

n_TOF Report at the 63rd Meeting of the INTC

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Outlook

Update for the main LS2 activities

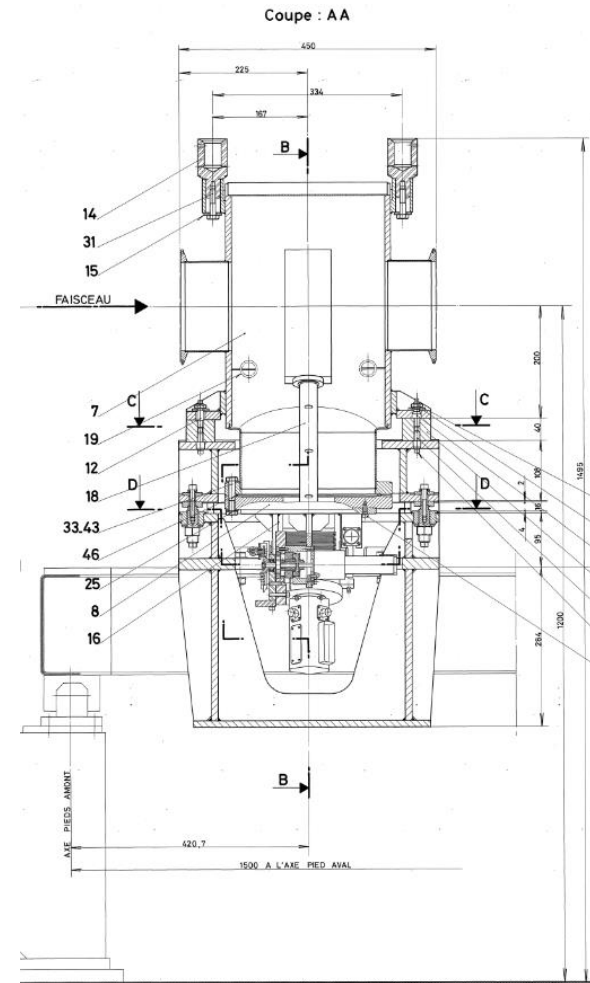
- Horizontal beam line
- Target exchange
- New control room

