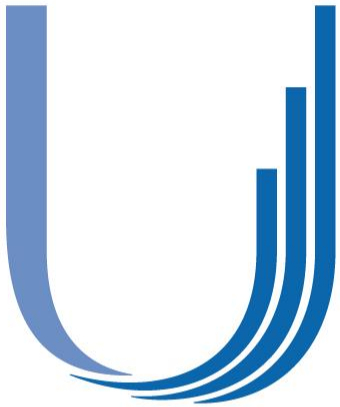
LIU–PLI PLanning and **I**nstallation

Coordination meeting



LHC Injectors Upgrade

Follow-up on the SRRs and the ECRs approvals

Space Reservation and Engineering Change Requests

Website : https://espace.cern.ch/LIUPLI/SitePages/LIU-PLI%20Follow-up.aspx

Machine	SRR	ECR	Title	Owner	Integration studies	LIU-PLI meeting	Status	Actions needed	Follow-up	Schedule	Comments
PSB		PSB-MKKSW-EC-0001	New KSW magnet in 16L1 of the PS Booster	**Luis Feliciano**	IN PROGRESS	4-Feb-15	**UNDER APPROVAL**	Integration studies ok Missing the 2D drawings ok Impact on the vacuum to be added in the ECR ok Approval process 04-05-15 Deadline 18-05-2015 **Updated Design Office version of the model to be integrated in the integration 3D model** **Confirm if the kicker is installed on the bench with or without additional support (calculation to be done by MME)**	**Benoit Riffaud** **Jean-Michel Lacroix**	**EYETS 2016-2017**	New 3D models to be added in the ECR containing the support for the vacuum chambers.
PSB	PSB-LJ-EC-0004		New SEM grid monitor and new fast BWS in PSB sector 4 and 11	**Federico Roncarolo** **Paolo Magagnin**	COMPLETED	29-Oct-15	**UNDER APPROVAL**	waiting for feedback about the RP aspect in this area Add the information about the wire scanner in the area 4L1 Approval process 02-10-2015 Deadline 14-10-2015 Presentation to LIU-PLI Information about the pumps for the vacuum to be included **Approval process for VSC and LIU Project Team**	**Thomas Birtwistle**	**EYETS 2016-2017**	Check if additional racks to ne added. If yes, to mention their position or at least the number.
PS	PS-LJ-EC-0001		PS Ring 2GeV New Injection Septum and Bumper	**Michael Hourican**	COMPLETED	3-Dec-15	**UNDER APPROVAL**	Integration studies Approval process 17-11-2015 Deadline 01-12-2015 Presentation to LIU-PLI **Integration studies to define the position for the transformers**	**Jean-Michel Lacroix**	**LS2**	
PSB	PSB-LJ-EC-0005		PSB BCER Switchboard and Containment Installation	**James Dewine**	COMPLETED	18-Feb-16	**UNDER APPROVAL**	Approval process 17-12-2015 Deadline 12-01-2016 **Presentation to LIU-PLI**	**James Devine**	**EYETS 2016-2017**	
PSB		PSB-LJ-EC-0006	Relocation of BI.BTV30 in the PS Booster Injection Line	**Stephane Burger**	COMPLETED	18-Feb-16	**UNDER APPROVAL**	Approval process 15-01-2016 Deadline 27-01-2016 **Presentation to LIU-PLI**	**Stephane Burger**	**LS2**	
PS		PS-WCM-EC-0002	The New Acquisition System for the PS Ring Wall Current Monitors	**Lars Soby**	N/A	18-Feb-16	**UNDER APPROVAL**	Approval process 10-02-2016 Deadline 18-02-2016 Implementation during the YETS 2015-2016 **Information to LIU-PLI**	**Thomas Birtwistle**	**YETS 2015-2016**	
SPS	SPS-LJ-EC-0002		LSS1 configuration after relocation of the SPS Beam Dumping System to LSS5 during LS2	**Etienne Carlier**		25-Feb-16	**UNDER APPROVAL**	Approval process 05-02-2016 **Deadline 19-02-2016** Presentation to LIU-PLI	**Sonia Bartolome**	**LS2**	
SPS	SPS-LJ-EC-0003		LSS5 configuration after relocation of the SPS Beam Dumping System during LS2	**Etienne Carlier**		25-Feb-16	**UNDER APPROVAL**	Approval process 05-02-2016 **Deadline 19-02-2016** Presentation to LIU-PLI	**Sonia Bartolome**	**LS2**	

