, R. Scrivens, P. Skowronski, F. Velotti

## Meeting objectives

An update on the status of the reference measurement system, with information on how data will be recovered and displayed, and a status report on the scheduling of ISTs in Linac3/LEIR.

## Approval of Minutes and Matters Arising - V. Kain

The minutes of the 31<sup>st</sup> of May are approved without comment.

V. Kain presents an update on the software synergies from across the complex.

- Some more items have been added with a couple of deadlines for when they will be presented. In each case a responsible person for coordinating the development has been assigned.
- Developers have not yet been assigned in almost all cases.

## Status of the Reference Measurement System - A. Rey, J-C. Dumont

### *Presentation*

- The objective was to create a Java API, which can be readily integrated with existing software to facilitate storing of references.
- Data is stored online in a manner that allows extraction with either a Java application or scripting (e.g. Python).
- In the Reference browser tool each reference can be viewed. Each reference object has tags, and each attachment to it has separate tags to allow specific items to be identified. Further work on the tool is required, but the main functionality is available.
- R. Alemany Fernandez asks if the tags are predefined or can be defined on the fly. A. Rey says both, items like data, LSA context, etc are predefined, additional user tags can then be added. V. Kain says there are two usage cases to be considered, either storing JAPC acquisitions for certain FESA classes or for operational references, which may require different approaches to tagging.
- Long term support for the application needs clarifying. If there are new requirements for post-LS2 they need to be defined and also given the necessary support.

*Discussion*

- H. Bartosik asks if there's a limit to how much can be saved with the LSA Import tool. A. Rey says it is possible to save all parameters for a particular particle transfer in a single go.
- R. Alemany Fernandez asks what the data format is. A. Rey says anything can be stored, in the case of the LSA Import tool it is the LSA objects as immutable Java objects. The same applies to JAPC, however the object definitions have changed due to a change of library, which is making it difficult to retrieve certain items. For LSA parameters it has been guaranteed that the objects will not be changed.
- H. Bartosik has asked if after saving all SPS parameters for e.g. SFT beams it is possible to reload a single parameter. A. Rey says it will be possible, but has not yet been implemented. V. Kain says that in the context of "super settings" the same functionality may be useful.
- R. Alemany Fernandez asks if the stored data could be used at all after a change of libraries, particularly in the context of LS3. V. Kain says that this is why there are screen shots to allow comparisons even if the raw data cannot be retrieved, but it is intended to make the data recoverable, which will require some additional work.
- P. Skowronski asks why data should be taken from different applications when the reference snapshot should be the complete state of the machine. A. Rey says that is one use case that exists already, but adding all acquisitions is not necessarily straight forward as some instruments are destructive or require arming etc. The objective is that all information considered necessary is added by the user, V. Kain says that automating it might be possible but would be a significant amount of work.
- V. Kain asks which machines used the reference tool already, all the injectors have used it. V. Kain proposes that as the reference tool has been used a lot it can be considered a new standard for OP, and should be supported accordingly, and asks what the long term support is like. J.-C. Dumont says that the plan for this instance has been to demonstrate the functionality and it should be integrated with the new log book application, the risk long term is down to how much it is used and how much data is involved.
- V. Kain asks about the plan for the eLogbook long term and if it will continue as is, because there was a discussion previously to review the status of the logbooks. J.-C. Dumont says there has been a consideration to merge all the logbooks to a single application, but this is not planned in the near term.
- A. Rey says that to reduce the risk of items becoming obsolete in case of library changes it would be possible to extract the data and store it as a JSON file (or similar), instead of storing the Java object. This has not yet been done as it would have required too much time, but may be possible in the long term.
- V. Kain asks what the intended dead line for the browser application is and if it will be ready for the LBE line run. B. Mikulec says the intention for the LBE line run is just to take references with the current tool.
- R. Scrivens asks if there's a risk of duplicating NXCALS. V. Kain says this has been raised before and needs to be discussed with CO, but the intended functionality is not the same. A. Rey says that coordinating with CO had been discussed but there was no available manpower

until after LS2. A. Rey says that in a long term ideal scenario it could be arranged such that the reference tool could interface with NXCALS as a way of storing data.

### **Linac3/LEIR Status of ISTs - R. Alemany Fernandez**

#### *Presentation*

- The source and Linac3 schedule are stored in an Excel file as part of an EDMS document. It will be migrated to a Microsoft Project at a later date.
- The ISTs for the source and Linac3 have been scheduled and will occur early in 2020.
- Responsible persons for some tests have been defined, some are still to be confirmed.
- The service requirements and deadlines have been passed on to CO.
- LEIR ISTs are stored in an Excel file, distinguishing Pre-ISTs from ISTs, technical coordination is being handled by OP.
- The full set of ISTs is almost complete in terms of time, safety, and services. A small number of items are yet to be defined and some more precise dates will be determined in the context of the hardware and beam commissioning working group.
- In order to finalise the checklists it has been necessary to export the data to Excel, it would be beneficial if there were a way to export data from Excel to the checklists.

#### *Discussion*

- R. Scrivens confirms that the source tests will be before switchyard closure and the details of how they will be planned in terms of accesses etc are to be determined. The schedule shown is the windows in which tests will occur, the specific dates will be finalised later considering their relationships to accesses and other tests.
- R. Alemany Fernandez asks R. Scrivens the status of the CV delay. R. Scrivens says it has been suggested that it could be reduced to two weeks, but they will not adjust the planning until that is confirmed.
- V. Kain asks what pre-ISTs are, R. Alemany Fernandez says they are a way for equipment experts to organise the work but from operations point of view there's no difference to ISTs.
- V. Kain asks who is responsible for the polarity tests, R. Alemany Fernandez says MSC is responsible but OP will repeat them at a later point.
- V. Kain asks when testing of power converters with loads is to be scheduled, as normally it is not done during ISTs. R. Alemany Fernandez confirms for LEIR it will be during ISTs, D. Cotte says it is the same for the switchyard.
- B. Mikulec asks how long is needed for the hardware tests and cold checkout, R. Alemany Fernandez says about one month.
- V. Kain says the schedule is well advanced, but needs dates for the dry runs. R. Alemany Fernandez says this is under way and has been decided for some items.

- D. Cotte says that the switchyard schedule needs to also include items from Linac3/LEIR. R. Alemany Fernandez says the intention is to finalise the plan within Linac3/LEIR, and then go to D. Cotte with the relevant items and construct the final schedule together.

## AOB

### *Outcome of the Planning Tool Discussion - J. Ridewood*

#### *Presentation —*

- An output of the LIU workshop was a request that scheduling be done in coordination with EN-ACE. MS Project is the current standard as it is the only tool able to provide the needed functionality, it is therefore the tool that will be used for commissioning scheduling.
- Recommissioning coordinators will be responsible for interfacing between the checklists and the projects, and filling in the project information for each machine.

#### *Discussion —*

- V. Kain asks if the planning can be used in successive years. J. Ridewood says in principle yes, perhaps with small modifications.
- V. Kain says that in the long term the intention is to replace MS Project with a new tool, but with any work from MS Project being usable in the new tool.
- A. Rey asks if the data is stored in a format that can be read by other applications as is the case for Excel and Word. J. Ridewood says there is a web application to view the data underway, but it is not yet released.

### *Future Meetings*

- Two upcoming topics are performance tracking and start up dates for the various facilities.
- Another round of IST discussions will happen once J. Coupard has completed the planning with MS Project to give an overview of what will happen and confirm the schedules.