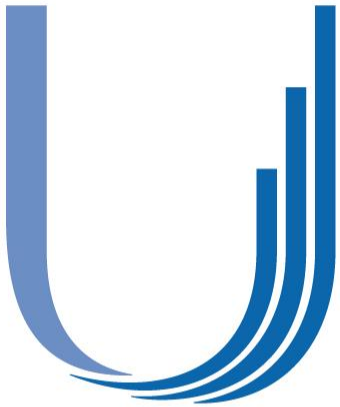


LHC Injectors Upgrade

LHC Injectors Upgrade

LIU AND TE-EPC ACTIVITIES

S. PITTET

LIU-PSB

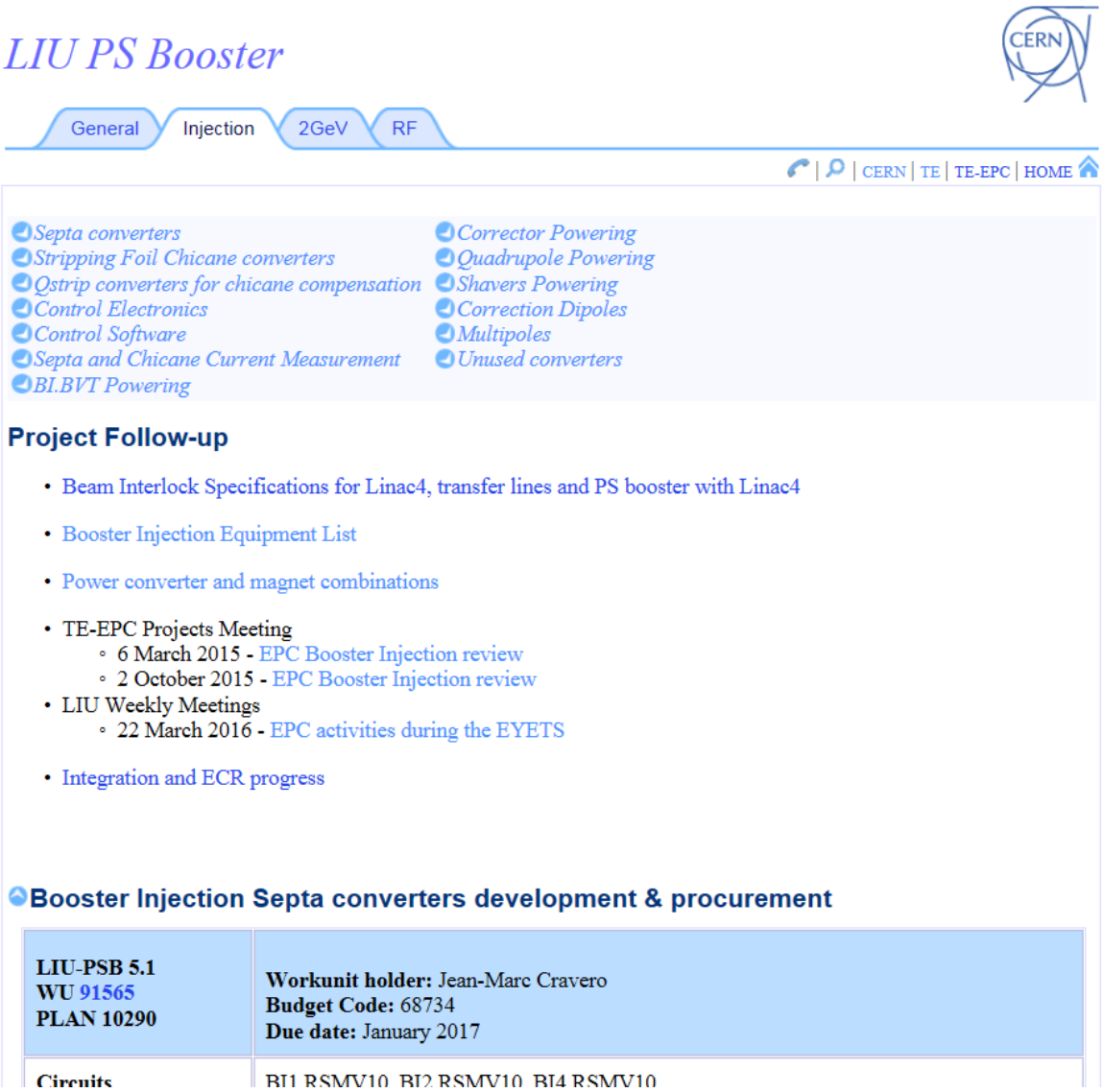
ACKNOWLEDGMENTS: J-M. CRAVERO, D. AGUGLIA, L DE MALLAC.

