



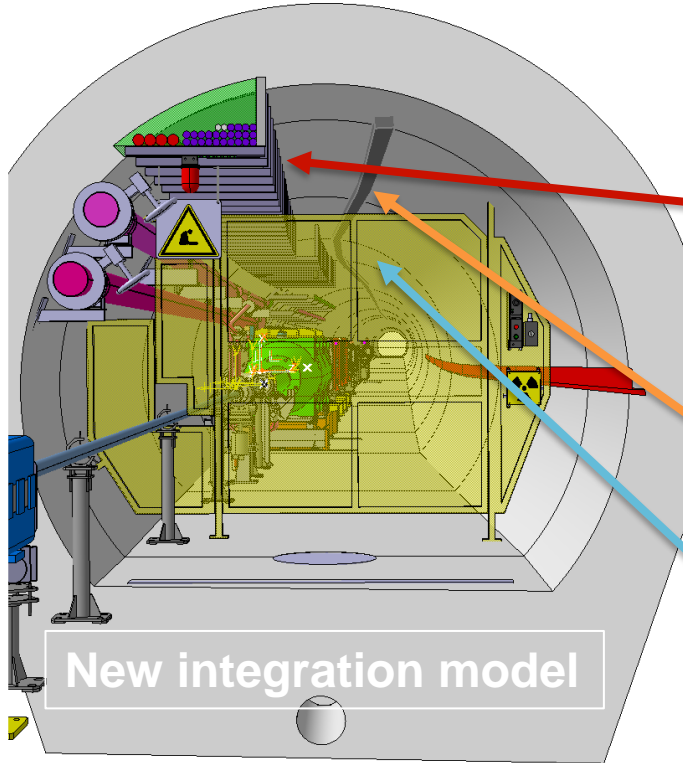
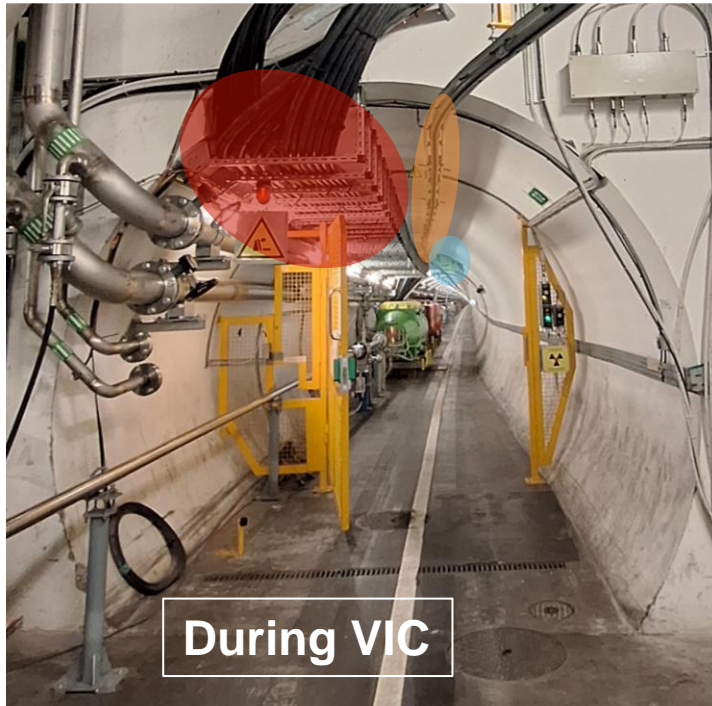
HL intervention in TI2/UJ22 during EYETS 24-25 follow-up

Francesca Paola Nicoletti
ATS-DO, HL-LHC WP15 Integration

13/12/2024

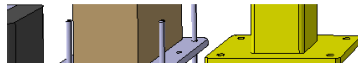


EYETS 24-25 intervention



Changes

- 20 cable tray supports shortened and 8 cables extended
- Power rail path modified
- TED lifting structure removed



