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LIU PSB - QSTRIP power converters

2GeV update

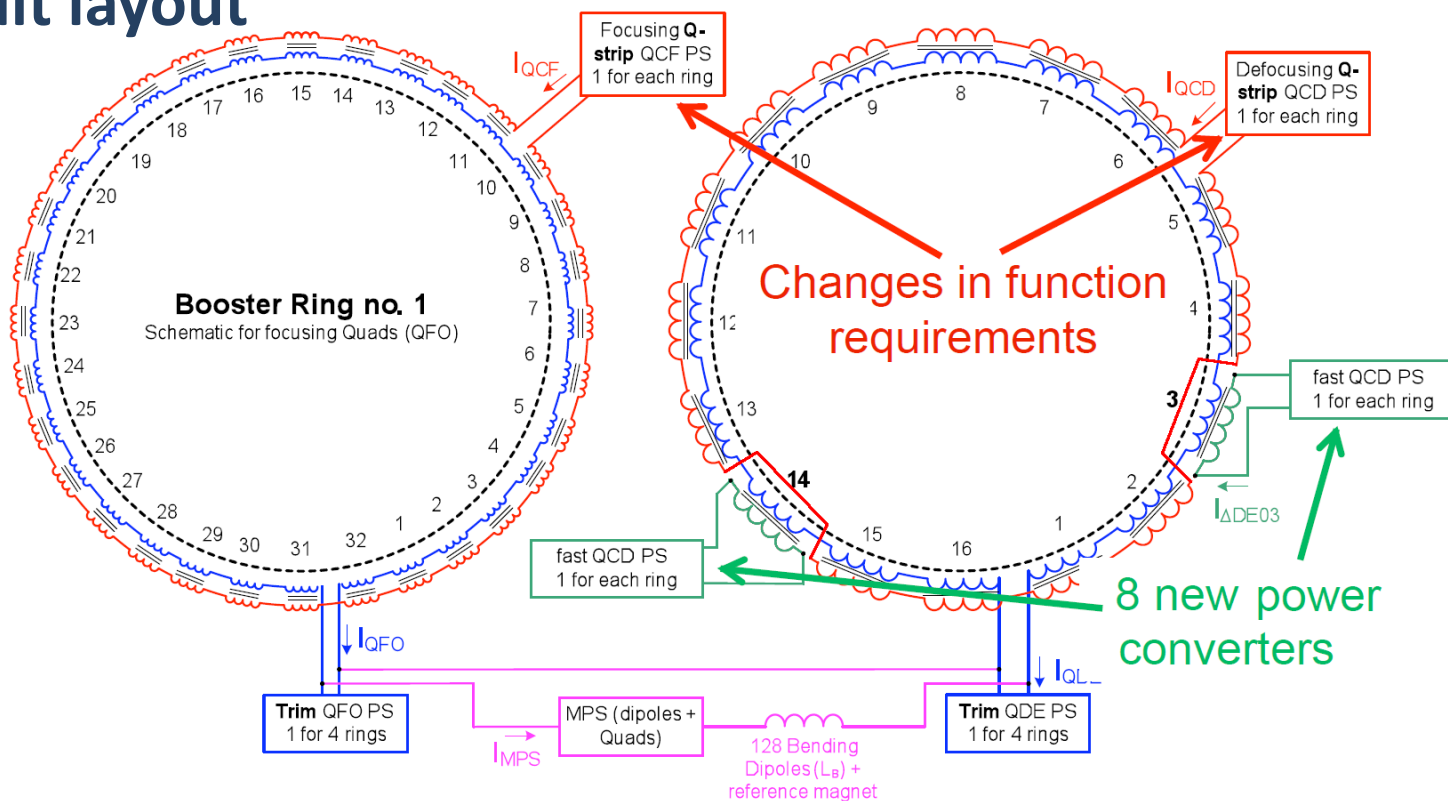
Project Purpose

- Provide upgraded power converters for PSB QSTRIP corrector magnets.

