



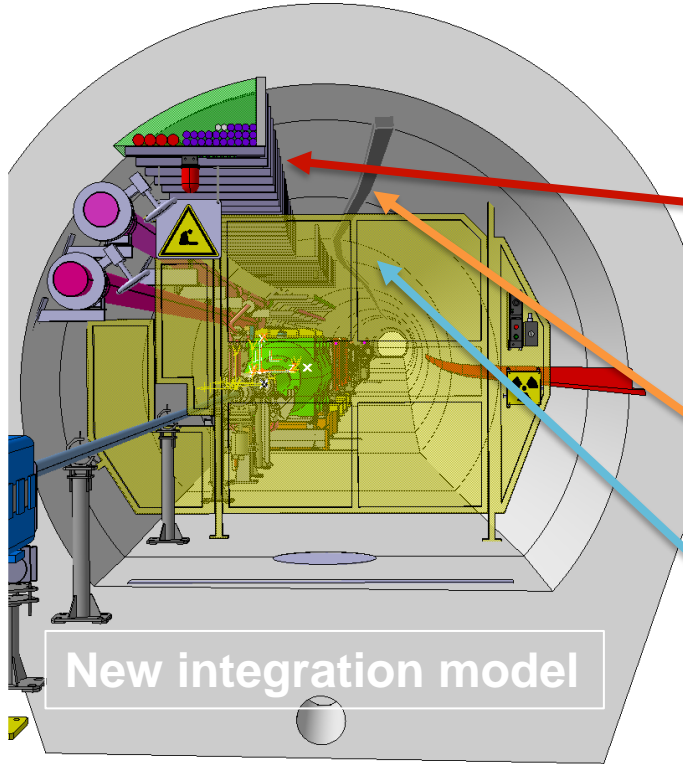
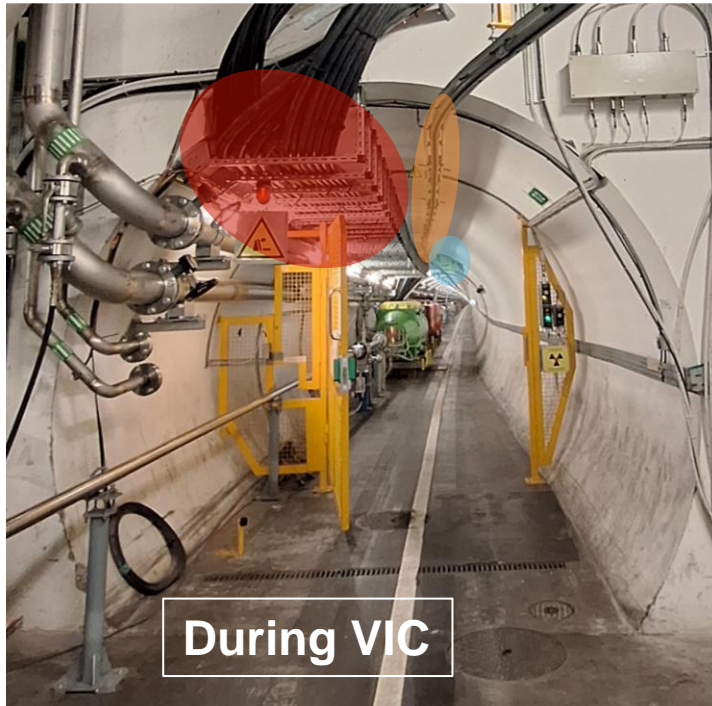
# HL intervention in T12/UJ22 during EYETS 24-25 follow-up

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

10/01/2025

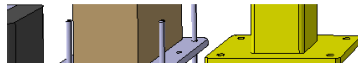


# EYETS 24-25 intervention overview



## 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**

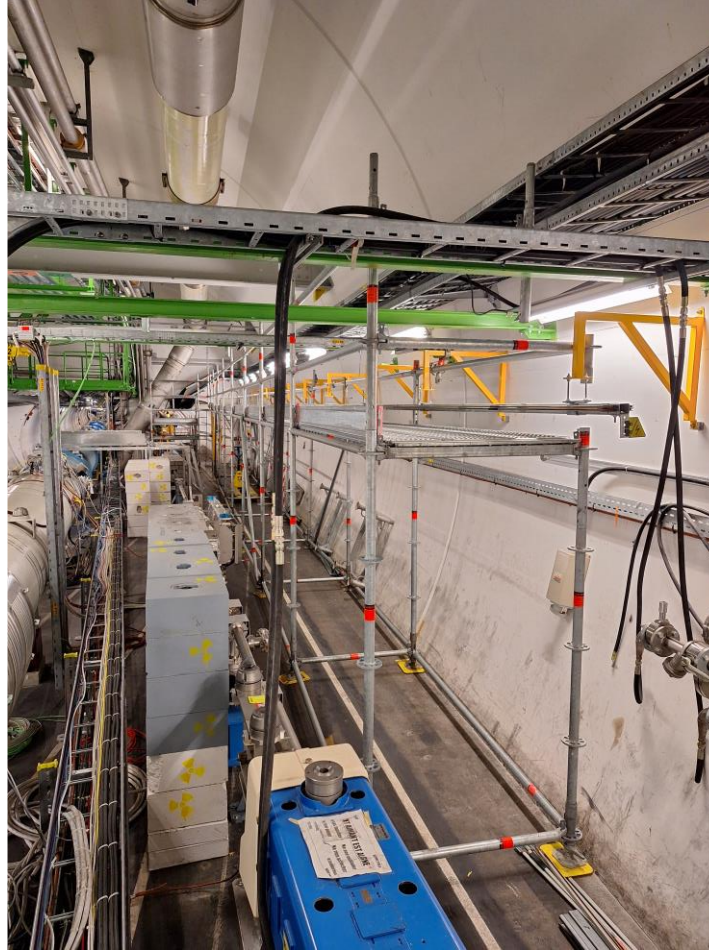
Scale: **Week** | Facilities: **MORE OPTIONS** | TODAY