EYETS 24-25 intervention planning

⚠ Please refer to [EN-ACE official website](#) for exact updated dates

Scale

Week Facilities MORE OPTIONS

Task name	Duration	Start date	Finish date	December, 2024				January, 2025				February, 2025				March, 2025					
				49	50	51	52	01	02	03	04	05	06	07	08	09	10	11	12		
Monorail & cables/cable trays rerc	38d	05/12/2024	10/02/2025																		
Monorail lock-out	1d	05/12/2024	05/12/2024																		
Electrical cables lockout (power c	0.5d	05/12/2024	05/12/2024																		
Electrical cables lockout (magnet	0.5d	06/12/2024	06/12/2024																		
Cables identification	0.5d	05/12/2024	05/12/2024																		
TED lifting structure removal	1d	11/12/2024	11/12/2024																		
TED lifting structure transport to s	0.5d	12/12/2024	12/12/2024																		
Monorail de-installation	2d	09/12/2024	10/12/2024																		
Crane dislocation and secure for l	2h	10/12/2024	10/12/2024																		
Scaffolding transport (from PMI2)	2h	12/12/2024	12/12/2024																		
Scaffolding installation	1d	12/12/2024	13/12/2024																		
Protection of the beam vacuum e	2h	13/12/2024	13/12/2024																		
Cables/cable tray modification (in	3.6w	16/12/2024	22/01/2025																		
Scaffolding de-installation	1d	23/01/2025	23/01/2025																		
Monorail re-installation	10d	27/01/2025	07/02/2025																		
Monorail unlock-out	1d	10/02/2025	10/02/2025																		
Scaffolding transport (from PMI2)	1d	24/01/2025	24/01/2025																		

Lockouts and cables identifications and tests

- Successful lockouts
- Successful tests
 - polarity check by TE-MSD
- Cable label error spotted and corrected on the field

