

DREAM update (IKON19)

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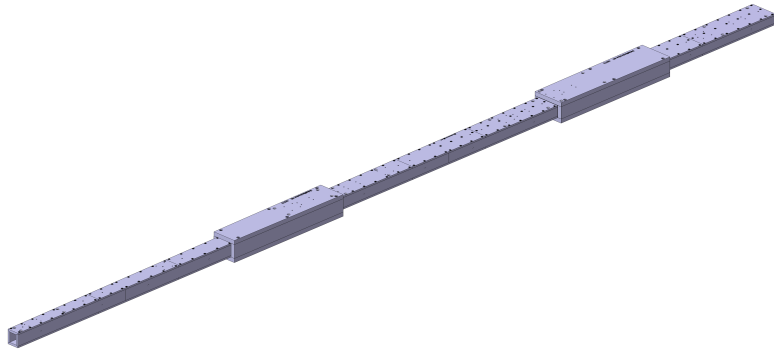
New TG dates

- Driven by guide procurement
- No change of TG5 date

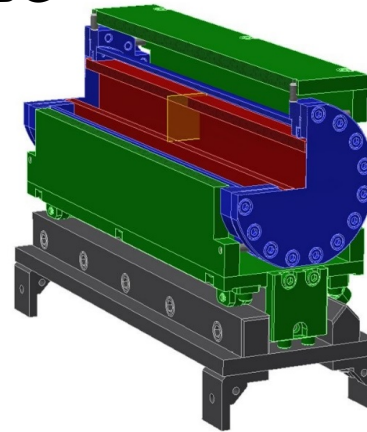
Oct '20	Dec'20	Jan'21	Feb'21	Mar'21	April' 21	May' 21	Aug' 21
Sub-TG3.2	Sub-TG3.3	Sub-TG3.4	IDR	Sub-TG3.5	Sub-TG3.6	Sub-TG3.7	Final TG3
Beam monitors	BC Chopper	Common shielding (ESS)	Cave	BWI	Cave	Neutron guides (in-bunker)	Neutron guides (out-of-bunker)
PSC + OC choppers	BBG				Beam stop	Hutch + Sample preparation lab	Drawing package of complete system
Heavy Shutter (ESS)					PSS	Facility infrastructure connections and utilities	Instrument control systems (EPICS)
					Sample environment	T0 Chopper (ESS)	
					Relevant MCA		
					Vacuum systems (ESS solution)		
					Interface of the ESS vacuum system		

Neutron Beam Optics Assembly / Bridge Beam Guide / Bi-spectral Switch

NBOA



BBG



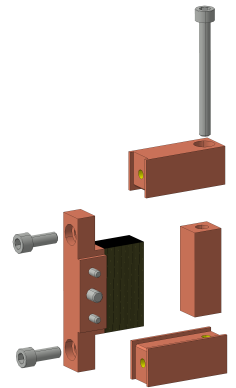
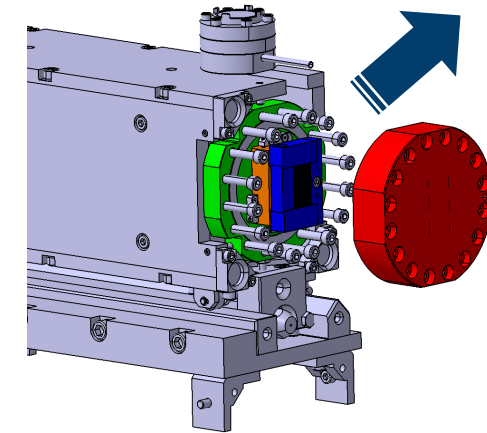
Optics

Pressure vessel

Alignment frame

Rail assembly

Bi-spectral switch



Bi-spectral switch manufactured	NBOA delivered to ESS	BBG installed	Bi-spectral switch installed
Q4 - 2020	Dec. - 2020	Aug. - 2021	Aug. - 2021