Task name	Duration	Start date	Finish date	Responsible Groups	December, 2024					January, 2025				
					48	49	50	51	52	01	02	03		
<b>Monorail &amp; cables/cable trays rerouting</b>	<b>38d</b>	<b>05/12/2024</b>	<b>10/02/2025</b>											
Monorail lock-out	1d	05/12/2024	05/12/2024	EN-ACE										
Electrical cables lockout (power convertes	0.5d	05/12/2024	05/12/2024	SY-EPC										
Electrical cables lockout (magnets side)	0.5d	06/12/2024	06/12/2024	TE-MSC										
Cables identification	0.5d	05/12/2024	05/12/2024	SY-EPC, EN-EL										
TED lifting structure removal	1d	11/12/2024	11/12/2024	EN-HE										
TED lifting structure transport to surface (fr	0.5d	12/12/2024	12/12/2024	EN-HE										
Monorail de-installation	2d	09/12/2024	10/12/2024	EN-HE										
Crane dislocation and secure for the lifting	2h	10/12/2024	10/12/2024	EN-HE										
Scaffolding transport (from PMI2)	2h	12/12/2024	12/12/2024	EN-HE										
ODH removal	2h	12/12/2024	12/12/2024	EN-AA										
Scaffolding installation	1.5d	13/12/2024	16/12/2024	BE-EA										
Protection of the beam vacuum equipment	2h	13/12/2024	13/12/2024	BE-EA, TE-VSC										
Cables/cable tray modification (included pu	5d	16/12/2024	20/12/2024	EN-EL										
Cables/cable tray modification (included pu	13d	06/01/2025	22/01/2025	EN-EL										
Scaffolding de-installation (TI2)	1d	16/01/2025	16/01/2025	BE-EA										
Scaffolding transport to PM25	0.5d	17/01/2025	17/01/2025	EN-HE										
Scaffolding de-installation (UJ22)	1d	23/01/2025	23/01/2025	BE-EA										
Monorail re-installation	10d	27/01/2025	07/02/2025	EN-HE										
ODH reinstallation	2h	27/01/2025	27/01/2025	EN-AA										
Monorail unlock-out	1d	10/02/2025	10/02/2025	EN-ACE										
Scaffolding transport (from PM25)	1d	24/01/2025	24/01/2025	EN-HE										
<b>MAFI</b>	<b>46d</b>	<b>28/11/2024</b>	<b>13/02/2025</b>											
Opening of shaft (PMI2) 1st part	2d	28/11/2024	29/11/2024	EN-HE										
Opening of shaft (PMI2) 2nd part	2d	05/12/2024	06/12/2024	EN-HE										
Trolley Vahle displacement for the MAFI te	4h	17/01/2025	17/01/2025	EN-HE										
MAFI lowering down	1d	24/01/2025	24/01/2025	EN-HE										
MAFI test	3.5d	27/01/2025	30/01/2025	EN-HE										
Closure of shaft	4d	10/02/2025	13/02/2025	EN-HE										

Last follow-up

Today

# Scaffolding installation in UJ22



**Scaffolding validated  
by all stakeholders**

# Scaffolding installation in T12



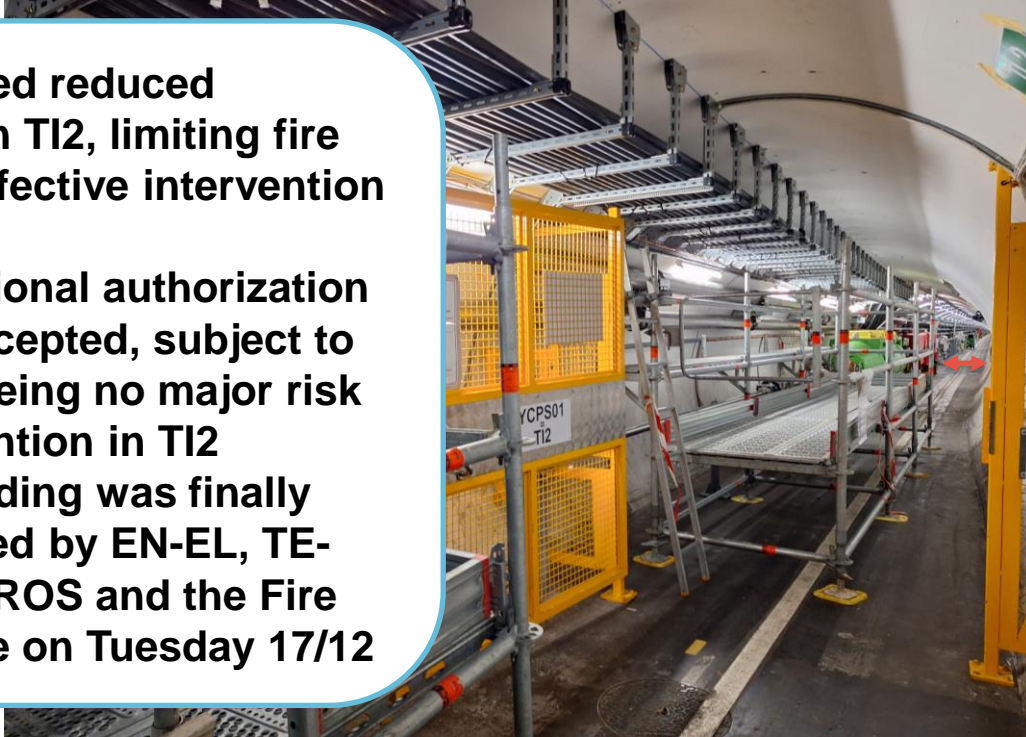
**Scaffolding modifications in T12 were requested to:**