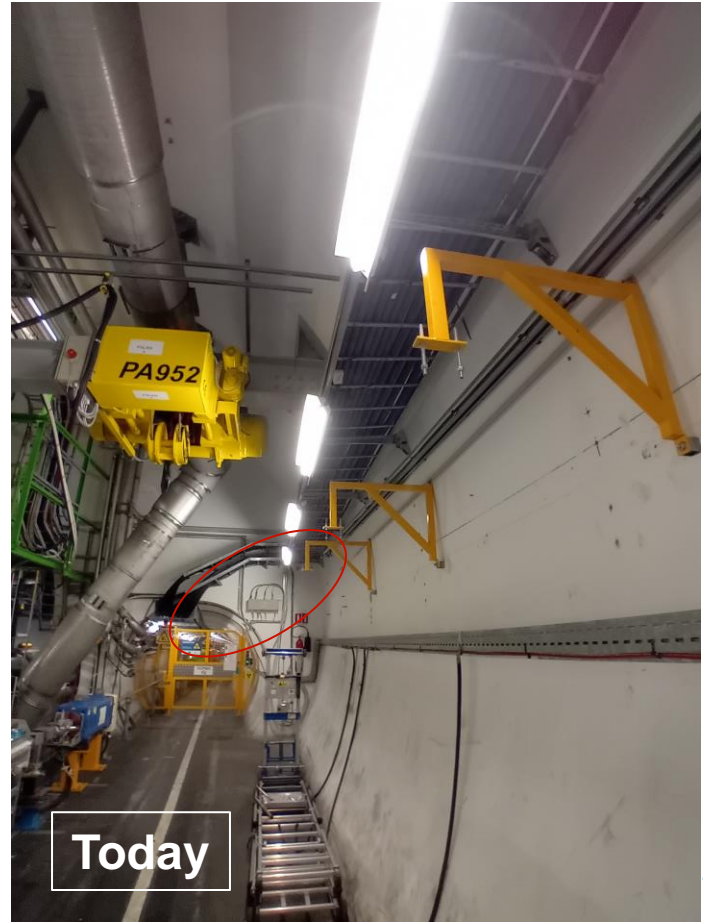
EN-HE de-installations



EN-HE de-installations



During VIC



Today

Vacuum protections



During VIC

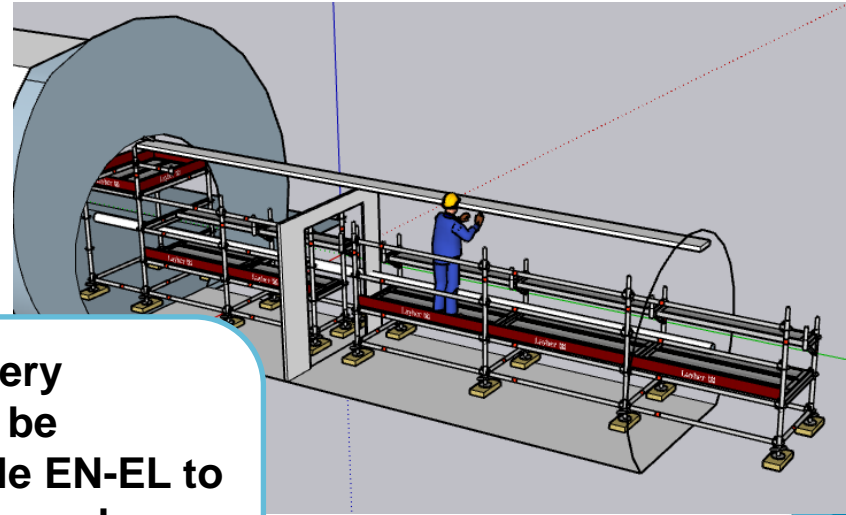
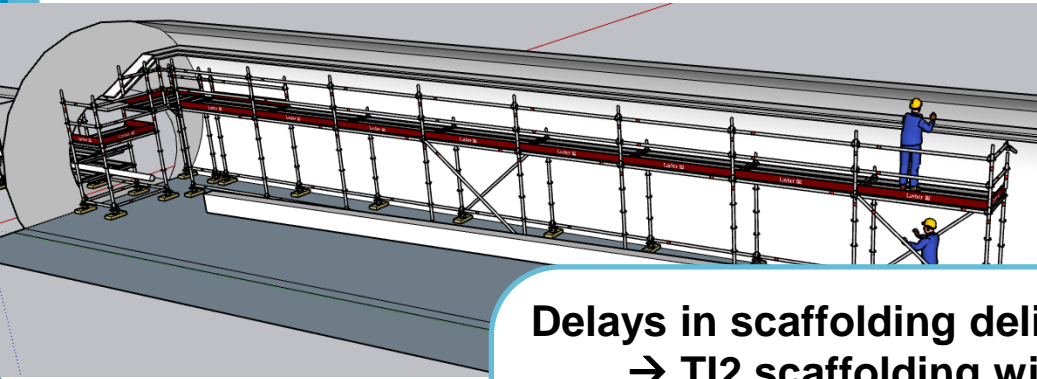


Today

Scaffolding

UJ22

TI2



Delays in scaffolding delivery
→ TI2 scaffolding will be installed first to enable EN-EL to start the works as planned
→ Scaffolding validation will be done by WP15, TE-VSC and EN-EL on Monday 16/12 morning

Next step

⚠ Please refer to [EN-ACE official website](#) for exact updated dates

Scale

Week Facilities MORE OPTIONS

Task name	Duration	Start date	Finish date	December, 2024				January, 2025				February, 2025				March, 2025					
				30	31	49	50	51	52	01	02	03	04	05	06	07	08	09	10	11	12
☑ ☰ Monorail & cables/cable trays rerc	38d	05/12/2024	10/02/2025																		
📄 Monorail lock-out	1d	05/12/2024	05/12/2024		Monorail lock-out																
📄 Electrical cables lockout (power c	0.5d	05/12/2024	05/12/2024		Electrical cables lockout (power convertes side)																
📄 Electrical cables lockout (magnet	0.5d	06/12/2024	06/12/2024		Electrical cables lockout (magnets side)																
📄 Cables identification	0.5d	05/12/2024	05/12/2024		Cables identification																
📄 TED lifting structure removal	1d	11/12/2024	11/12/2024		TED lifting structure removal																
📄 TED lifting structure transport to s	0.5d	12/12/2024	12/12/2024		TED lifting structure transport to surface (from PMI2)																
📄 Monorail de-installation	2d	09/12/2024	10/12/2024		Monorail de-installation																
📄 Crane dislocation and secure for l	2h	10/12/2024	10/12/2024		Crane dislocation and secure for the lifting test prior to scaffolding installation (UJ22)																
📄 Scaffolding transport (from PMI2)	2h	12/12/2024	12/12/2024		Scaffolding transport (from PMI2)																
📄 Scaffolding installation	1d	12/12/2024	13/12/2024		Scaffolding installation																
📄 Protection of the beam vacuum e	2h	13/12/2024	13/12/2024		Protection of the beam vacuum equipment (with scaffolding) + validation of the protections and scaffolding with all stakeholders																
📄 Cables/cable tray modification (in	3.6w	16/12/2024	22/01/2025		Cables/cable tray modification (included pulling, connection and testing)																
📄 Scaffolding de-installation	1d	23/01/2025	23/01/2025		Scaffolding de-installation																
📄 Monorail re-installation	10d	27/01/2025	07/02/2025		Monorail re-installation																
📄 Monorail unlock-out	1d	10/02/2025	10/02/2025		Monorail unlock-out																
📄 Scaffolding transport (from PMI2)	1d	24/01/2025	24/01/2025		Scaffolding transport (from PMI2)																

