

SY-STI(-TCD) activities

HL-LHC logistics needs

LS3

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SY-STI-TCD

Update 24-10-2024

LS3 activities – HL-LHC collimation WP5.2

Activity coordinator: F-X Nuiiry, R. Seidenbinder

Removal of 10 collimators with their support @IP 1 L&R -> **buffer zone ~30m²**

- PLANS: 12937 , 13452

Removal of 10 collimators with their support @IP 5 L&R -> **buffer zone ~30m²**

- PLANS: 13453, 13455

Removal of 16 collimators with their support @IP 7 L&R -> **buffer zone ~50m²**

- PLANS: 12936

Installation 20 collimators, masks and their supports @IP 1 L&R -> **buffer zone ~60m²**

- PLANS: 13459, 13460

Installation 20 collimators and masks and their supports @IP 5 L&R -> **buffer zone ~60m²**

- PLANS: 13461, 13462

Installation 10 collimators @IP 7 L&R -> **buffer zone ~30m²**

- PLAN: 12943

Temporary removal TCDIV.29233 (UJ22) for EN-HE

- **PLAN: 12224**

Temporary removal IP8 TCDDM.4R8 & IP2 TCDD.4L2 for TE-MSD -> storage in the tunnel during the execution of the work?

- **PLAN: 14181 & 14182**

Support required from EN-CV, EN-HE, TE-VSC, BE-CEM, BE-GM, SY-BI, HSE-RP

Buffers zones requirements for LS3

We need to have dry and safe buffer zones for de-installation and installation phases (IP1, 5 and 7) collimators are being recovered

- Temperature should be min +15°C and MAX +30°C
- Should be clean
- Shouldn't be with mixed with trash dismantled equipment (concrete, steel structure, cables...)
- Cannot be a tent
- We don't need to move all the collimators and supports at once
- Collimators on trailers
- Supports on Euro Pallets

Feedback from WP15?

LS3 activities – HL-LHC collimation WP5.2

Storage space requests

20	23 juillet 2020	out of building	Under discussion	LHC collimators storage and LS3 production	...	Storage B947	Inside a building	Marco Calviani	SY/STI	SY - Systems	420	HL-LHC	WP5	No,	350	200	350	
124	17 mars 2022	to start	Under discussion	Collimators and masks for HL-LHC project	...	Storage B947,RA storage B954,RA storage B955	Inside a building	Francois-Xavier Nuiiry	SY/STI	SY - Systems		HL-LHC	WP5	No,	160	80	100	236

- ID 20 to be deleted
- ID124: 191m² conventional storage + 45m² radioactive storage can it moved to approved?
- Will be partially supported by revamping of building 263 (funded by SY+SCE)
- Can we work on the consistency of the request?

LS3 activities – HL-LHC collimation – WP5.2

IP1 and IP5 LHC collimators flow towards HL-LHC

20 RP collimators + supports will be removed by beginning of LS3: 10 for IP1 and 10 from IP5.

None of them will be declared as waste. There are 4 categories:

- 16 collimators + 4 supports will be sent SCE storage and stored there up to December 2028.
- 2 TCTPH + 2 supports at Point 1 will be re-used in the HL-LHC Machine
- 2 TCTPV + 2 supports at Point 5 will be re-used in the HL-LHC Machine
- 12 remaining supports will be re-used in the HL-LHC Machine.

The exact workflow during LS3 of the 2 TCTPH + 2 TCTPV is still under discussion with the respective groups (VSC, STI...). Their destination could be either 867/R-P49, either 867/R-W25.

The exact workflow during LS3 of the 2 + 2 + 12 supports re-used in the HL-LHC Machine is still under discussion. Their destination will be first 867/R-P49, then SCE storage buildings and stored there up to mid-2028.

