

# DREAM update for IKON18

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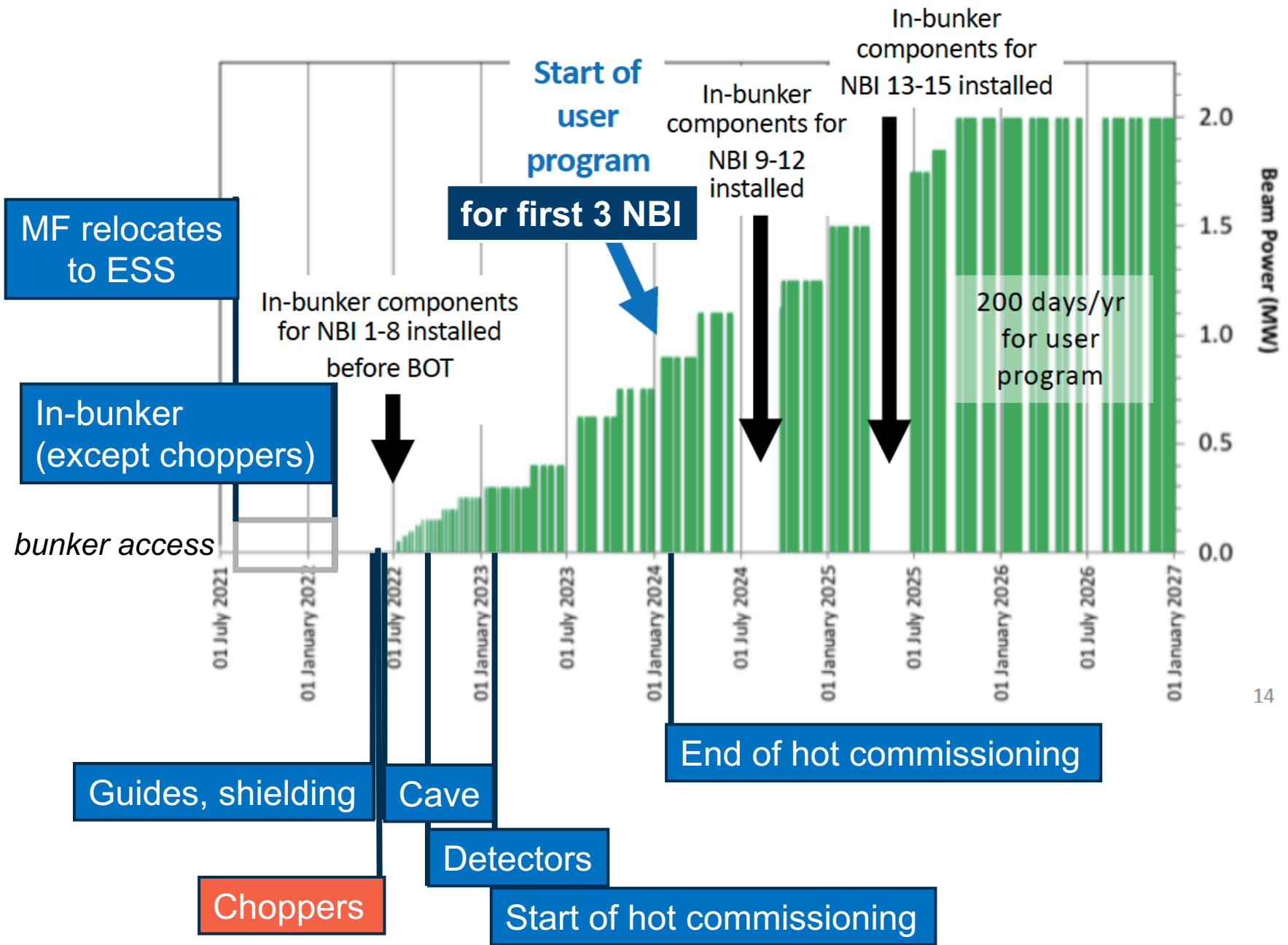
# Progress towards Final TG3