- enable EN-EL contractors to work properly
- better protect TE-VSC equipment

# Scaffolding installation in TI2

**This caused reduced passage in TI2, limiting fire brigade effective intervention**

- **Exceptional authorization was accepted, subject to there being no major risk intervention in TI2**
- **Scaffolding was finally validated by EN-EL, TE-VSC, EROS and the Fire Brigade on Tuesday 17/12**



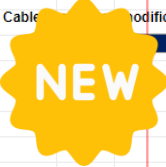
# EYETS 24-25 intervention planning

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

Scale: Week Facilities MORE OPTIONS

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Closure of shaft	4d	10/02/2025	13/02/2025	EN-HE										

- Anticipated scaffolding de-installation in TI2
- Scaffolding transport through point 2 (instead of PMI2 shaft)



- Postponed MAFI test



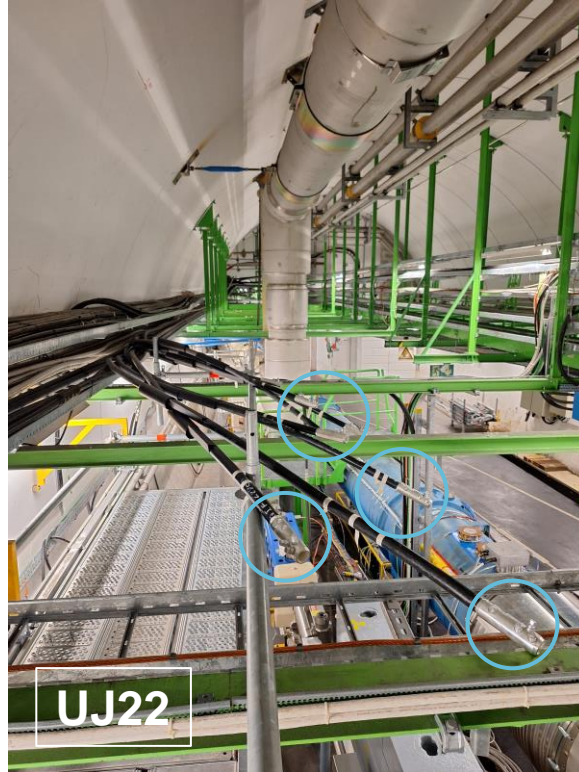


# Cable tray supports modifications



- EN-HE traced the new line to be followed
- EN-EL started cable tray supports shortening → scheduled to finish today

# Cables modifications



- **EN-EL cut and sleeved existing cables**

→ **Extensions sleeving scheduled for early next week, before the scaffolding is dismantled in T12.**

# New cable coil transport



**Transport slightly delayed (one day) because of:**

- **TE-VSC equipment in the transport area**
- **coil was bigger than standard for LHC**

→ **Transport done this morning**

→ **No impact on overall planning**

# Cables waste ✓ ↻



- **RP checked cable sample**
  - **Cables are not considered radioactive**
  - **They will go in standard waste**

## Next week activities

- Cables and supports modifications to be finished by **EN-EL**
- TI2 scaffolding to be dismantled by **BE-EA** and transported by **EN-HE**
- Possibly, start of electrical tests (insulation and continuity tests) by **EN-EL**