Project Deliveries

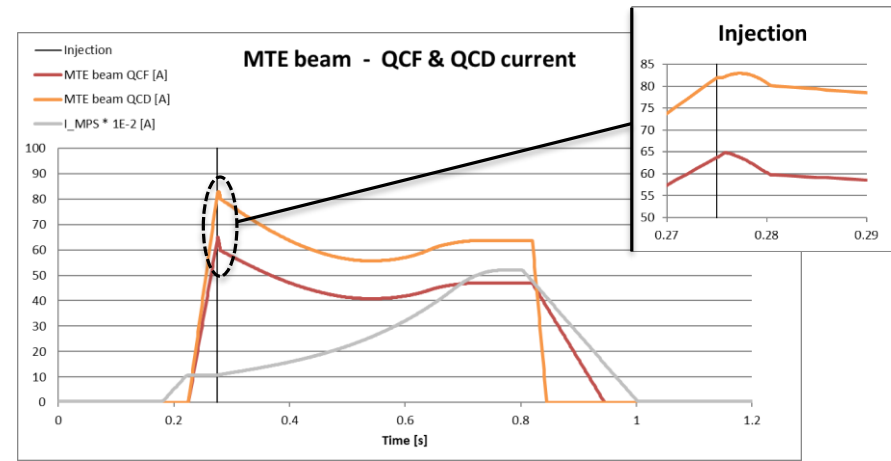
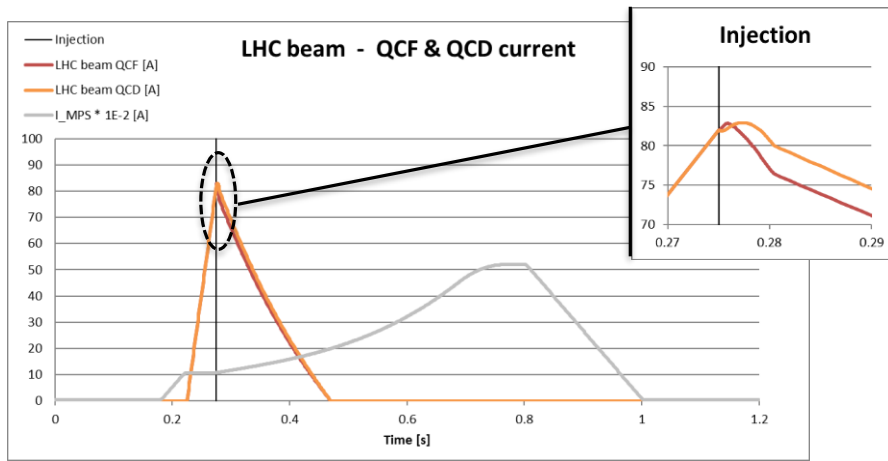
- Quantity: **16 + 2 units**
- Delivery date: **LS2**
- Budget: **160 kCHF**
- Operation: **TE-EPC-LPC**