Follow-up on the SRRs and the ECRs approvals

Space Reservation and Engineering Change Requests

Website : https://espace.cern.ch/LIUPLI/SitePages/LIU-PLI%20Follow-up.aspx

Machine	SRR	ECR	Title	Owner	Integration studies	LIU-PLI meeting	Status	Actions needed	Follow-up	Schedule	Comments
PSB		PSB-L-EC-0001	New Injection Region 1L1	**Wim Weterings**	IN PROGRESS	14-Jan-15	**APPROVAL CLOSED**	**Integration studies:** **- positioning of the transformers - action EPC and MME** **- structure of the BSW - action MME** **- Need detail of the needs from EPC to define the general services**	**Wim Weterings** **Christophe Coupat** **Benoit Riffaud** **Jean-Michel Lacroix**	**LS2**	
SPS		LHC-TCDI-EC-0002	Upgrade of the TCDI Collimators in the SPS to LHC Transfer Lines (TI2 and TI8)	**Matthew Fraser**	COMPLETED	28-Jan-15	**ENGINEERING CHECK**	**Integration studies: Validation of the transport handling** **Engineering Check process 02-02-2016** **Deadline 16-02-2016**	**Samy Chemli**	**LS2**	
PS		PS-VC-EC-0001	Modification of the PS Ring MU41 and MU42 Vacuum Chambers	**Jan Hansen**	COMPLETED	12-Aug-15	ENGINEERING CHECK CLOSED	Engineering Check process 24-07-2015 Deadline 05-08-2015 Presentation to LIU-PLI Issue with the workshop deadline - Installation date to be clarified - confirmation to postponed to EYETS 2016-2017 **New version to be submitted** Approval process Presentation to LIU-PLI Presentation to IEFC	**Jan Hansen**	**EYETS 2016-2017**	Need the Technical Report to be RELEASED Need prensetation from Serena about trapped modes
PSB	PSB-LJ-EC-000x		Absorber	**Francois-Xavier Nuiry**	IN PROGRESS		**IN WORK**	**Volume estimation for integration studies**	**Francois-Xavier Nuiry**	**LS2**	
PS	PS-LJ-EC-000x		Internal dumps	**Francois-Xavier Nuiry**	IN PROGRESS		**IN WORK**	**Volume estimation for integration studies**	**Francois-Xavier Nuiry**	**LS2**	
PSB		PSB-BPUWB-EC-0001	Installation of a Wideband Pickup in the BTP Transfer Line	**Jeroen Belleman**	COMPLETED	10-Jun-15	**NOT IMPLEMENTED**	to be sent for approval Approval process 30-06-2015 Deadline 15-07-2015 Need confirmation about the positioning of magnets - confirmed by Simone Gilardoni Presentation to IEFC 21-08-2015 - approved to be RELEASED Postponed to EYETS 2016-2017 - to be OBSOLETE - New ECR to be submitted Information to LIU-PLI and IEFC **Integration studies: New layout position**	**Jeroen Belleman** **Jean-Michel Lacroix**	**EYETS 2016-2017**	