**Under discussion
will be revised as per LS3 shift**

LS3 activities – HL-LHC beam dumps WP14

TDE replacement UD62 & UD68

Activities coordinators: N. Solieri, D. Grenier

Removal of the 2 beam dumps 1 Week / side

- PLANS: 13457, 12927

Construction of the 2 beam dumps + 2 operational spares in SX6

- PLANS: 13589, 13721
- Co-activity with BE-EA

Installation of the 2 new beam dumps

- PLANS: 13456, 12928

Dismantling of Run3 beam dumps in SX6 (post LS3)

- PLAN: 12933

Details presented: <https://indico.cern.ch/event/1390762/>

HL – LHC Engineering Change Request
Buffer zone space at UX65 for
- magnet deinstallation and installation
- QRL modules refurbishment

➔ **buffer zone for TDE in UX65 included in the ECR: LHC-H-EC-0002 pending approval with final comments?**

Support required from EN-HE, EN-CV, TE-VSC, BE-CEM, BE-GM, HSE-RP

LS3 activities – HL-LHC beam dumps WP14

Storage space requests

22	23 juillet 2020	completed	Cancelled	HL-LHC LHC beam dumps (core + cradle)	...	Storage B947	Inside a building	<input type="checkbox"/> Marco Calviani	SY/STI	SY - Systems	422	HL-LHC	WP14	No,	1,500	300	180	
185	16 juin 2023	completed	Cancelled	Space reservation at SX6 for LHC beam dump activities	...	Point 6	Inside a building	<input type="checkbox"/> Nicola Solieri	SY/STI	SY - Systems	12,927	HL-LHC	WP14	No,	900	150	150	250
186	16 juin 2023	on going	Under discussion	Space reservation in SX6 and UX65 bunker for LHC beam dumps	...	Point 6	Inside a building	<input type="checkbox"/> Nicola Solieri	SY/STI	SY - Systems	12,927	HL-LHC	WP14	No,	900	150	150	45



All those 3 requests concern and justify the usage of SX6 and part of UX65
Can we work on the consistency of the request(s)?

