



EN-HE Updates

HI-ECN3 WP4 - Coordination meeting #8 – C. Duran Gutierrez, R. Rinaldesi – EN-HE

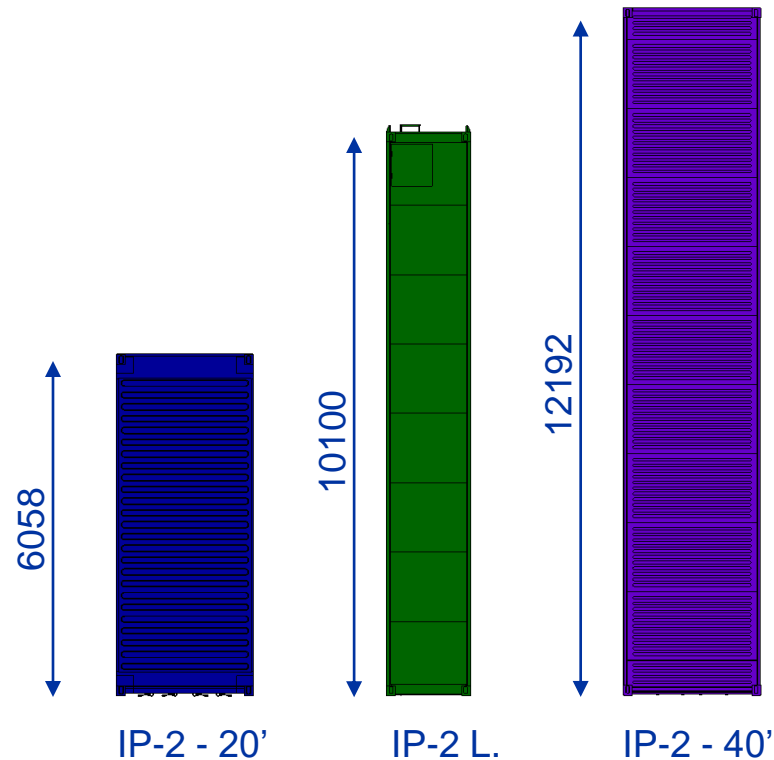
30-01-2025

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 - Manoeuvring operations
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 - ECN3 Transfer tables. Components location
 - Vacuum Vessel – Handling and lifting points
 - SHiP Experiment – Handling and installation
 - TCC8 Transport volumes

Transport containers

Manoeuvring operations



IP-2 – 20'	
Ext. Length	6058 mm
Ext. Width	2438 mm
Ext. Height	2591 mm
Roof opening length	5693 mm

SPECIAL CARGO BOX IP-2 (Langendorf)	
Ext. Length	10100 mm
Ext. Width	1500 mm
Ext. Height	2591 mm
Rear opening	1400 mm

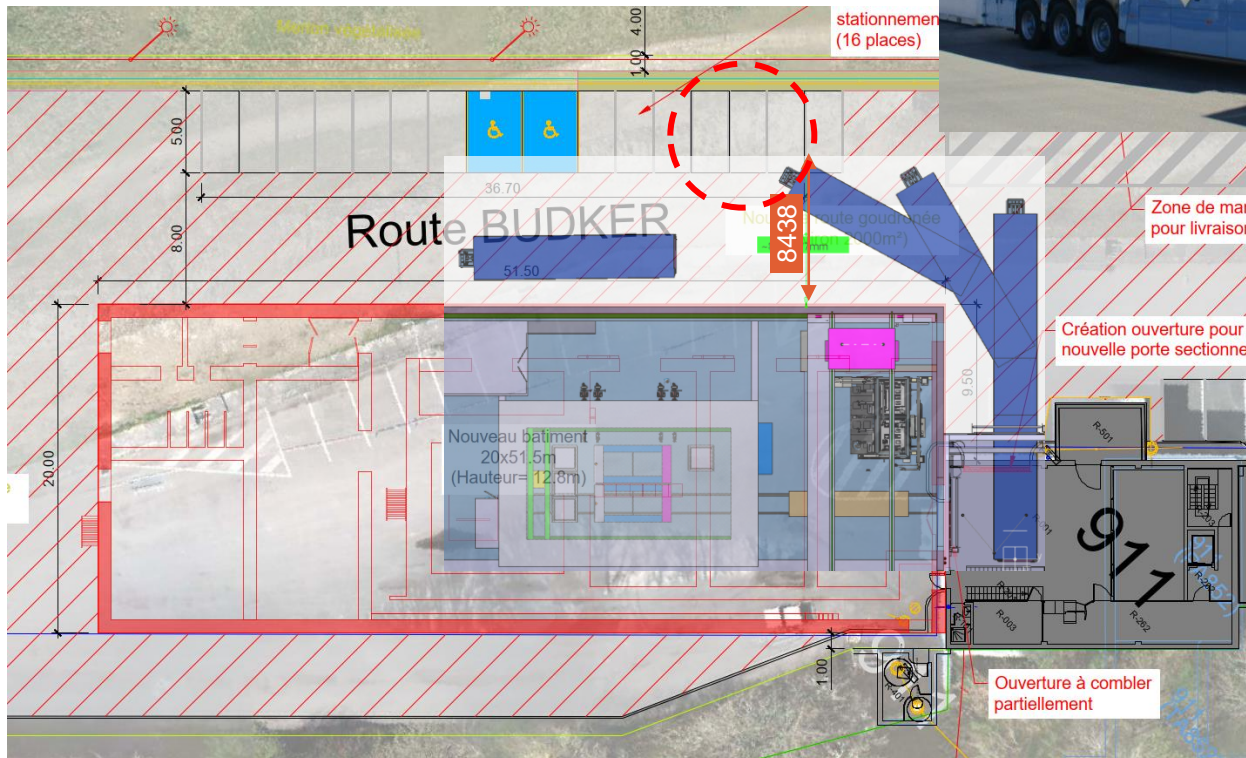
IP-2 – 40'	
Ext. Length	12192 mm
Ext. Width	2438 mm
Ext. Height	2591 mm
Roof opening length	11600 mm

