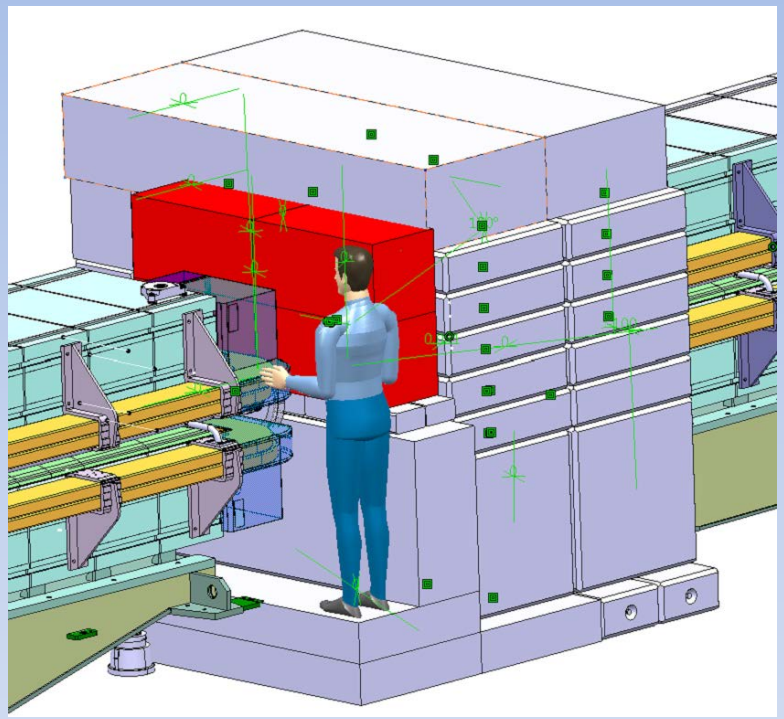
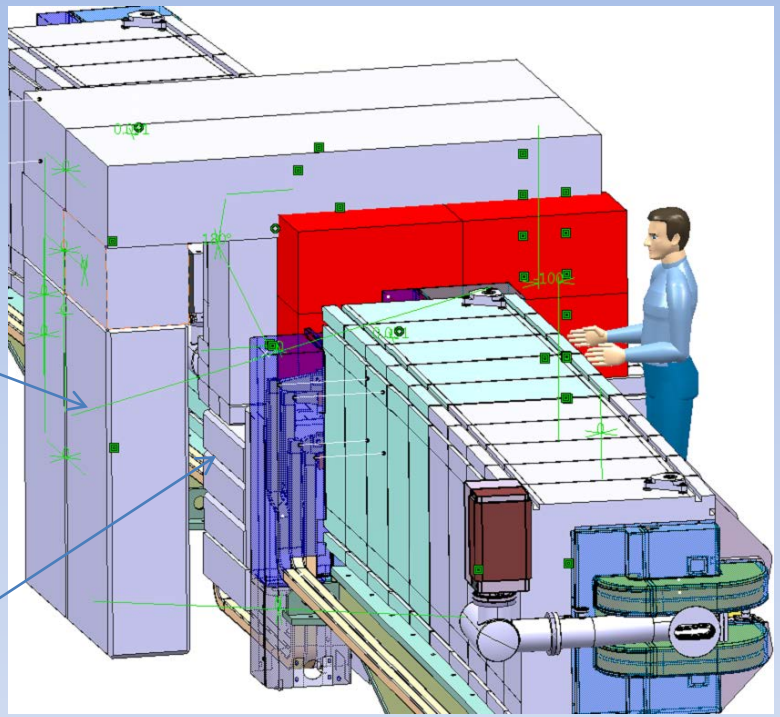
Status and developments of the shielding studies for the dummy septum TPS15