# Weekly follow-up

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

# Useful links

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

# Thank you to all the persons that are working on this intervention !







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





## ***Already discussed finished activities***



# Lockouts and cables identifications and tests

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

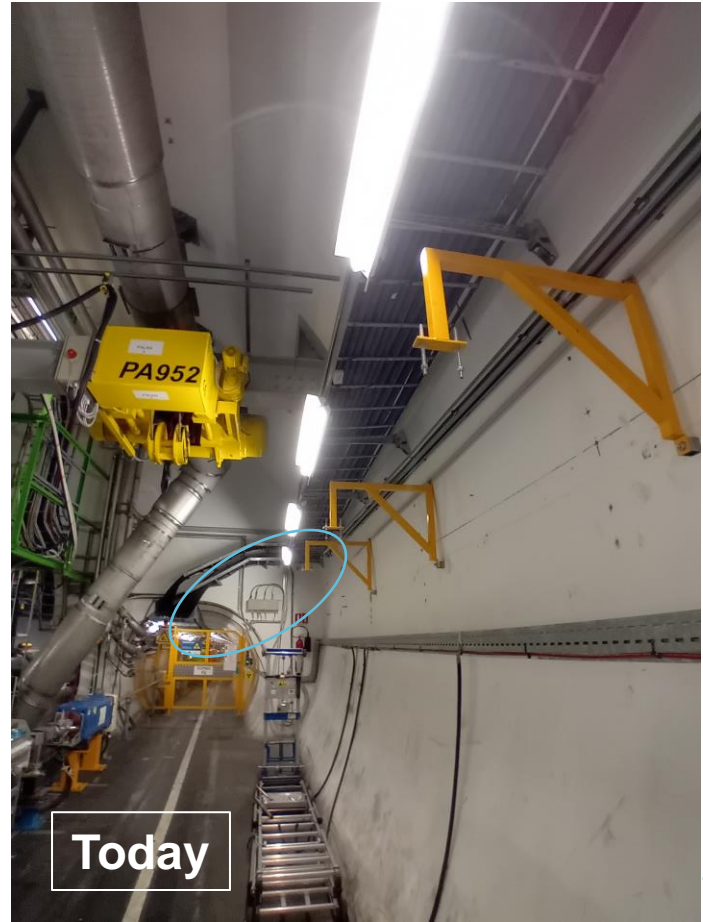
# EN-HE de-installations



# EN-HE de-installations



During VIC



Today

# Vacuum protections



During VIC



Today

# Vacuum protections



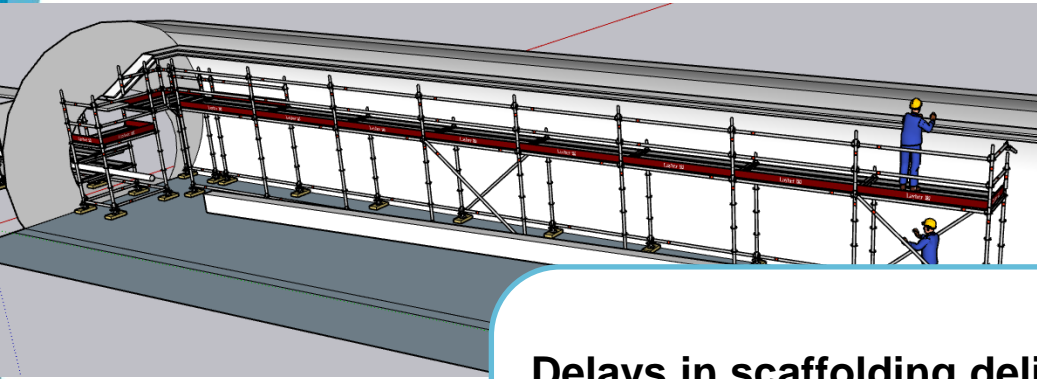
# Vacuum protections



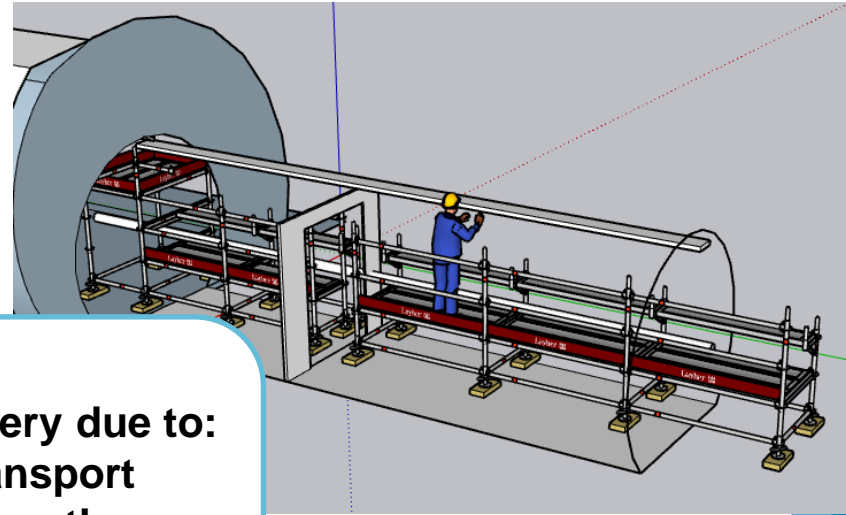


# Scaffolding transport

UJ22



TI2



**Delays in scaffolding delivery due to:**

- **Number of pallets to transport through PMI2 shaft higher than expected**
- **Persons tunnel issues**