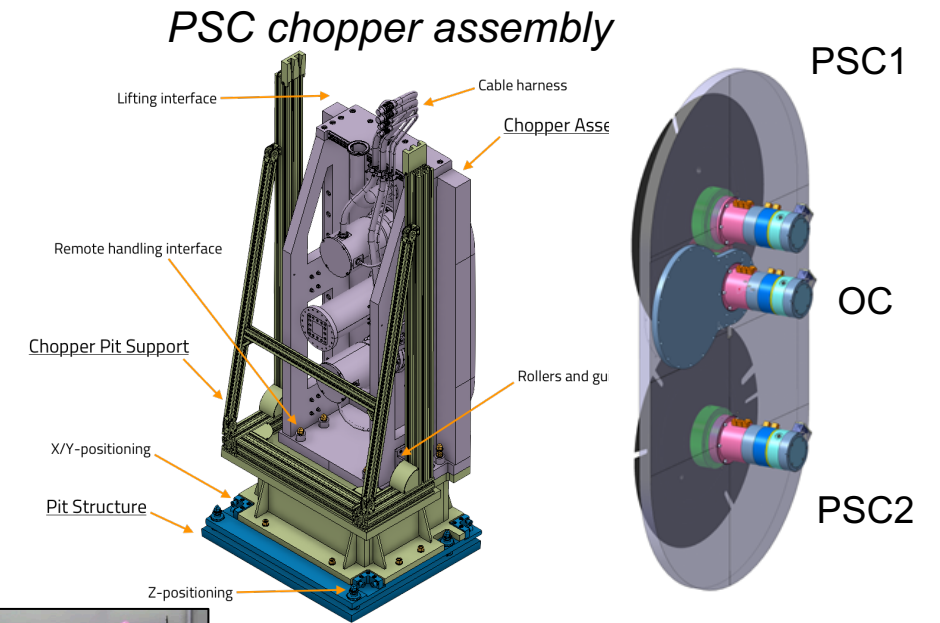
Delays of neutron tests of NBOA and first wafers for bi-spectral switch

- Delays in delivery NBOA to ESS. No effect on TG5
- No effect on installation date of bi-spectral switch
- BBG kick off meeting this week

Chopper system

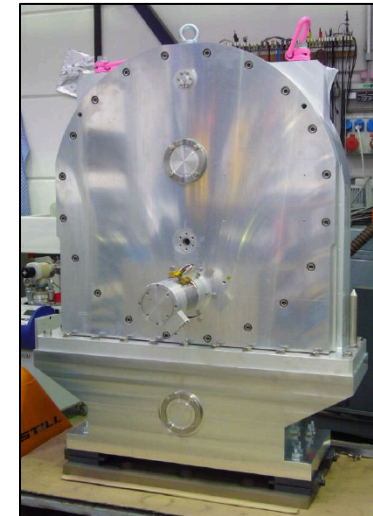
Pulse Shaping Chopper (PSC, 308 Hz) & Overlap Chopper (OC, 14 Hz)

- Design accepted. Procurement completed.
- Manufacturing and installation by Jülich Chopper Group
- Interfaces with guides and ODIN are defined
- IDR in June 2020, SubTG3 is planned for October



Band Control Chopper (BC, 112 Hz)

- Design accepted. Procurement completed.
- Manufacturing and installation by Jülich
- Remote handling w/o breaking guide vacuum
- SubTG3 is planned for December

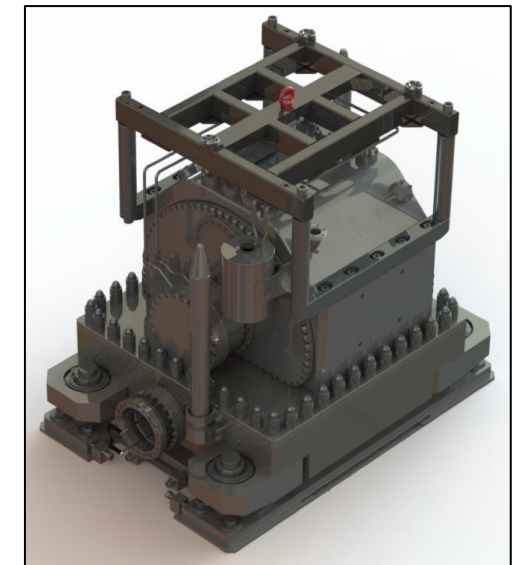


BC (POWTEX@FRM2)

T0-Chopper

- ESS prototype will be used (CTV approved)
- COVID-19 delays
- SubTG3 is planned for October