Introduction

More details on workunits:

http://te-epc-lpc.web.cern.ch/te-epc-lpc/machines/liu-booster/booster_injection.stm

http://te-epc-lpc.web.cern.ch/te-epc-lpc/machines/liu-booster/booster_2gev.stm



LIU PS Booster

General | Injection | 2GeV | RF

CERN | TE | TE-EPC | HOME

- *Septa converters*
- *Stripping Foil Chicane converters*
- *Qstrip converters for chicane compensation*
- *Control Electronics*
- *Control Software*
- *Septa and Chicane Current Measurement*
- *BI.BVT Powering*
- *Corrector Powering*
- *Quadrupole Powering*
- *Shavers Powering*
- *Correction Dipoles*
- *Multipoles*
- *Unused converters*

Project Follow-up

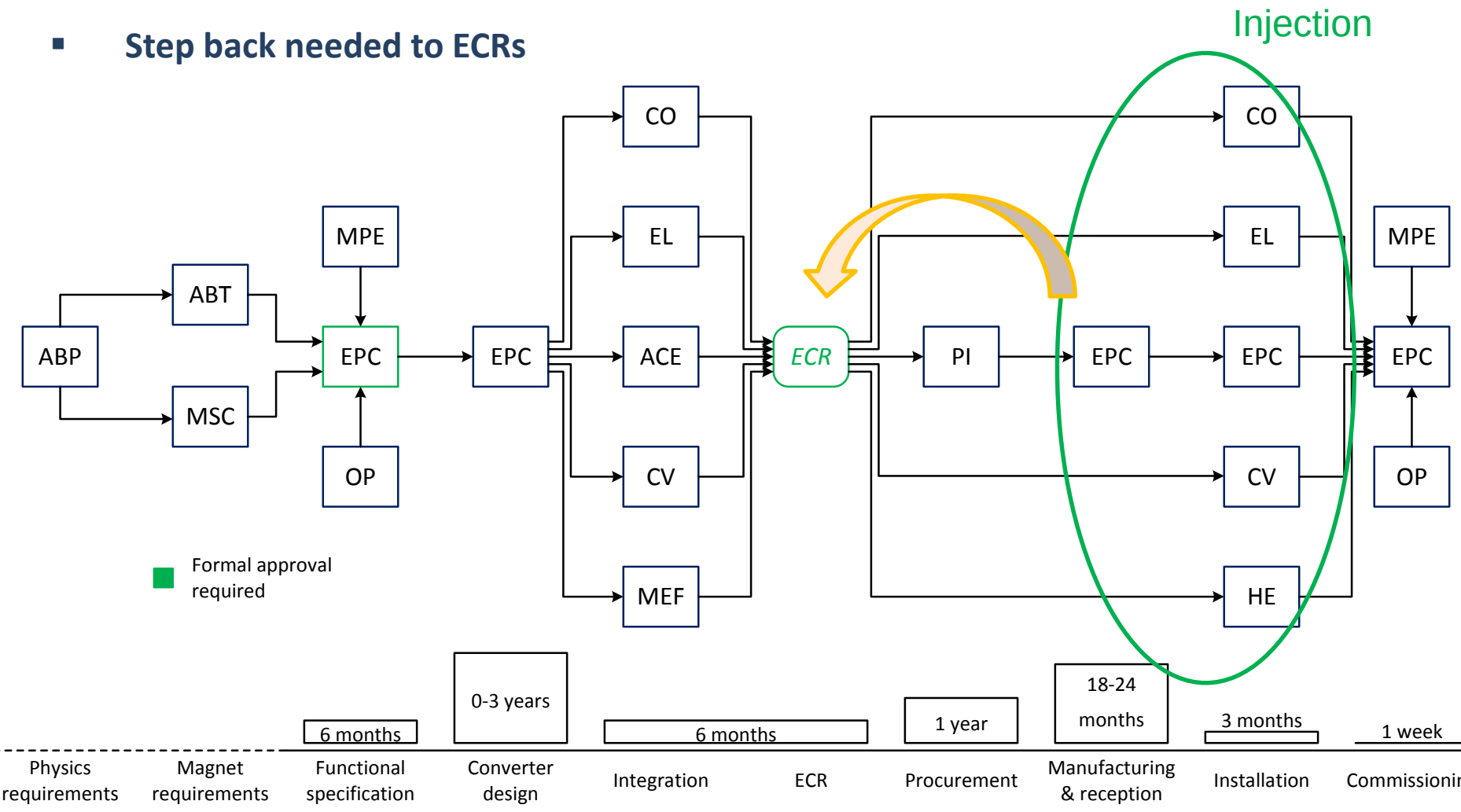
- Beam Interlock Specifications for Linac4, transfer lines and PS booster with Linac4
- Booster Injection Equipment List
- Power converter and magnet combinations
- TE-EPC Projects Meeting
  - 6 March 2015 - EPC Booster Injection review
  - 2 October 2015 - EPC Booster Injection review
- LIU Weekly Meetings
  - 22 March 2016 - EPC activities during the EYETS
- Integration and ECR progress