Cables and cable trays modifications by EN-EL

Weekly follow-up

- Weekly follow-up on Thursday afternoons with all stakeholders
- Weekly updates will be given during HL Friday meetings

Useful links

- ECR [EDMS 3052693](#)
- Transport study [EDMS 2609399](#)
- Shortening of metallic beam in UJ22
Operational Procedure [EDMS 3124111](#)



***Thank you for your attention
Any questions ?***

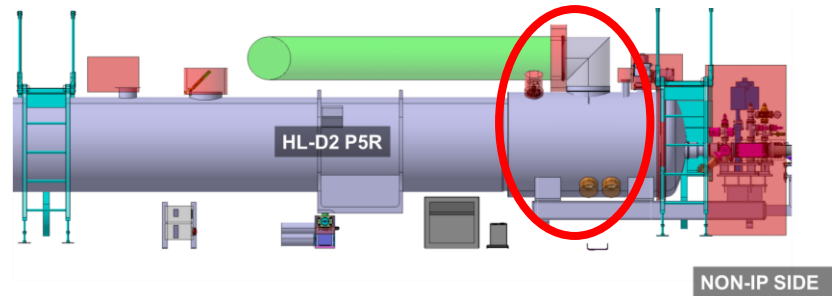
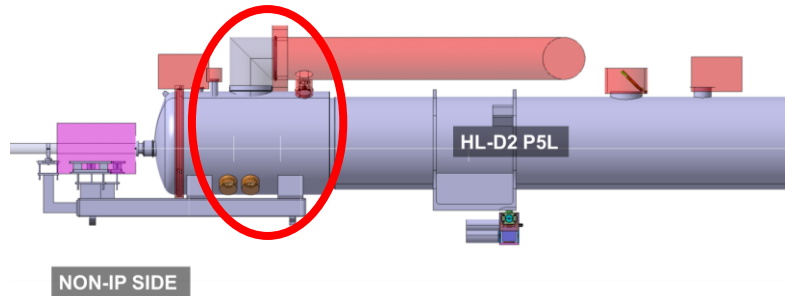




Extra slides



D2 transport constraint

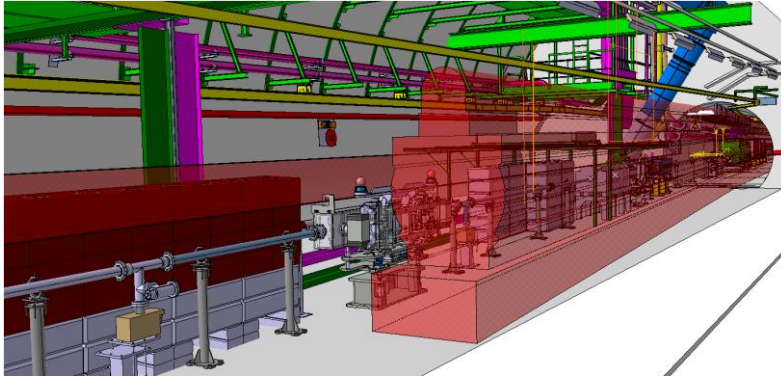


Transport constraint

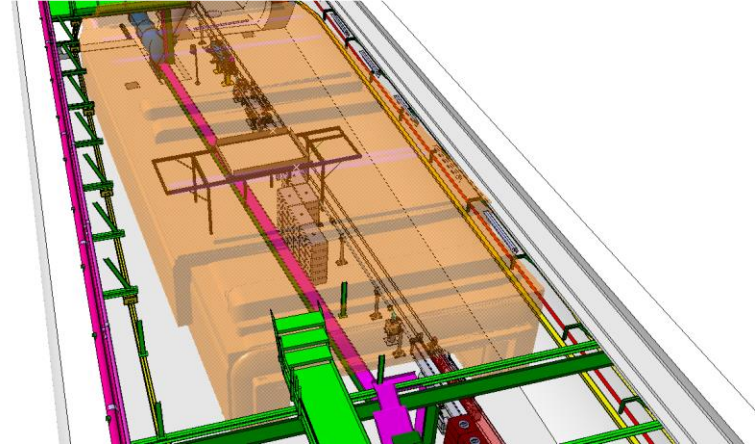
→ height of HL-LHC D2 cryogenic vacuum vessels +
cryogenic jumpers

[EDMS 2609399](#)