# Scaffolding in T12

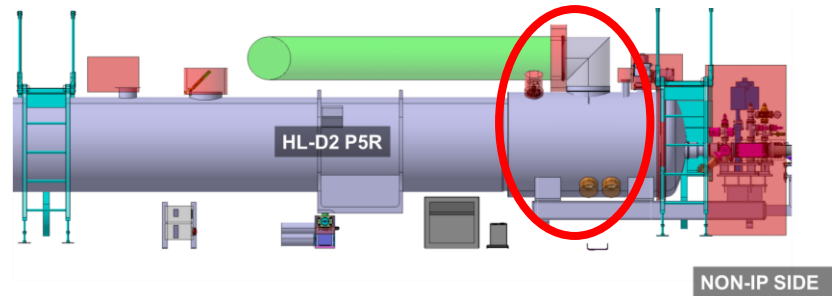
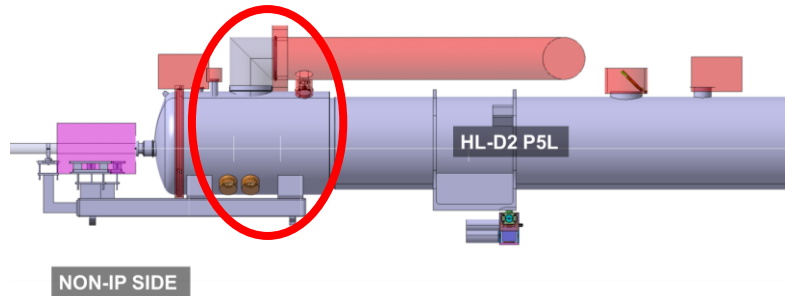




## ***Extra slides***



# D2 transport constraint

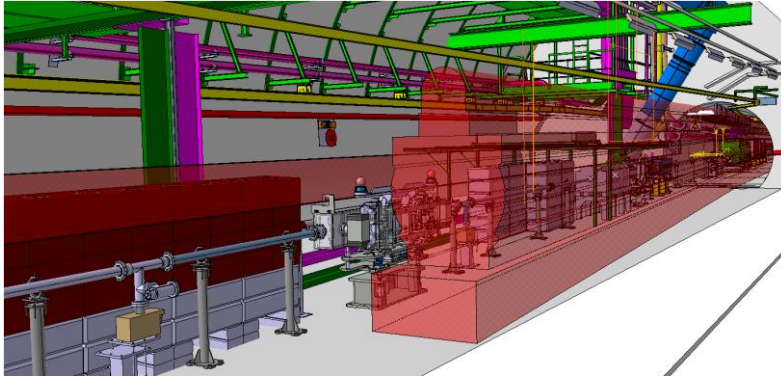


## Transport constraint

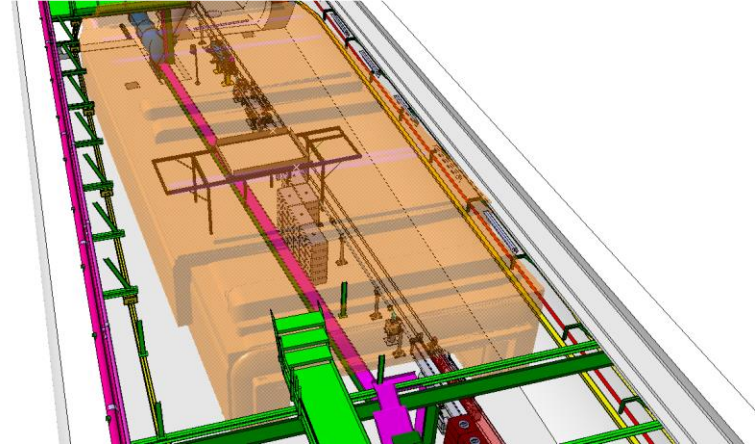
→ height of HL-LHC D2 cryogenic vacuum vessels +  
cryogenic jumpers

[EDMS 2609399](#)