Closed Shielding

From View from outside of PS ring



From View from inside of PS ring



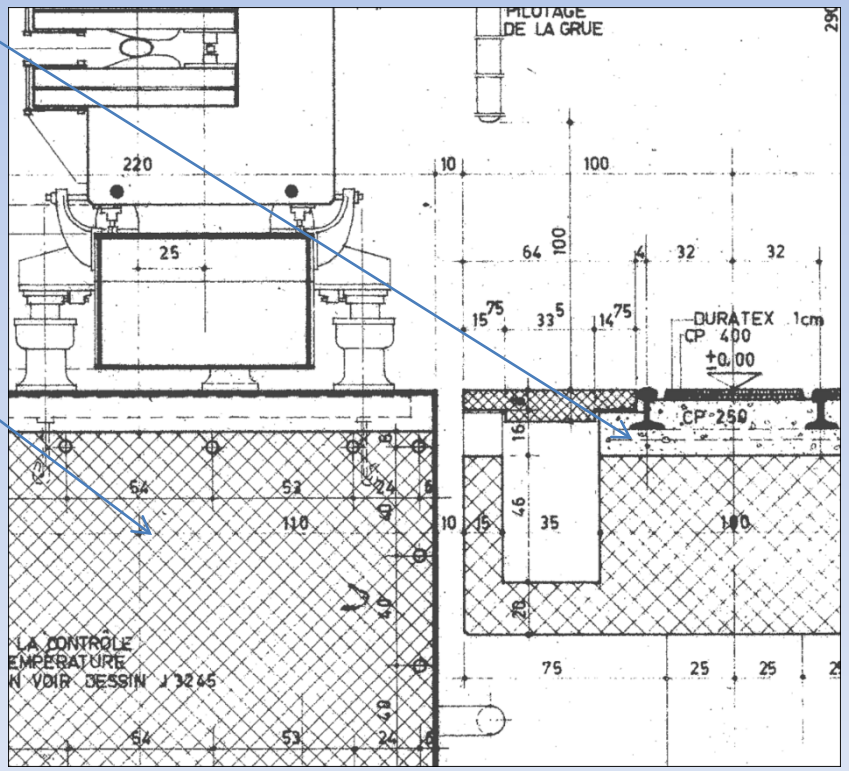
Due to the pumping port there is no available space to position blocks which will support the roof structure. A second shielding arrangement has been installed to take the roof blocks. In the event of problems with the passage of the locomotive these blocks (roof and roof support may have to be temporarily removed but the inner shieling would remain.

Tunnel cross section

Verification required from Civil engineering

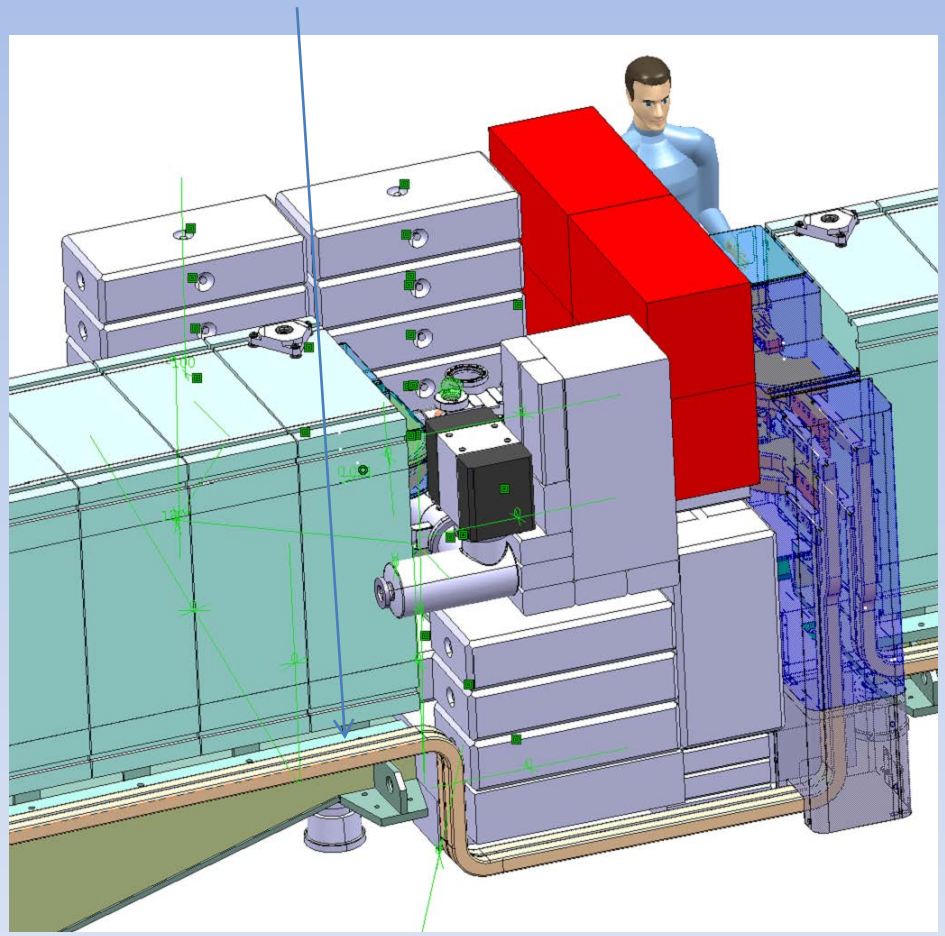
Can these blocks,(roof support blocks) be placed on the PS floor? (Not to be confused with the PS accelerator support)