Context : HL-LHC D2 transport study



HL-LHC D2 transport volume in TI2

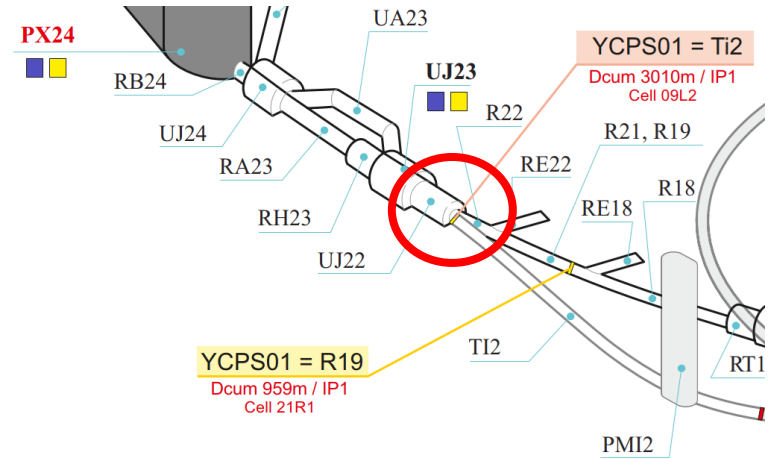


HL-LHC D2 lifting volume in UJ22

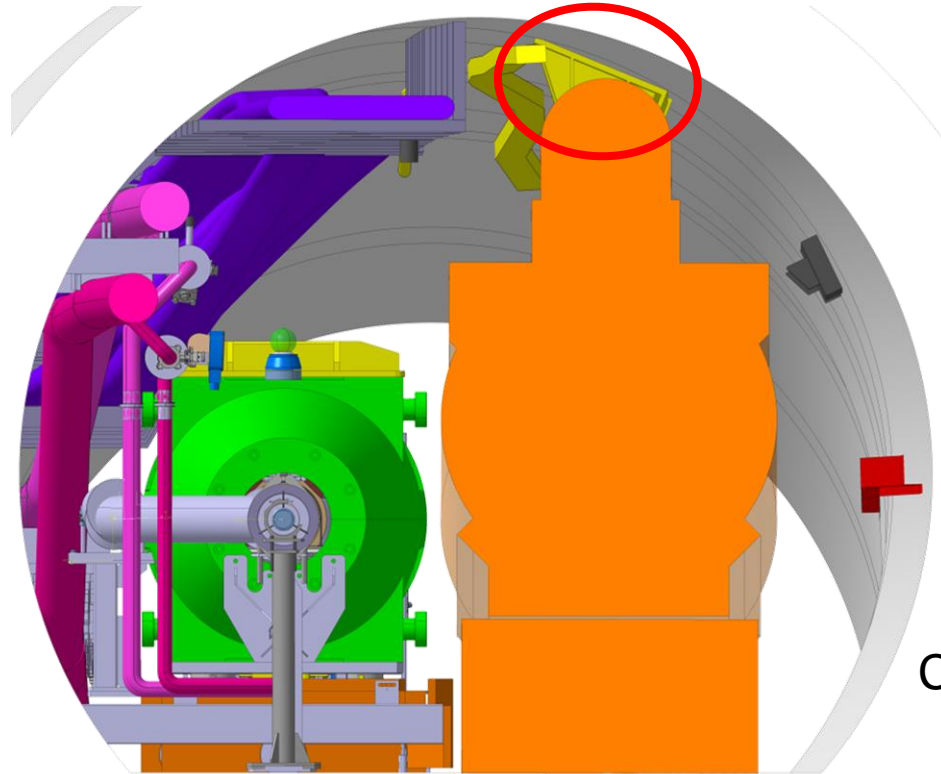
Context : Interferences that need modifications of the infrastructure

