

DREAM update for STAP

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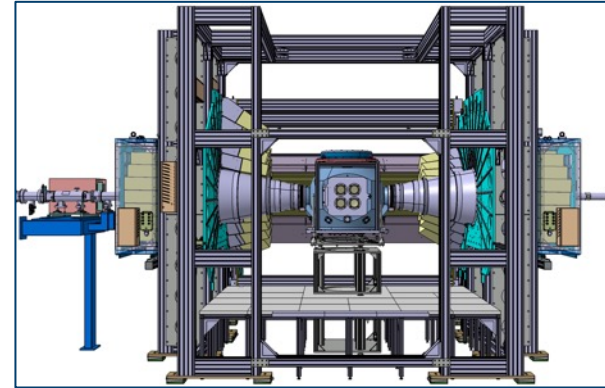
DREAM instrument

- **Partners: FZJ 76%, LLB 20%, ESS 4%**
- **Construction budget: 13.66 M€**
- **TG5: July, 2024**

Disc choppers (FZJ)
(PSC & BC)
FAT ongoing
Installation: Q4 2023
T0 Chopper (ESS)
• **Installed**

Sample vessel (FZJ)
• **Installed**

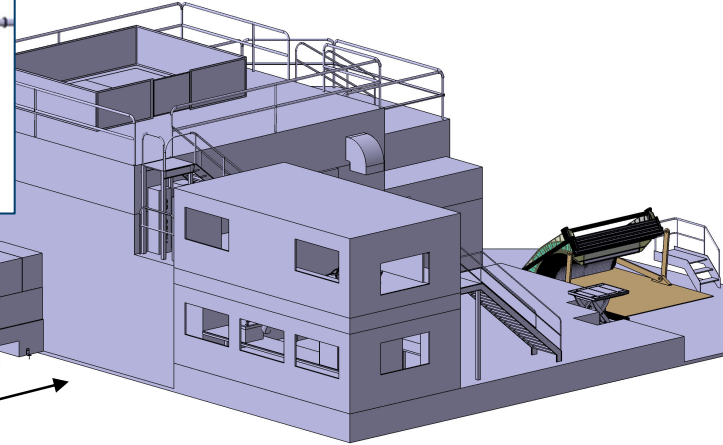
Vessel support (LLB)
• **Installed**



Detectors (FZJ)
• Installation: Q4 23 – Q1 24

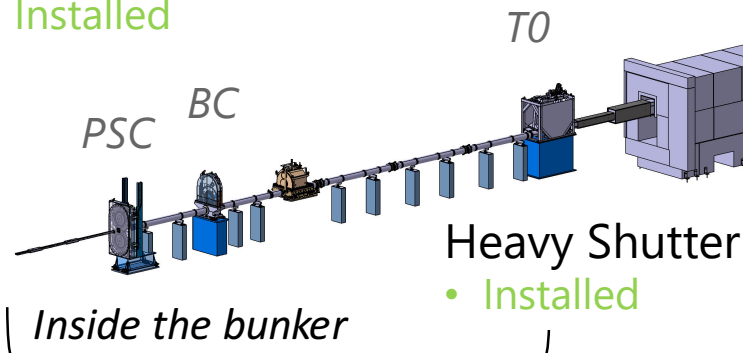
