LIU Beam Transfer coordination meeting

Notes from the meeting held on
24 November 2010

Present: Jan Borburgh, Christian Carli, Roland Garoby, Simone Gilardoni, Brennan Goddard, Klaus Hanke, Alessandra Lombardi, Malika Meddahi, Maurizio Vretenar, Wim Weterings, Sylvain Weisz.

1- Introductory remarks

Malika Meddahi reminded that during the first LIU project team meeting it was agreed to launch a series of discussion concerning the overall LIU Beam Transfer systems.
At the same time, it was proposed that the transfer lines are treated within each machine upgrade project with the TL end-point being the entrance into the next accelerator. Injection and extraction systems are treated within the corresponding machine. For the LINAC4, it was proposed at that time that the project will include the BI transfer line all the way to the flange of the distributor BI.DIS near the entrance of the Booster. Then PSB will treat BI line from distributer onwards, including PSB injection (budget will remain in LINAC4), and will treat BTP line to entrance flange of PS injection septum. This LINAC4 – PSB "border" proposal is part of the discussion of today.

The first LIU beam Transfer coordination meeting did address the Booster to PS transfer line, including PSB extraction and recombination, BT line and PS injection system.
This second LIU beam Transfer coordination meeting is addressing the LINAC4 to Booster transfer line. Coherence and consistency should be ensured.

2- List of ongoing activities and status – Maurizio Vretenar (slides)

The review of the LINAC4 TL took place a month ago. 4 zones are being crossed by this line, which represents over ~177 m from PIMS to the foil.

Coordination and installation of these lines:
- B400 and B410 until the wall- LINAC4 + LINAC2 zones: Julie Coupard
- B363, LTP and LTB lines: R Scrivens, Booster: Nicolas Gilbert.

It was clarified that nothing will be changed in the existing line itself, only the measurement transfer lines will be re-designed. Measurements lines are meant to measure emittance (LBE) and energy dispersion (LBS). They need to be refurbished for 160 MeV operation while remaining compatible for ion operation. Design is therefore tricky. A solution was found for the LBE beam design and work is still in progress for LBS.

Present :borders" of TL LINAC4 /PSB:
- Beam optics : to stripper foil
- Installation, coordination: to PSB wall
- No strong reason to have a common boundary at the distributor flange (15m away from the wall)

All the lines are in the layout database. This will be the source of the sequence files.

It was agreed that
- **Beam element names should not be changed**
- **The boundary between LINAC4 and booster lines is the WALL (not the flange of the distributor)**
- **R. Scrivens** will supervise the supervision of the installation of the new beam stopper

It was agreed that:

General coordination of installation (**J. Coupard, R. Scrivens**) - Layout to be frozen beginning of 2011

General coordination concerning beam parameters, consistency, progress: **Proposal: C. Carli**, for the overall transfer line coordination, from LINAC4 up through and including the injection part into the PSB - and not only from LINAC4 to the WALL. **Final answer by C. Carli by 30 November.**

- Beam optics (until stripper foils): **A. Lombardi**
- Measurement lines: **B. Mikulec** (Thomas Hermann, Fellow). As of April 2011, when Thomas leaves, LBS design will be moved to **A. Lombardi**' team. Somebody from the HW side will have to be found to make the link with the HW colleagues.
- Magnets: **Th. Zickler**
- Power supplies: **D. Nisbe**t
- Vacuum: **G. Vandoni**
- Diagnostics: **U. Raich**

Reporting: to both projects LINAC4 – PSB, in joint meeting when needed. Wim Weterings will be added to PSB upgrade WG member list.

Question of Pakistani contribution: design will be integrated with the design office but who will supervise the potential construction? To be clarified, especially for vacuum chamber production – to be followed-up – **C. Carli**.

Malika Meddahi