MAGiC progress update

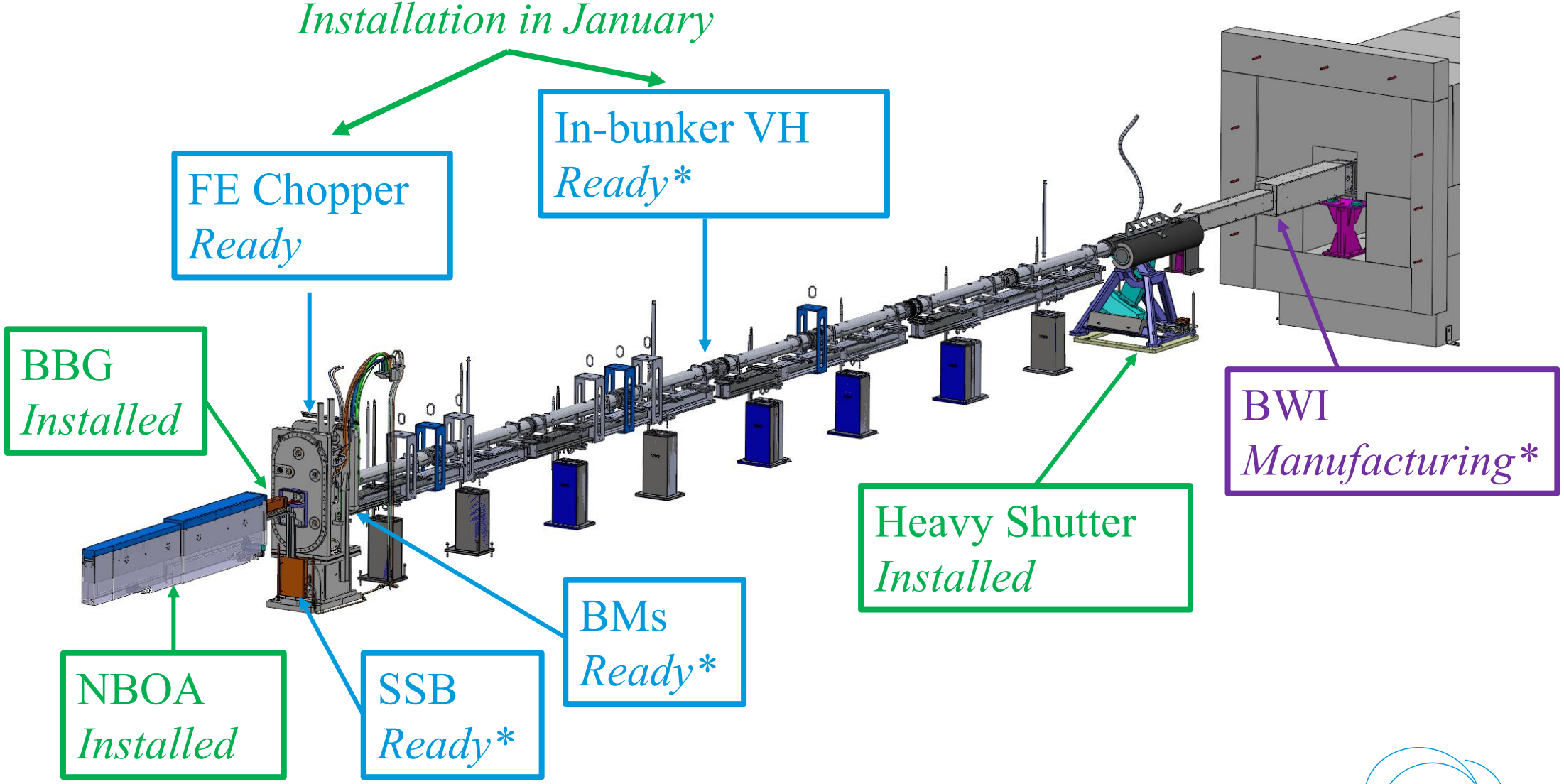
November 2025

Human resources

- Iurii Kibalin, an Instrument Data Scientist for single-crystal diffraction, started on September 1st
- The Instrument Operation Engineer position has been open, interview process is ongoing
- In October a new designer is assigned to help with the analyzer/detector B support structure from the NSS designer team

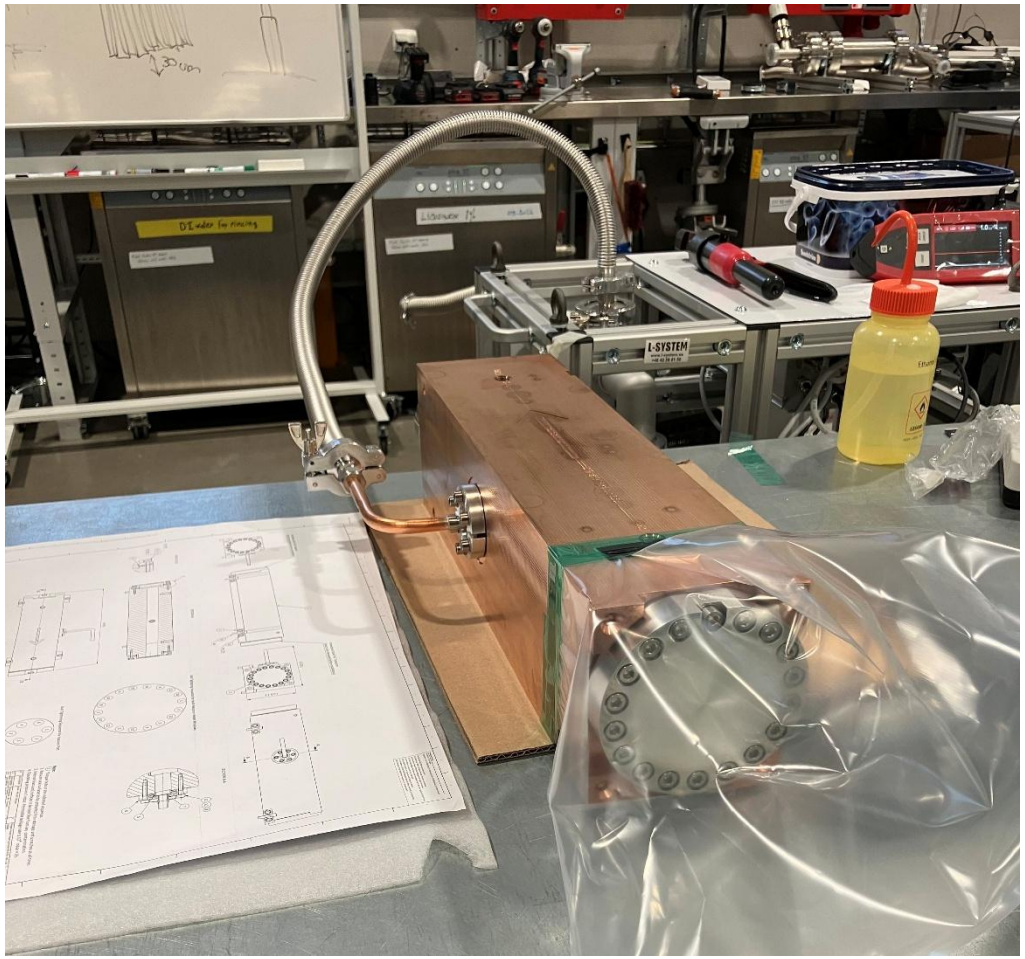
Bunker components

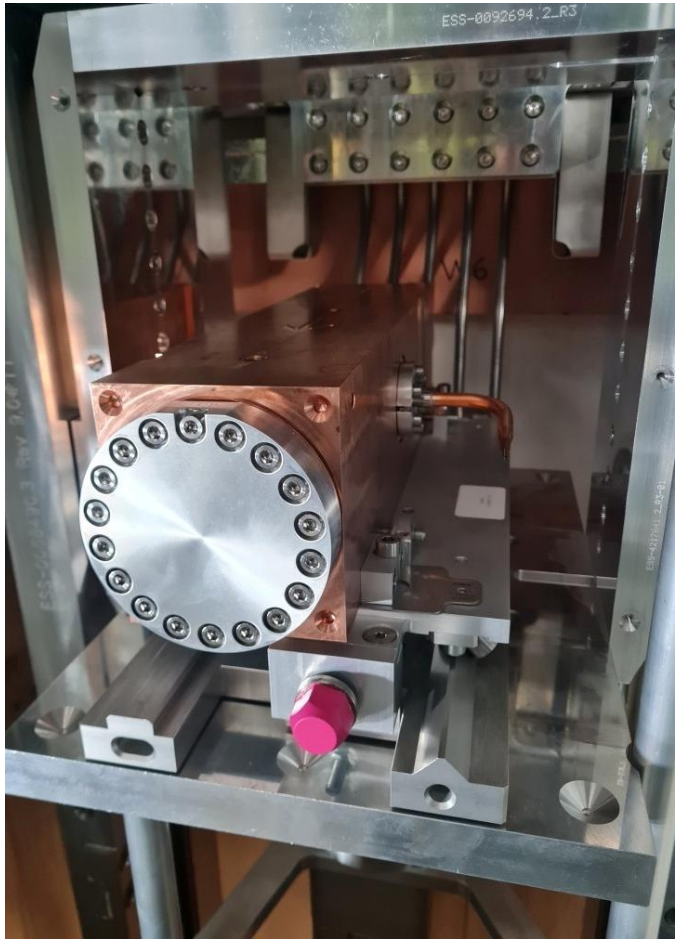
Installation in January



EUROPEAN SPALLATION SOURCE

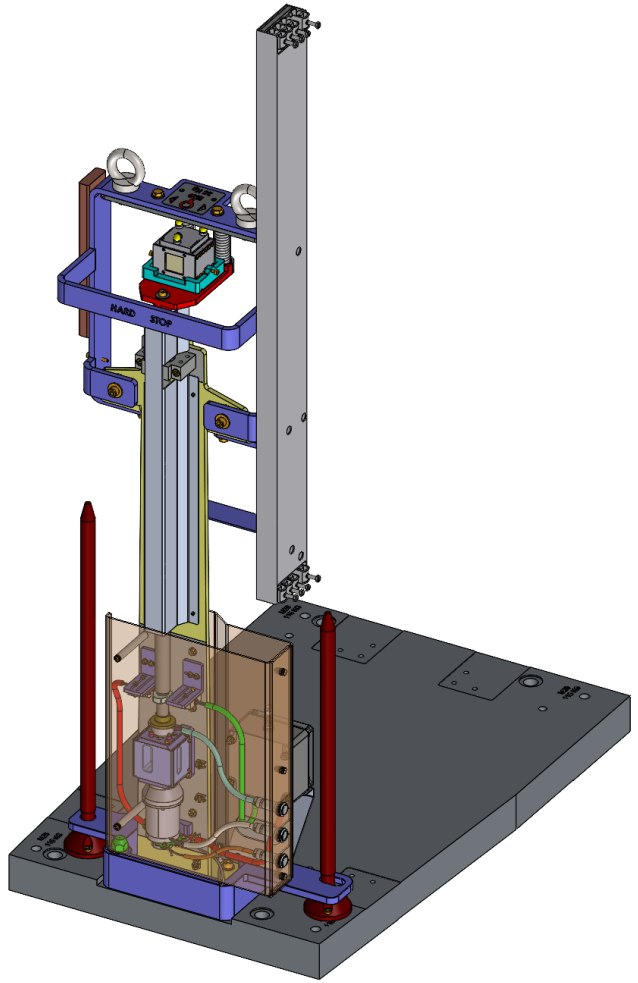
Bridge Beam Guide (BBG)