Detector frame (FZJ)
• **Installed**

Experimental cave (LLB)
• **Installed**



Control hutches and
sample prep lab (FZJ)
• **Installed**

NBOA (FZJ)
• **Installed**



Neutron Guides & Shielding
(FZJ, ESS)
• **Installed**

CEP: **Installed**
CUP: ongoing
PSS: Installation after CUP/CEP

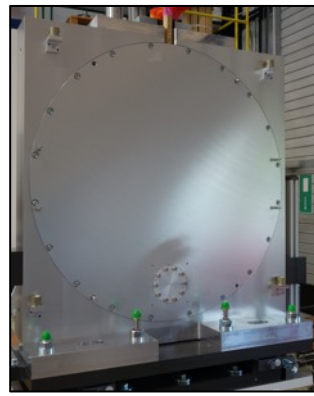
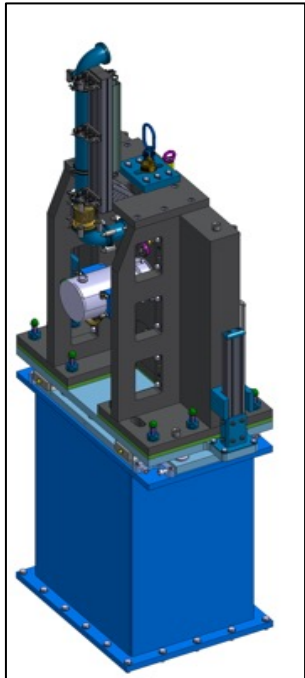
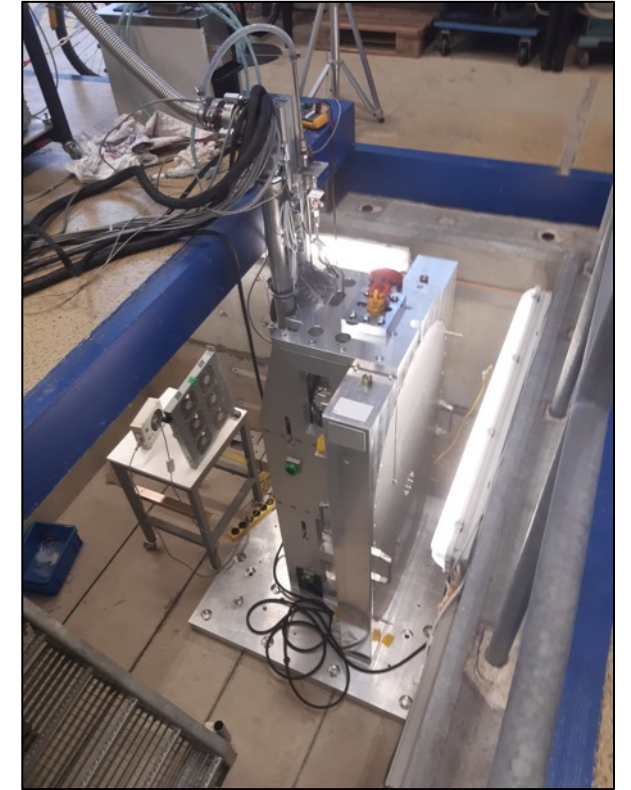
Bi-spectral switch
Beam monitors

Inside the bunker

Chopper system

Pulse Shaping Chopper (308 Hz) & Overlap Chopper (14 Hz)