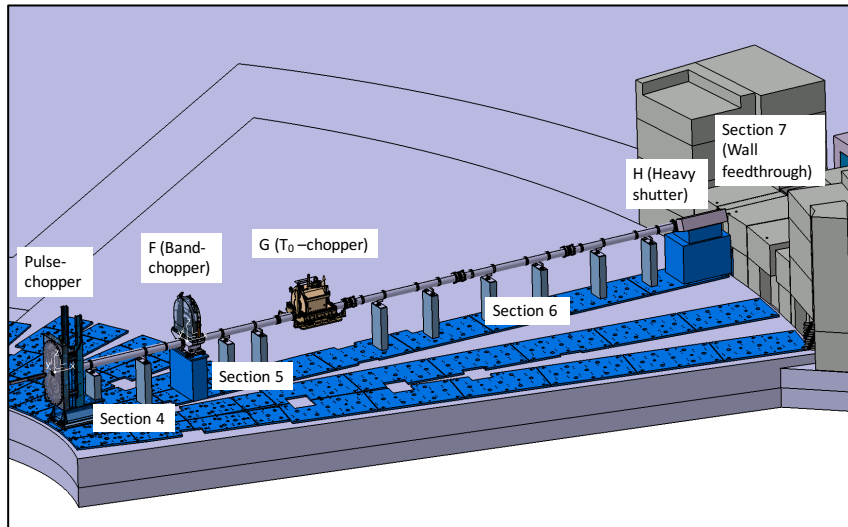
T0 prototype (ESS)



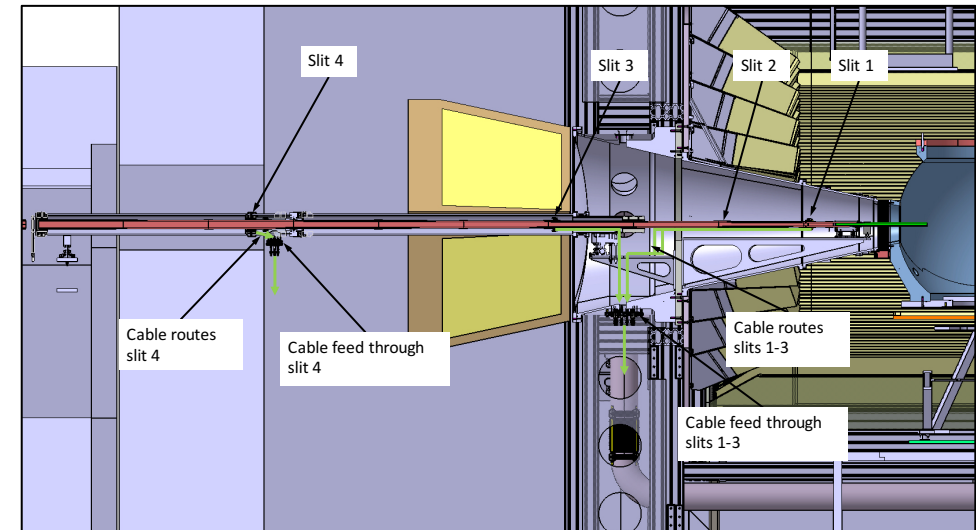
Neutron guides

- Procurement is completed
- SwissN will deliver in- and out-bunker guides
- Installation for in-bunker guides is prioritized to meet bunker access dates
- Out-bunker guides will be delivered later, but installation is still on time

Inside bunker



Outside bunker



Bunker access	Chopper base	In-bunker guides
Oct.21* May.22	Oct. - Dec. 2021	Sept. - Oct. 2021