LANGENDORF Trailer	
Ext. Length	11744 mm
Ext. Width	2554 mm
Ext. Height	3500 mm
Floor height	448 mm

Trailer platform heights	
Nooteboom CERN 537	1485 mm
Faymonville CERN 548	1420 mm
Rino Trailers CERN 549	1360 mm

Transport containers

Manoeuvring operations



SPECIAL CARGO BOX IP-2 (Langendorf)

Ext. Length	10100 mm
Ext. Width	1500 mm
Ext. Height	2591 mm
Rear opening	1400 mm

LANGENDORF Trailer

Ext. Length	11744 mm
Ext. Width	2554 mm
Ext. Height	3500 mm
Floor height	448 mm

Estimated turning radius

- Better to relocate some parking spaces to allow the turning of larger trucks and containers if needed

Ongoing assessments

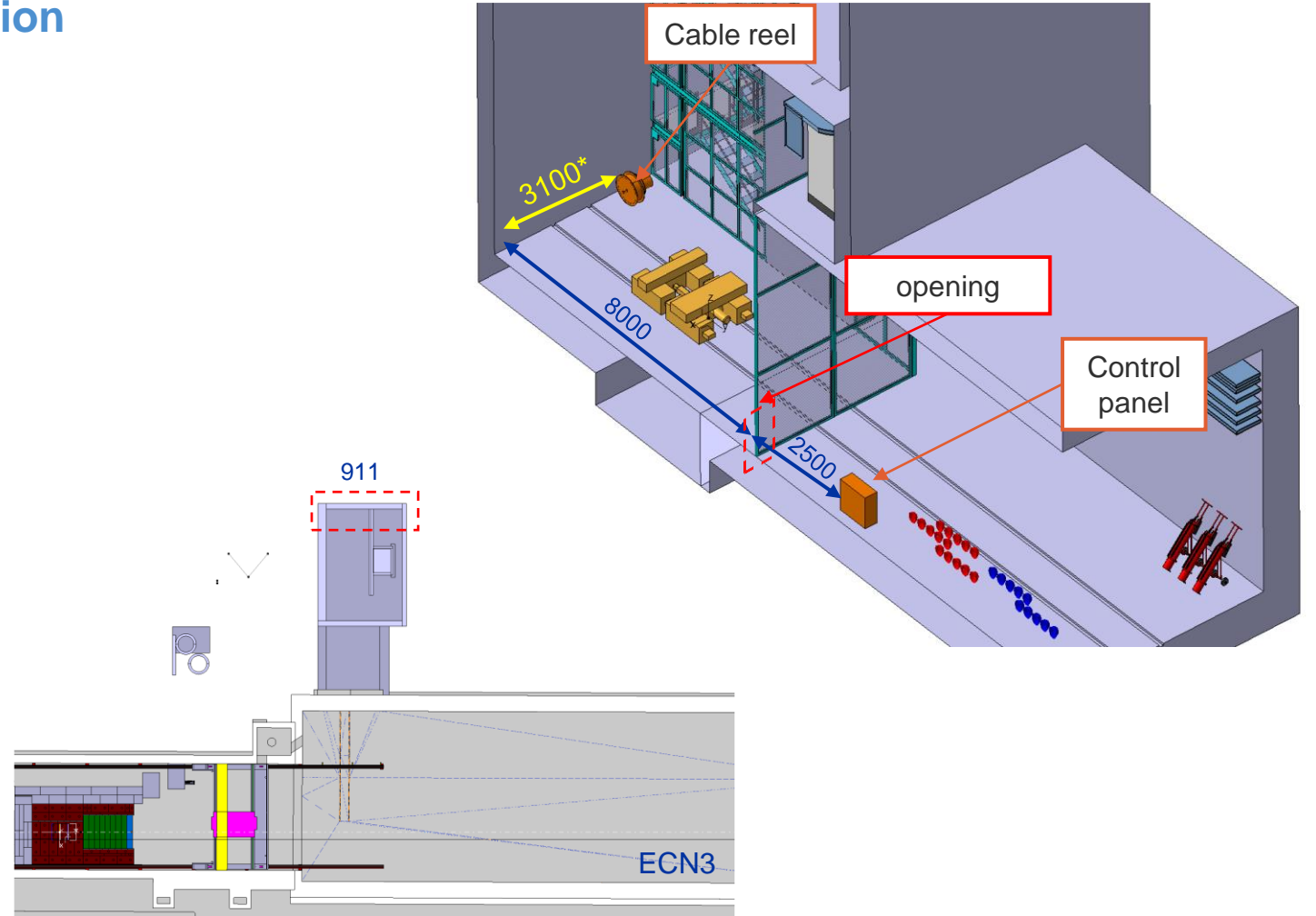
ECN3 Transfer tables. Components location