Follow-up on the SRRs and the ECRs for the YETS 2015-2016

PS Complex

Machine	ECR	Title	Owner	Integration studies	LIU-PLI meeting	Status	Actions needed	Follow-up	Schedule
Linac3-Linac4-LEIR	L3-LJ-EC-0001	Modification of the GTS-LHC Extraction Region in Linac 3	**Ville Aleksi Toivanen**	N/A	3-Dec-15	RELEASED	Approval process 13-11-2015 Deadline 26-11-2015 Presentation to LIU-PLI Presentation to IEFC 04-12-2015 - approved RELEASED 04-01-2016 **to be installed**	**Richard Scrivens**	**YETS 2015-2016**
Linac3-Linac4-LEIR	L3-BCFAB-EC-0001	LINAC3 Faraday Cups Upgrade	**Ivan Francescut** **Federico Roncarolo** **Sergey Sadovich**	N/A	3-Dec-15	RELEASED	Approval process 16-11-2015 Deadline 26-11-2015 Presentation to LIU-PLI Presentation to IEFC 04-12-2015 - approved **RELEASED 12-01-2016** **to be installed**	**Richard Scrivens**	**YETS 2015-2016**
PSB	PSB-K-EC-0001	BSW Chicane Stripping Foil Magnet Power Converter Infrastructure	**David Hay**	COMPLETED	10-Dec-15	RELEASED	Integration studies Approval process 18-11-2015 Deadline 30-11-2015 Presentation to LIU-PLI Presentation to IEFC 11-12-2015 - approved RELEASED 16-12-2015 installed		**YETS 2015-2016**
PS	PS-WCM-EC-0001	Installation of PS Wall Current Monitors	**Jeroen Belleman**	before LIU-PLI	before LIU-PLI	RELEASED	installed		**YETS 2015-2016**
PS	PS-ACC10-EC-0001	Modification of the water cooling circtuit of the 10 MHz cavities (prototype)	**Carlo Rossi**	COMPLETED	10-Dec-15	RELEASED	Under studies Approval process 03-12-2015 Deadline 09-12-2015 Presentation to LIU-PLI Need confirmation from EN-CV - confirmed by Serge Deleval Approved by LIU Project Presentation to IEFC - approved on 15-02-2016 RELEASED 20-02-2016 installed		**YETS 2015-2016**
SPS	SPS-ADKCV-EC-0003	High bandwidth damper kickers in LSS3 of the SPS	**Debora Aguilera**	COMPLETED	not presented	RELEASED	Approval process 04-09-2015 Deadline 18-09-2015 Presentation to IEFC 18-09-2015 - approved RELEASED 03-11-2015 installed		**YETS 2015-2016**
SPS	SPS-MKE-EC-0001	Reconfiguration of SPS east extraction kicker system	**Nicolas Magnin**	COMPLETED	22-Oct-15	RELEASED	Integration studies Approval process 28-09-2015 Deadline 12-10-2015 Presentation to LIU-PLI New version with clarifications about the vacuum flanges Approval process for VSC and LIU Project Team Presentation to IEFC 27-11-2015 - approved RELEASED 07-12-2015 installed		**YETS 2015-2016**
SPS	SPS-V-EC-0002	Modification of the SPS sectorization in long vacuum sector 460	**Jose Ferreira**	COMPLETED	10-Dec-15	RELEASED	New ECR to edit Approval process 27-11-2015 Deadline 10-12-2015 Presentation to LIU-PLI Presentation to IEFC 11-12-2015 - approved RELEASED 15-12-2015 **installed**		**YETS 2015-2016**

Forecast 2016 – Engineering Change Requests for the Linac4

Installation scheduled for the EYETS 2016-2017

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	ECR needed (yes or no)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
Linac4 connection to PSB	Connect the Linac4 to PSB	Dismantling of a part of the Linac2 Change of the magnet BHZ.20 New sectorization (Civil Engineering, Access System, Chicanes, Shielding) Modification of the power converters Cabling Cooling & Ventilation ? Interlock ?	to be detailed	Interface Linac4 Linac2 (410-363)	EN-ACE	Aurelio Berjillos	yes			no	be ready	no	yes
Linac4 connection to PSB	upgrade the LBE measurement line	New LBE measurement line	to be detailed	LBE line (PS Switch Yard)	BE-ABP	JB. Lallement	yes			no	be ready	no	yes

