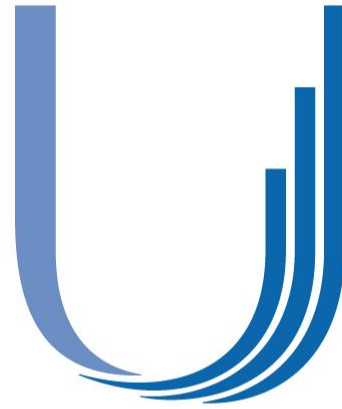


Planning and Installation

LIU Project Team meeting

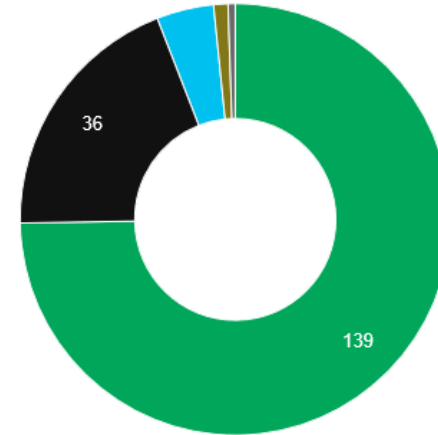


LHC Injectors Upgrade





PLAN version 2



- Created
- Approved
- Approved if
- Finished
- Cancelled

2 activities *Approved if*

ID	Title	Group	Responsible	WBS	Facilities	Group contribution	Status	Status Comment
11103	Relocate the eCloud test bench power converters	TE-EPC	EMILIEN COULOT (TE-EPC-MPC)	SPU-PRJ	SPS	BE-OP, EN-ACE, EN-EL, EN-HE-HH, SMB-SE-PO, TE-EPC	Approved if	Please give urgently technical information to EN-EL
10316	Supply new converters for Booster Ejection Transfer Bending Magnets	TE-EPC	IVAN JOSIFOVIC (TE-EPC-MPC)	PBU-PRJ	PS Booster	BE-CO, BE-OP, EN-ACE, EN-CV, EN-EL, EN-HE-HH, IT-CS, SMB-SE, TE-MPE-MI	Approved if	Please give urgently technical information to EN-EL

Information from Valerie Montabonnet:

Activité 10316 - Supply new converters for Booster Ejection Transfer Bending Magnets
 La Functional Specification est en cours de validation en interne EPC. L'ECR suivra en Septembre.
 Dès que la Functional Specification est approuvé, EN-EL sera contacté.

11103 - Relocate the eCloud test bench power converters
 Changement de dernière minute : EPC va profiter de cette relocation pour changer les 2 convertisseurs qui étaient sur-dimensionnés.
 La Functional Specification est en cours d'écriture chez nous.
 Dès que la Functional Specification est approuvé, EN-EL sera contacté.

9 activities **Created** (announce too late for the version 2 → will be approved in the version 3)