# Context : HL-LHC D2 transport study



HL-LHC D2 transport volume in TI2

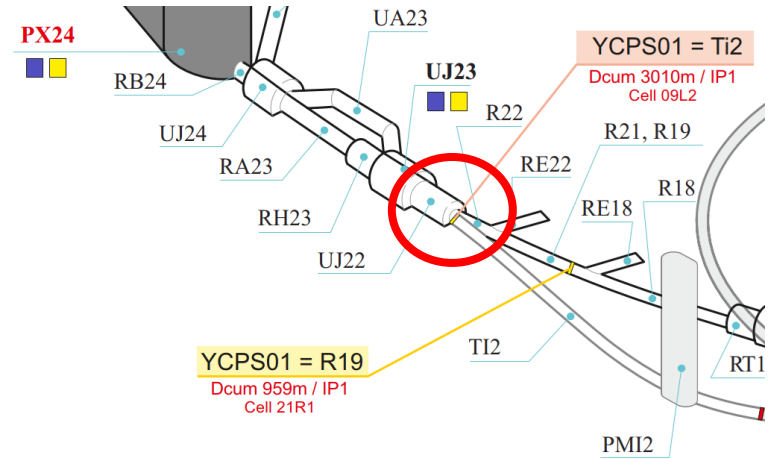


HL-LHC D2 lifting volume in UJ22

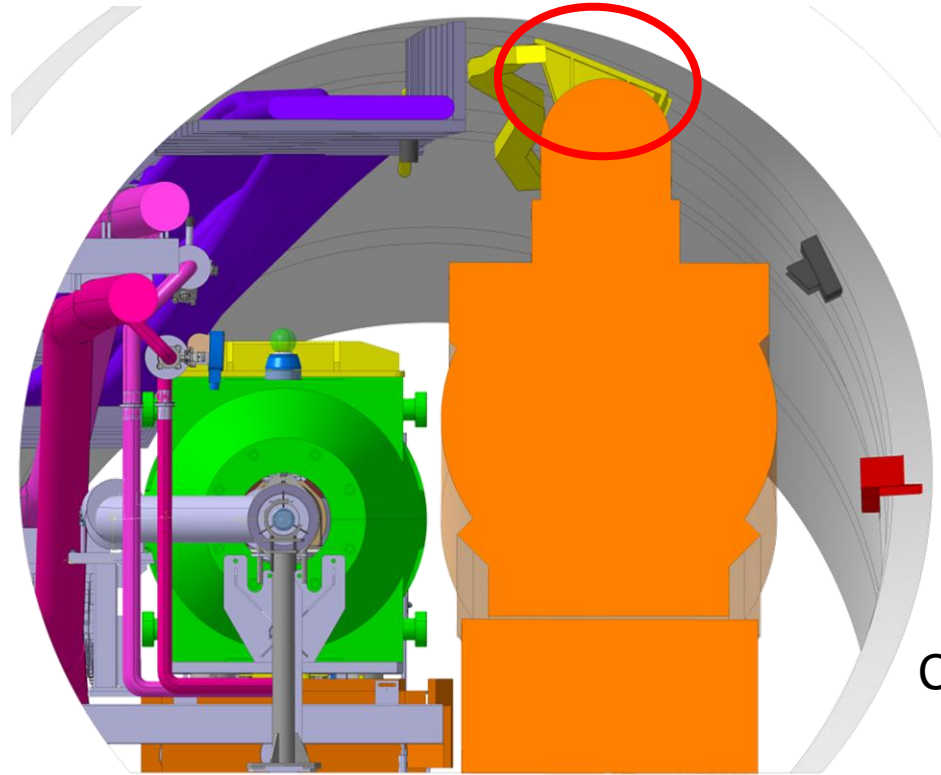
# Context : Interferences that need modifications of the infrastructure

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

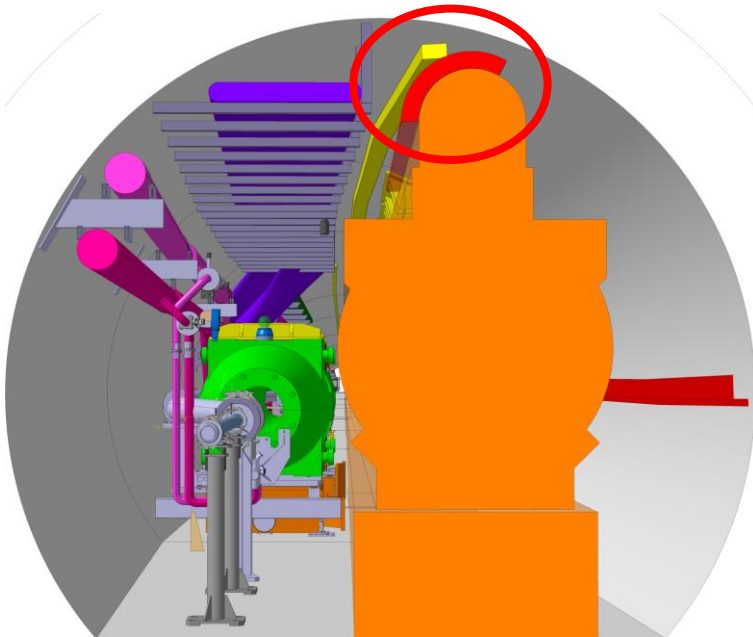
TED lifting structure will be de-installed