Main n_TOF LS2 activities - ongoing

New sweeping magnet



New SEM grid

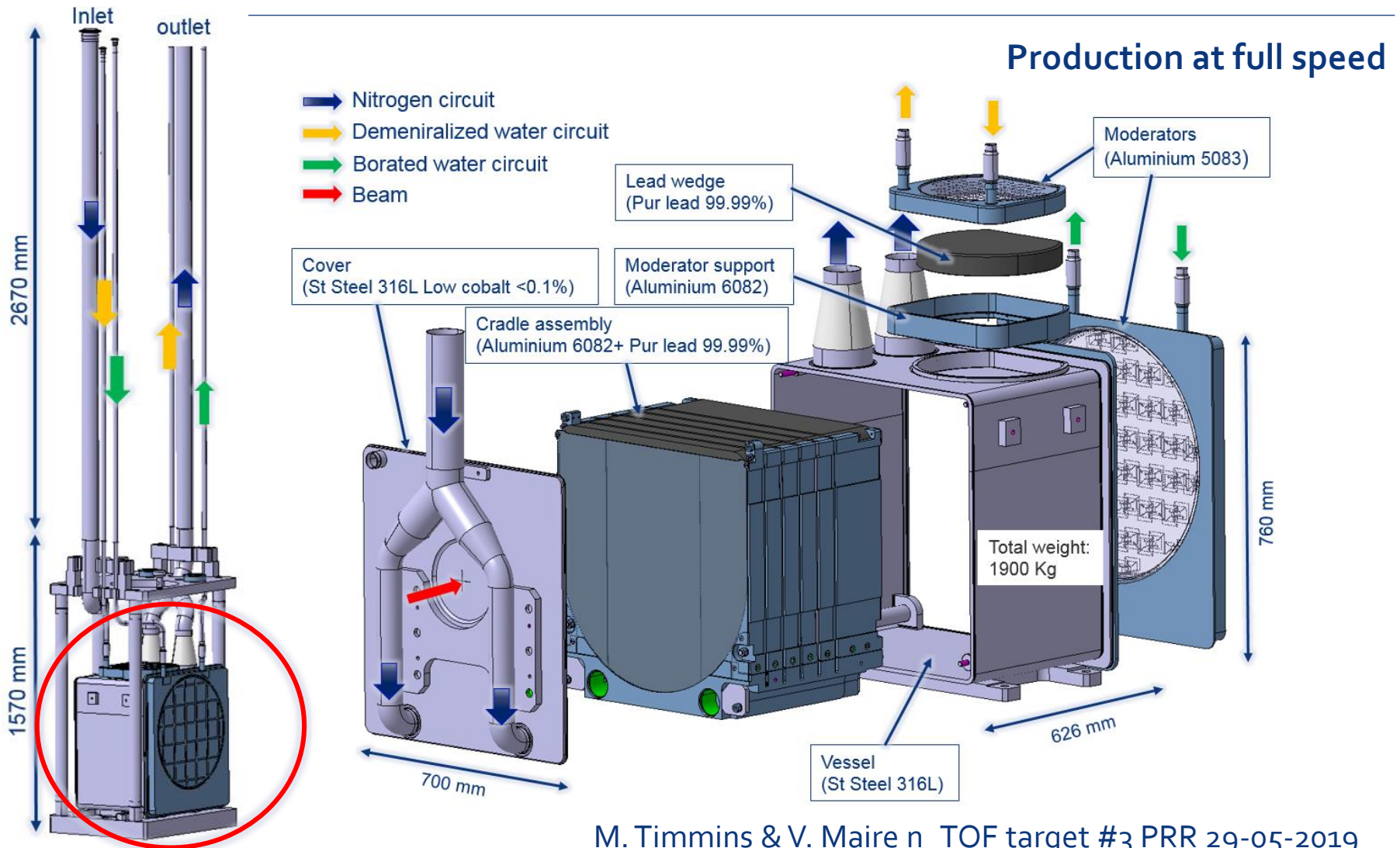


n_TOF spallation target #3

- Project well in the target construction phase, having passed a series of reviews during 2018 and 2019
- Going ahead with a sliced pure Pb target, cooled by N₂ flow at slightly above atmospheric pressure, ~800 m³/h
 - Dedicated neutron moderation circuits, with borated water and demineralized (light) water
- Matching the physics requirements of the n_TOF collaboration
- On good track for target installation during November/December 2020