**latest ESS estimate*

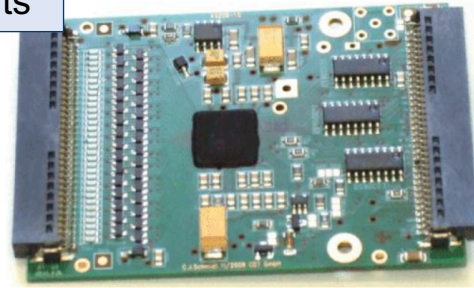
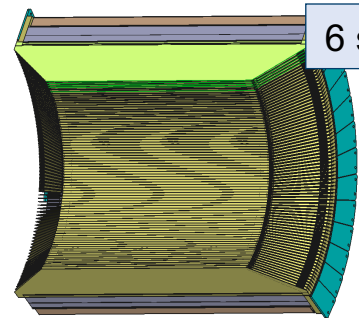
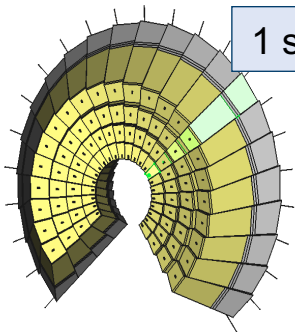
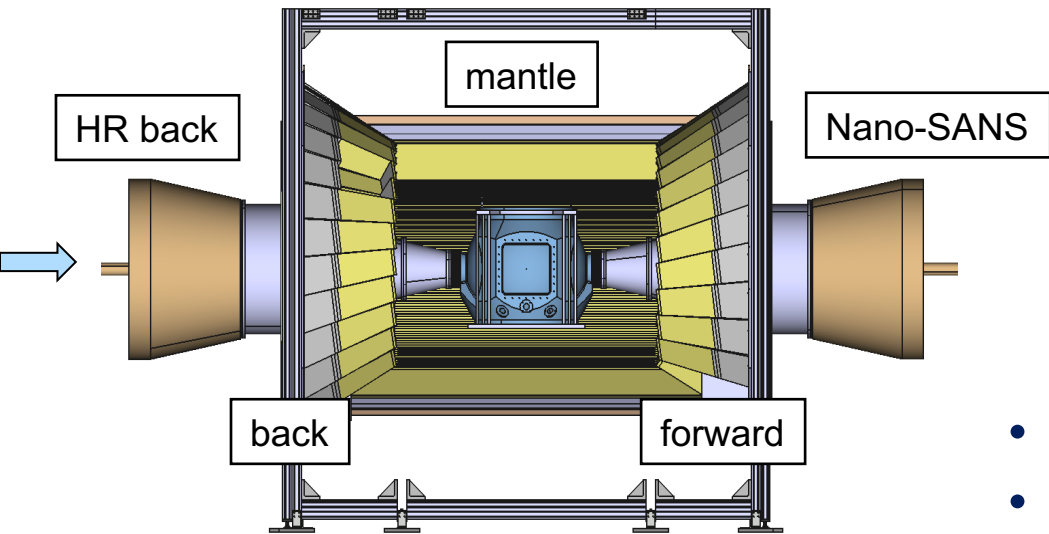
D01 available to Partners	Out-bunker guides	Guide shielding installed	Cave
03.06.2021	Apr. 22 - Jul. 22**	Jun. 22	Jun.21 – Jun.22

***last piece inside the cave*

Detectors

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

Complete detector coverage



- End-cap is successfully tested with neutrons (July 2019)
- Mantle & ESS readout electronics tests delayed to Q4 2020
- Procurement is complete, except for HR detector
- Finalizing HR det. requirements

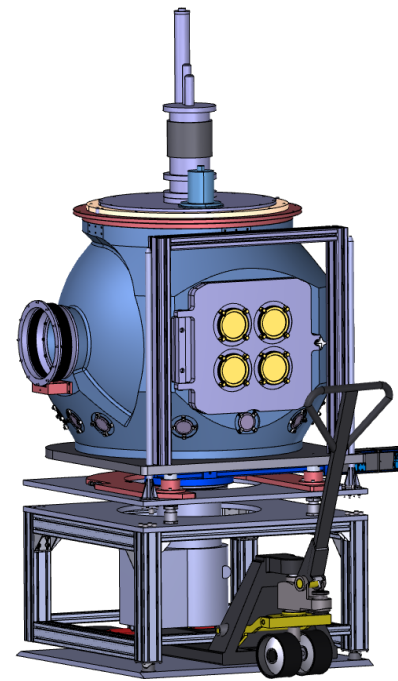
	back/forward	mantle	HR back	Nano-SANS**
Manufactured	May - 2021	May - 2021	Apr. - 2022	Q3 - 2023