*still needs ESS approval*

Dec'18	Mar'19	May'19	Aug'19	Nov'19	Mar '20	June '20	Oct '20	Dec'20
<b>IDR</b> - Bi-spectral switch - Bunker wall feedthrough - Detector support structure - Detectors - Sample vessel - Vessel support <b>CTV</b> - Chopper system (excluding T0 chopper)	<b>Sub-TG3.1</b> - Bi-spectral switch and BBG optics - Detector support structure - Detectors - Sample vessel - Vessel support	<b>CTV</b> - Cave - Bunker wall feedthrough - Neutron guides inside the bunker  <b>Sub-TG3</b> - NBOA	<b>CTV</b> - Neutron guides outside the bunker	<b>CTV</b> - SEE (ESS response received)	<b>CTV</b> - T0 Chopper - Beam monitors - Hutch + Sample preparation lab	<b>Sub-TG3.2</b> - BWI -PSC + OC choppers -Heavy Shutter -Beam monitors	<b>Sub-TG3.2</b> - T0 Chopper	<b>Sub-TG3.3</b> - BC Chopper - Neutron guides (in-bunker and out-of-bunker) - Beam stop - Instrument control systems (EPICS) - Vacuum systems (ESS solution) - Relevant MCA - PSS - Interface of the ESS vacuum system - Facility infrastructure connections and utilities (not yet dealt with) - Drawing package of complete system  <b>Final TG3</b>
								

- Date for the Final TG3 was moved to December 2020
- New proposed schedule allows faster manufacturing of components (i.e. choppers)
- No affect on installation process

# Schedule

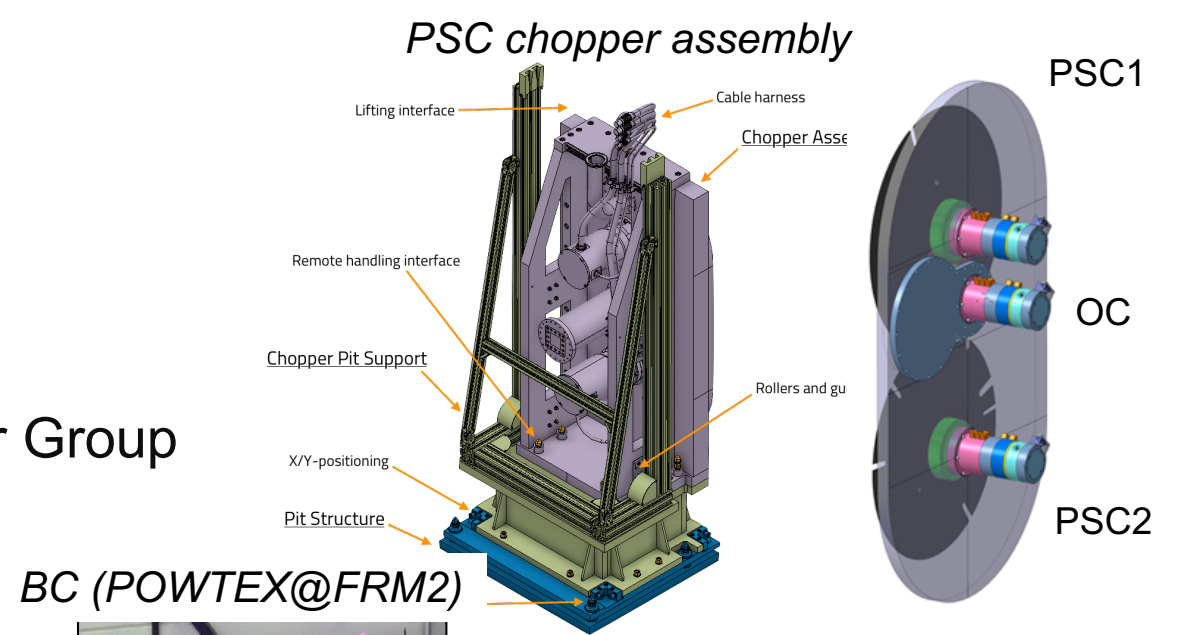


- Completion of chopper installation date (Jun-22) is later than the bunker access date (Feb-22)