Installed

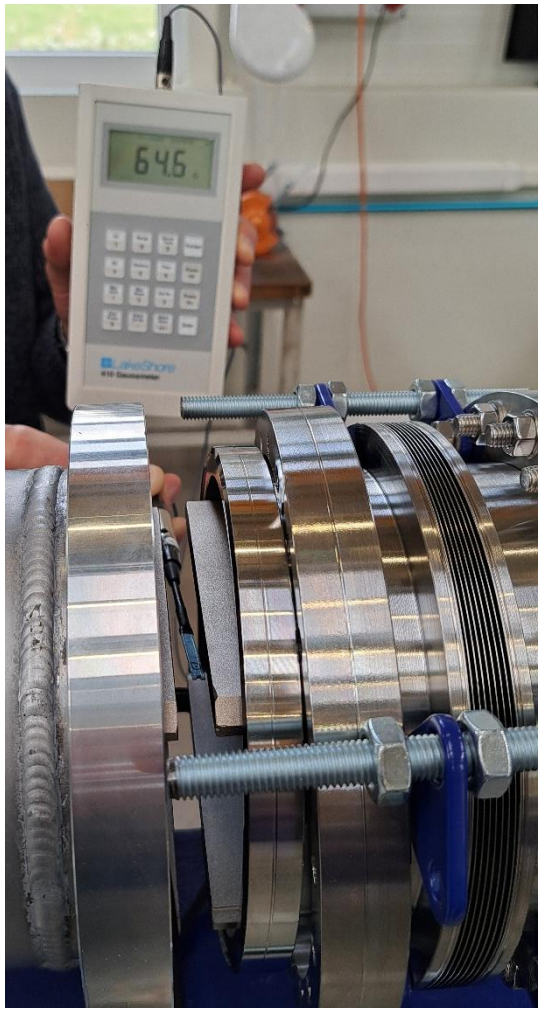
Solid State Bender (SSB)



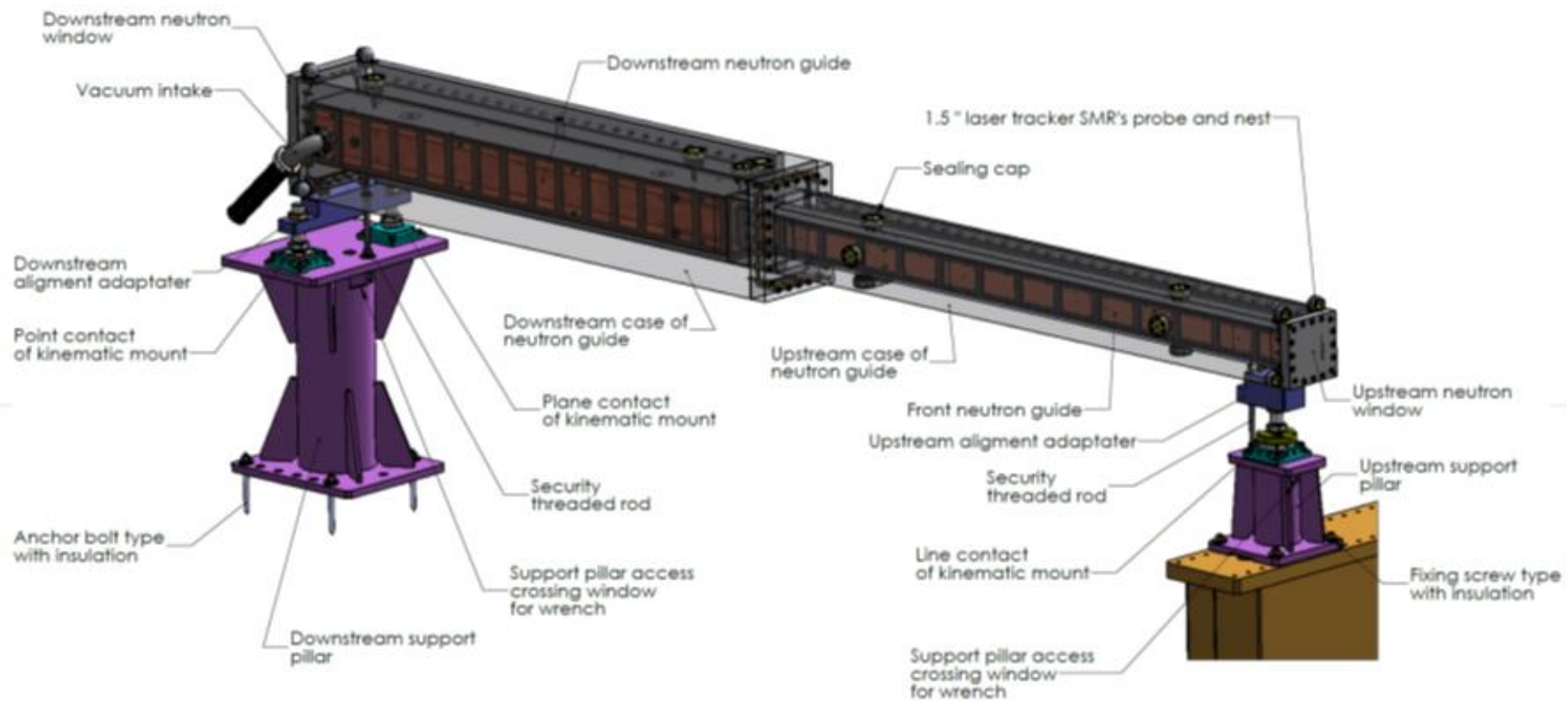
In-bunker Vacuum Housing

Installation in January

FAT of the in-Bunker Vacuum Housing



Bunker Wall Insert



Tendering is finished. The manufacturing time is 21 weeks. The delivery is forecasted in March/April.