General Dimensions

- **Control panel** – 760x760x300
- Radio commande – 400x300x200
- **Cable reel** – 650x610x650 (aprox.)
 - L. Cable = 35 m

Location Requirements

- Cable reel aligned with the rails and with the side of the transfer tables



Ongoing assessments

ECN3 Transfer tables. Components location

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Location Requirements

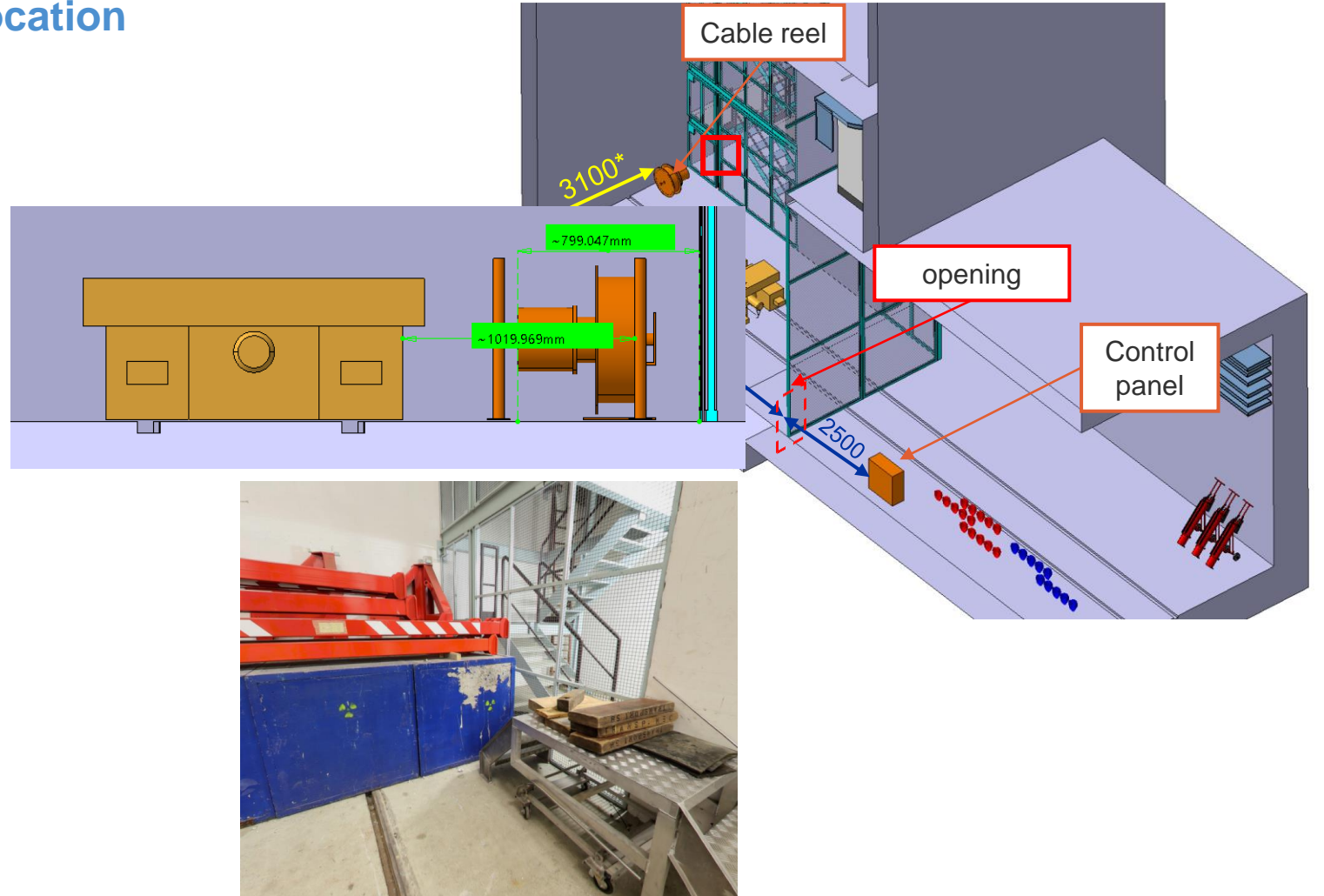
- Cable reel aligned with the rails and with the side of the transfer tables