Forecast 2016 – Engineering Change Requests for the PSB

Installation scheduled for the EYETS 2016-2017

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	SRR needed (Yes or No)	ECR needed (Yes or No)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
Linac 4 Connection to PSB	New PSB Injection Region	New Injection Region		RING (1L1)	TE-ABT	Wim Weterings	no	PSB-L-EC-0001	14-Jan-15	APPROVAL CLOSED	no	be ready	no	yes
Linac 4 Connection to PSB	New PSB Injection Region	Removal of the KSW1L1 BTV 50 assembly	New KSW16L1 New KSW16L4 Move KWS16L4 to 2L1	RING (16L1, 16L4, 2L1)	TE-ABT	Luis Miguel Coralejo Feliciano	no	PSB-MKKSW-EC-0001	4-Feb-15	UNDER APPROVAL	no	yes	no	no
Linac 4 Connection to PSB	PSB Injection Systems	Relocation of BI.BTV30 for installation of the new BI.SMV	BI.BTV30	BI line	BE-BI	Stephane Burger	no	PSB-LJ-EC-0006	10-Jun-15	UNDER APPROVAL	no	be ready	no	yes
PSB 2 GeV Upgrade	Magnets	Main Ring Bending and Quadrupole Magnets for 2.0 GeV operation			TE-MSC	Antony Newborough	no	yes			no	be ready	no	yes
Linac 4 Connection to PSB	Beam instrumentation	Installation of a Wideband Pickup in the BTP Transfer Line	New wideband BPM	BTP line	BE-BI	Jeroen Belleman	no	PSB-BPUWB-EC-0001	10-Jun-15	NOT IMPLEMENTED	no	yes	no	no
PSB 2 GeV Upgrade	Beam instrumentation	Provide additional wire scanners (new design)	Prototype of Wire Scanner	RING (4L1)	BE-BI	Bernd Dehning	PSB-LJ-EC-0004	yes			no	yes	no	no
Linac 4 Connection to PSB	Beam instrumentation	Measurement of injection efficiency with Linac4 (Modify BCTs - BR.TMD for Watchdog)	4 monitors BR.TMD	RING (8L1)	BE-BI	Patrick Odier	no	yes			no	yes	no	no
Linac 4 Connection to PSB	Beam instrumentation	New bunch-by-bunch, turn-by-turn trajectories electronics for ring pickups	PSB-TMS	RING	BE-BI	Jeroen Belleman	no	yes			no	yes	no	no
PSB 2 GeV Upgrade	Beam instrumentation	New Tune pick-ups	New BPM	RING (3L1)	BE-BI	Jocelyn Tan	no	yes			no	yes	no	no
Linac 4 Connection to PSB	Beam instrumentation	Install new Beam Loss Monitors at ring (2 FIC per period)	BLMs	RING (L3 at all periods)	BE-BI	Christos Zamantzas	no	yes			no	yes	no	no
Linac 4 Connection to PSB	Beam instrumentation	Install new Beam Loss Monitors at injection (BI line)	BLMs	Injection (BI line)	BE-BI	Christos Zamantzas	no	yes			no	be ready	no	yes
Linac 4 Connection to PSB	Beam instrumentation	Install new Beam Loss Monitors at extraction and transfer	BLMs	Extraction (BT,BTY,BTM)	BE-BI	Christos Zamantzas	no	yes			no	yes	no	no
PSB 2 GeV Upgrade	Electrical Systems	Upgrade of LV general services distribution systems: PSB BCER Switchboard and Containment Installation		b.361	EN-EL	James Devine	PSB-LJ-EC-0005	yes			no	yes	no	no
Linac 4 Connection to PSB	RF Systems	Transverse Feedback: 800 W power amplifier, new PU head amplifiers and new (digital) electronics			BE-RF	Alfred Blas	no	yes			no	yes	yes	yes
Linac 4 Connection to PSB	General Infrastructure	Modification of the layout of racks in the BRF2	power converters racks metalic infrastructure cabling	BRF2	EN-MEF	David Hay	no	PSB-K-EC-0001	14-Jan-15	RELEASED	installed	yes	no	yes