EUROPEAN SPALLATION SOURCE

D03/E02 components

160m-long neutron guide
Ready

OoB VH, Lot-3
Designed

Adiabatic Spin-Flipper
Being designed

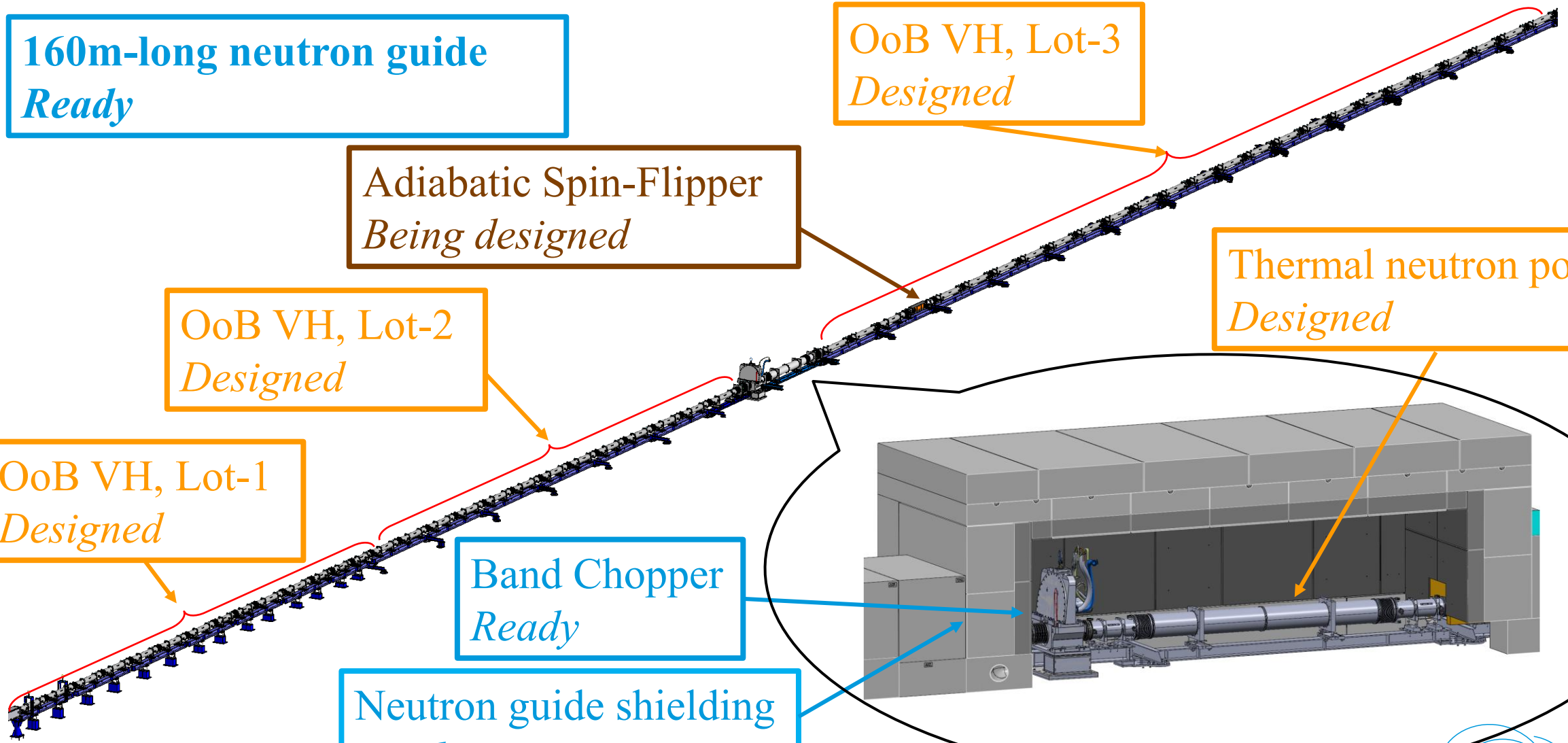
OoB VH, Lot-2
Designed

Thermal neutron polarizer
Designed

OoB VH, Lot-1
Designed

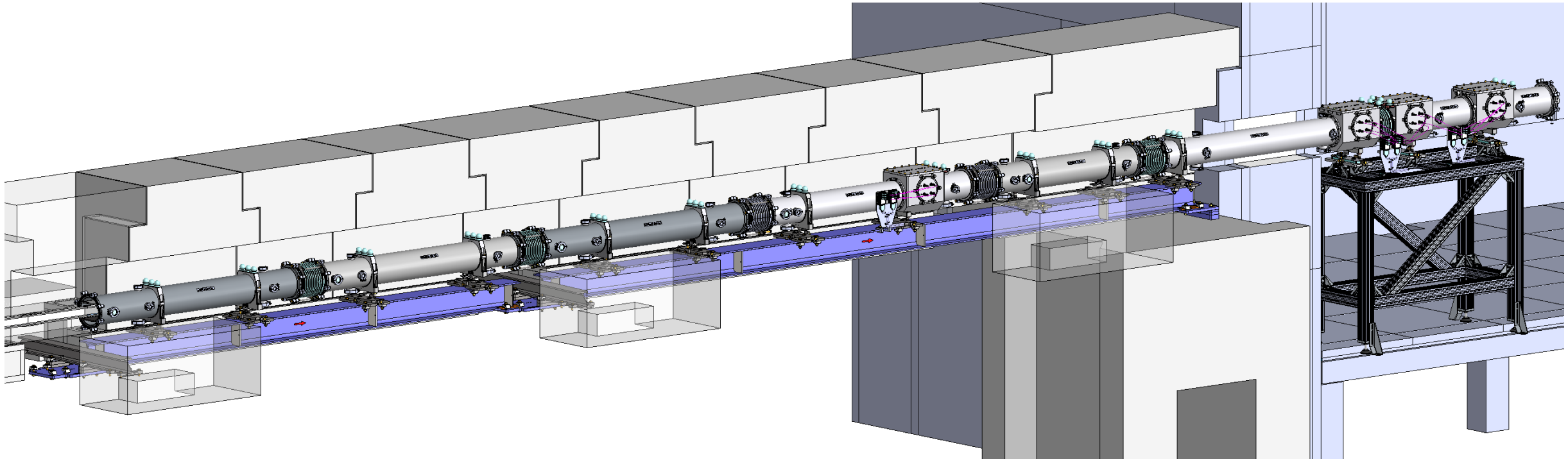
Band Chopper
Ready

Neutron guide shielding
Ready



EUROPEAN SPALLATION SOURCE

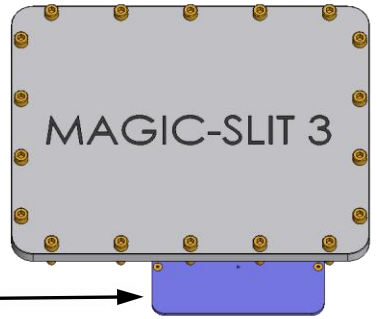
Out-of-Bunker Vacuum Housing, Lot-4



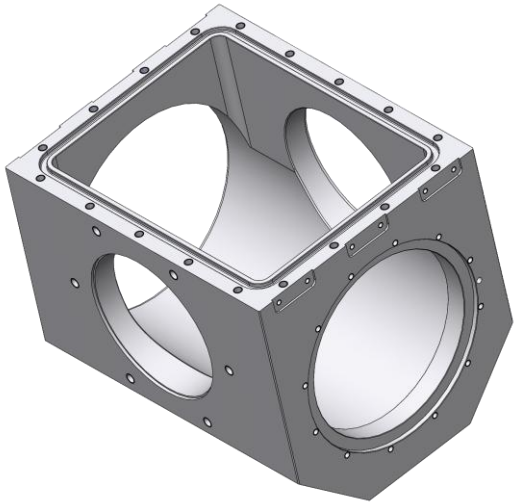
Out-of-Bunker Vacuum Housing, Lot-4

Vacuum housing cover

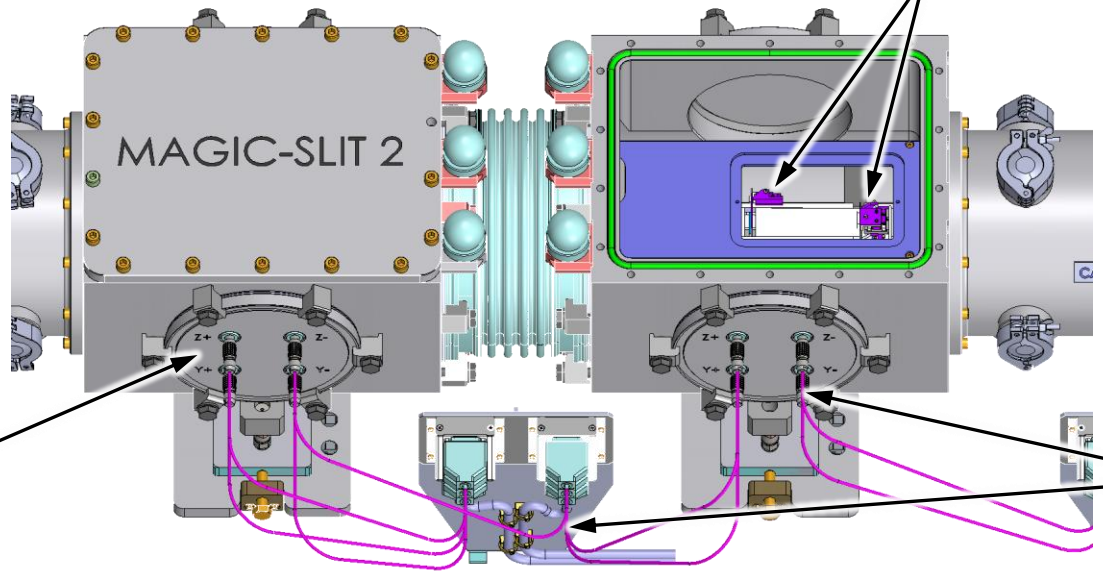
Steel plate cover



