Wrap-up Session 2: LS2 system readiness and shutdown execution

As requested, a short summary of points raised where additional follow-up may be necessary
Wrap-up

• Several groups will be completing the spares inventory toward end of LS2 or even in 2021
• A lot of options / fall-back solutions exist, and are contingent on the performance commissioning in 2021-2023
• SPS scrapers: spares built in LIU but STI need updated FS with use-cases for numbers of cycles, since present system not compatible with the original assumptions

Actions

→ Document the statement of the spares available after LS2 by end of 2020 – Project Leader and Machine Coordinators (LIU-IONS/L4/PSB/PS/SPS TC actions)
→ Update the Functional Specifications for the SPS scrapers with use cases depending on the number of LHC fills per day during the HL-LHC by xxx – LIU-SPS TC action
→ Document the options and left-overs from LS2 to prepare for future deployment including the check-points and timelines by end of 2020 – Project Leader and Machine Coordinators (LIU-IONS/L4/PSB/PS/SPS TC actions)
Wrap-up

- LIU activities for the Linac4 connection, PS Booster and SPS are on critical path. Daily follow-up are in place to react quickly in case of delays. **Early communication of schedule changes is crucial to optimise schedule contingency.**
- General issue on QA in design offices in Groups which impact on release of drawings and ECRs. A strategy to address this issue must be defined (ATS management).
- Some beam line equipment will be ready “just in time” with installation schedule. Any delays could impact activities on the critical paths or VSC resources load. **Low risk score and >2 months margin does NOT mean that we can relax the attention on these items!** An iteration with technical risks from Groups is needed to improve the schedule risk analysis.
- End of MS Project license should be technically transparent - budget for new licenses (ATS management)?

Actions

→ Ensure the quality assurance process to release 3D models, detailed mechanical assembly drawings, differential layout drawings and ECRs by end of June 2019 – Malika, Wim, Yvon (LIU Executive action)
→ Release the final versions of the readiness for installation documents with an approval process by end of March 2019 – Julie and Machine Coordinators (LIU-IONS/L4/PSB/PS/SPS TC actions if necessary)
→ Review the risk analysis associating scheduling and technical aspects by end of September 2019 – Julie and Ray to make a proposal based on BE-BI equipment by May 2019 (LIU Executive action)
Specific topics

Wrap-up

- Safety of the LIU Project is documented in Safety Packages. Mitigations on electrical non-conformities are put in place with pre-visit with HSE unit.
- Consolidation of TT2 power converters in building 269: Electrical circuits are yet not part of Layout DB – what are the plans to address this? Animated discussion on FGCs, SIS, BIS and PS external conditions: to sort out.
- RF Upgrade: critical part of schedule in 2nd half 2020 when everything is put back together prior to and during commissioning, key phase to prepare and plan. Verify early enough availability RF SW to allow OP layers.
- SPS Beam Dump: MKDV switch delay in prototype validation, reliability run with modified version week 9, deadline end May. Schedule: Launch analysis of possibilities (especially EN-EL) in case CE finishes somewhat early.
- Beam Intercepting Devices: TCDIL still missing storage space in 927, increases risks through more transports, can this be solved in short term? TIDVG no schedule margin, heavily dependent on MME.

Actions

→ Electrical circuits in Layout database – mandate to be defined in the ATS
→ Functional specification of the power converters interlocks – post-LS2 action to be followed-up BE-OP/TE-MPE
→ Ensure the readiness of RF software for commissioning by xxx – LIU HB Coordination action
→ Review performance MKDV switch by May 2019 – LIU-SPS TC action
→ Review margins in shutdown planning from civil engineering works with EN-EL by April 2019 – Etienne, Jonathan (LIU-SPS TC action)
→ Ensure readiness of the TIDVG by April 2020 – LIU-SPS SBDS WG (LIU-SPS TC action)