1. TED lifting structure in TI2
2. Power rail in TI2
3. Cable tray in TI2 and UJ22
4. ~~Metallic structure in UJ22~~

Postponed to LS3



TED lifting structure interference in TI2



Courtesy J. Oliveira

TED lifting structure interference in TI2

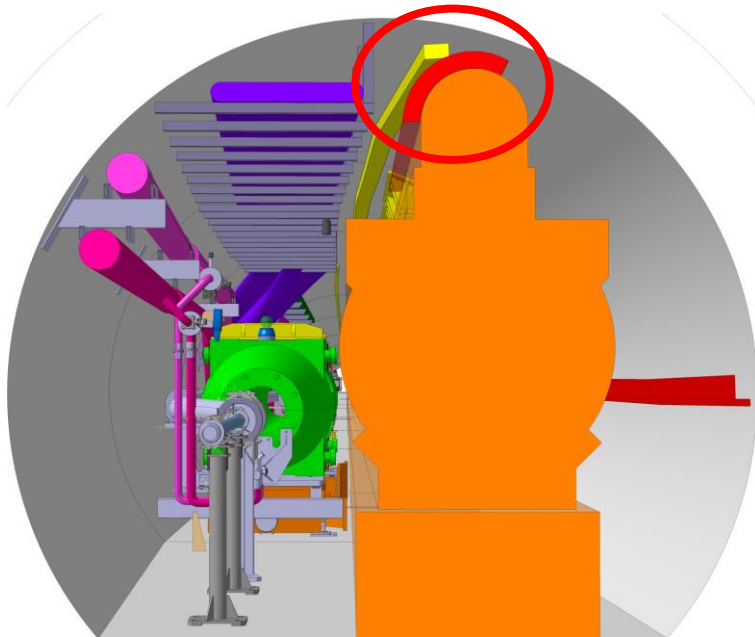
Action

TED lifting structure will be de-installed

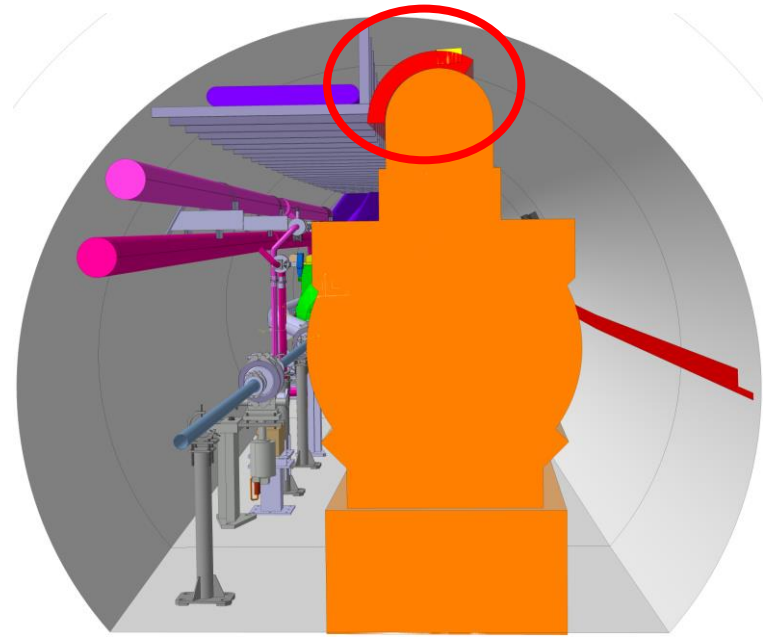


Power rail interferences in TI2

17th cable tray support



11th cable tray support