The slits box with 3 side access to slits



Access to the slits



Custom flange DN160ISOK

Electrical connections to the slits via vacuum feedthroughs

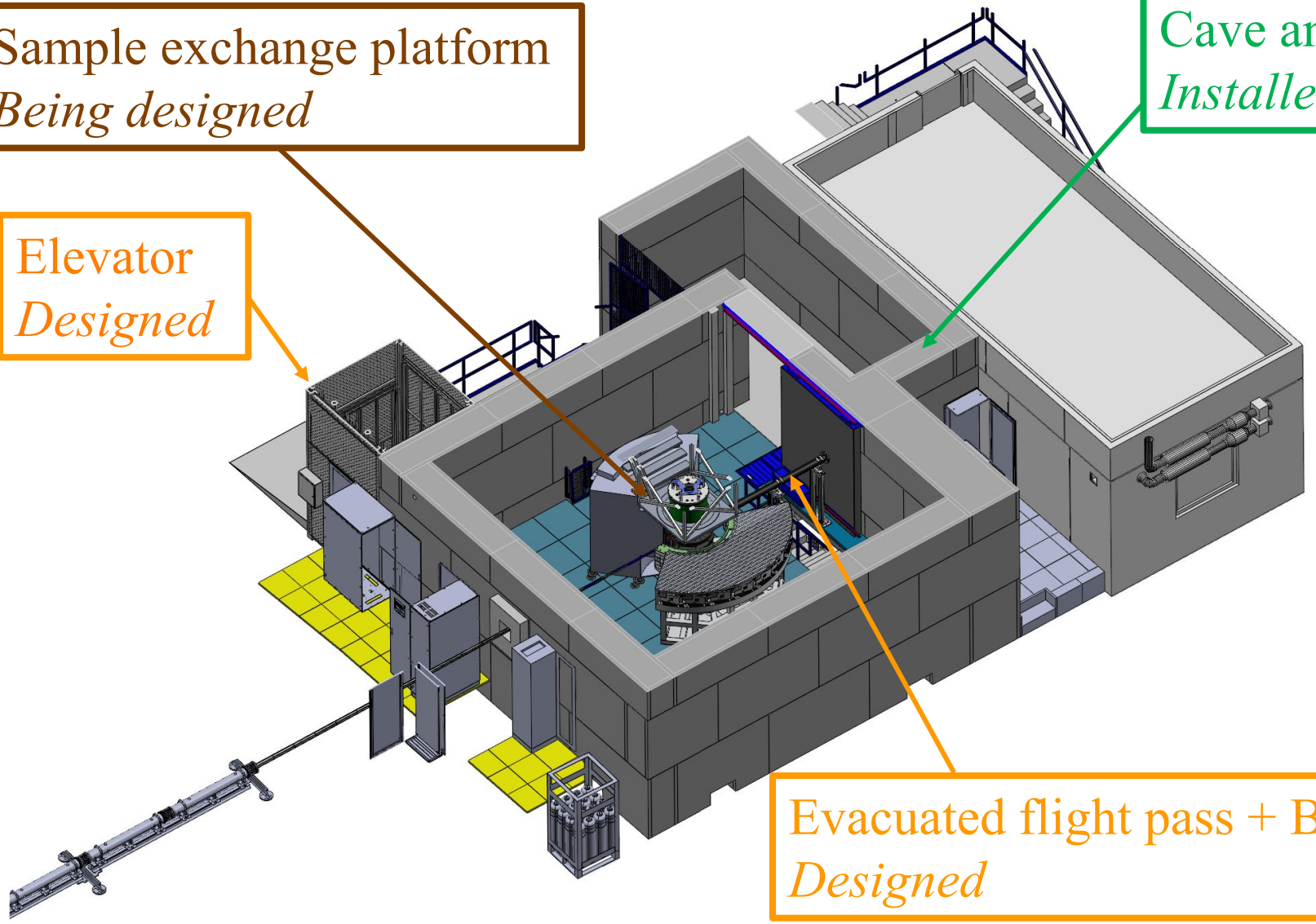
ISO F sight glass VIEWPORT can be used

EUROPEAN SPALLATION SOURCE

Experimental Cave

Sample exchange platform
Being designed

Elevator
Designed



Cave and hutches
Installed

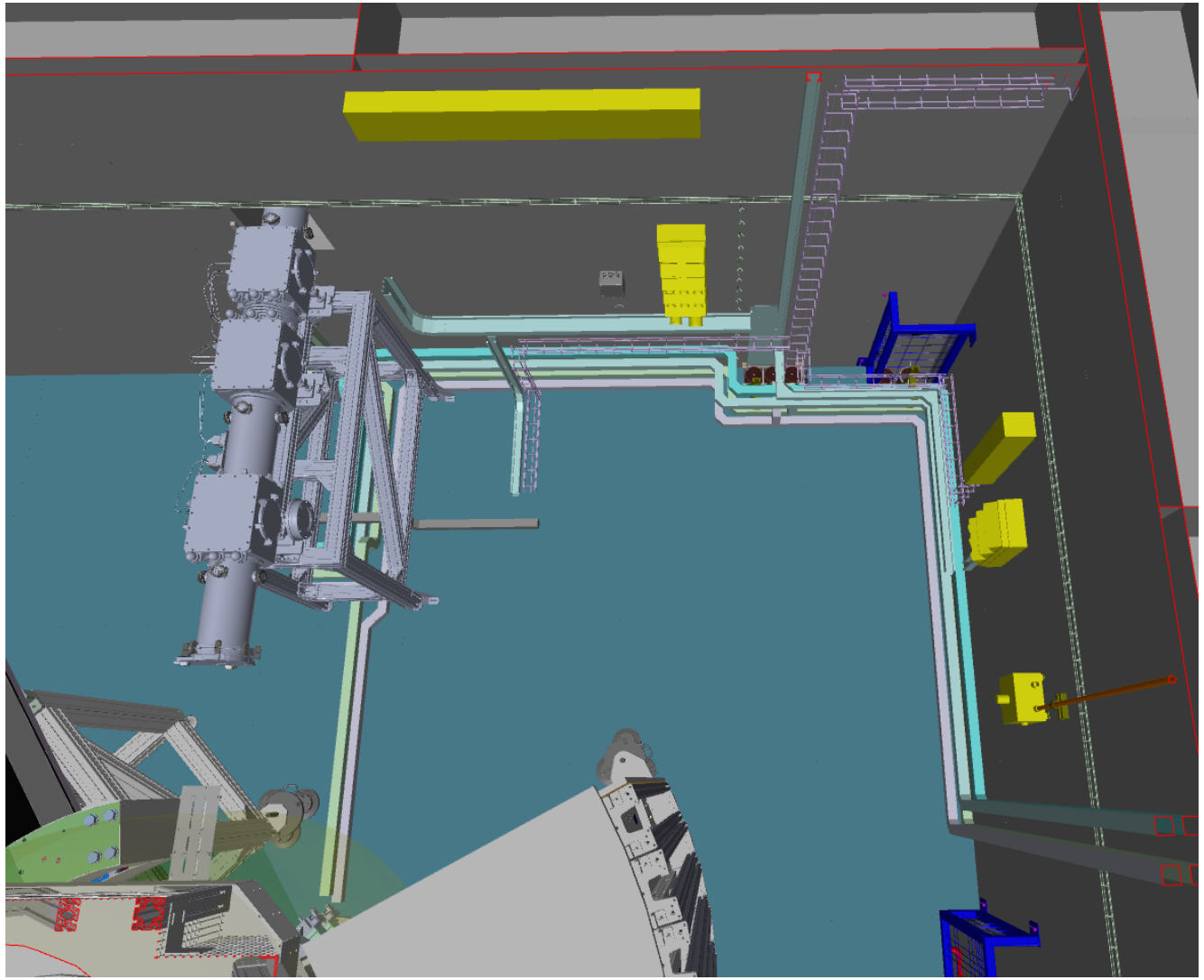
CEP scope
Being designed

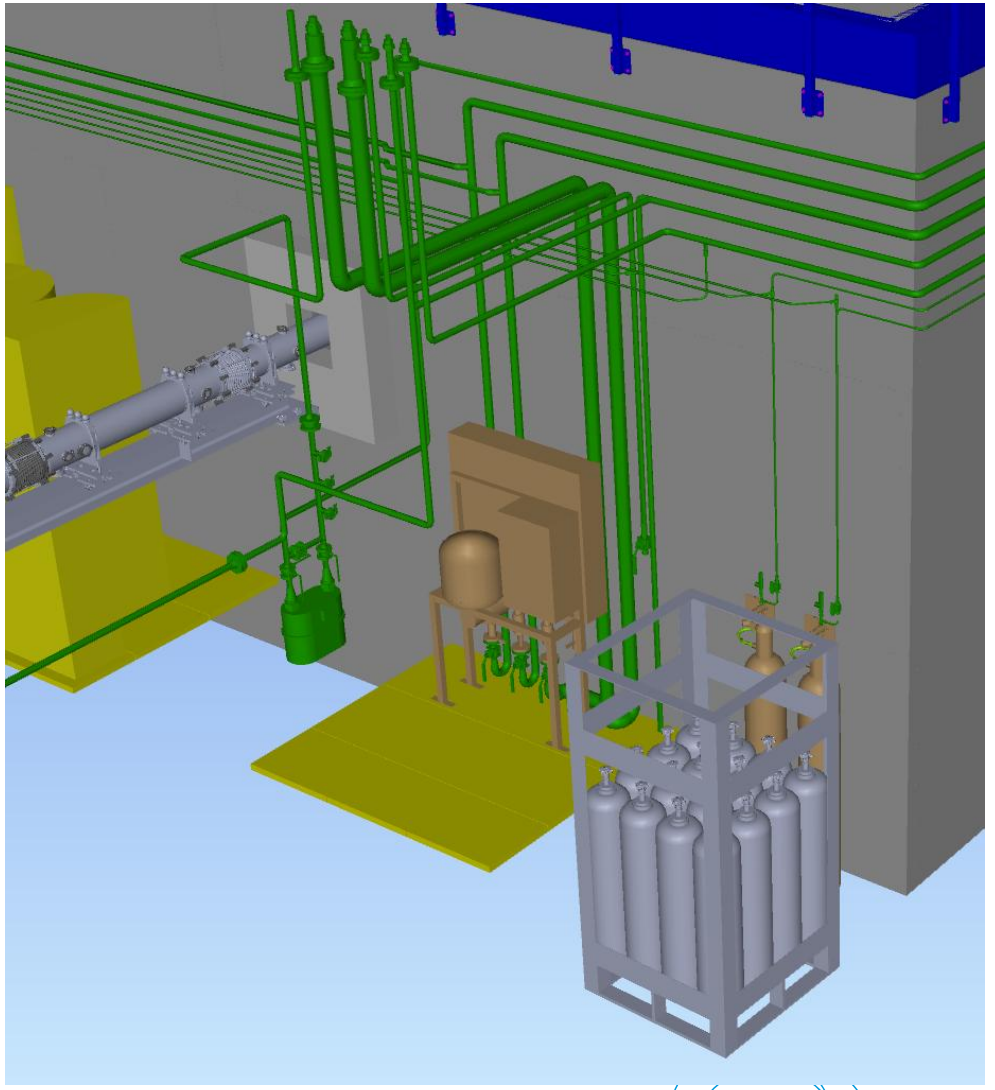
CUP scope
Start of the design

CMCA scope
Being designed

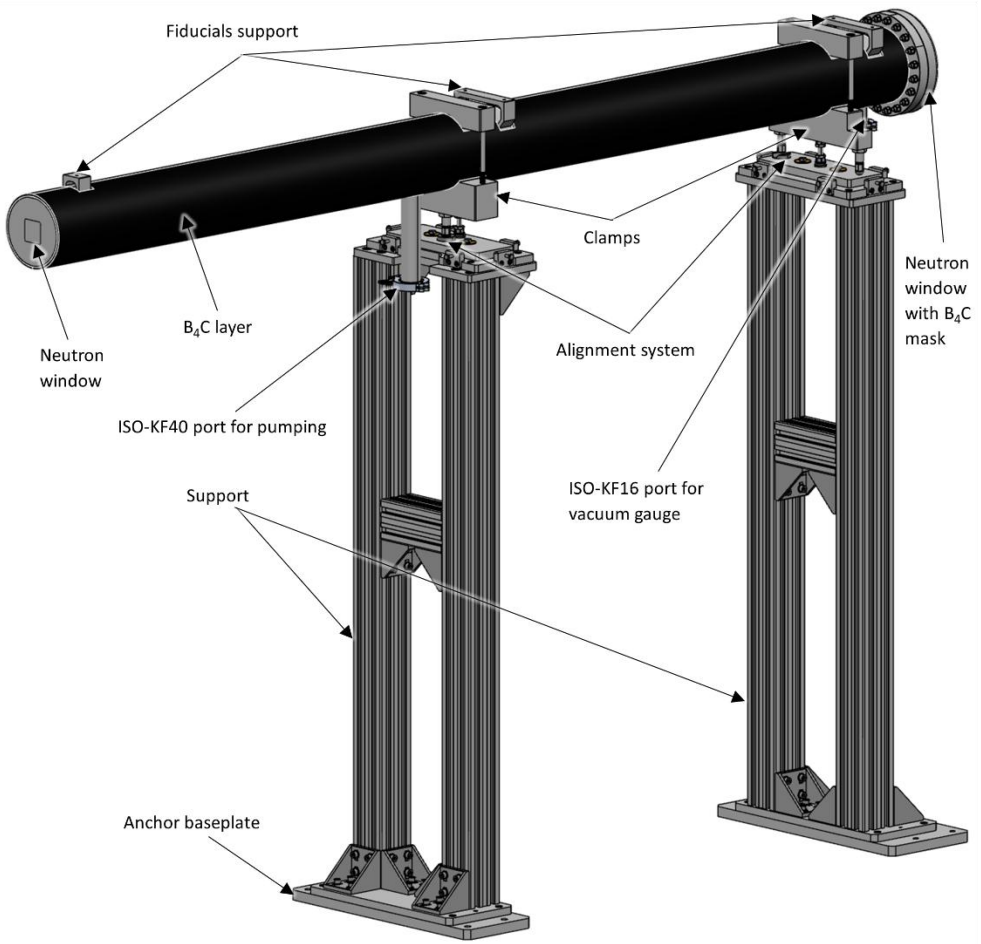
Evacuated flight pass + Beam Stop
Designed