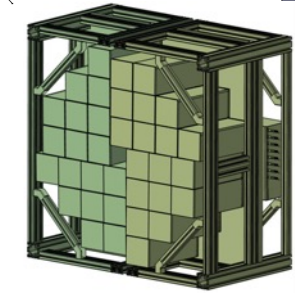
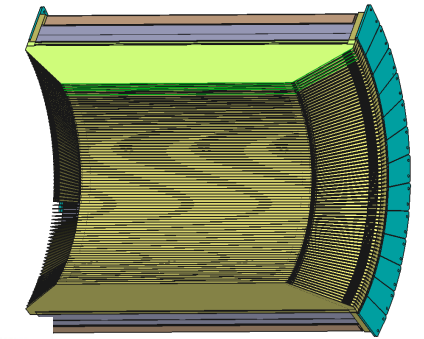
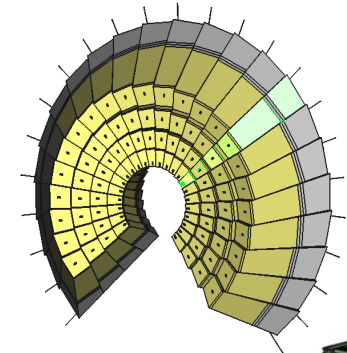
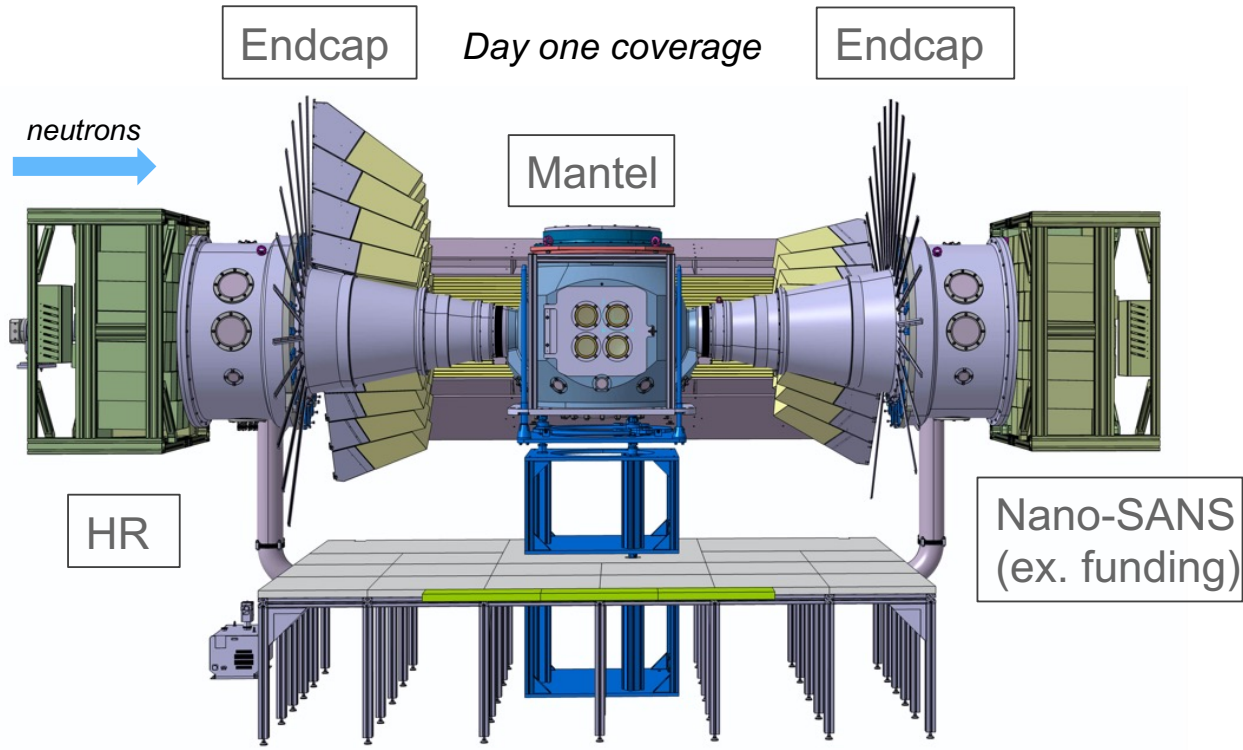
- PSC and BC choppers fully assembled at FZJ
- All three discs of PSC reached the target speed
- FAT tests are ongoing at FZJ




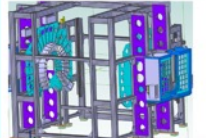
Band Control Chopper (112 Hz)

- New oval hub manufactured
- FAT tests ongoing
- If more time is needed for FAT, it can be installed later PSC