** not part of the scope, external funding

Cave installed	Detector support installed	SubTG4	Detectors installation completed	Hot commission/ First science
Jun. - 2022	Jun. - 2022	Jun. - 2022	Sept. - 2022	Jan. - 2023

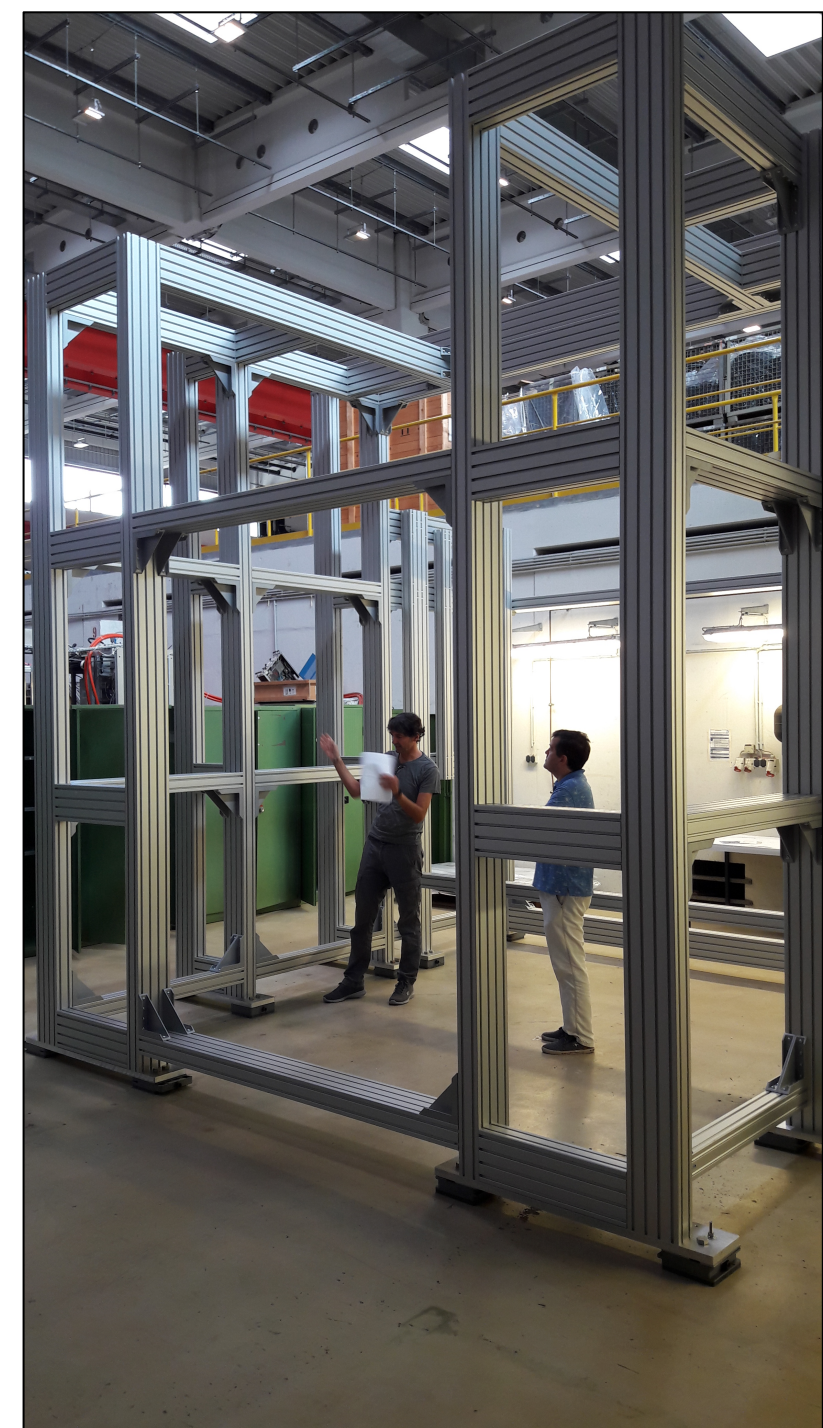
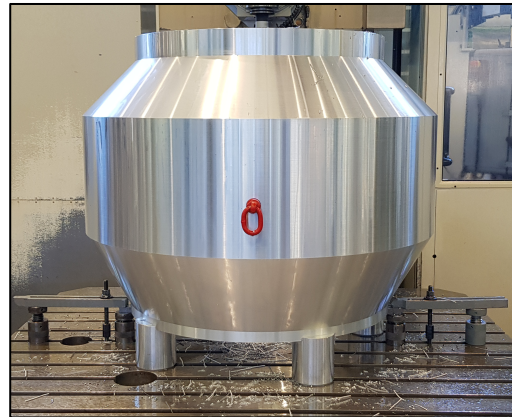
Sample vessel