Forecast 2016 – Engineering Change Requests for the PS

Installation scheduled for the EYETS 2016-2017

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	ECR needed (Yes or No)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	TS 2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
2GeV upgrade	Beam Instrumentation	New Ionization profile monitor (BGI) H	All new cables, power and aqn	SS82	BE-BI	J. Storey - D. Bodart	yes			no	yes	no	no	no

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	ECR needed (Yes or No)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	TS 2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
Injection energy at 2GeV	RF-HP	80 MHz fast - New fast tuner against beam loading and for fast change to operation with ions		SS08, SS88, SS89	BE-RF	Carlo Rossi	yes			no	no	yes	yes	no
Injection energy at 2GeV	New injection	Optimise the beam acceptance modifying the vacuum chambers inside the adjacent main dipoles need to be modified	MU41, MU42	41, 42	TE-VSC	J. Hansen	PS-VC-EC-0001	12-Aug-15	ENGINEERING CHECK CLOSED	no	no	yes	no	no
Injection energy at 2GeV	Vacuum	New vacuum chambers	New vacuum chambers	SS41	TE-VSC	J. Hansen	yes			no	no	yes	no	no
2GeV upgrade	Beam Instrumentation	Second new Ionization profile monitor (BGI) V	All new cables, power and aqn	Location to be defined	BE-BI	J. Storey - D. Bodart	yes			no	no	yes	no	no
2GeV upgrade	Beam Instrumentation	New plus faster BLMs	Diamond BLMs	SS14,15,17,18,40,41,42,43,44,45,46,49,71,75,79,83	BE-BI	BI - Ewald Effinger; Christos Zamantzas	yes			yes (cables)	no	yes	no	no
2GeV upgrade	Beam Instrumentation	Slow BLMs	Ionisation BLMs	everywhere	BE-BI	BI - Ewald Effinger; Christos Zamantzas	yes			no	no	yes if cables	no	no
2GeV upgrade	Magnets	Skew quadrupoles. 20, conception end 2015 - magnets end 2017	QNs QSKs	03,07,19,23,29,33,37, 41,43,47,53,57,69,73, 79,83,87,91,93,97	TE-MSC	D. Bodart	yes			no	no	yes	no	yes
2GeV upgrade	Magnets	New vertical corrector 20 DVT Conception JUNE 2015 - dispo END 2016. Can be anticipated during TS yes	DVTs	02,04,08,12,20,22,24, 30,34,38,44,54,64,70, 76,80,88,94,98	TE-MSC	D. Bodart	yes			no	no	yes	no	no

Forecast 2016 – Engineering Change Requests for the SPS

Installation scheduled for the EYETS 2016-2017

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	ECR needed (yes or no)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
Increase SPS performance	Beam Instrumention upgrade	Orbit Systems: new fibre backbone	Optical Fibres	Sextant 1 to 6	EN-EL	Simao Pedro Costa Machado	ECR 1273766	N/A	UNDER IMPLEMENTATIO N	no	yes	no	yes
Increase SPS performance	Beam Instrumention upgrade	Upgrade Fast Ring BCTs	New Fast BCTs	LSS3 and LSS5	BE-BI	Lars Jensen	yes			no	yes	no	no
Increase SPS performance	Beam Instrumention upgrade	Diamond BLMs	2 new BLMs	LSS1	BE-BI	Lars Jensen	yes			no	yes (prototype)	no	yes
Increase SPS performance	Vacuum sectorisation improvement	Reduce length of arc sectors by factor 2, to reduce pumping times. Improved protection against loss of ecloud scrubbing	New vacuum valves	Arcs (to be detailed)	TE-VSC	Jose Antonio Ferreira Somoza	yes			no	yes	no	no
Increase SPS performance	200 MHz power upgrade	LSS3 for upgrade of the 200 MHz RF system		BA3-JT10-BAE3-PA3-TA3-LSS3 (services)	BE-RF	Eric Montesinos	yes			no	yes	no	no
Increase SPS performance	200 MHz power upgrade	LSS3 for upgrade of the 200 MHz RF system		LSS3 (services)	BE-RF	Eric Montesinos	yes			no	maybe	no	no
Increase SPS performance	Better damping of instabilities	New intra-bunch damping system in vertical plane to damp instabilities from TMCI or ECI.	New wide band transverse damper	to be detailed	BE-RF	Wolfgang Hofle	yes			(yes)	Maybe	Maybe	yes
Increase SPS performance	New Beam Dump	preparation of the support for the beam dump		ECX5/ECA5/LSS5	TE-ABT	Etienne Carlier	yes			no	yes	yes	no
Increase SPS performance	Impedance Reduction	Vacuum flange impedance reduction and association aC coating of opened SSS and quadrupole chambers.	QFs QF SSS	1 arc to be defined	TE-VSC	Paul Cruikshank	yes			no	yes	no	no