DREAM detectors

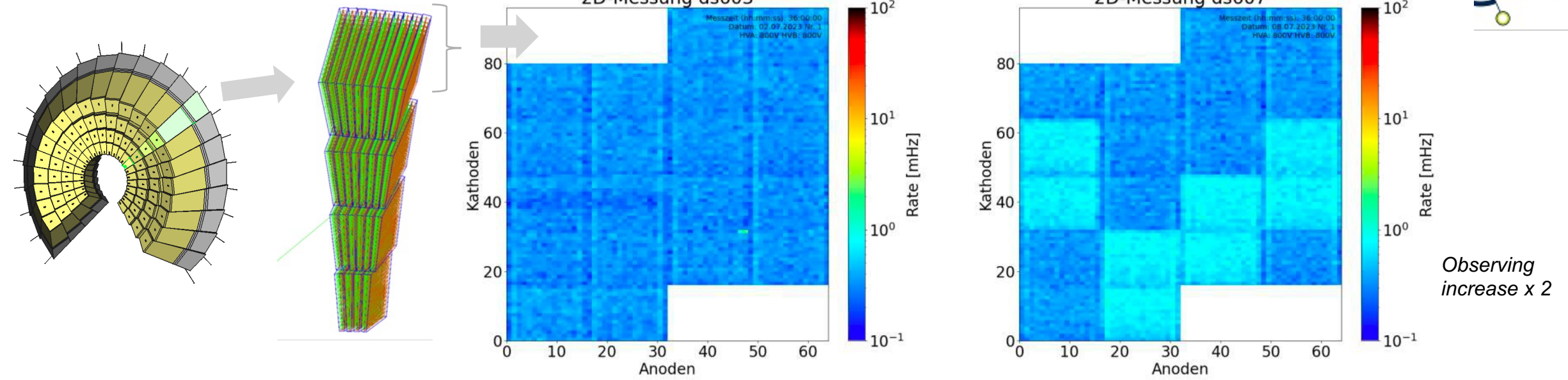


- Endcap & mantle first segments are successfully tested with neutrons
- Endcap: manufacturing completed
- Mantel: serial production is ongoing
- Endcaps will be delivered to Utgard in Nov. for repeating FAT
- Mantle can only be delivered on-site after rack is installed and CUP is finished

<p>DREAM HR and SANS Detectors</p> <p>Report on Design and Adaptation for 0-Serial Production</p> <p>07.07.2022</p>	<p>JÜLICH FORSCHUNGSZENTRUM</p>  <p>CDT</p>
<p>© 2022 CDT GmbH, DREAM HR and SANS DR - 1</p>	<p>Christian J. Schmidt, Martin Klein, Christoph Meier</p> 

Screenshot

FAT of endcap detectors



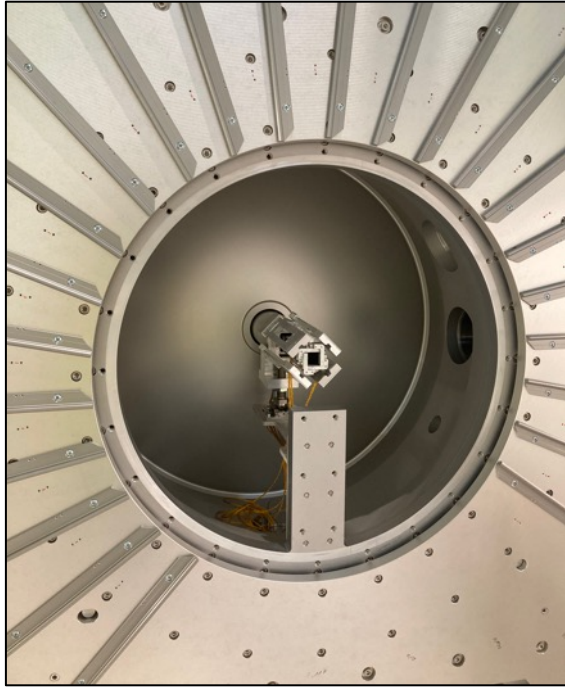
Average background < 1mHz per voxel

- All modules passed FAT within required quality specifications

Some areas show more background due to few ppm uranium in the sputter targets
New targets will be used for mantle modules in the future batches