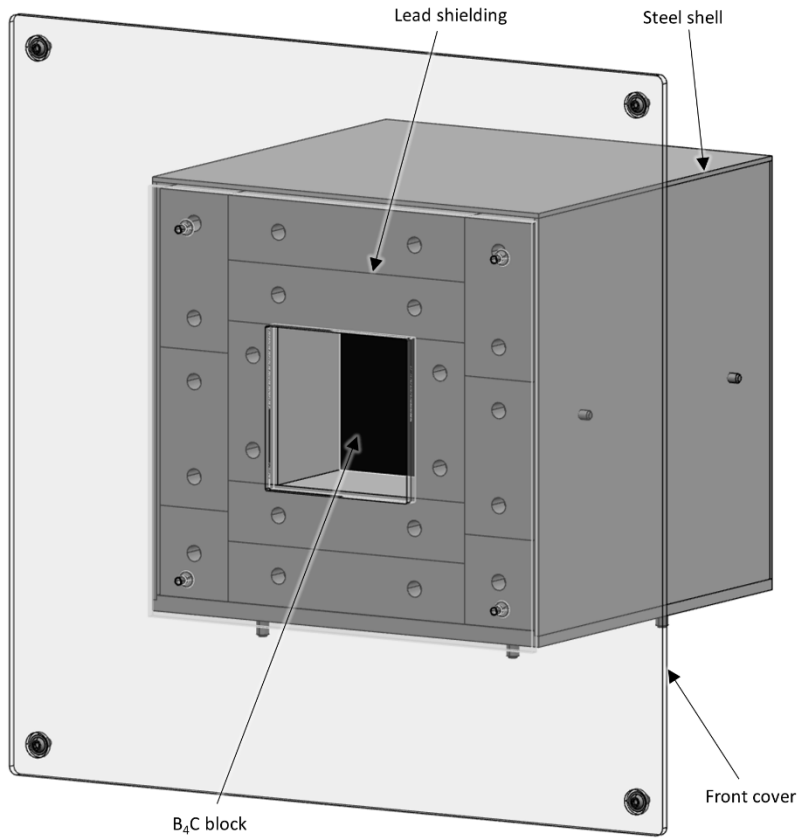
CEP and CUP design





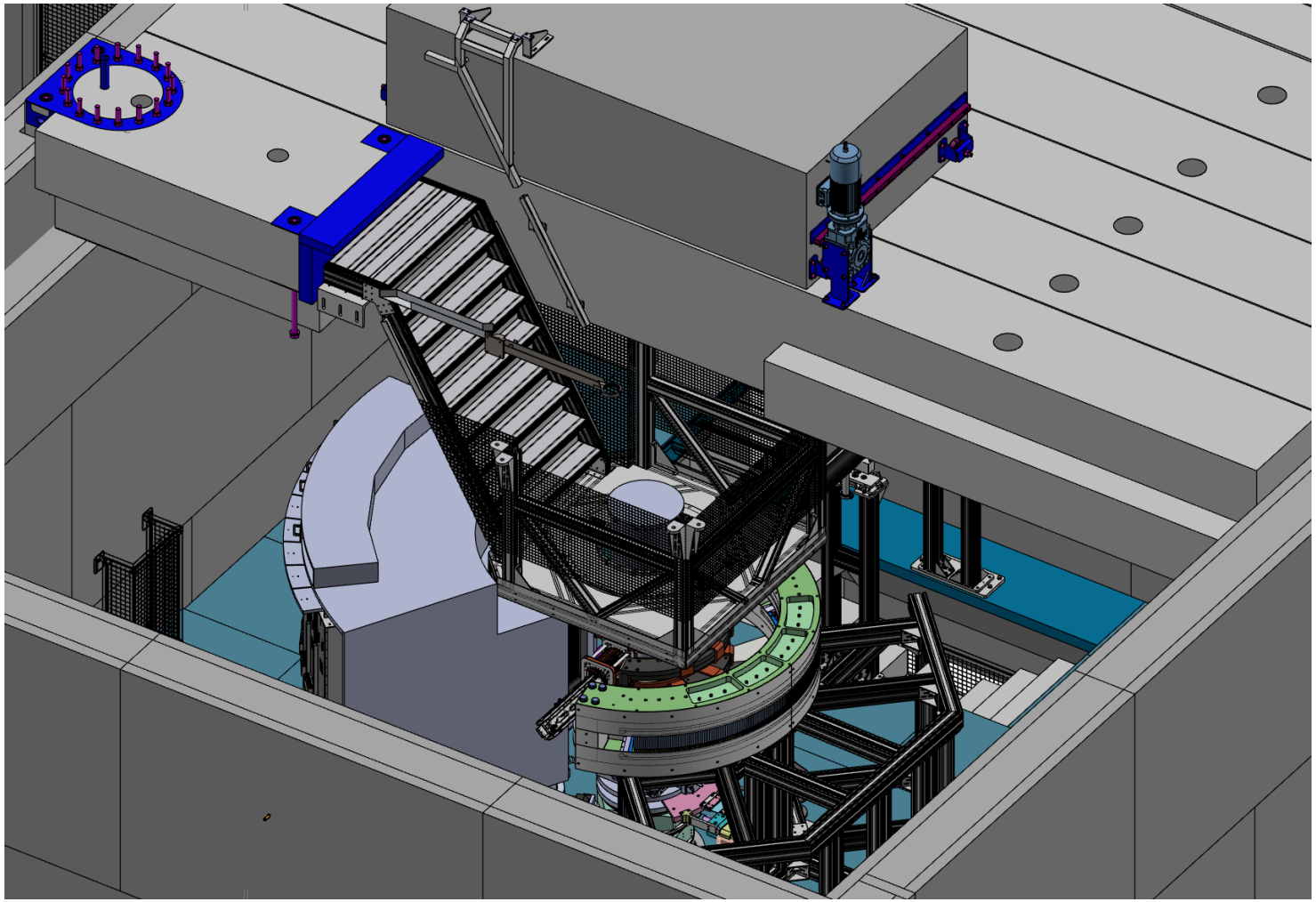
Neutron beam termination system





EUROPEAN SPALLATION SOURCE

Elevated platform



Goods elevator

Scattering characterization system

8T vert. cryomagnet
Manufacturing

Variox cryostat
Ready

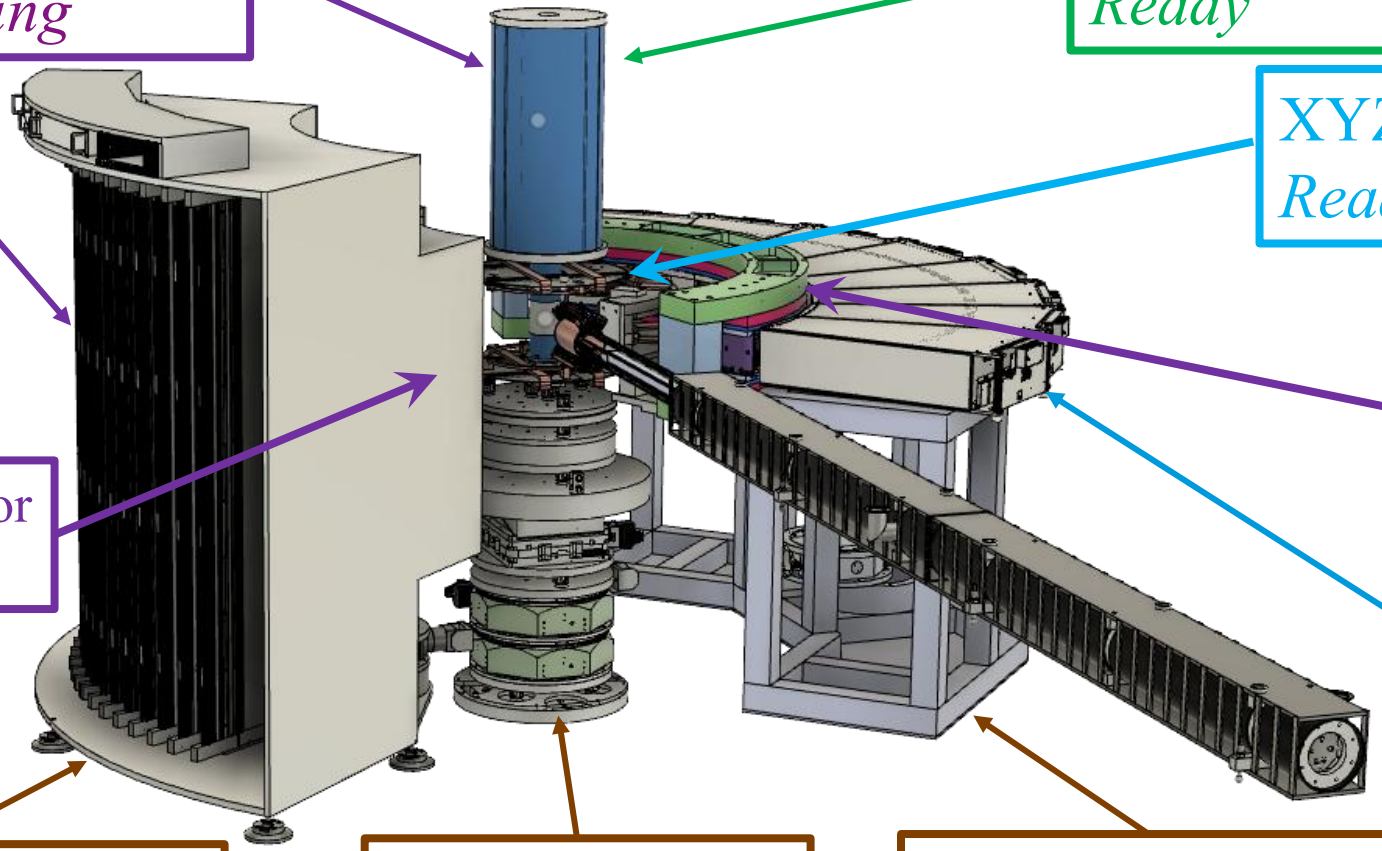
XYZ field coils
*Ready**

Detector A
Manufacturing

Analyzer
Manufacturing

Radial Collimator
Manufacturing

Detector B
Ready

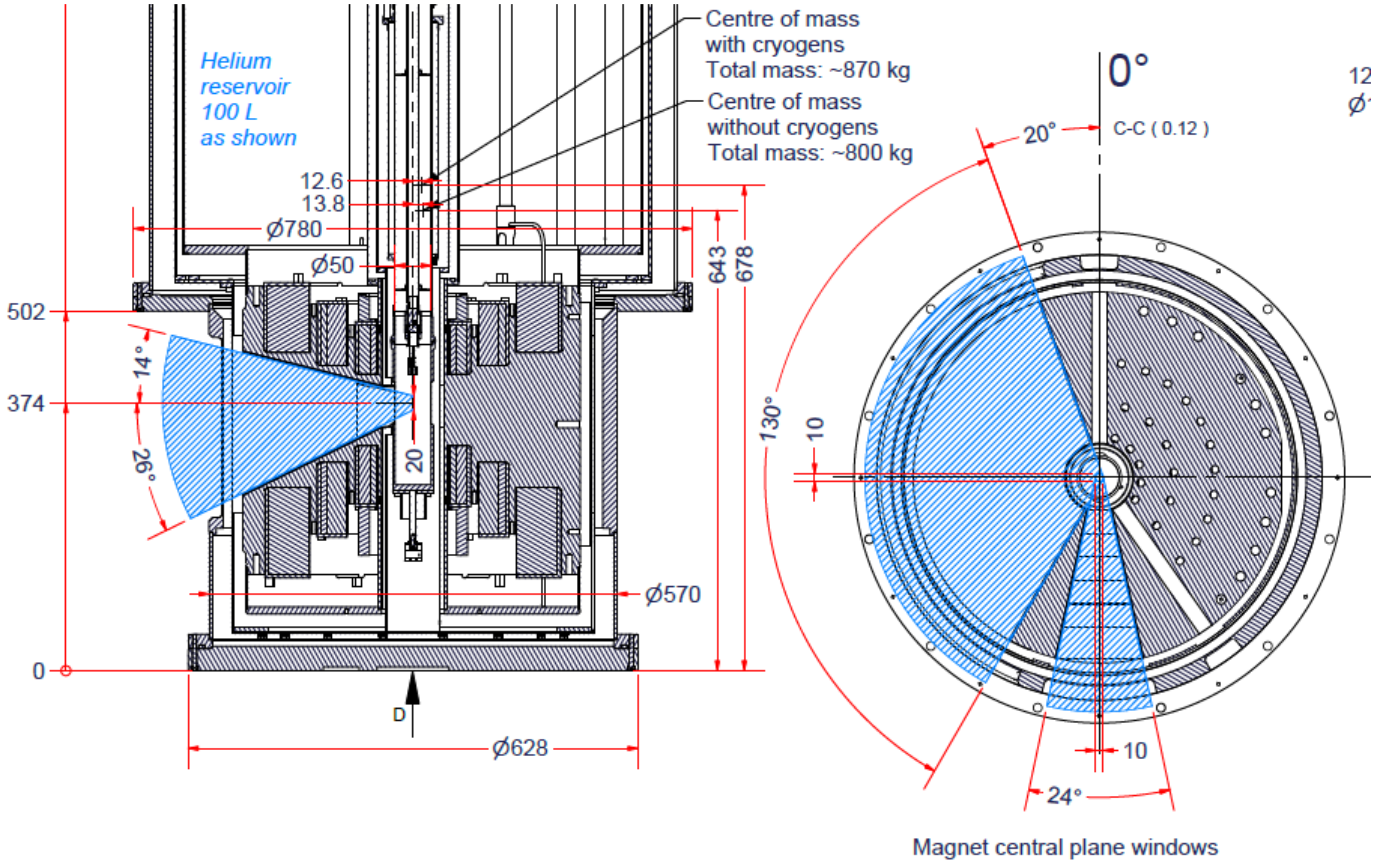


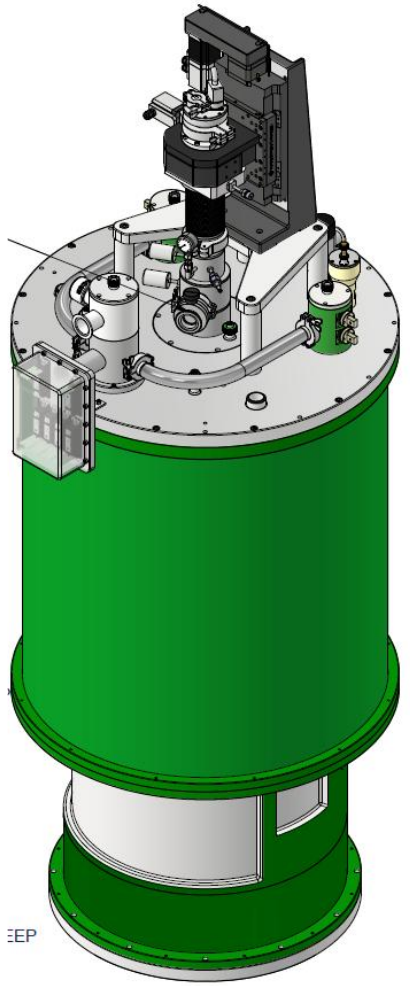
Det. A support table
Being designed

Sample stage
Being designed

Analyzer/Det. B support table
Being designed

8T Cryomagnet