Integration studies, Space reservation and Engineering change requests

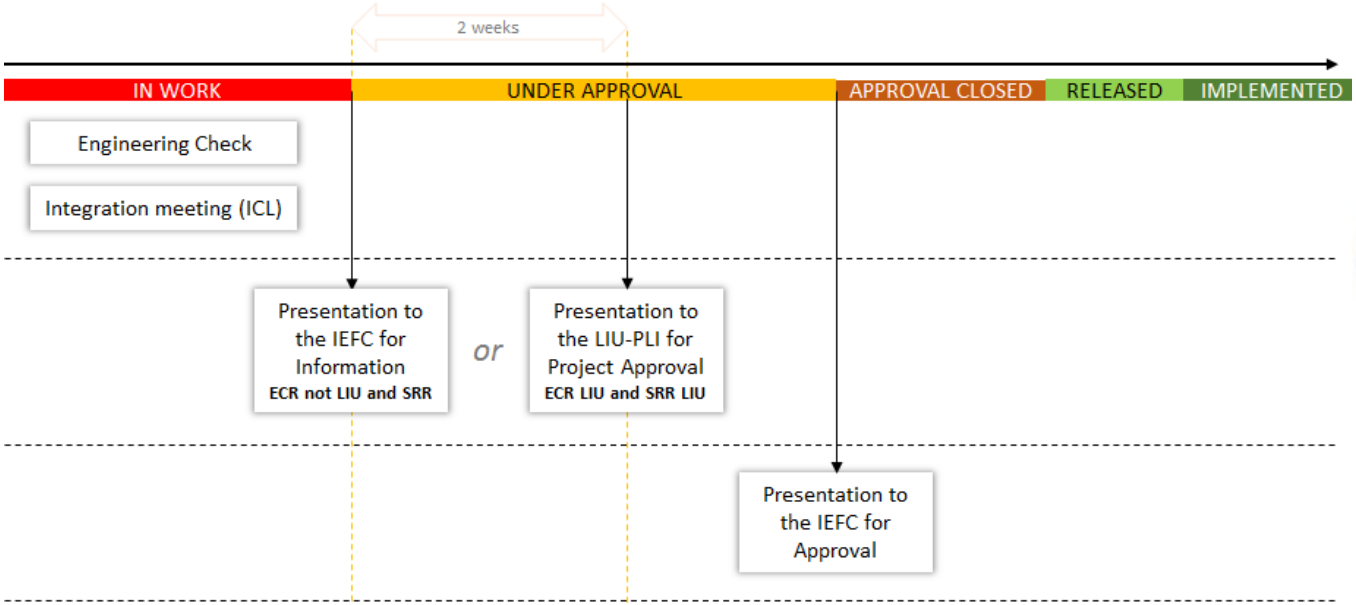
Last year we asked to make ECR for underground and not for surface but