Observations

- **Control panel installed outside the shaft**
- An **opening** in the door of the shaft must be created to pass the cable that connects the control panel with the cable reel.

Studying → Exact location of the cable reel

- It would occupy certain space inside the shaft
- Possibility to locate it outside, under the staircase



Ongoing assessments

Vacuum Vessel – Handling and lifting points

Considerations for the study

- The installation sequence will involve only the vacuum vessel
- The internal components being added at a later stage using the rails.
- The grey guides attached to either side of the opening will be assembled after installation along with the door.
- No requirements regarding the tilting of the vessel.

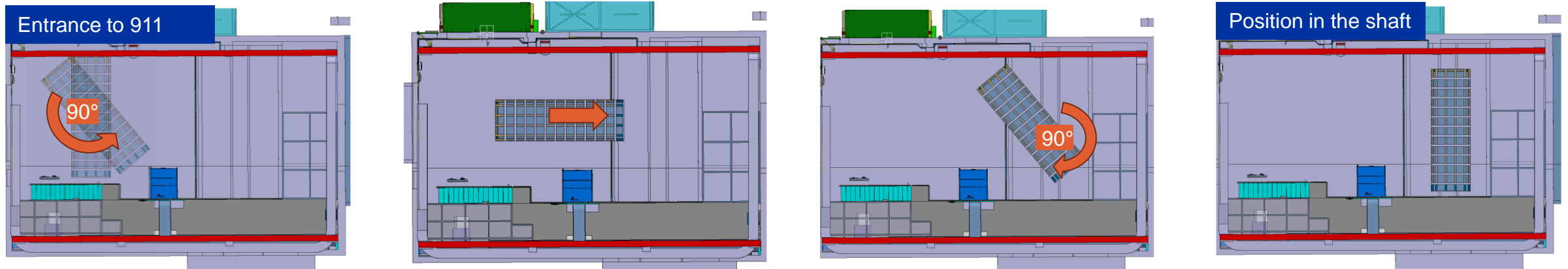
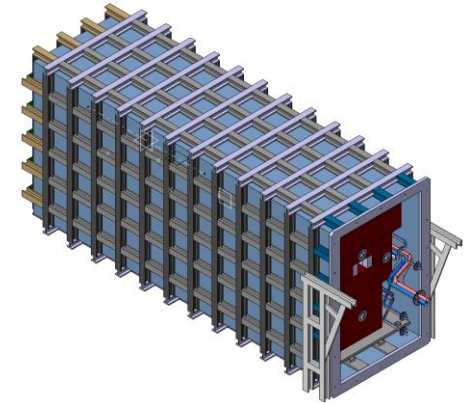
Vacuum vessel design (ST1662378_01)