Neutron guide installation complete

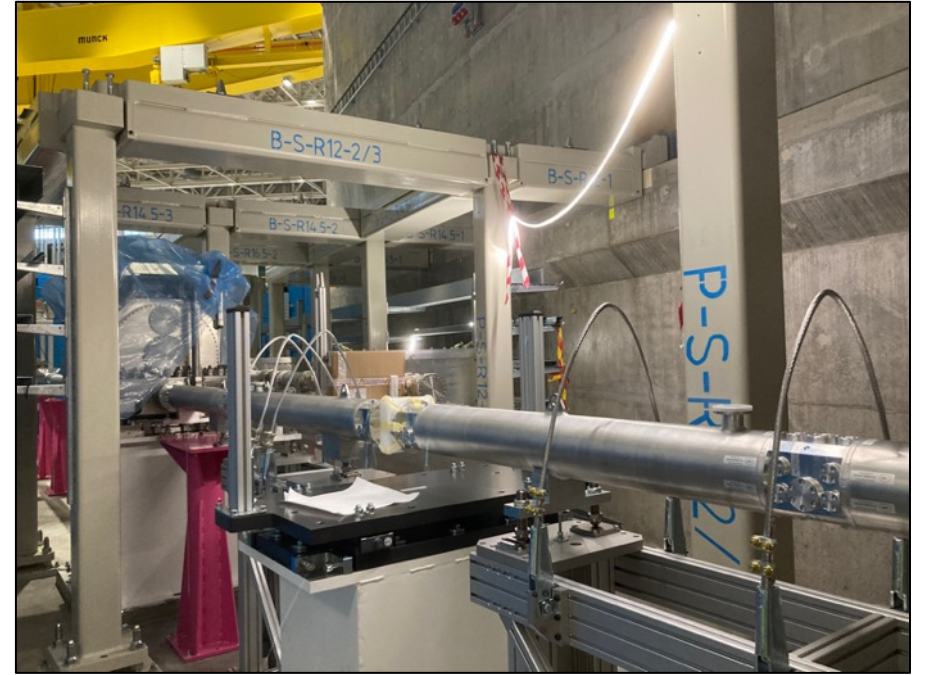
Slits & guide field



Polarizer support