n_TOF target #3

Mechanical design overview

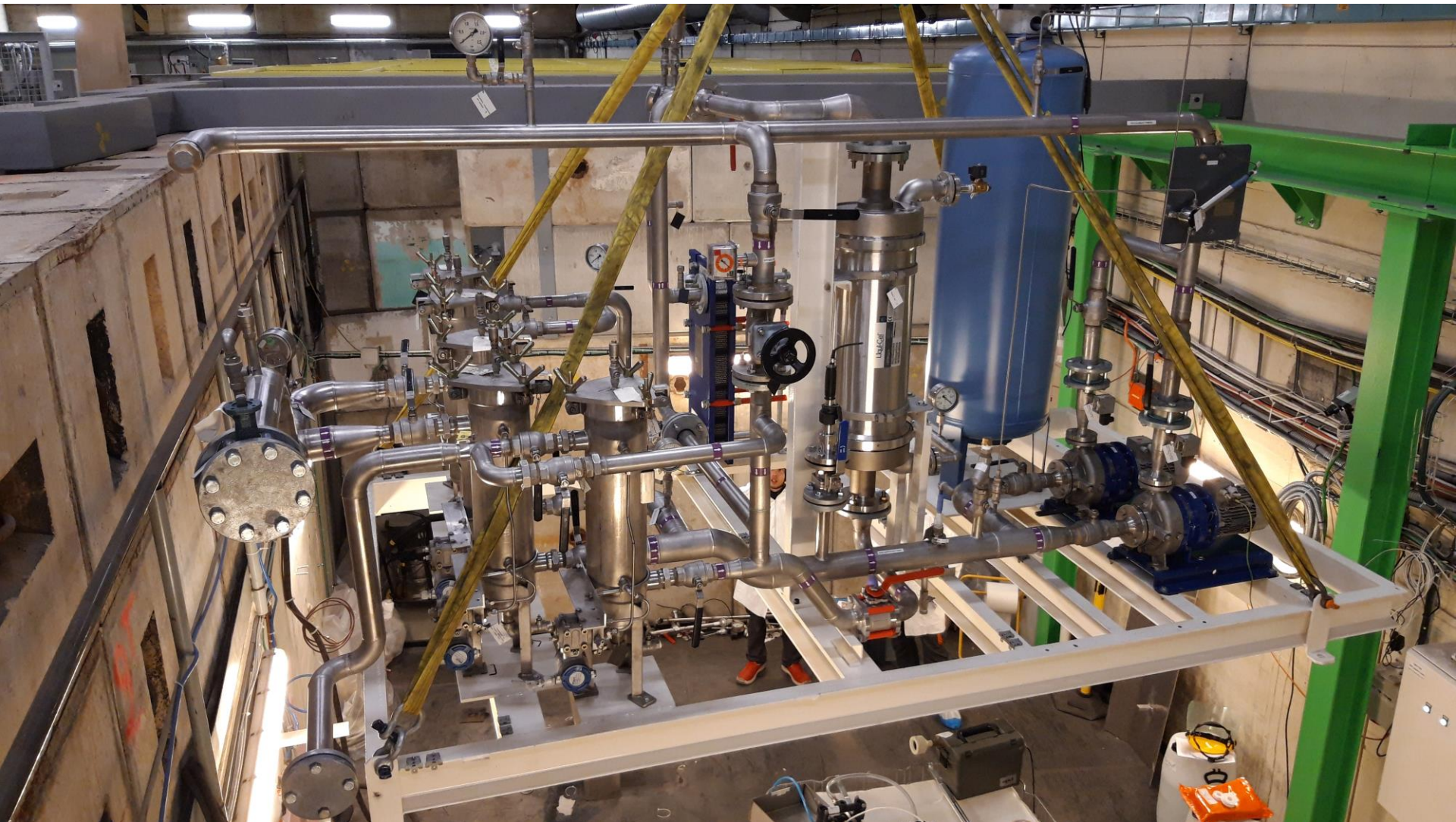


M. Timmins & V. Maire n_TOF target #3 PRR 29-05-2019

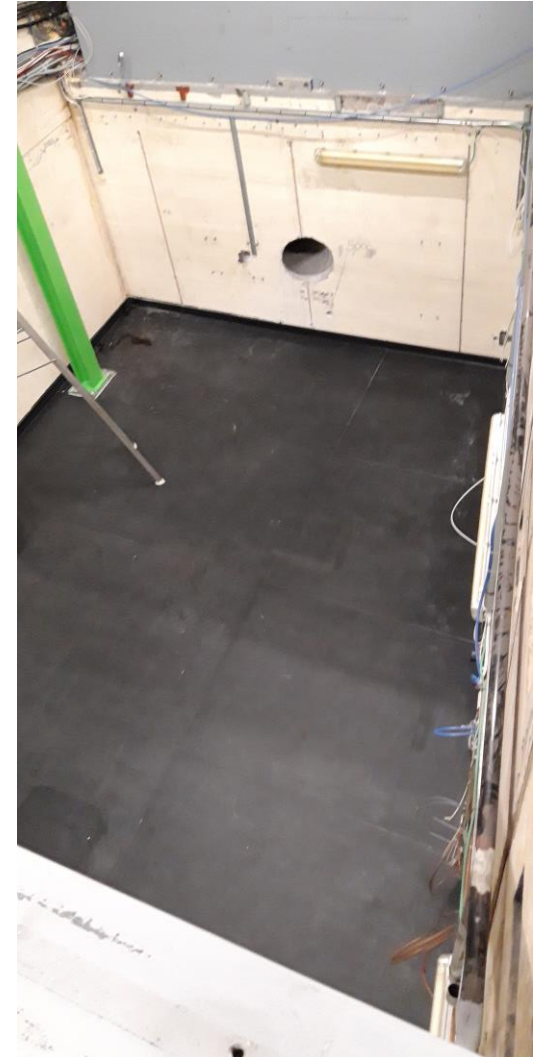