# Chopper system

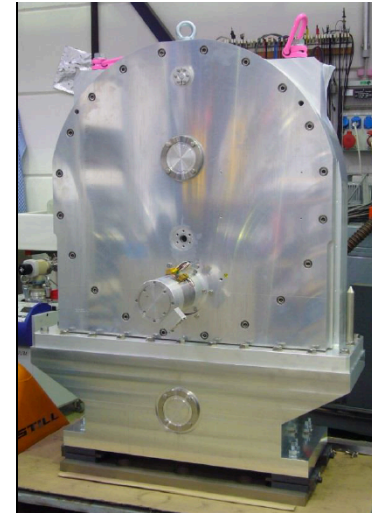
## Pulse Shaping Chopper (PSC, 308 Hz) & Overlap Chopper (OC, 14 Hz)

- Design accepted. Procurement completed.
- Manufacturing and installation by Jülich Chopper Group
- Interfaces with guides and ODIN are defined



## Band Control Chopper (BC, 112 Hz)

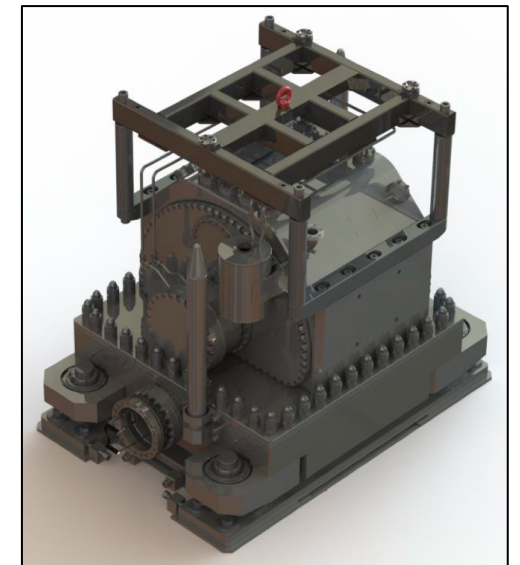
- Design accepted. Procurement completed.
- Manufacturing and installation by Jülich
- Remote handling w/o breaking guide vacuum



## T0-Chopper

- ESS prototype will be used (CTV by March 2020)
- Design finalized by October 2020 (SubTG3)

