

Updates for DREAM instrument (October 2025)

This report describes the major activities of the project since the last STAP meeting in April 2025.

Schedule update

The current planning assumes full local and integrated testings of DREAM components by November 2025, followed by a pre-TG5 meeting mid December 2025 and a combined TG5-iSRR meeting end January 2026. The instrument should be ready to take neutrons shortly after beam-on-target (BOT), which is scheduled for the end of March 2026.

Instrument installations

The last in scope components of the DREAM instrument have been delivered and installed, the mantle detector unit in June and the Ar-CO₂ gas system for the detector in September. The FPGA boards of detector units have been replaced with the newest chips and flashed with an updated version of the firmware, so all the modules have similar electronics so to ease the work for readout integration.

The standardized Ar-CO₂ panel feeding the monitors will be set up by DetG. The monitors and their services were installed earlier this year, the bunker beam monitor rack was finalized and energized in October with the help of DetG who will also provide help with the relevant documentation.

The patch panels for special sample environments are delayed and will be delivered by CEP early 2026.

Safety systems installations: PSS, REMs & ODH

The PSS installation inside the cave is done. The cave roof has been reinstalled after the mantle detector delivery, and the PSS team will set up the roof PSS lock in October. The ODH sensors inside the cave and near the Ar-CO₂ gas panel are operational. The REMs monitoring is installed.

Local (LSAT) and Integrated (iSAT) Site Acceptance Tests

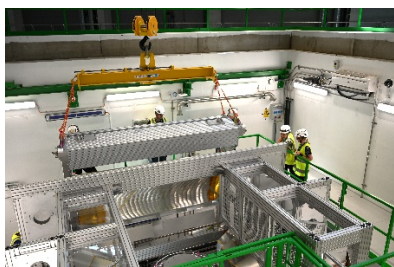
The Heavy Shutter LSAT was passed in September.

The T0 chopper has been locally tested by the chopper group in September at 14 and 28Hz. The integrated SAT of the full chopper system (PSC-OC, BC, T0) is expected early November.

The local SAT for the MCA components (slits, reservations for future positioning systems) will be scheduled later in November, to be followed immediately with the iSAT of the slits.

The LSAT and iSAT of the beam monitors will be scheduled soon in collaboration with DetG and will probably take place in November. Integration work on beam monitor firmware is ongoing, in parallel with the other Tranche 1 instruments equipped also with CDT I-BM monitors.

Finally, the LSAT of the detector units started mid-October, to be followed end November by the iSAT.



Figures 1: Craning of mantle detector to its final position – Closing of the cave roof - Ar-CO₂ gas panel for detector inside the cave.

Sample preparation lab.

The installation of benches and cabinets in the sample preparation hutch is ongoing. Basic equipment (vacuum cabinets for air-sensitive samples, tools, binocular microscope) have been ordered in prevision to the Hot Commissioning activities.