Width 2050 mm

Length 6410 mm

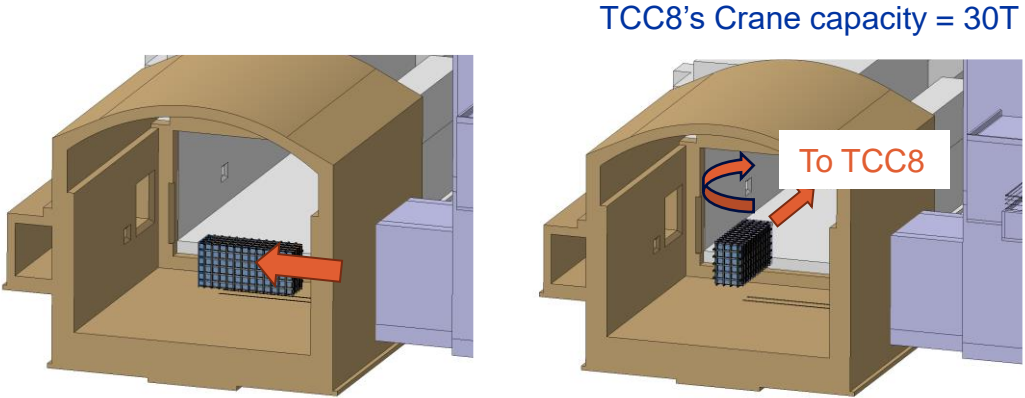
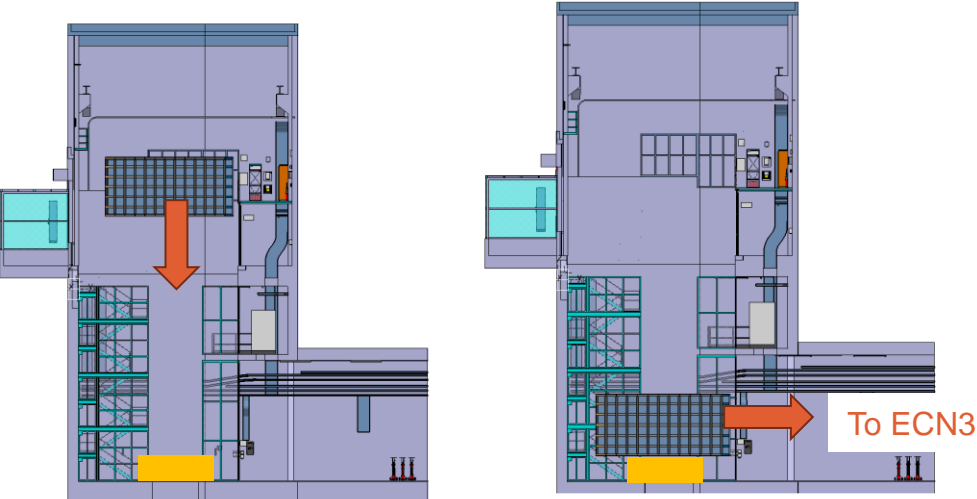
Height 2965 mm