n_TOF Target #2 dismantling

CERN - November 2019

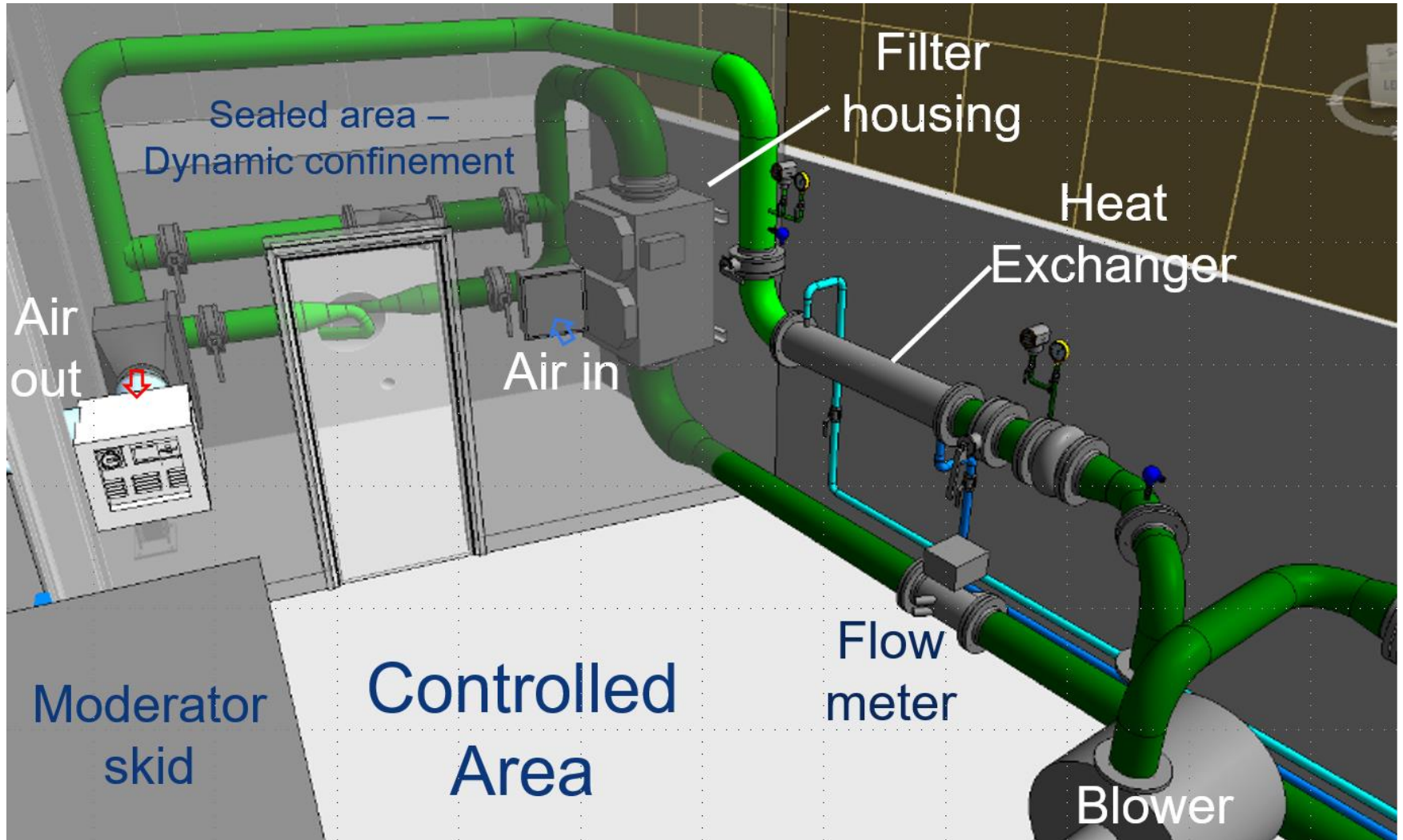
n_TOF target cooling station



n_TOF target cooling station ready

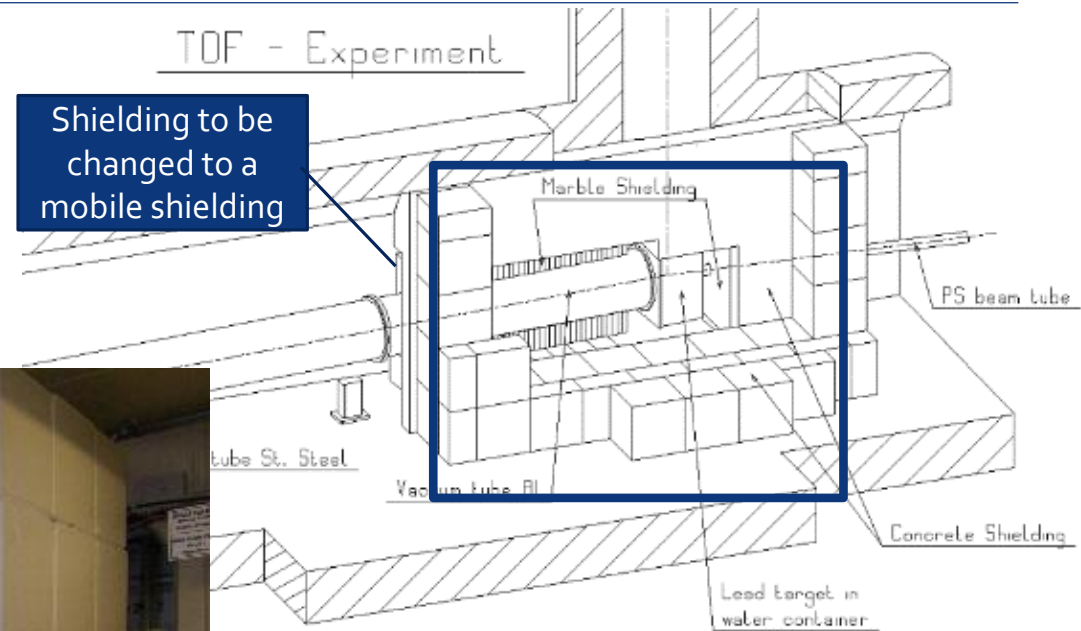


n_TOF target cooling station - Target N₂ Cooling Circuit



Modification of the target side shielding

Reconfiguration of the (fixed) shielding around the spallation target.