Booster Injection Septa converters development & procurement

LIU-PSB 5.1 **WU 91565** **PLAN 10290**	**Workunit holder:** Jean-Marc Cravero **Budget Code:** 68734 **Due date:** January 2017
Circuits	BI1.BSMV10_BI2.BSMV10_BI4.BSMV10

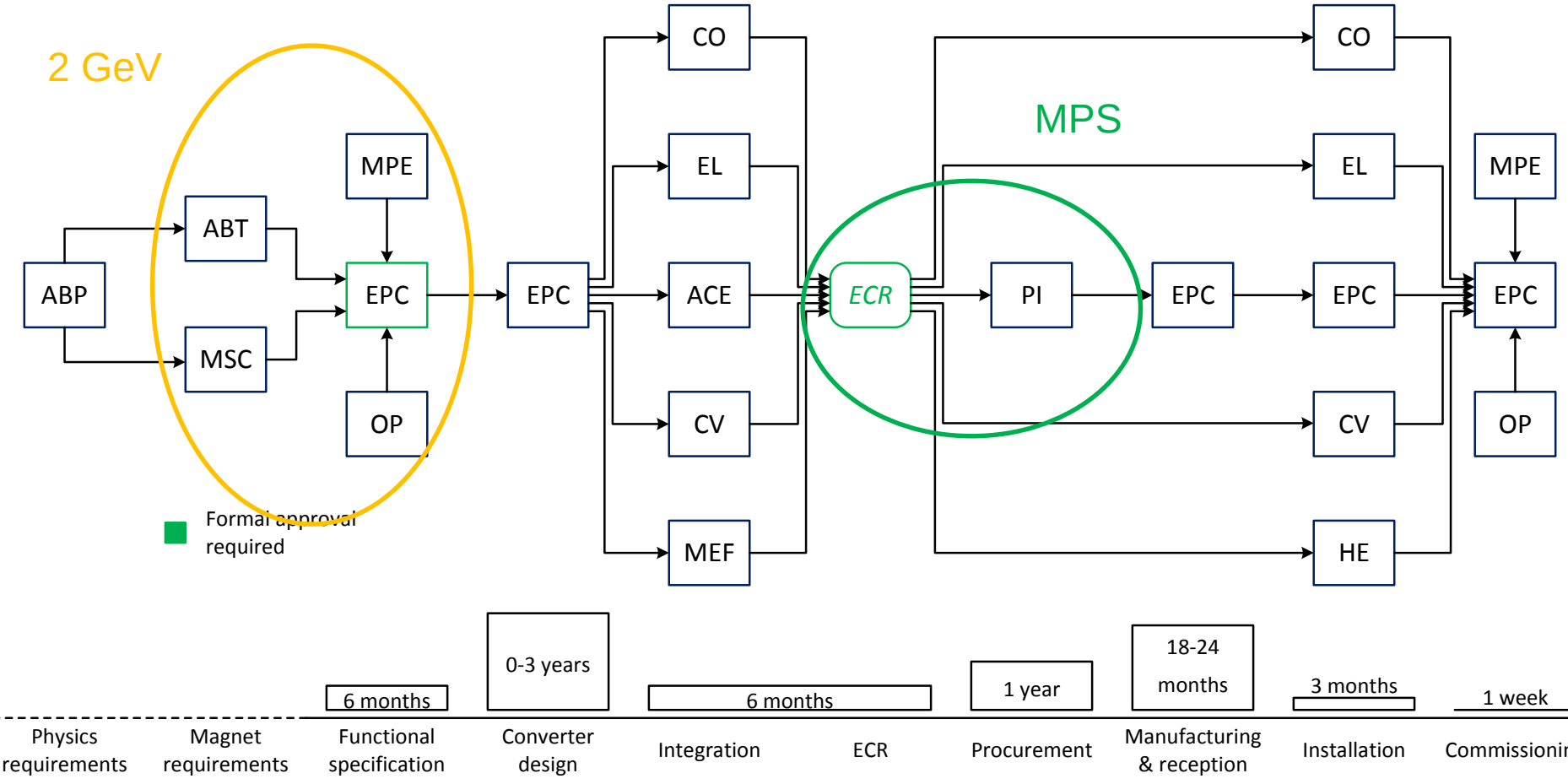
Dependencies on other groups - Injection

- All dependencies well defined
- Step back needed to ECRs



Dependencies on other groups – 2GeV

- All dependencies well defined
- Only MPS well advanced



EPC workunits status/open issues

Well advanced:

- **WU 91565 Injection Septa converters:** converters already installed, transformer and cables to be installed.
- **WU 91566 Stripping Foil Chicane converters:** finalizing integration.
- **WU 91567 Injection Qstrip converters:** reception tests.
- **WU 126815 BI.BVT Powering:** manufacturing.
- **WU 126816 Injection Corrector Powering:** manufacturing.
- **WU 158192 Correction Dipoles Power Converters:** In operation.
- **WU 91570 Booster MPS:** Procurement started.
- **WU 91573 MidiDiscap:** manufacturing.