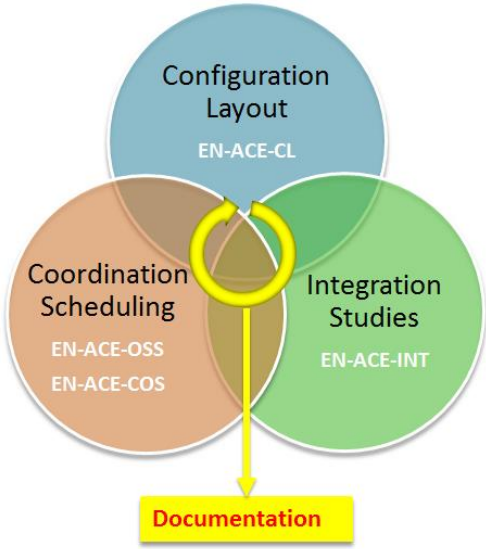
- We faced to issues on surface (ex. modification of the rack room in b. 361 for the new injection of the PSB: metallic infrastructure validated but finally not adapted)
- We identified that some work on surface were not validated by the integration studies team (ex. Modification of the fireproof doors in the PS, new rack layouts)

→ We need to have all the modifications on surface, relative to any upgrade in underground, to be detailed in an ECR, before the work start.

It is important to centralize and coordinate the studies → integration meeting

Only after the validation in integration meeting, the SRR or ECR is sent.





Forecast 2016 – Space Reservation Requests for LEIR, PSB and PS

Installation scheduled for LS2

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	SRR needed (Yes or No)	ECR needed (yes or no)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
LIU-Ions	upgrade LEIR Dump	Dump in extraction channel, allowing to safely and cleanly dump the ion beam when not desired by PS or LHC	to be detailed	LEIR	EN-STI	Antonio	yes	yes			no	no	yes	no

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	SRR needed (Yes or No)	ECR needed (Yes or No)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
PSB 2 GeV Upgrade	PSB Extraction and Transfer	Deliver magnets for BT, BTP, BTM transfer lines		BT, BTP, BTM lines	TE-MSC	Antony Newborough	yes	yes		IN WORK	no	no	no	yes
PSB 2 GeV Upgrade	PSB Extraction and Transfer	Provide extraction kicker (BEr.KFA14L1)		RING (14L1)	TE-ABT	Luc Sermeus	yes	yes			no	no	no	yes
PSB 2 GeV Upgrade	PSB Extraction and Transfer	Provide recombination kicker (BT1/4.KFA10)	BT1.KFA10 BT4.KFA10	BT line	TE-ABT	Luc Sermeus	yes	yes			no	no	no	yes
PSB 2 GeV Upgrade	Beam Intercepting Devices	New absorber/scraper		RING (period 8)	EN-STI	Francois-Xavier Nuiry	PSB-LJ-EC-000x	yes			no	no	no	yes
PSB 2 GeV Upgrade	RF Systems	2/4/16 MHz cavity consolidation studies and Finemet cavity beam studies	BR.C02/C04/C16	RING (C02 = 7L1) (C04 = 13L1) (C16 = 5L1)	BE-RF	Mauro Paoluzzi Matthias Haase	yes	yes		IN WORK	no	no	no	yes
PSB 2 GeV Upgrade	RF Systems	Provide new RF bypasses for PSB rings	to be detailed	to be detailed	BE-RF	Alfred Blas	yes	yes			no	no	no	yes

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	SRR needed (Yes or No)	ECR needed (Yes or No)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
Injection energy at 2GeV	New injection	New injection septum 42. . Appropriate new power converters + 1 bumper in ss42 under vacuum together with the injection septum	SMH42	SS42	TE-ABT	J. Borburgh – J. M. Cravero	PS-LJ-EC-0001	yes		UNDER APPROVAL	no	no	no	yes
2GeV upgrade	Magnets	Insertion quadrupoles magnets can have production started in 2015 or 2016 and then installed Can be anticipated during TS yes		33-49 or 33-65 /KFA53 installed or not	TE-MSC	D. Bodart	yes	yes			no	no	no	yes
2GeV upgrade	Beam dumps	New internal beam dumps		SS47 OR SS48 and SS31 OR SS75	EN-STI	F.X. Nuiry	PS-LJ-EC-000x	yes		IN WORK	no	no	no	yes
RF systems upgrade	RF-HP	Modification of the water cooling circtuit impact on the cooling supply	10 MHz cavities	SS36, 46, 51, 56, 66, 76, 81, 86, 91, 96	BE-RF	Carlo Rossi	yes	yes			no	no	no	yes