- Compatible with cryo-pump for future upgrade
- Sample support was modified (LLB)
- Compatible with standard SAD flanges
- Manufacturing delayed by 3 months, priority is given to moderator
- No effect on installation date



Detector support

- Designed for full detector coverage
- FAT at ITEM in June 2020
- Installation in Jülich is ongoing

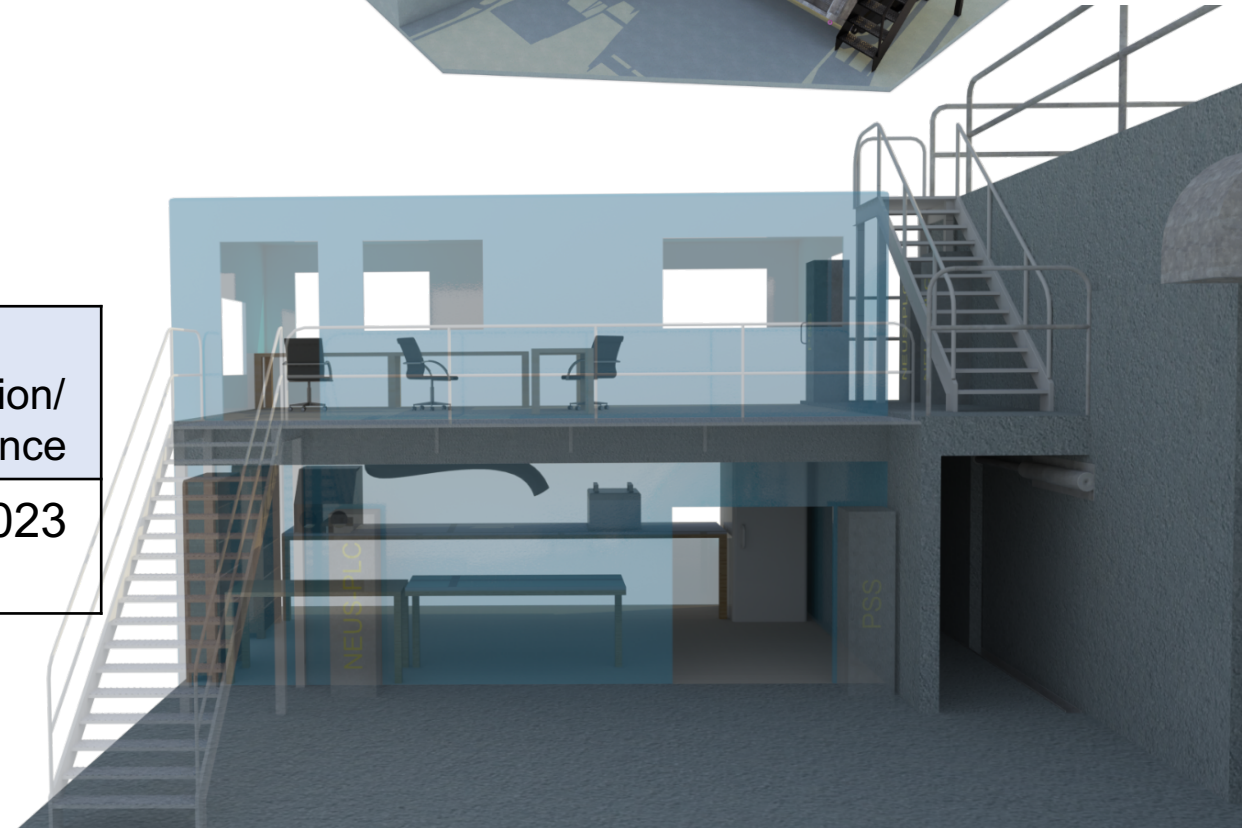
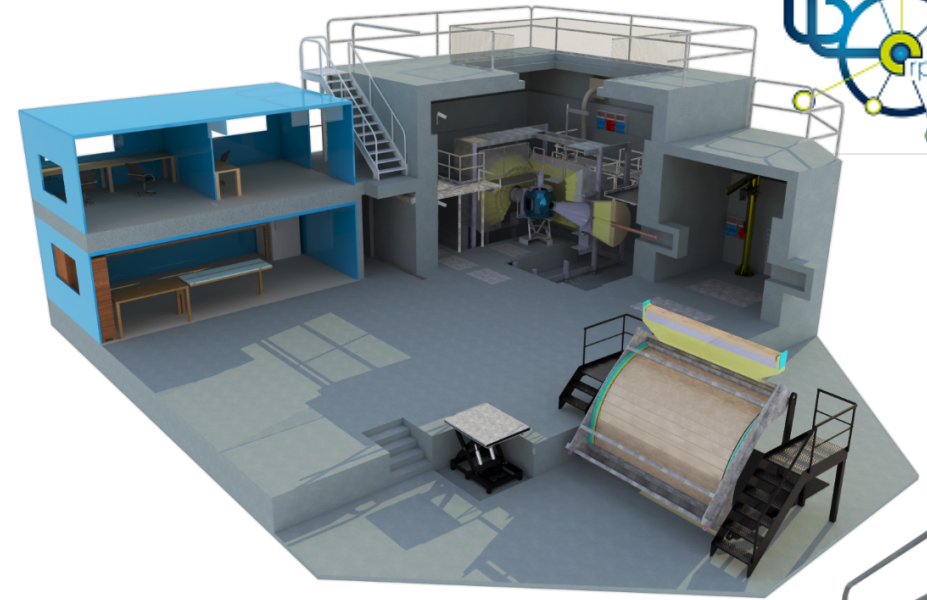