PLAN version 2

ID	Title	Group	Responsible	WBS	Facilities	Group contribution	Status
<input type="text" value="id"/>	<input type="text" value="Title"/>	<input type="text" value="Department-Group"/>	<input type="text" value="First name, last name, group or perso..."/>	<input type="text" value="LIU-PROJ"/>	<input type="text" value="x Facility"/>	<input type="text" value="Select the contributing grou..."/>	<input type="text" value="Select a status..."/>
11460	Supply new converters to consolidate LINAC3 and LEIR Pulsed Quadrupole Magnet converters	TE-EPC	JEAN-MARC CRAVERO (TE-EPC-FPC)	IIU-PRJ	LEIR, LINAC 3	BE-CO, BE-OP, EN-EL, IT-CS, TE-EPC	Created
11424	Installation of the damping resistors on the Booster main bending and quadrupole magnets	TE-MSC	ANTONY NEWBOROUGH (TE-MSC-MNC)	PBU-PRJ	PS Booster	BE-OP-PSB, EN-ACE-OSS, TE-EPC	Created
11426	Provide and install new PS injection kicker magnet KFA45	TE-ABT	THOMAS KRAMER (TE-ABT-PPE)	PSU-PRJ	PS&TT2	BE-OP, EN-ACE-SU, EN-CV, EN-HE-HH, EN-MME, HSE-RP, TE-VSC-BVO	Created
11427	Install additional HV cables for KFA45	TE-ABT	THOMAS KRAMER (TE-ABT-PPE)	PSU-PRJ	PS&TT2	EN-CV, EN-EL-EIC, EN-HE-HH	Created
11430	Replace three extraction kicker magnets (MKE6) in LSS6	TE-ABT	GAEL BELLOTTO (TE-ABT-KSC)	SPU-PRJ	SPS	BE-ABP-HSC, BE-OP, EN-ACE-SU, EN-CV, EN-HE-HH, HSE-RP, HSE-SEE, TE-VSC-BVO	Created
11415	SPS RF Low Level upgrade for LIU	BE-RF	PHILIPPE BAUDRENHIEN (BE-RF-FB)	SPU-PRJ	SPS	BE-CO, BE-CO-HT, BE-ICS-AS, BE-OP-SPS, BE-RF-CS, BE-RF-FB, BE-RF-PM, EN-CV, EN-EL-EIC, EN-EL-FC, EN-HE-HH, IPT-DI, IT-CS-DO, SMB-SE-CEB	Created
11429	Replace one injection kicker magnet (MKP)	TE-ABT	GAEL BELLOTTO (TE-ABT-KSC)	SPU-PRJ	SPS	BE-ABP-HSC, BE-OP, EN-ACE-SU, EN-CV, EN-HE-HH, HSE-RP, HSE-SEE, TE-VSC-BVO	Created
11484	Revamping of crane PR537 in TCC2	EN-HE	ROBERTO RINALDESI (EN-HE-HM)	SPU-PRJ	SPS	EN-HE-HH, HSE-SEE	Created
11485	Revamping of crane PR539 in EHN2	EN-HE	ROBERTO RINALDESI (EN-HE-HM)	SPU-PRJ	SPS	EN-HE-HH, HSE-SEE	Created





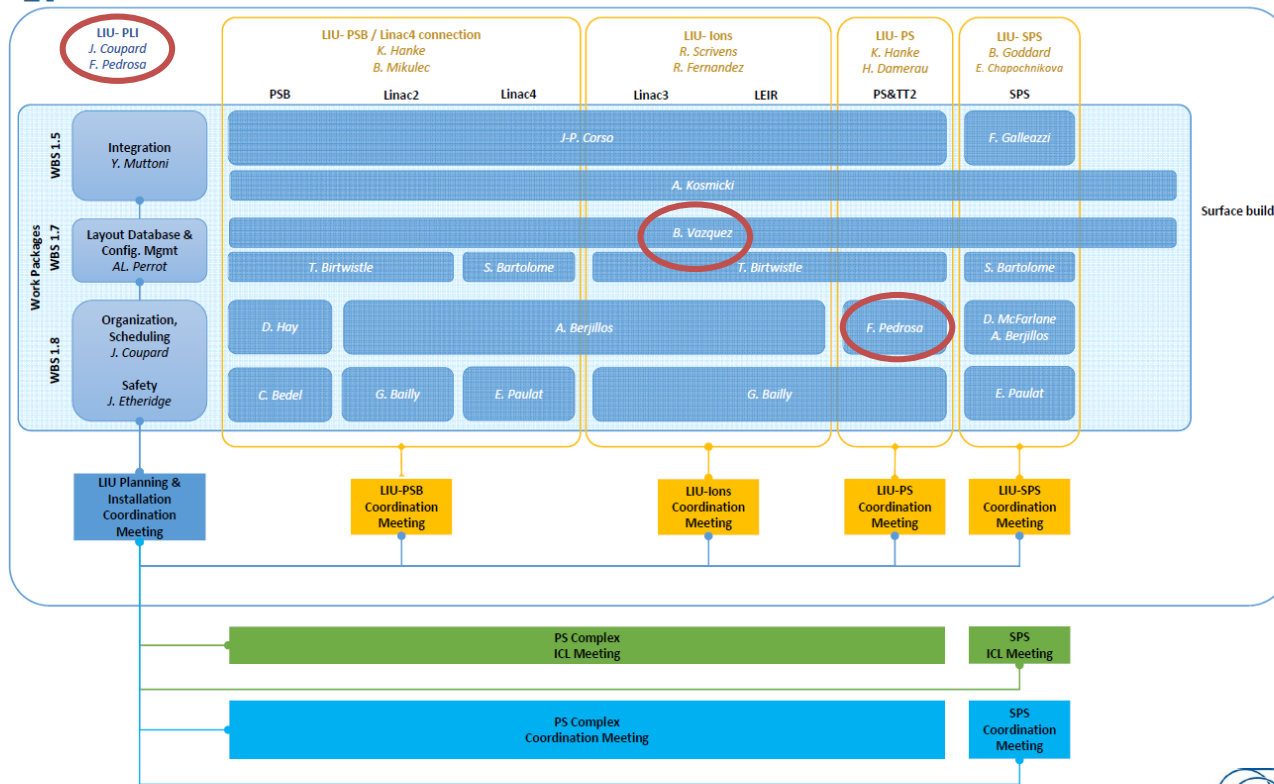
LIU-PLI deputy and PS Facility Coordinator