EPC workunits status/open issues

Specification pending:

- **WU 158193 Injection Quadrupole Powering.**
- **WU 91571 Booster MPS Trims.**

Not formally started:

- **WU 91572 ALG1&2 upgrade:** No formal specification from ABT.
- **WU 91574 Transfer bendings:** Some specifications still missing from MSC. Needs to be treated in one batch by EPC.

Requests from LIU

PSB Injection well defined.

«Self-built» requirements for the 2GeV part. Not upgraded converters will have to be specified and approved by the project:

- **BR.ONOH0, BR.XNOH0: converters are assumed to be ok.**
- **BR.BDLs converters assumed to be ok at a first glance, but might need to be upgraded. Is the 5% ripple current ripple induced by the MPS compatible with injection requirements?**

Planning

- **Overall timeline still fits with LIU schedule, provided that <u>all</u> requirements are defined by end 2016.**

- **All activities declared in PLAN**

Provide Booster MPS

LIU-PSB 5.2 **WU 91570** **PLAN 10311**	**Workunit holder:** Fulvio Boattini **Budget Code:** 99238 **Due date:** September 2019
Circuits	BR.RMPS
Deliverables	2+1 POPSB Converters

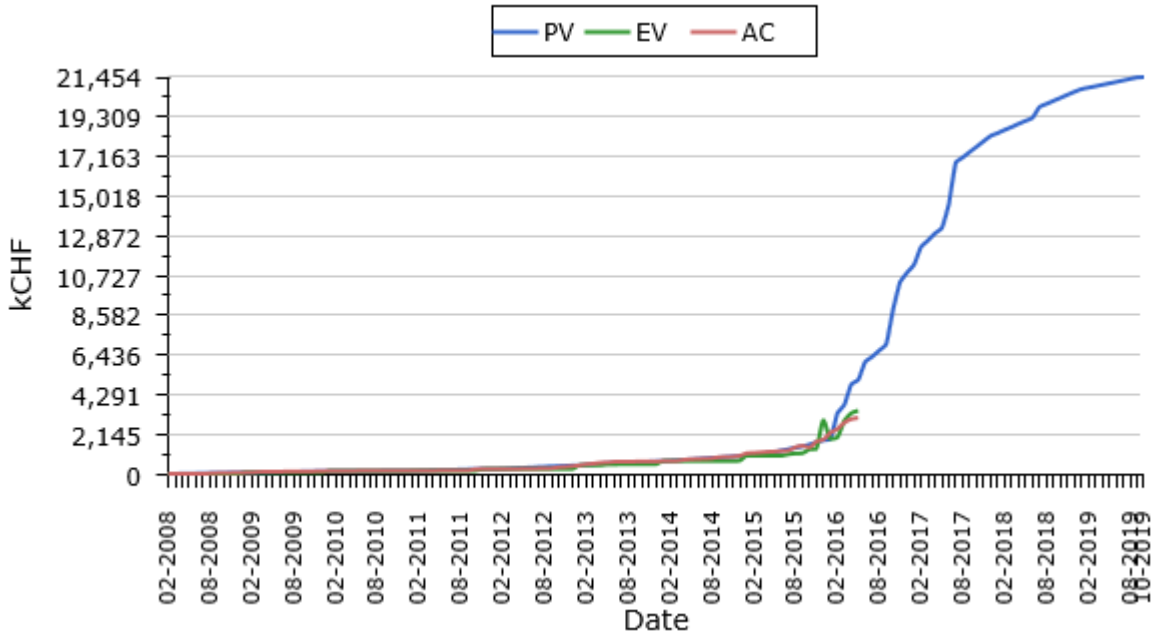
- **Consolidation items in line with LIU project**

  - Most items integrated into LIU

  - Remaining items will be soon integrated in APT under CONS (Linac4 to PSB transfer lines, control electronics).

Budget

- Overall budget correct: 6.8 MCHF (2016)
- Budget usage: 35%.



- Most WU in the noise of the MPS.
- Some spending hidden behind transitory budget codes.

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