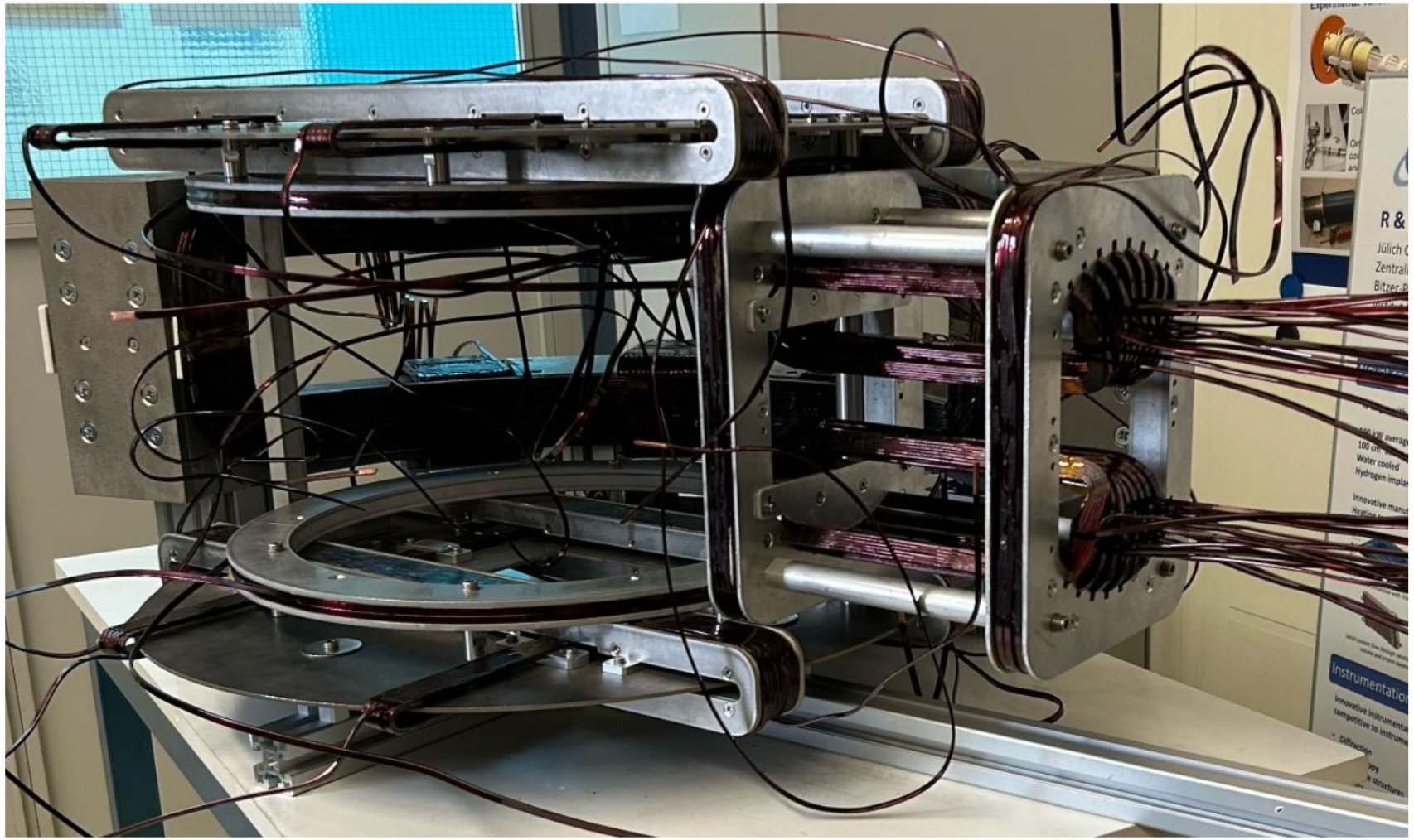




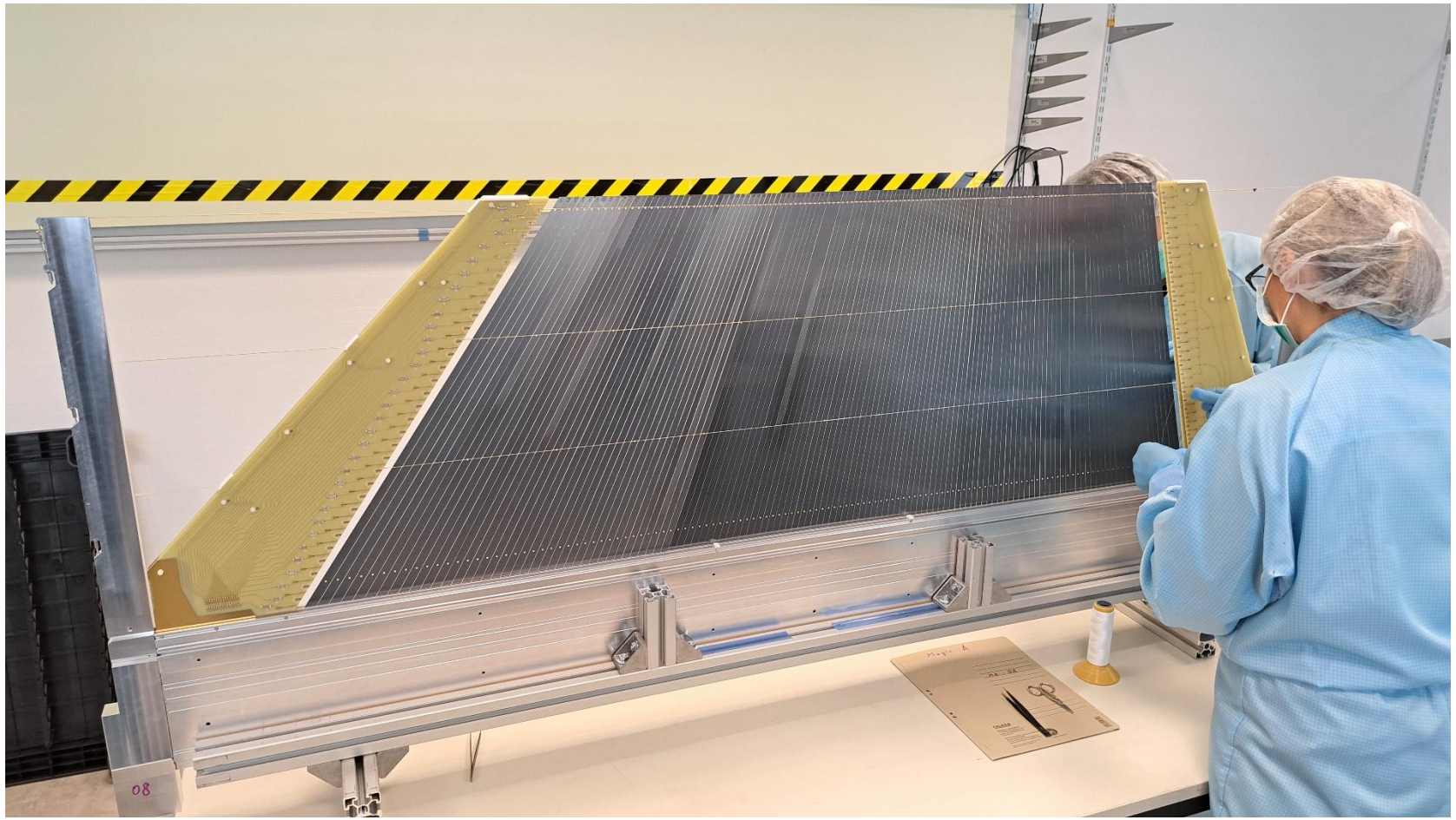
Delivery Q2 2026

EUROPEAN SPALLATION SOURCE

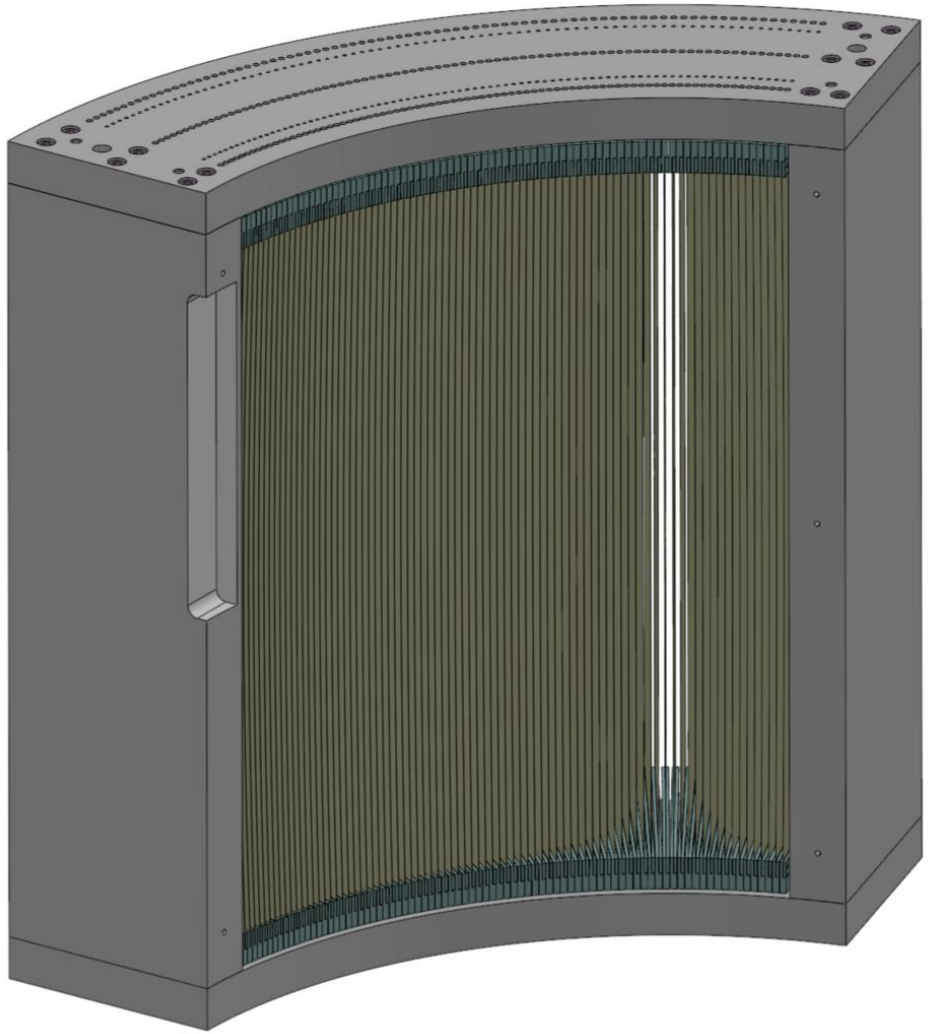
XYZ magnetic field assembly

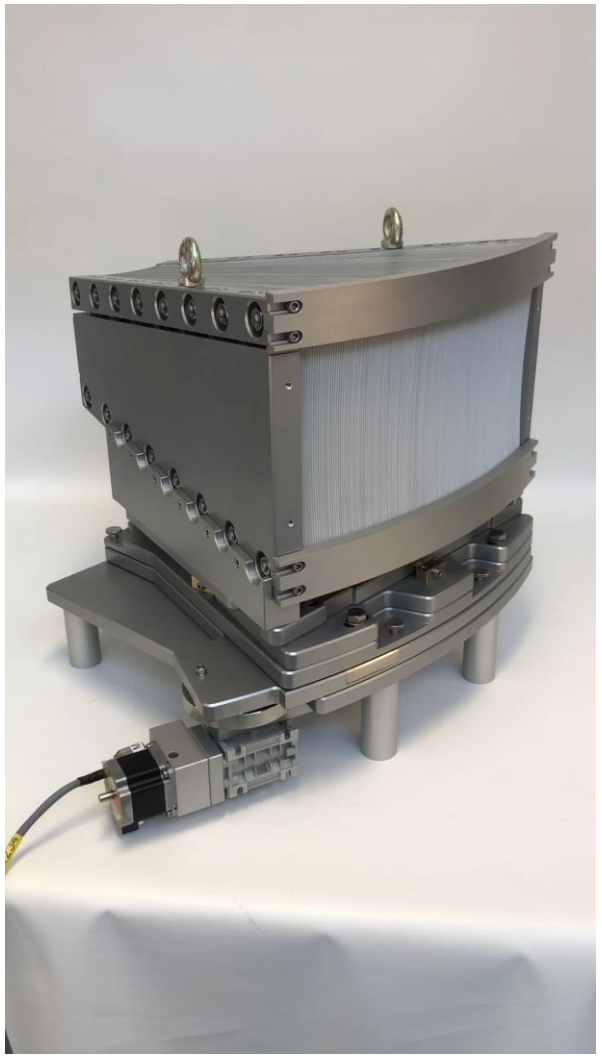


Detector A manufacturing

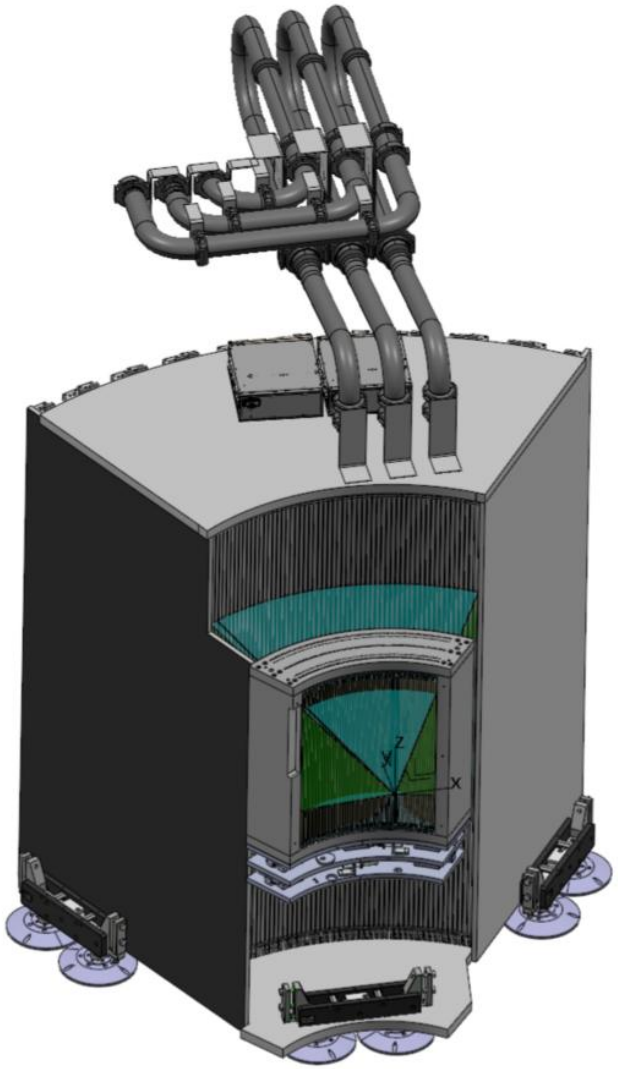


Radial Collimator

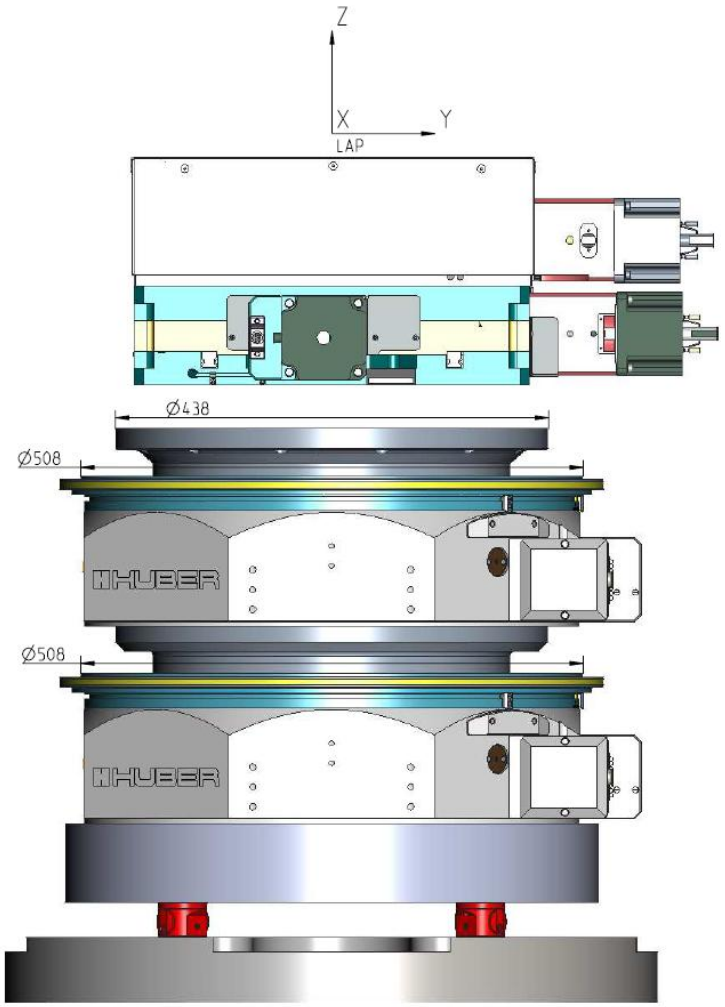


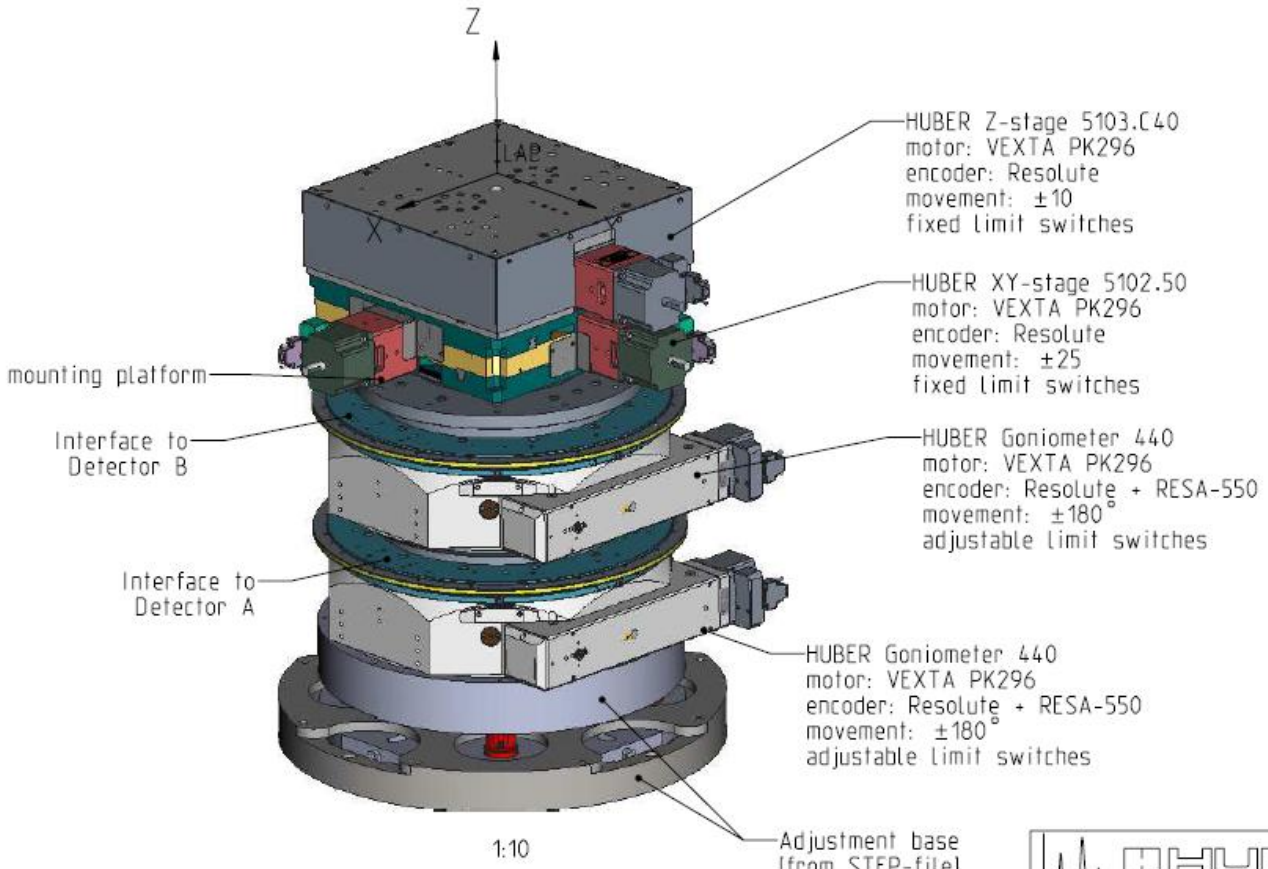


Detector A support structure



Sample stage





HUBER
X-RAY DIFFRACTION EQUIPMENT
SOMMERSTRASSE 4 D-83253 RIMSTING
PHONE+49-8051-68780 FAX-49-8051-687810

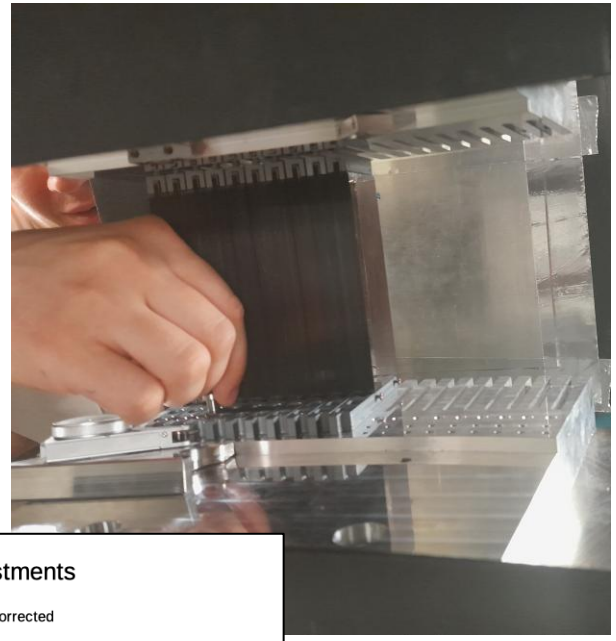
Analyzer test experiment at BOA

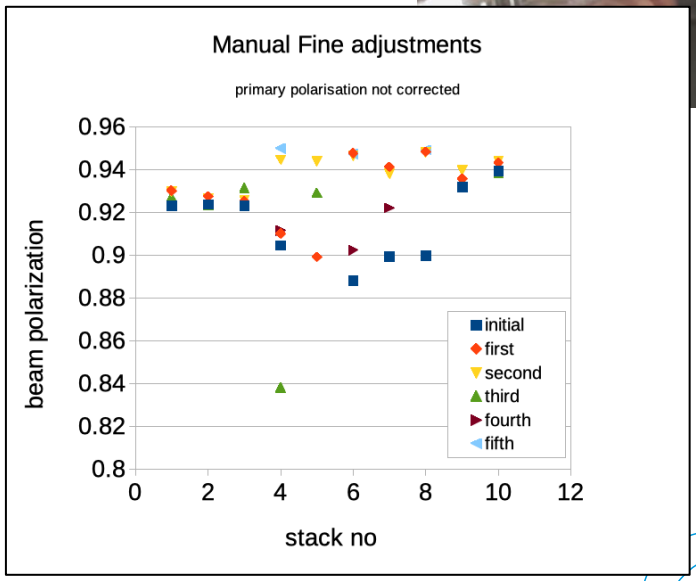
BOA: Experiment

- Aug 2025