Weight 25.283,201 kg



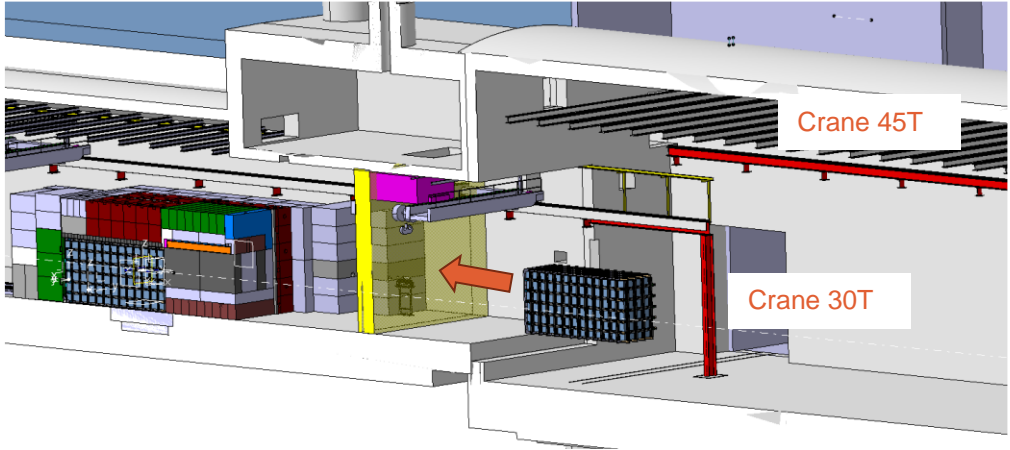
Ongoing assessments

Vacuum Vessel – Handling and lifting points



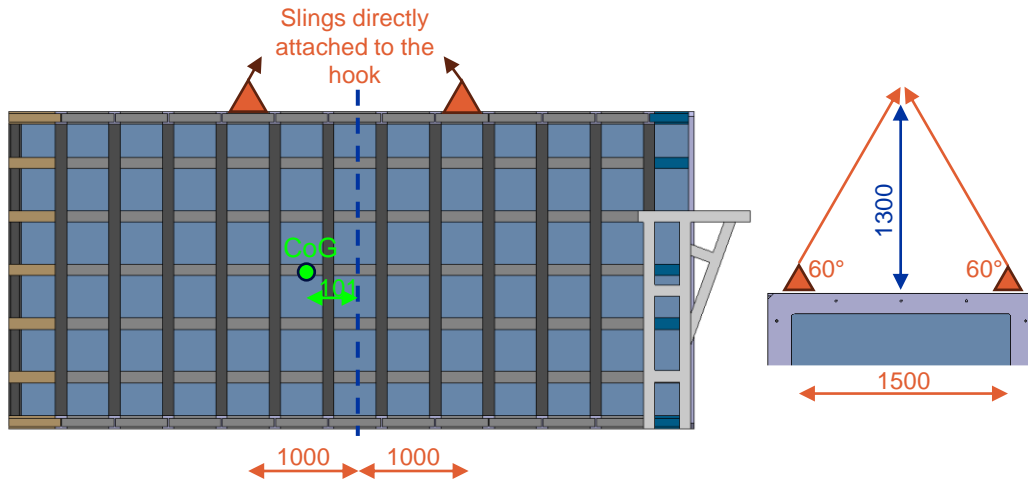
Constraints		
Area	Type	
911	Hook height	8000 mm
ECN3	Hook height (45T)	9200 mm
ECN3	Hook height (30T)	6660 mm
Tcc8	Hook height (30T)	5000 mm

In TCC8, there will only be ≈ 1800 mm clearance above the vacuum vessel for lifting equipment



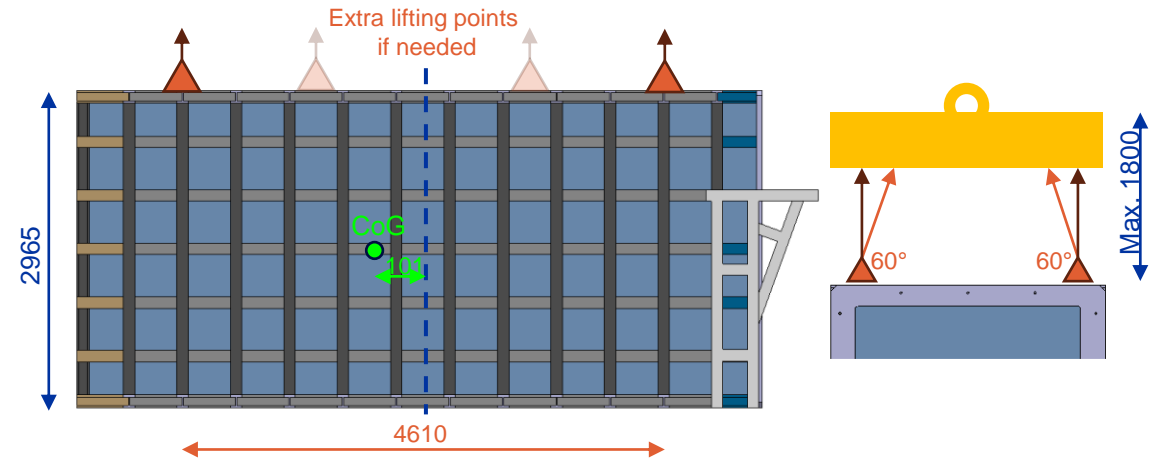
Ongoing assessments

Vacuum Vessel – Handling and lifting points



Option 1 – Slings directly attached to the hook

- 4 lifting points located close to the COG (approx. 1000 mm on each side along the length of the vacuum vessel)
- A minimum sling angle of 60° is preferred
- The distances between the lifting points are indicative