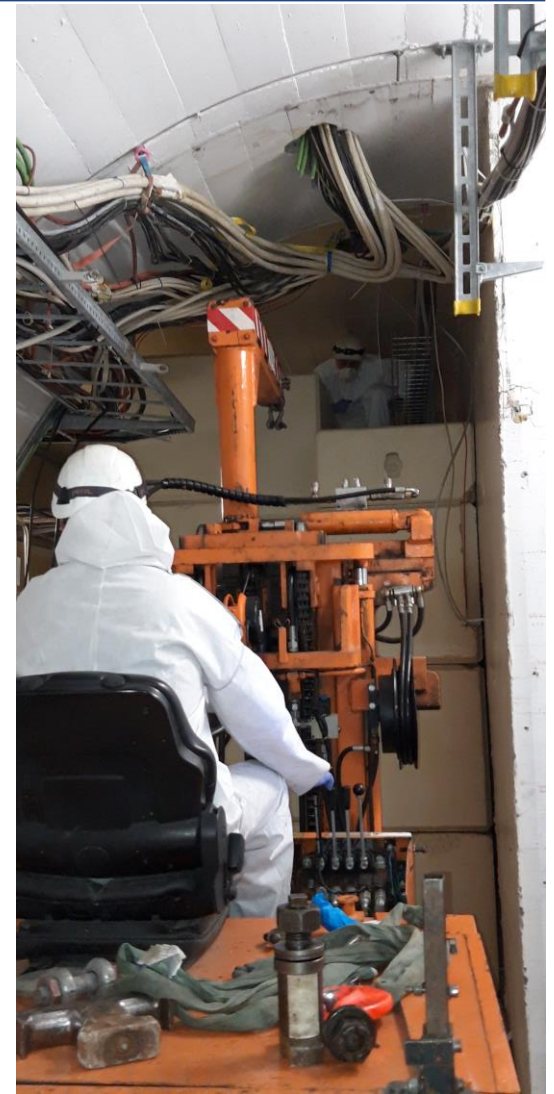


Opening of shielding early 2020

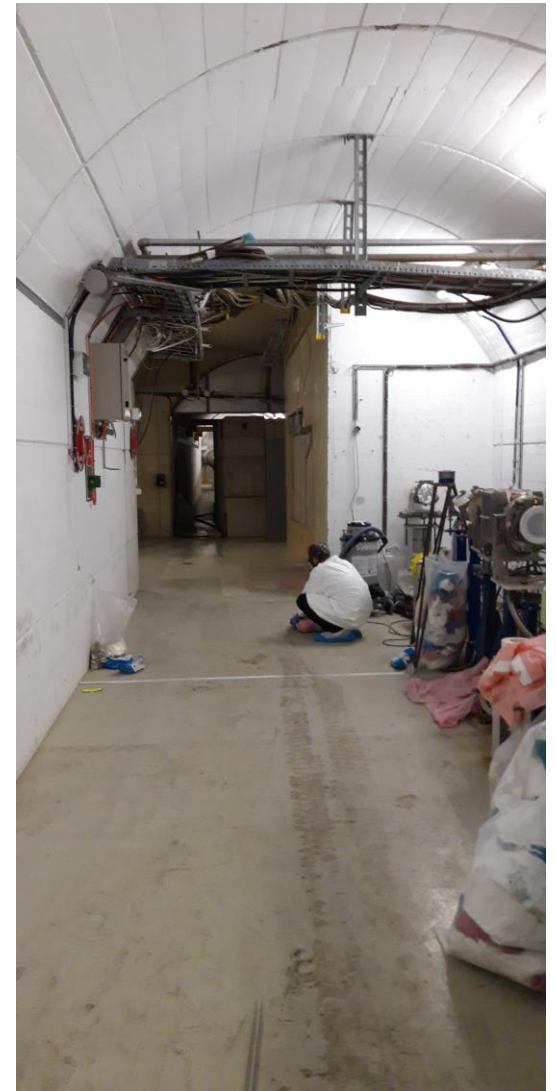
Modification of the target side shielding