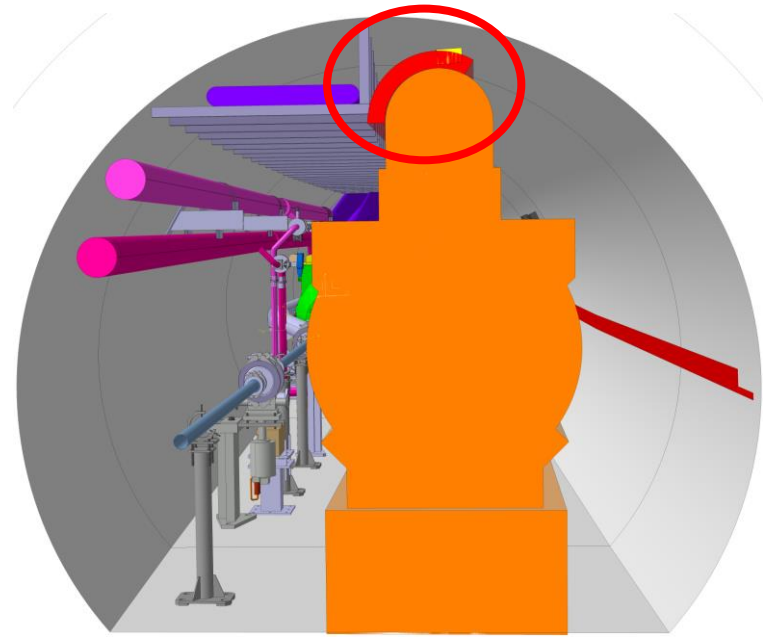


# Power rail interferences in TI2

17<sup>th</sup> cable tray support



11<sup>th</sup> cable tray support



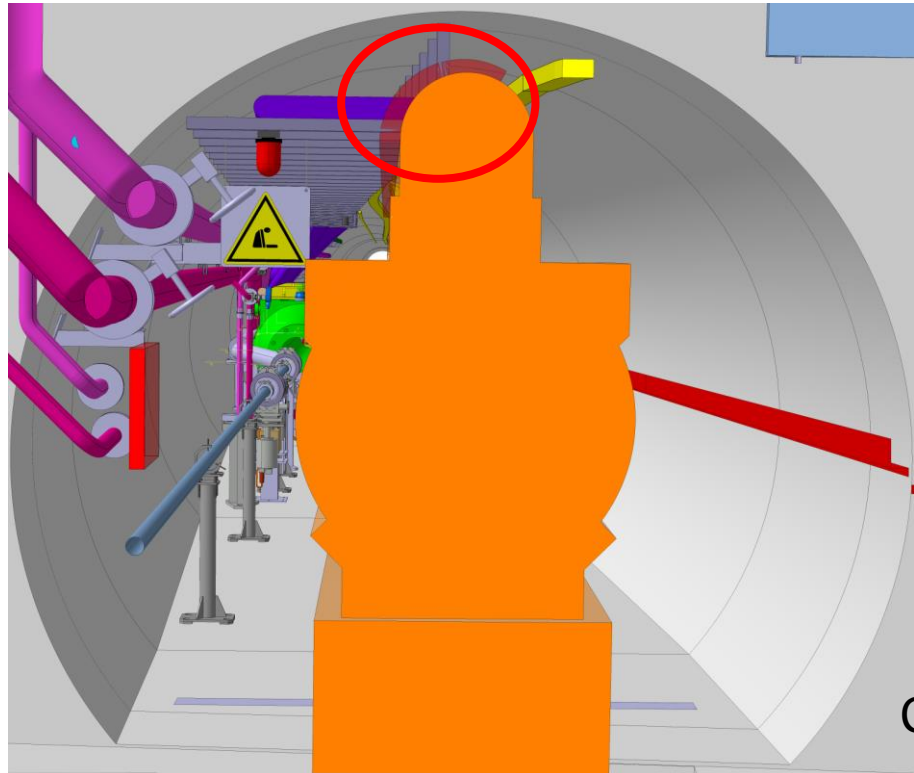
# Power rail interferences in TI2



## 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 750mm<sup>2</sup> Cables Ø 55 mm

22 x ACC 400mm<sup>2</sup> UCT1S Ø 35.3 mm

Green area is 0.136 m<sup>2</sup>

2 x NH48 Ø 29 mm



Courtesy J. Oliveira

# Cable tray interferences in TI2



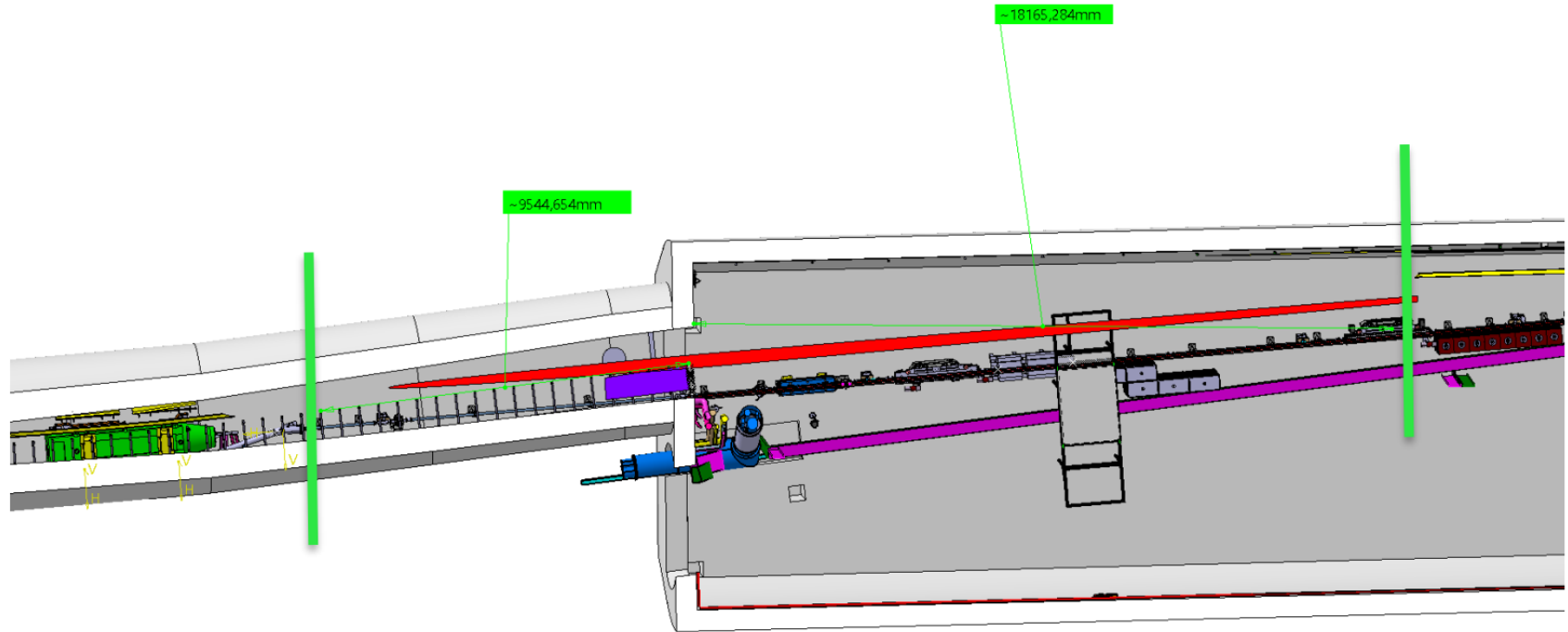
Photo Courtesy D. De Luca (EN-EL-CS)