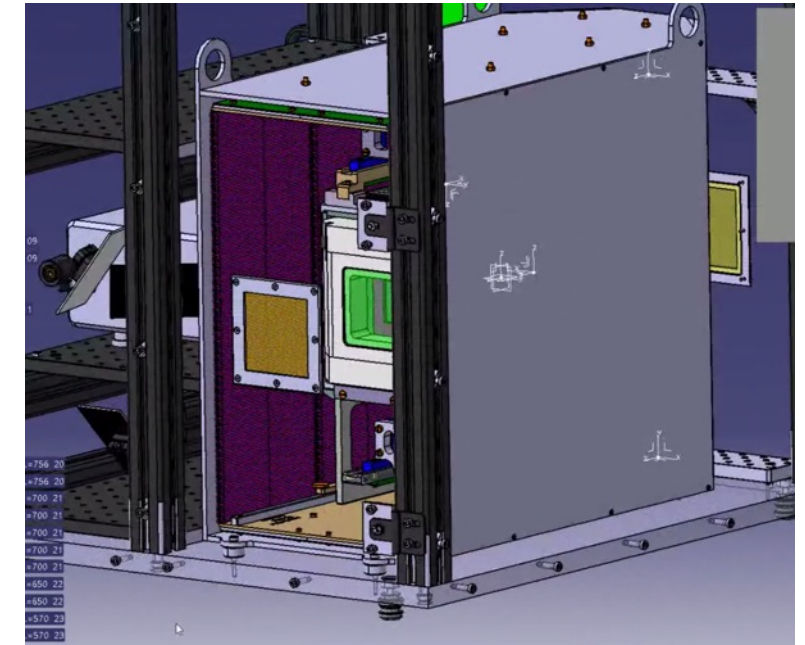
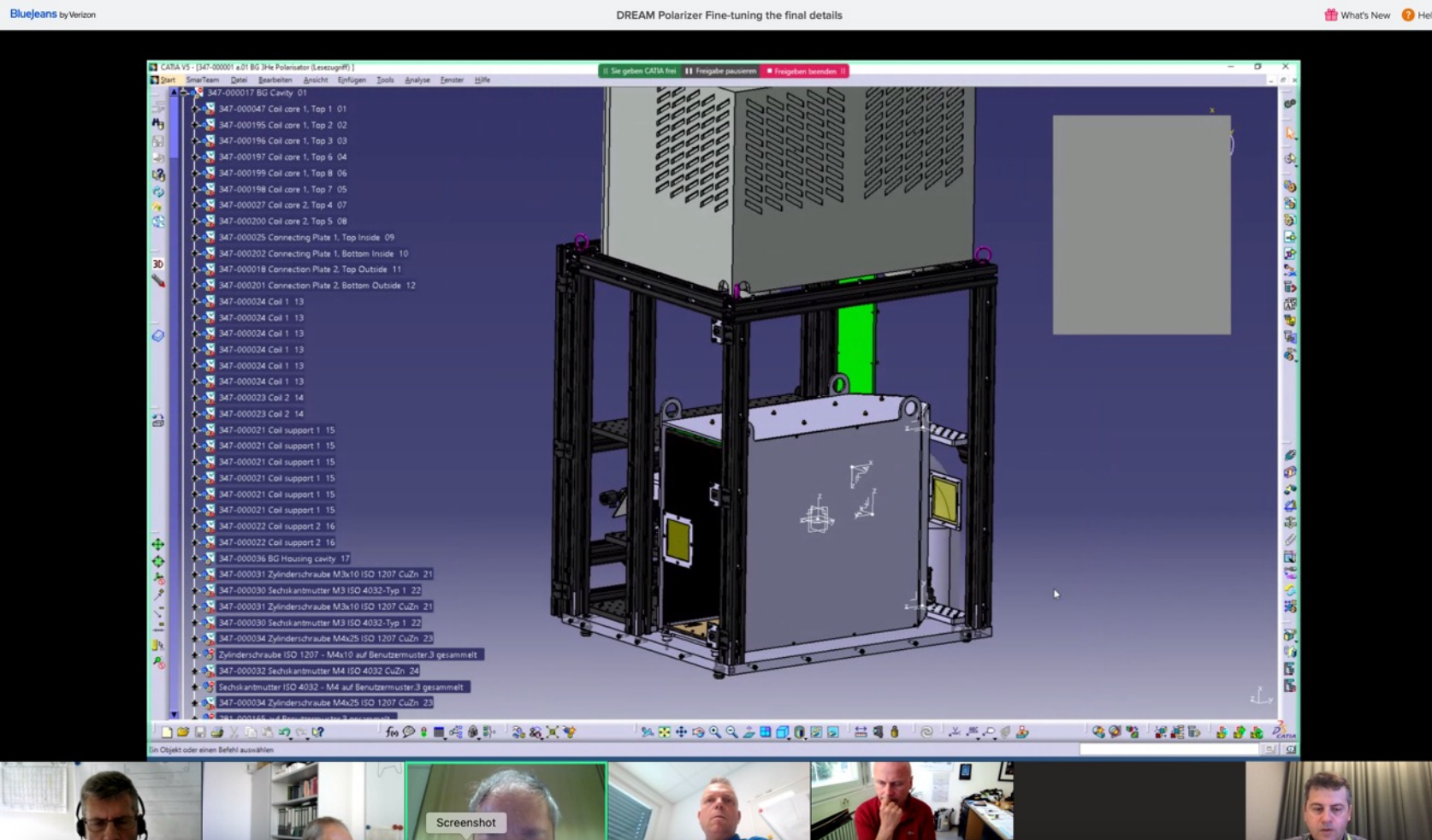


In-bunker guides



Cold neutron polarizer (RAC funding)