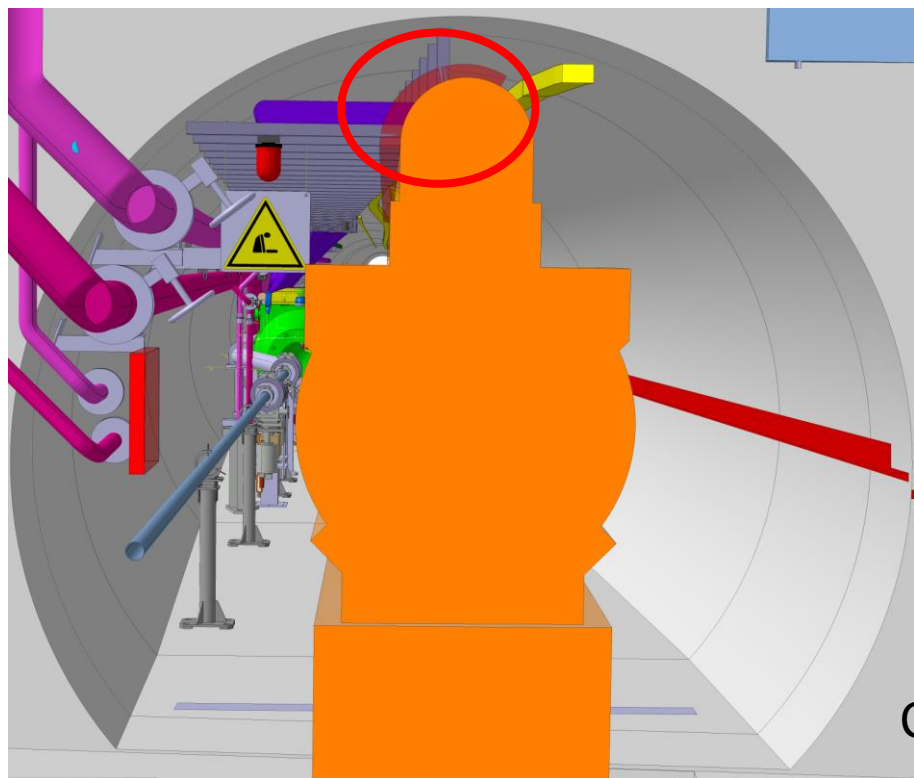
Power rail interferences in TI2



Action

New path for power rail in the vault

Cable tray interferences in TI2



Courtesy J. Oliveira

New options for the cable tray

4 x Water Cooled Cables (WCC) PUQ1 750mm² Cables Ø 55 mm

22 x ACC 400mm² UCT1S Ø 35.3 mm

Green area is 0.136 m²

2 x NH48 Ø 29 mm



Courtesy J. Oliveira

Cable tray interferences in TI2



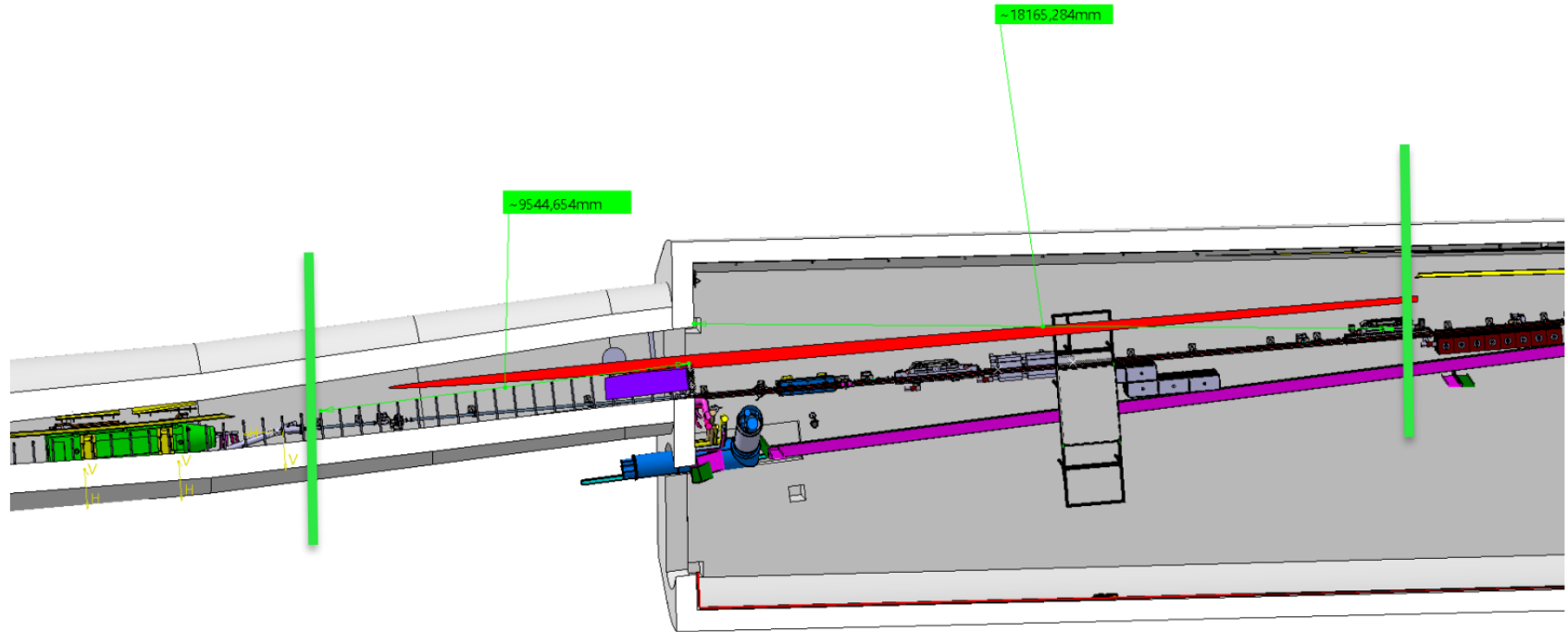
Photo Courtesy D. De Luca (EN-EL-CS)