Removal of the target side shielding



Removal of the target side shielding

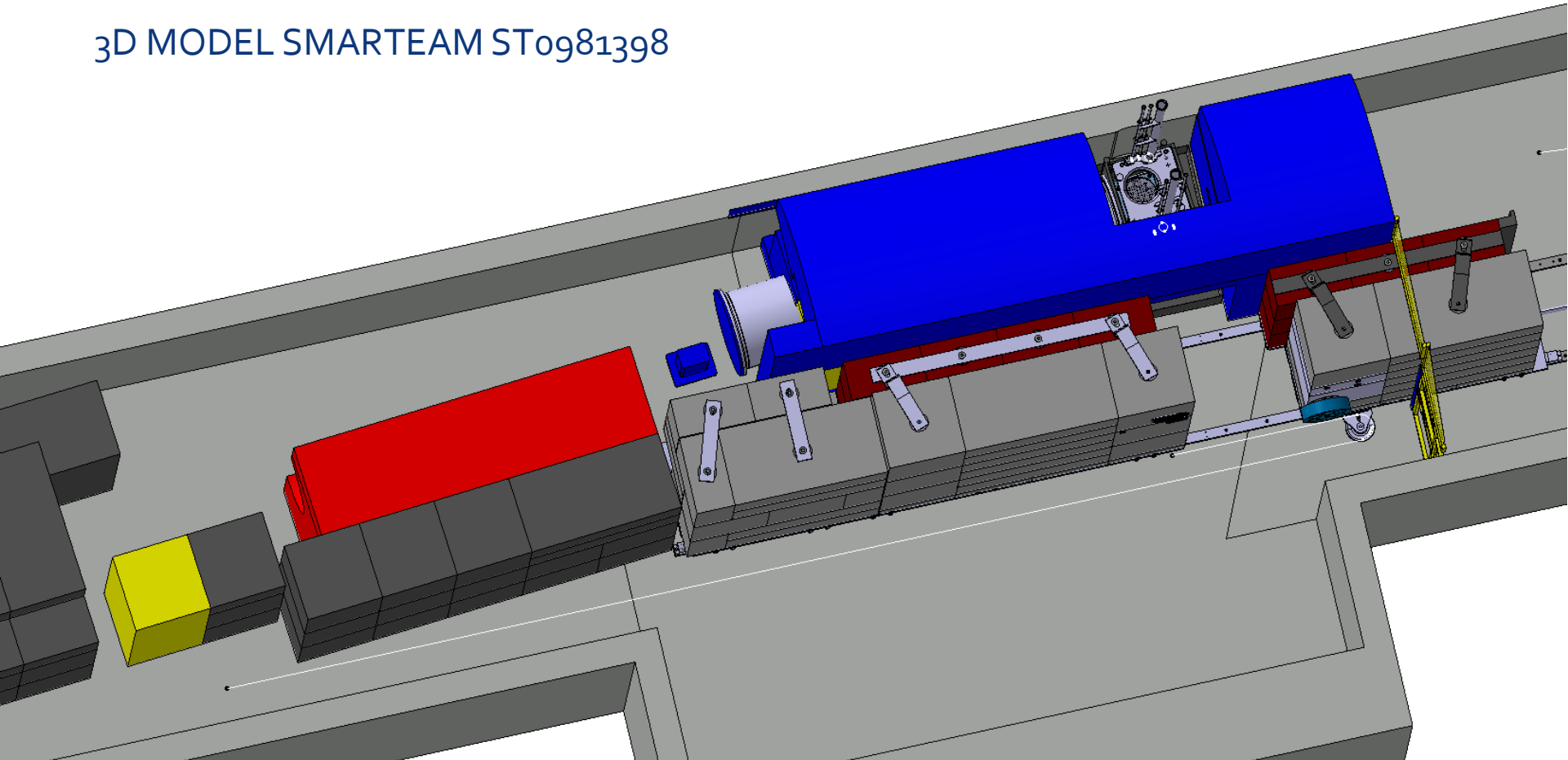


n_TOF NEAR

- In conjunction with the n_TOF target replacement, we will profit to review the shielding on the side of the target and anticipate the realization of a Near Experimental ARea (NEAR), for different applications
- First time that the target pool will be exposed since first start of the facility in 1999
- Essential also to guarantee facility continuity and reliability in case of unforeseen events (i.e. flooding on the pool during Q1 2017, which delayed restart)
- **Shielding removal & reinstallation before summer 2020 (!)**