*T0 prototype (ESS)*

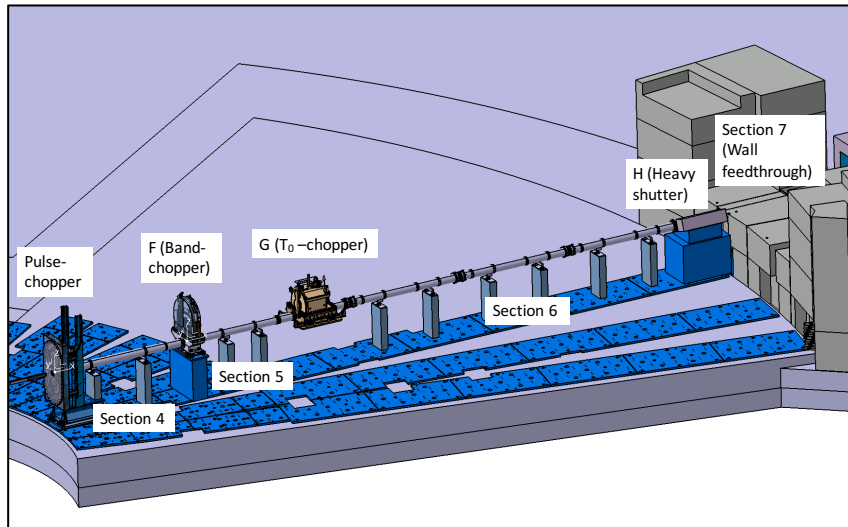




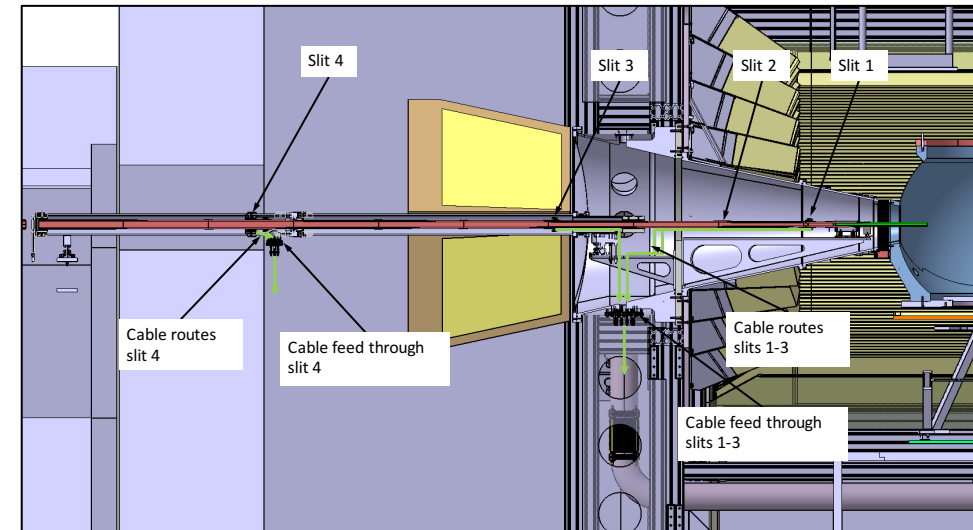
# Neutron guides

- Design accepted by ESS (CTV)
- Procurement is ongoing (quotes expected in March 2020)
- Interface with choppers and monitor inside bunker
- Interface with monitor, cave, HR-detector, shielding outside bunker

*Inside bunker*



*Outside bunker*

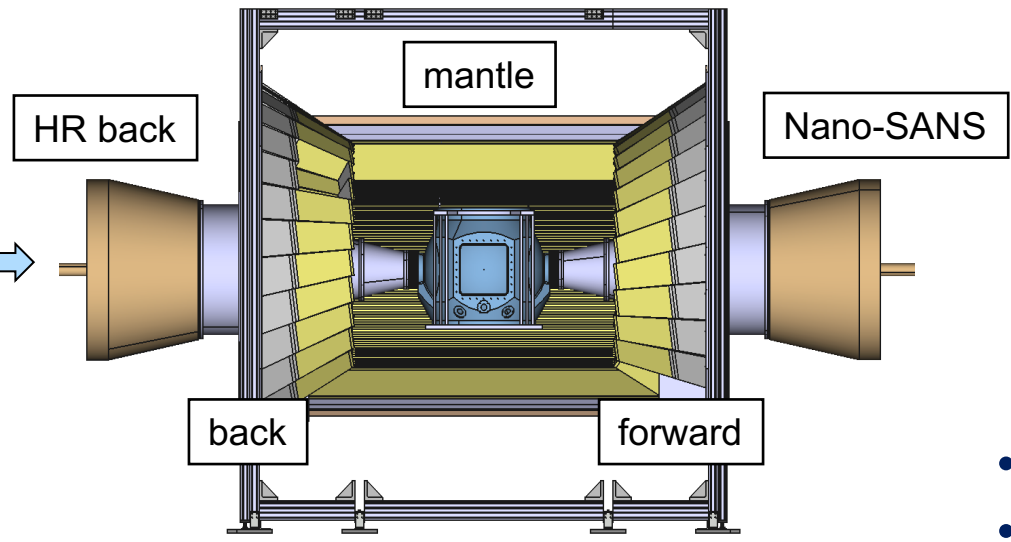


Bunker access	Chopper base	In-bunker guides
Aug.21 Feb.22	Sept. - Oct. 2021	Sept. - Oct. 2021

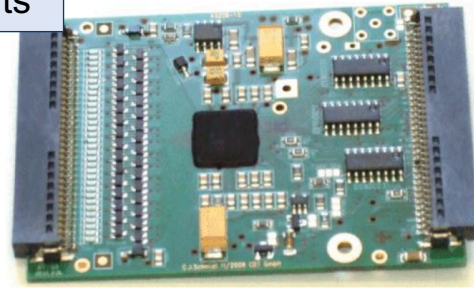
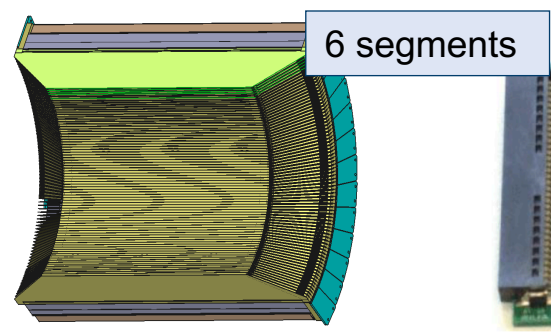
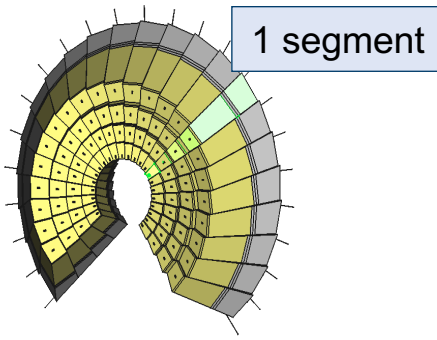
D01 available to Partners	Out-bunker guides	Guide shielding installed	Cave
03.06.2021	Nov. 21 - Mar. 22	Jun. 22	Jun.21 – Jun.22