Cave installed	Detector support installed	Sample vessel & support installed	Detectors installation starts	Detectors installation completed
Jun. - 2022	Jun. - 2022	Jun. - 2022	Jun. - 2022	Sept. - 2022

Hutch & Sample preparation lab



- Now part of FZJ WP
- CTV was accepted by ESS
- Internal design review at FZJ before procurement
- First quote is received



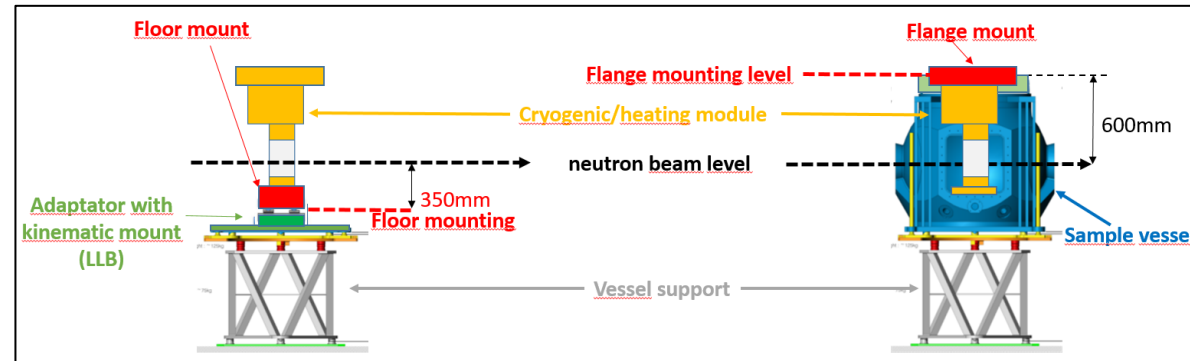
D01 available to Partners (with crane)

26.07.2021

Cave installed	Hutch & sample lab installed	Hot commission/ First science
Jun. - 2022	Jun. - 2022	Jan. - 2023