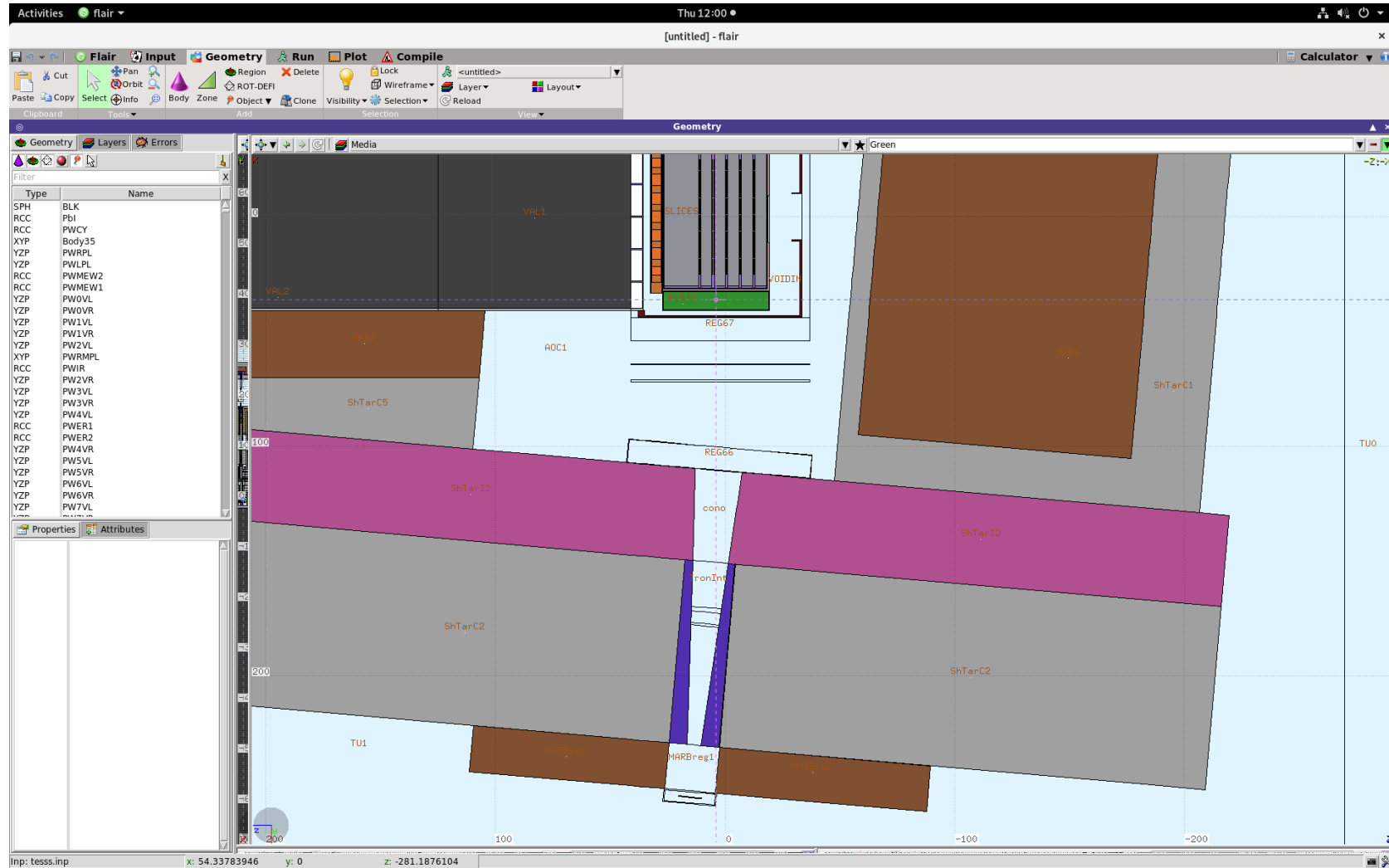
n_TOF NEAR

3D MODEL SMARTTEAM ST0981398



n_TOF NEAR

scoring
position
27



n_TOF Experiment LS2 Coordination Meeting

- Projects followed up until now:
 - Experimental Areas Preparation for the LS2 work. In particular,
 - remove all radioactive samples and sources to be stored by RP
 - Contamination control performed by RP confirms absence of contamination
 - Cabling campaign in EAR₁ (remove the old sweeping magnet cables, replace the detector cables in the rack/bunker area)
 - Implementation of the ASN-OFSP safety recommendations in EAR₂, Consolidation of the gas system in EAR₂ – started in December
 - Consolidation of the alignment system
 - Upgrade of the n_TOF electronics laboratory and control room
 - DAQ upgrade
 - Consolidation and R&D program for detectors

n_TOF control room and ASN-OFSP comments

- Control room in B 603 -> B 506
 - Handed over B 603 in December
 - B 506 renovation work finished.
 - Set up of the control room with the DAQ upgrade early this year
 - Temporary office space for n_TOF local staff and visitors in B 864

- ASN-OFSP safety recommendations
 - Possibility for a beam stop button and door opener from the bunker inside studied and solution found, **installed**.
 - Sink for EAR 2 **in place**, (evacuation towards the B 506)
 - Buffer zone for RP checks on exiting material, permanent after the remounting of the vertical beam line end of 2020

Summary

- Main activities for LS2 - Facility
 - Horizontal beam line modifications
 - Target exchange
 - New target shielding
- Main activities for LS2 – Experiment
 - Electronic lab completed
 - New control room in work
 - Detector upgrade ongoing
- Detector upgrade reporting and
- Commissioning plans for 2021 and the future physics program at the next INTC meeting



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Thank you