## Actions

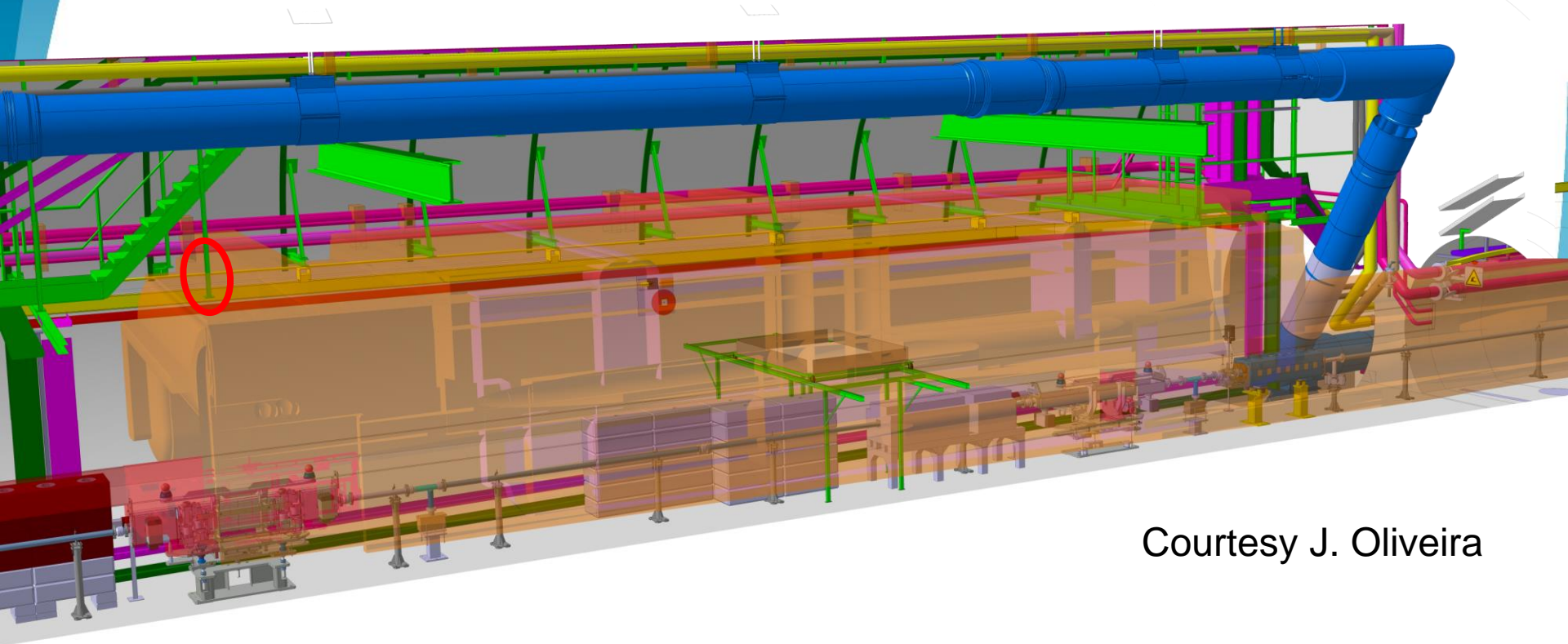
8 cables to be cut and extended

Cable tray to be cut

# Cables modifications area

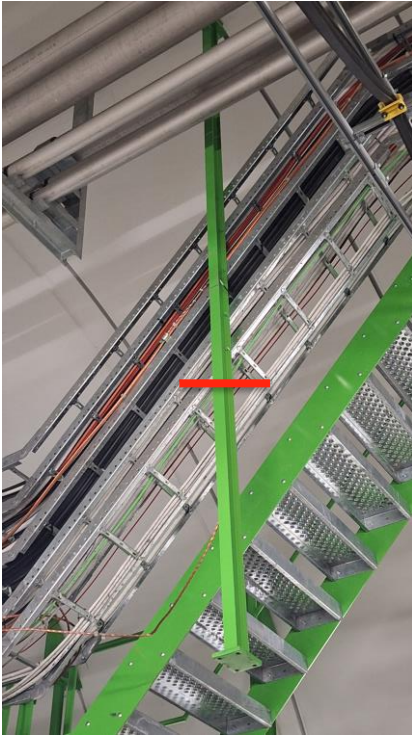


# Metallic structure interferences in T12



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