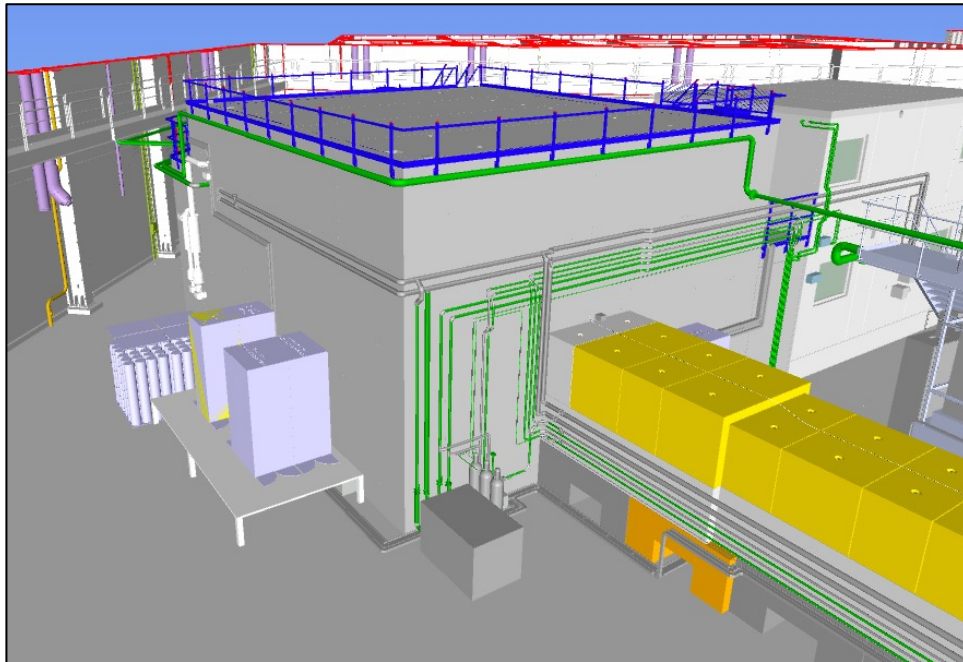
- CDR on 03.09.2023
- Start of manufacturing was approved
- Installation Q3 2023



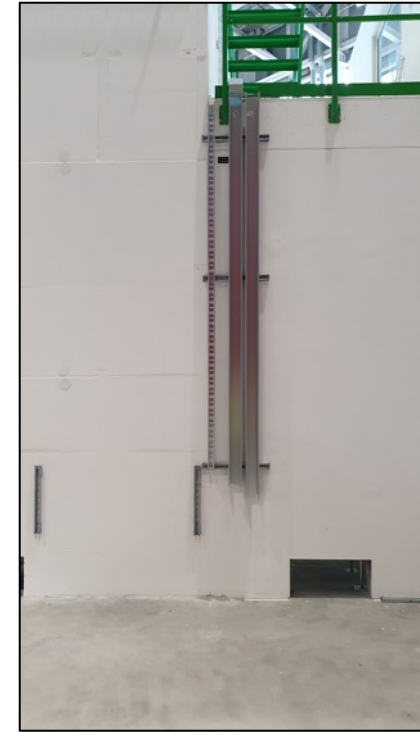
Common projects

- Common Electrical Project (CEP): complete
- Common Utility Project (CUP): started
- Common shielding project: complete
- Personnel Safety System (PSS): IRR scheduled

DREAM model with CUP infrastructure



CEP installation in DREAM cave



Other updates

- Final TG3 is complete
- Preliminary design for sample changer cryofurnace is accepted, quote is pending
- First science workshop will be organized in 2024
- Document for full detector upgrade was presented to ESS Science Director
- SA interviews are ongoing



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UPGRADING DREAM DETECTOR COVERAGE TO THE FULL SCOPE

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Issues

- Grouting issue with T0 chopper base (no impact on schedule)
- Delays with detector/monitor rack procurement (impact on schedule is not clear)