Simon Mataguez is replaced by **Fernando Pedrosa**



LIU - Planning & Installation Coordination Team

EDMS 1427184



01 August 2017

LIU-PLI Team - J.Coupard



10 August 2017

LIU PT meeting - J. Coupard





Cost & Schedule Review 2016 recommendation

Prepare an integrated schedule and show the critical path

CERN CH-1211 Geneva 23 Switzerland

EDMS NO.
0000000



Date: 2017-xx-xx

Installation Readiness for the Long Shutdown 2 (2019-2020)

1. Introduction

Following the cost and schedule review 2016 [1], the CERN Machine Advisory Committee (CMAC) made the recommendation to prepare an integrated schedule of the LIU Project and show the critical path in the Long Shutdown 2 (LS2) master schedule [2]. In order to prepare such schedule, an *installation readiness date* is added into the detailed schedule of installation, based on the preparation schedule of the equipment.

This document summarizes the installation readiness dates of the new equipment for the LIU Project that are referred in the LS2 detailed schedules, in agreement with the LIU work package responsible.

2. Installation readiness of the equipment

2.1 BE-BI

Work package responsible: Jocelyn Tan

Equipment	Installation readiness date
BI.BTV30	Ready
BT2.BTV10	January 2019
BT3.BTV10	January 2019
BLMs for the new injection region	Ready
BLMs for the extraction transfer lines	January 2019
Fast Wire Scanners for Period 4 and 11	January 2019

2.2 BE-CO

Work package responsible: Eve Fortescue-Beck

Equipment	Installation readiness date
Hardware	
OASIS	



EDMS NO.
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2.3 BE-ICS

Equipment	Installation readiness date

2.4 BE-RF

Work package responsible: Mauro Paoluzzi, Andy Butterworth, Wolfgang Hofle

Equipment	Installation readiness date
Finemet cavities	January 2019
Transverse Damper amplifiers	January 2019
Low level feedback for the connection of transverse feedback for the connection of 2 GeV	Ready
Transverse Feedback for 2GeV	January 2019
RF Bypasses	Ready
RF Controls	

2.5 EN-CV

Work package responsible: Gabor Petrika

Equipment	Installation readiness date
Connection of the RF cooling on the main PSB demi water pumping station	January 2019
Pressure rating upgrade of the existing hydraulic accessories	January 2019

2.6 EN-EL

Work package responsible: James Devine, Georgi Georgiev

Equipment	Installation readiness date

Proposal



Based on the LS1 experience with the R2E Project and LHC Collimation Project, it is necessary to have dedicated persons in charge of the **day-to-day in-situ management and supervision** for

- The 200 MHz RF Upgrade in SPS Point 3
 - The New Beam Dump in SPS Point 5 and reconfiguration of the SPS Point 1
- 2 FTE (Staff CERN-wide ? BE-RF ? TE-ABT ? BE-OP ?)

Based on Linac4 experience with installation of the transfer line, it is necessary to have a dedicated person in charge of the **mechanical removal and installation of the Complex PS transfer lines** (connection to LT-BHZ20, LBE, BI and BTP lines)

→ 1 FTE (Staff CERN-wide ?)