Forecast 2016 – Space Reservation Requests for the SPS

Installation scheduled for LS2

Goal	Upgrade	Action	Equipment or System impacted	Location	Group	Contact	SRR needed (yes or no)	ECR needed (yes or no)	Presentation of the SRR/ECR to the LIU-PLI meeting	Status of the SRR/ECR	YETS 2015-2016	EYETS 2016-2017	YETS 2017-2018	LS2 2019-2020
Increase SPS performance	Beam Instrumention upgrade	Upgrade BGI	New BGI	LSS5	BE-BI	Lars Jensen	yes	yes			no	no	no	yes
Increase SPS performance	Beam Instrumention upgrade	Upgrade new fast wire scanners	New Wire Scanners	LSS4 and LSS5 location to be defined by BE-OP	BE-BI	Lars Jensen	yes	yes			no	no	no	yes
Increase SPS performance	Beam Instrumention upgrade	Upgrade Fast Ring BCTs	New Fast BCTs	LSS3 and LSS5	BE-BI	Lars Jensen	yes	yes			no	yes	no	no
Increase SPS performance	Beam Instrumention upgrade	Upgrade synchrotron-light monitors BSRT, matching and BLDM	Move BSRT	location to be defined by BE-OP	BE-BI	Lars Jensen	yes	yes			no	no	no	yes
Increase SPS performance	ZS improvements	Improvement of pumping, impedance reduction, improvement of ion trap connections, short-circuiting of anodes	General layout, Pumping module, Vac chamber cross section	LSS2	TE-ABT	Bruno Balhan	yes	yes		IN WORK	no	no	no	yes
Increase SPS performance	200 MHz power upgrade: Reduce impedance by 15% and double RF voltage to allow operation with very high RF current	LSS3 for upgrade of the 200 MHz RF system of the SPS during LS2: two new travelling-wave cavities and the construction of two new RF systems	RF cavities and RF systems	LSS3	BE-RF	Eric Montesinos	SPS-LJ-EC-0001	no	5-Nov-15	RELEASED	no	no	no	yes
Increase SPS performance	Extraction protection upgrade	Replacement of TPSG4/6 by upgraded versions with better robustness and protection of MSE	TPSG4 and TPSG6	LSS4 and LSS6	TE-ABT	Jan Borburgh	yes	yes			no	no	no	yes
Increase SPS performance	Better damping of instabilities	New intra-bunch damping system in vertical plane to damp instabilities from TMCI or ECI.	New wide band transverse damper	to be detailed	BE-RF	Wolfgang Hofle	yes	yes			(yes)	Maybe	Maybe	yes
Increase SPS performance	New Beam Dump	Relocation of present LSS5 systems due to new beam dump system in LSS5	UA9 experiment eCloud experiment Beam instrumentation experiments	LSS5	TE-ABT	Etienne Carlier	SPS-LJ-EC-0003	no	25-Feb-16	UNDER APPROVAL	no	no	no	yes
Increase SPS performance	New Beam Dump	Removal of present beam dump system from LSS1 and rearrangement of remaining LSS1 systems	Removal of TIDH & TIDV dumps Removal of MKDV & MKDH kickers Removal of TFDH, BGSH, TFDV & BSGV monitorsl Replacement of QDA117 by QD117 Replacement of QFA118 by QF118 Modification vacuum sectorisation	LSS1 / BA1	TE-ABT	Etienne Carlier	SPS-LJ-EC-0002	no	25-Feb-16	UNDER APPROVAL	no	no	no	yes