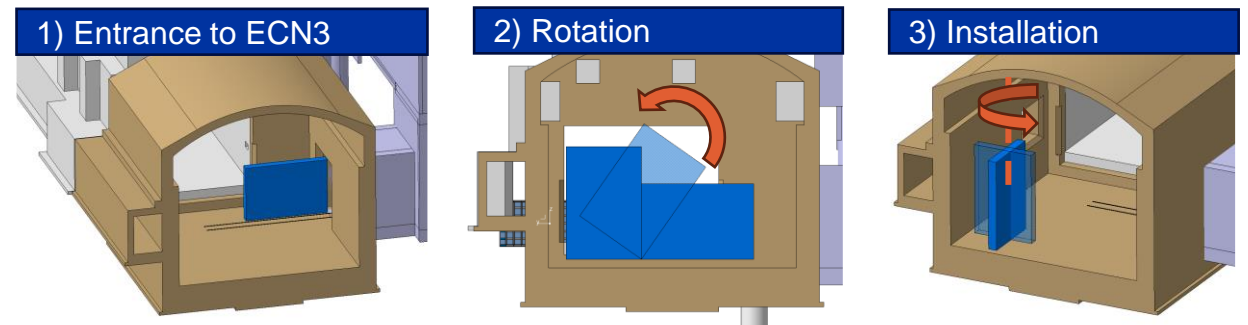
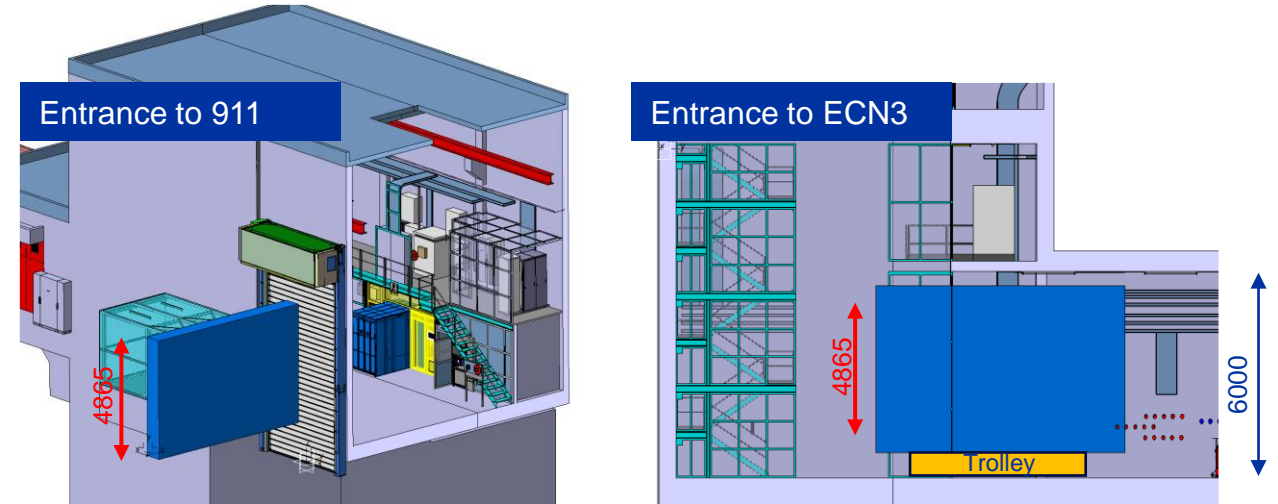
Option 2 – Dedicated lifting beam

- 4 lifting points as shown (more if needed)
- A minimum sling angle of 60° is preferred if a 90° angle is not possible
- Total weight of the lifting equipment < **5 tons**
- The distances between the lifting points are indicative

Ongoing assessments

SHiP Experiment – Handling and Installation

- Transport and handling study to assess the possibility to introduce the components of the experiment through building 911
- Components under study
 - **Coil + Cryostat**
 - **Straw Tracker**
- The **current dimensions** of those components are **close to the limit** to be introduced through 911's shaft
- **Pending**
 - Solution to rotate the components for installation once in ECN3