LS2 Space Management:

- Did all the LIU requests have been sent (from Groups to Dep. Space Managers) ?
- LS2 Team dedicated : Germana Riddone (TE-VSC), Katy Foraz (EN-ACE), Jonathan Meignan (EN-ACE) with support from David Hay (EN-ACE)
- Surface space management will be linked to the facility coordinators schedule



LIU-PLI meetings

August 2017

- 31 Aug [LIU - Planning & Installation meeting](#) NEW
- 24 Aug [LIU - Planning & Installation meeting](#) NEW
- 17 Aug [LIU - Planning & Installation meeting](#) NEW

LIU-IONS ECR LEI-BPM-EC-0002 (EDMS 1829177) Installation of Beam Position Monitors in the LEIR ETL line 15m

This ECR details the installation of 5 beam position monitors in the ETL injection line to LEIR.

Speaker: Lars Soby (CERN)

[ECR v.0.1](#)

LIU-IONS ECR LEI-T This document concerns the disassembly of the Linac2 transfer line from the end of the DTL cavities, DTL cavities not included, up to the LT.BHZ20 magnet. The aim is to liberate space for new items installation (bldg.363/R-402), described in the ECR: CPS-LJ-EC-0002 "Connection of the Linac4 to the LT.BHZ20"

This document describes of the vacuum chamber foreseen to be installed.

Speaker: Aurelio Berjillos Barranco (CERN)

[ECR v.0.2](#)

This ECR is part of the LIU

Speakers: Antonio Pe

[ECR v.0.1](#)

LIU-PS ECR PS-BW-Ring

It is proposed to install of instruments will be in

Speaker: Aurelio Berjillos Barranco (CERN)

[ECR v.0.2](#)

Speakers: Dmitry Gudkov (CERN), Raymond Va

[ECR v.0.1](#)

LIU-PS ECR PS-MDBCC-EC-0002 (EDMS 1835539) Installation of ADKSV

The operation of the BGI magnet is needing a correct details the chosen solution which consists of installing a second power supply for the return field separately. Tuning of the integrated field will be performed by setting different currents between the two circuits.

Additional data can be found on the Indico Page: 645350.

Speakers: Dominique Bodart (CERN), Yves Thurel (CERN)

[ECR v.0.1](#)

LIU-SPS ECR SPS-LJ-EC-0005 (EDMS 1698074) New RF power feeder line in SPS point 3 shaft (PA3) and GT10 for LIU-SPS 15m

This ECR is part of the LHC Injectors upgrade (LIU) framework, which covers SPS, and seeks to prepare the reliable delivery of the required beams to the LHC, to meet the goals of the High Luminosity LHC (HL-LHC) project.

Part of the SPS upgrade project concerns the upgrade of the 200 MHz RF system, which is the frequency at which main accelerating system of the SPS operates. This involves the addition of two new travelling-wave cavities and the construction of two new RF systems which will feed them, as well as the installation of the surrounding equipment to ensure the correct functioning of said systems. The required changes are divided in several parts with related ECRs to describe the changes in surface, shaft and the tunnel.

The corresponding SRR has been already approved [1].

This ECR is dedicated to the required changes in the shaft (PA3) and in the GT10 for the upgrade of the 200 MHz RF System.

Speakers: Eric Montesinos (CERN), Pilar Parrado Caballero (Ministere des affaires etrangeres et europeennes (FR))

[ECR v.0.1](#)

LIU-SPS ECR SPS-ADKSV-EC-0001 (EDMS 1835539) Installation of ADKSV 15m

Speakers: Eric Montesinos (CERN), Pilar Parrado Caballero (Ministere des affaires etrangeres et europeennes (FR))





LS2 schedule

Linac4 connection

- **Done**
 - Presentation during the review in August 2016
 - Review of the schedule with the PSB and PS schedules

PS Booster

- **In work** → strategy under discussion with
 - EN-EL for the de-cabling and cabling campaigns
 - TE-VSC and TE-MSB on the sequence for the upgrade of the transfer lines

PS & TT2

- **In work** → strategy based on the consolidation of the main magnets
 - Priority on the PS Switch Yard area for LIU Project (injection upgrade, new LBE)
 - Integration of the CV works

SPS

- **In work**
 - Main activity in Points 1, 3 and 5 for LIU Project (**critical path on SPS 3 and 5**)
 - Coordination between aC coating/impedance reduction, Cabling campaigns and SPS Fire Safety Project

LHC

- **In work** → New TCDIs in TI2 and TI8 scheduled in LHC 1 and 8 (**critical path on LHC 8**)

Complex PS

SPS

LHC