- 10 stacks tested
- Spectrum more thermal than AMOR, closer to MAGiC condition

Results:

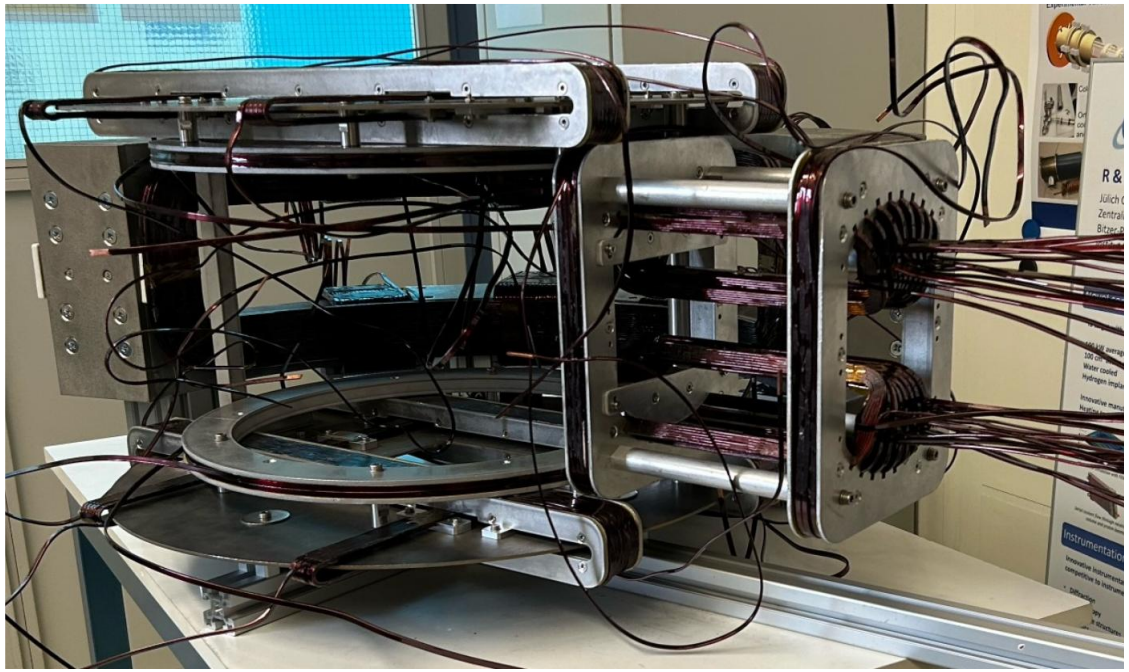
- Overall good performance
- Performance consistent with AMOR data
- Mechanical parts/fine alignment validated
- Bragg extinction at 5 Å observed, ISIS proposal for closer characterization at IMAT instrument





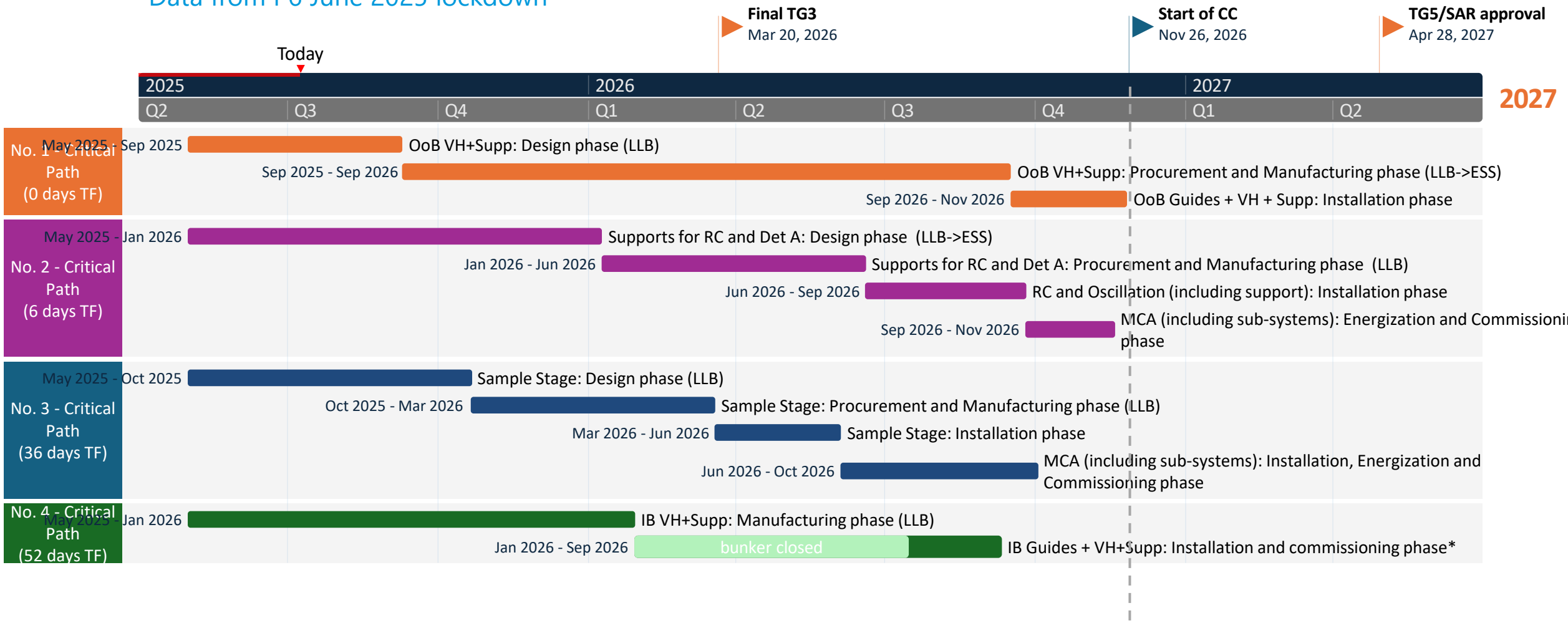
EUROPEAN SPALLATION SOURCE

Instrument operation challenges



Magic Critical Paths

Data from P6 June 2025 lockdown



Design phase ends at CDR approval
Procurement and Manufacturing phase ends at FAT closure of open points
Installation and Commissioning phase ends at SAT approval
TF: number days of **total float** to Instrument's TG5

*installation linked to first access after BOT. there's a potential to accelerate and install before BOT
Note: 2nd segment of Analyzer is part of the instrument scope but currently not linked to TG5 in P6

Action points

- Installation of the out-of-bunker vacuum housing. The installation service will cost >100k€ (44k€ for the iB VH installation). In principle can be done by ESS installation team for free*. Timeline vs costs
- If the financial matters regarding the Variox cryostat are settled between FZJ and ESS it should be moved from the scope of MAGiC instrument project to the Sample Environment group to avoid unnecessary waste of time for Qgate, documentation, etc.