Actions

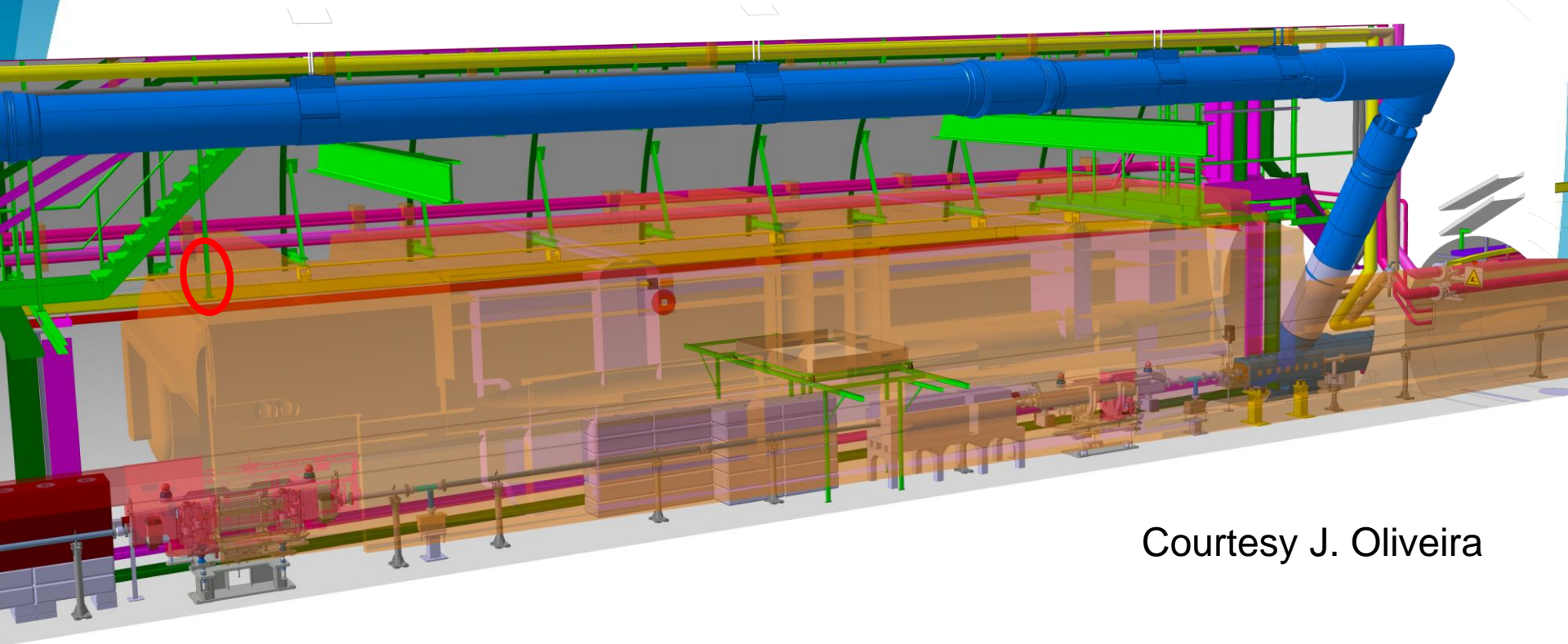
8 cables to be cut and extended

Cable tray to be cut

Cables modifications area

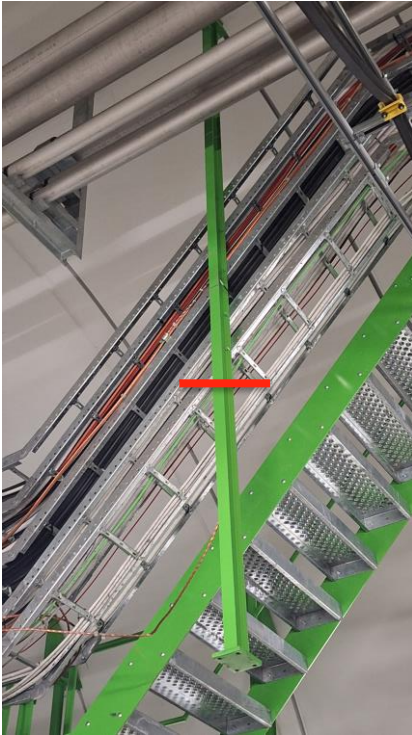


Metallic structure interferences in T12



Courtesy J. Oliveira

Metallic structure interferences in TI2




Action

Metallic bar to be cut just below the lowest cable tray

Working areas and machine to be protected

 Working areas

 Machine to be protected