Circuit layout

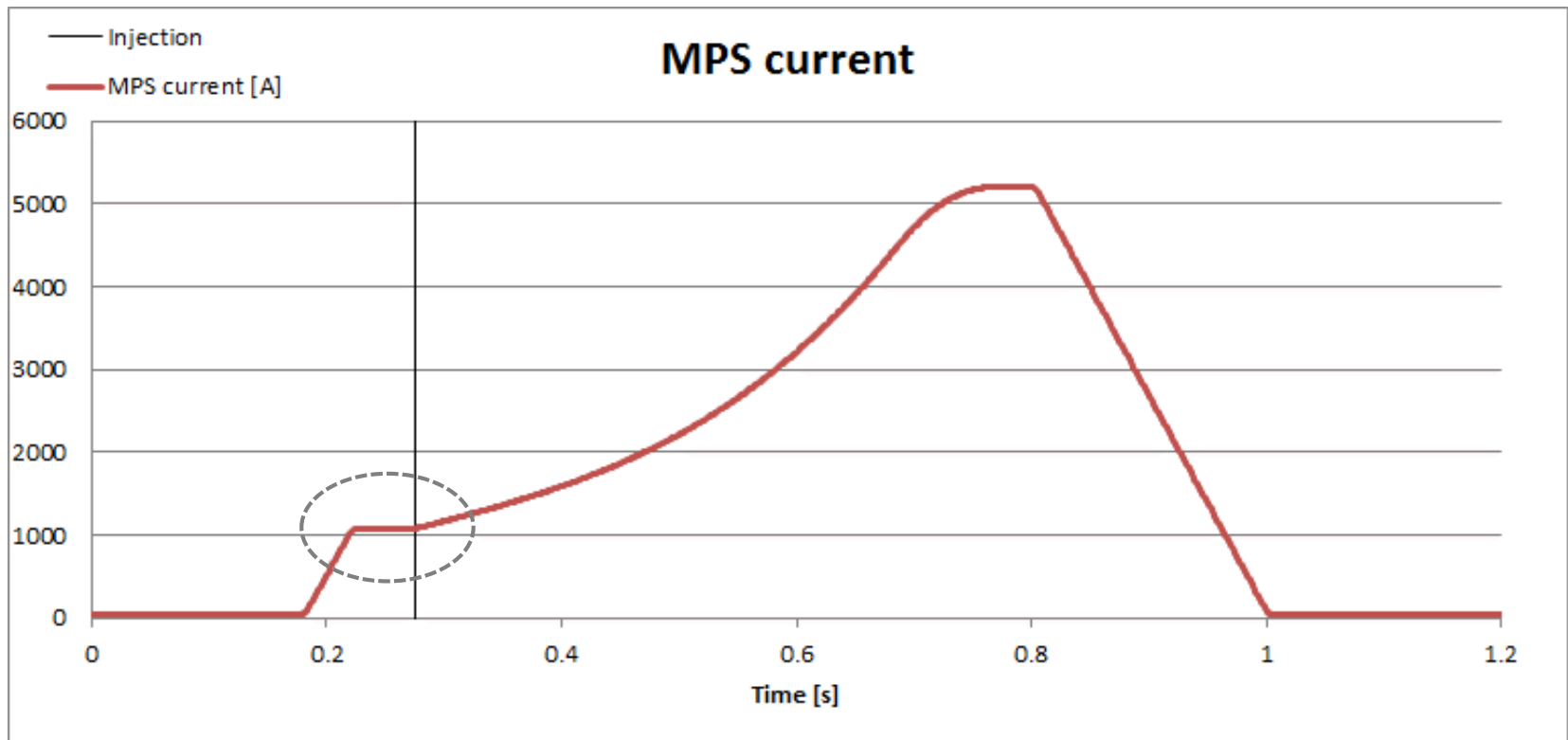


- New fast correction functions are required to compensate the chicane perturbations -> need for new converters.
- Separate powering of magnets in sectors 3 and 14 for dedicated correction.

- The increase of current for 2GeV operation was not taken into account in the initial functional specification.
- New calculations of the functions for beta-beating correction and tune rematching have been performed. (F. Antoniou)
- A new functional specification with updated current waveforms (for LHC and MTE beams) will be released.



- The MPS current waveform has been updated, with a 50 ms flat bottom before injection.
- This will allow the stabilisation of the magnetic field.
- The QSTRIP converters will ramp-up during this flat bottom, as there is no induced voltage from the MPS (constant current).



- 16 + 2 CANCUN 100 converter (100 A / 30 V) are foreseen.
- No change compared to previous baseline.
- One converter for test purpose has already been installed.
- The remaining QSTRIP converters will be installed during LS2.



- The 2GeV requirements lead to new constraints on the QSTRIP power converters.
- The foreseen converter type (CANCUN 100) can handle the updated current waveforms.
- **The converters are ready for installation in LS2.**



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