# Detectors

Complete detector coverage



## Development of first modules and readout electronics (Sept. 2017)



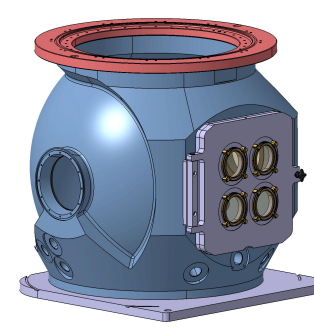
- End-cap is successfully tested with neutrons (July 2019)
- Mantle & readout electronics will be tested in May (TRIGA)
- Procurement of entire system starts in Q2 2020

	back/forward	mantle	HR back
Manufactured	May - 2021	May - 2021	Apr. - 2022

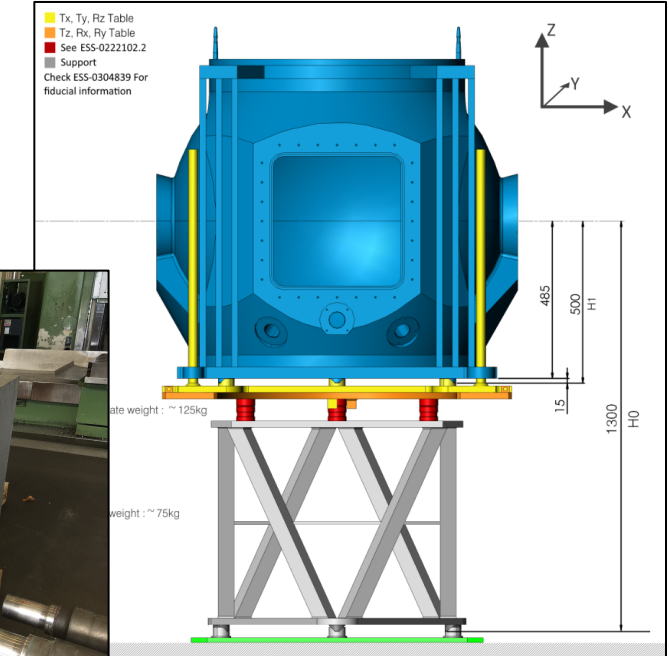
Cave installed	Detector support installed	Detectors installation starts	Detectors installation completed	Hot commission/ First science
Jun. - 2022	Jun. - 2022	Jun. - 2022	Sept. - 2022	Jan. - 2023

# Sample vessel

- Compatible with cryo-pump for future upgrade
- Compatible with standard SAD flanges
- Sample support (LLB)
- Downscaled prototype was manufactured
- First parts have arrived to FZJ