DREAM Specific SEE: Cryofurnace with Sample Changer

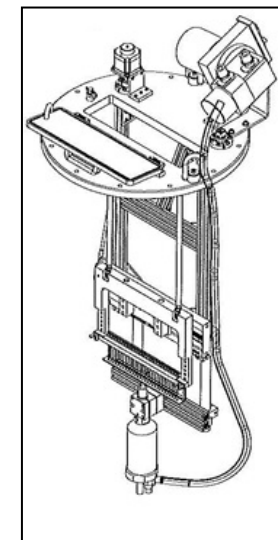
- T = 4K-800K
- 20 samples
- Flange & floor mounts



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

- Call for tender is published (end of tender Oct. 5th)
- Relaxed requirement: samples are not pre-cooled
- Fallback option: simple stage with cryo-jet and/or heat gun
- Sample changer capability is crucial for a fallback option

NOMAD @ SNS



Other updates

- Call for tender for cave is out (closing in October)
- Procurement of CDT beam monitors is complete (SubTG3 in October)
- There is a progress with PSS
- External funding was obtained for polarizer and SANS detector
- Work package exchange between LLB and FZJ (sample prep lab – elevated floor)

SE Priorities for Diffraction

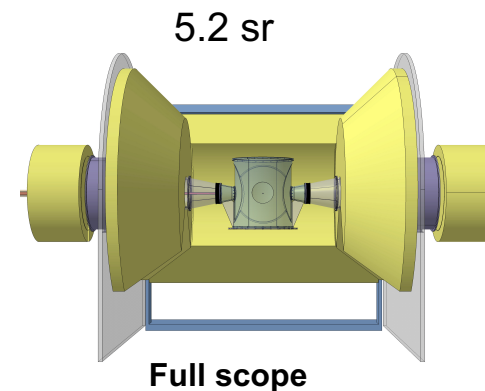
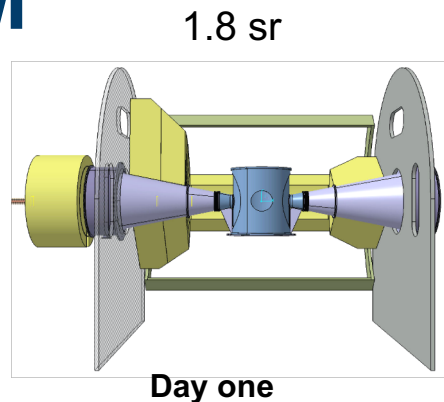
DREAM



System	Details	partners	comment	status
Cryofurnace	Instr. specific; 20-position changer	LLB	CTV completed; challenging specs.	Green
Wet Cryostat & heatgun-cryojet	Standard Orange Cryostat required for high T; added 9/2020	LLB	2 nd hand, OC sample sticks available, mechanical & control integration started	Green
Magnet	Asymmetric 8T + Dilution / ³ He	LLB	8T: CTV completed, LT: prepare CTV	Green
hi-p: clamp, PE	2, 20 GPa + low T	LLB	TA ready to be activated	Yellow
hi-p: PE, DAC	20, 50 GPa (RT and low T)	ESS/SNS	PE available with specific inserts (RT)	Green
Gas Processing	Automated	EE	commissioning started with partner	Green
Electrochemistry	Multi-parameter cell	EE	TA recently activated; some C-19 impact	Green

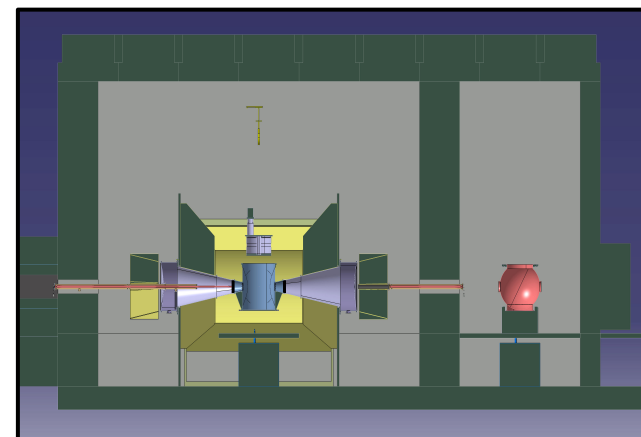
Upgrade priorities for DREAM

1. Complete detector coverage (partly funded by RAC)



2. Second sample station

- High-pressure
- Laue camera
- Multi purpose station



3. Polarizer cell for thermal neutrons and analyzer

(cold neutron polarizer is funded by RAC)