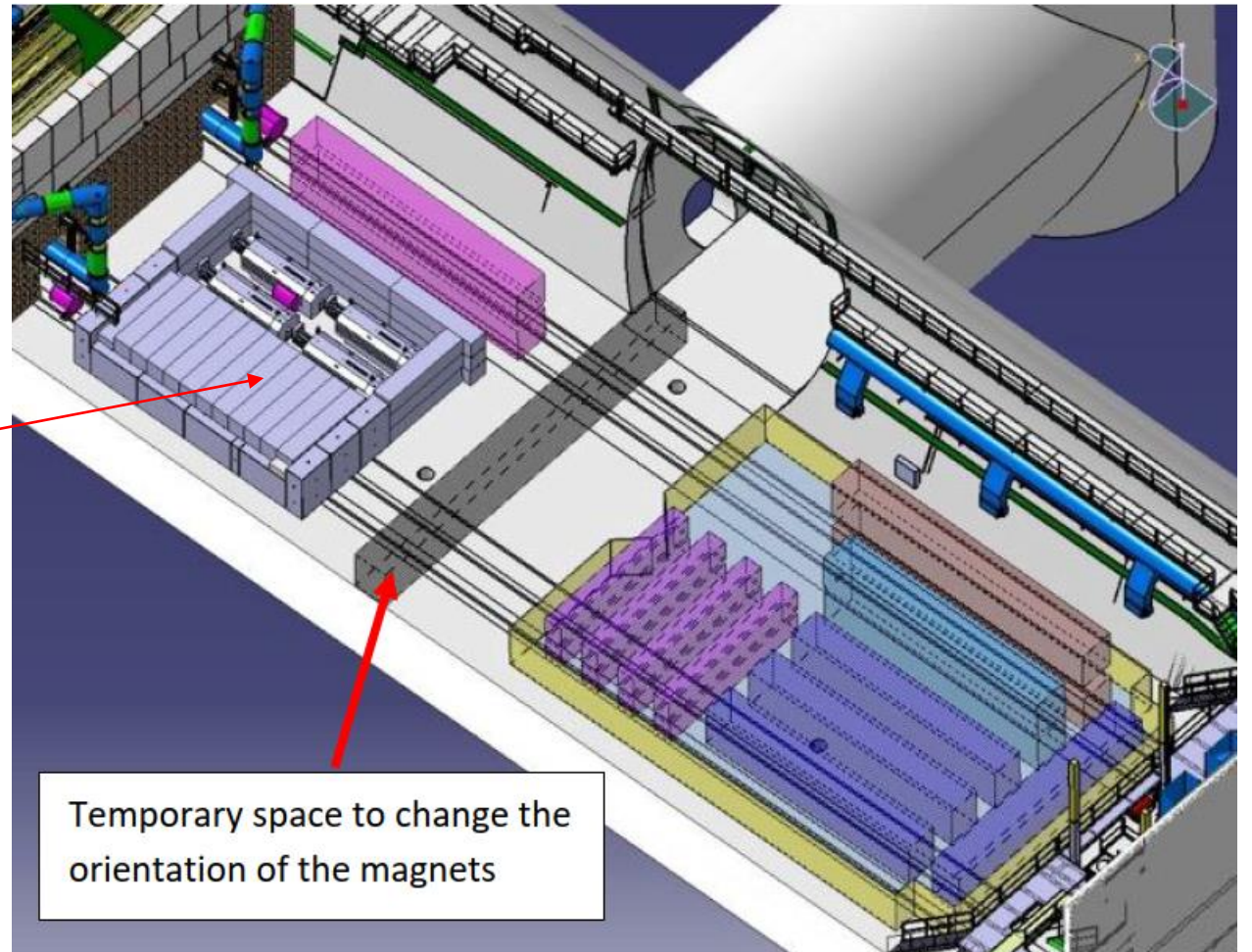
LS3 activities – HL-LHC beam dumps WP14

Dump construction
SX6
2685-R-006
~430m²



LS3 activities – HL-LHC beam dumps WP14

Storage of activated dumps
Bunker in UX65
As described in ECR: LHC-H-EC-0002
~45m²



LS3 activities – HL-LHC beam dumps WP14

Base de chantier request

105	SX6	Base de chantier pour construction beam dump HL-LHC (TDEs) 🌿	... SY	☐ Damien Grenier	SY/STI	HL-LHC	140	Temporary storage	Electricity,IT	01/09/2024	30/06/2030	Concrete base < 100 kg/m2	Offices on the first floors of SX6 (1-002 and 1-004) neede for the construction, replacmenet and deconstruction of TDEs (WP14)
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Could this be granted?

Dump construction
SX6
2685-1-002 and 1-008
~150m²



LS3 activities – HL-LHC beam dumps WP14

SX6 use during LS3



- Space availability in Point 6 (SX6 and UX65) for dump activities is critical to avoid transport on public roads of this large radioactive equipment and adequate crane
- Setup of a ~400 m² working area for the assembly of the HL dumps in SX6, starting in mid 2025

STI working with EA (+SCE, IE, & co.) in order to share STI/TCD space in SX6 for the TAXN work and accommodate HL LHC WP8 --> it seems feasible, with **EA block to be defined precisely to avoid WP14 being on the critical path**

SY-STI Radioactive waste inventory

Rad. Waste description	Year	Quarters	RW Prod...	Facility	Project	Other haz...	Mass (tons)	Volume (...)
LHC - TDE LHC (2x units)	2028	Q4	Damien Grenier	LHC Machine	HL-LHC	None	12	20
LHC TDI RUN 2	2028	Q4	Antonio Perillo Marco	LHC Machine	HL-LHC		12	20
SPS - 16 collimators TCDI (First Generation)	2026	Q1	Francois-Xavier Nuiry	LHC Machine	HL-LHC	None	8	12
HL-LHC WP5 - 5 collimateurs TCTVB LHC stocké	2030	Q3	Francois-Xavier Nuiry	LHC Machine	HL-LHC	None	4	11
4 Lifting supports Dump LHC-TDE	2026	Q2	Damien Grenier	LHC Machine	HL-LHC		4	13



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