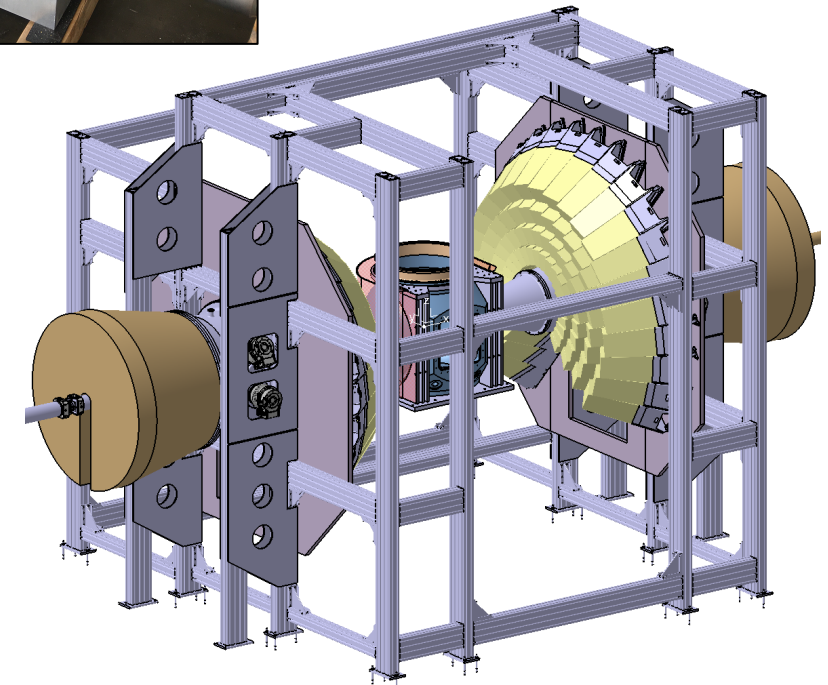


# Sample vessel support



# Detector support

- Designed for full detector coverage
- Procurement is done



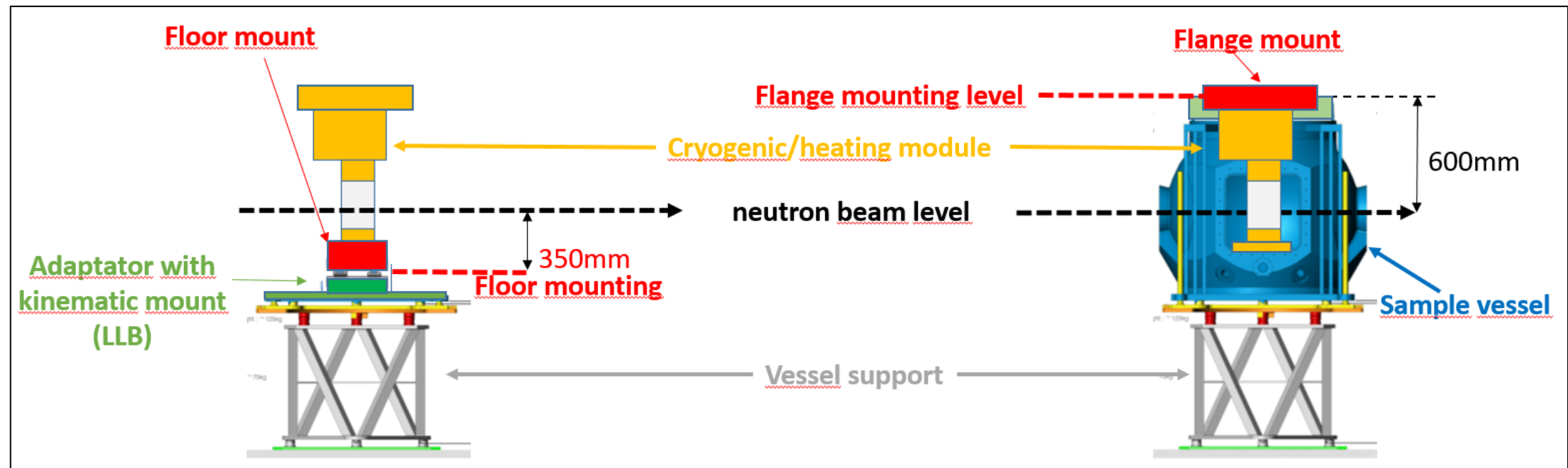
Cave installed	Detector support installed	Sample vessel & support installed	Detectors installation starts	Detectors installation completed
Jun. - 2022	Jun. - 2022	Jun. - 2022	Jun. - 2022	Sept. - 2022



# DREAM Specific SEE: Cryofurnace with Sample Changer

- T = 4K-800K
- 20 samples
- Flange & floor mounts

SEE Procured	SEE Manufactured	SEE delivered to ESS	Sample vessel & support Installed	Detectors Installation completed
Nov. - 2020	May - 2021	Sept. - 2021	Jun. - 2022	Sept. - 2022



# Project risks and issues



1. The final installation of choppers is later than the bunker access
2. Final TG3 is delayed, but no effect on installation dates
3. Difficulties in progress of designing PSS
4. Cost of detectors might be exceeded