Ongoing assessments

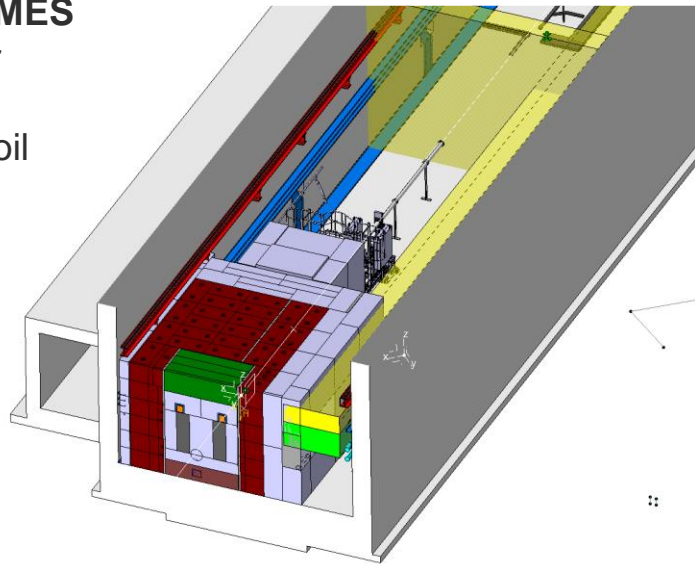
TCC8 Transport volumes

Crane coverage

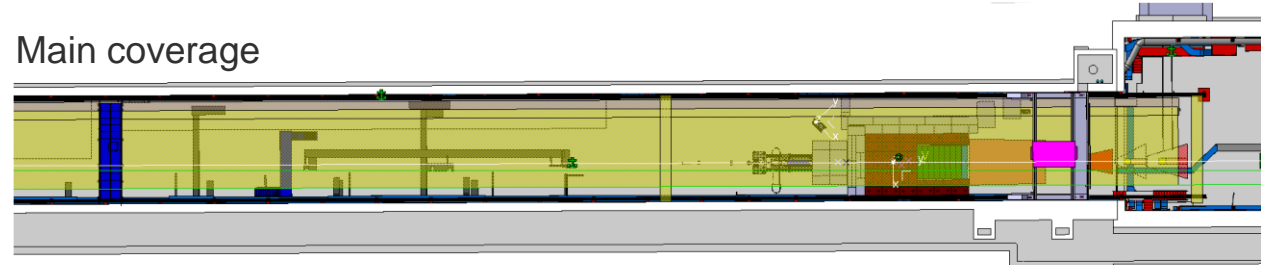
- Main coverage
- Auxiliary hoist coverage (5T)
 - + 300 mm per side
 - + 400 mm height
 - + 3000 mm travel in ECN3

TRANSPORT VOLUMES

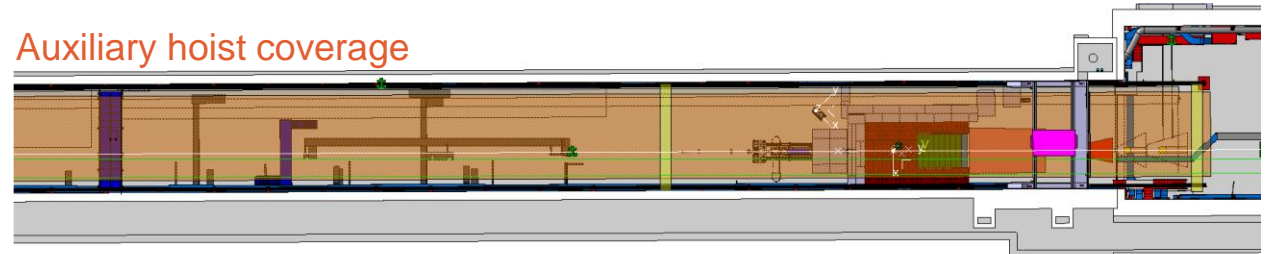
- Transport corridor
- Target volume
- Hadron stopper coil



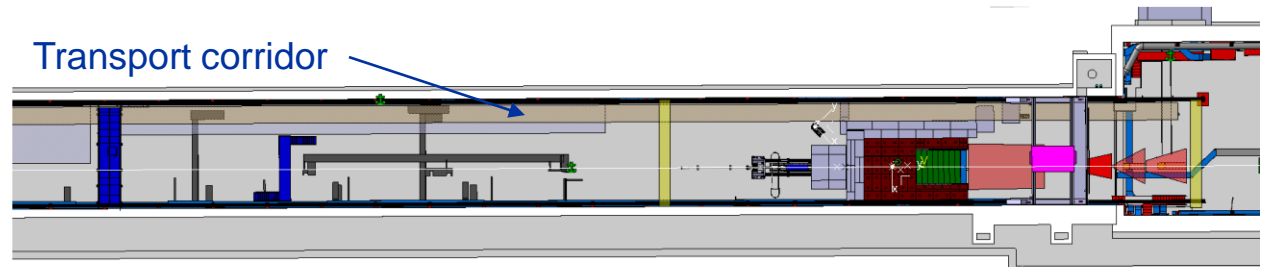
Main coverage

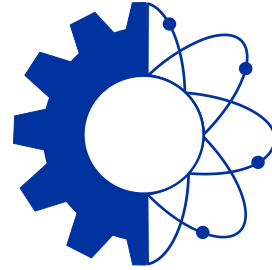
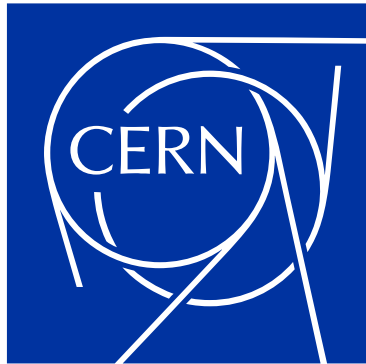


Auxiliary hoist coverage



Transport corridor





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