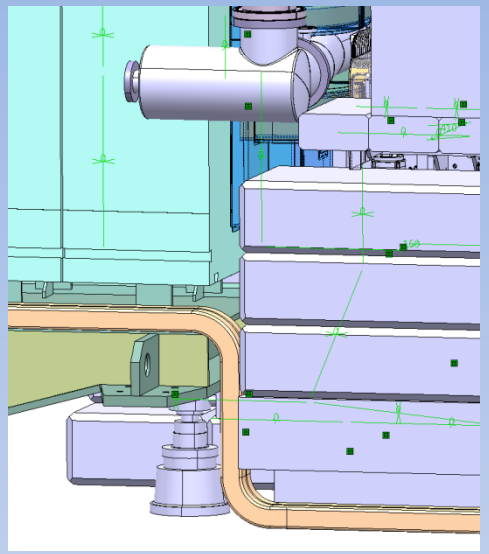
If the drawing is correct then the vertical roof support blocks are positioned with approx 10-15 cm distance between the first rail and the side wall of the block.



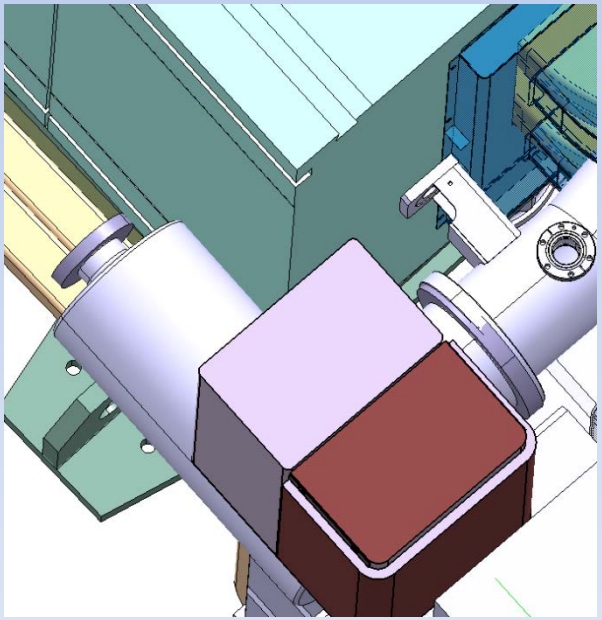
Roof and Inner roof support blocks removed

Downstream shielding dedicated to the vacuum chamber remains in place. Roof shielding and roof support blocks removed. This operation will be necessary if the main magnet (MU14) busbars need to be removed.





2 Downstream feet on MU14 at each side of magnet. In integration there is only one central foot – error.



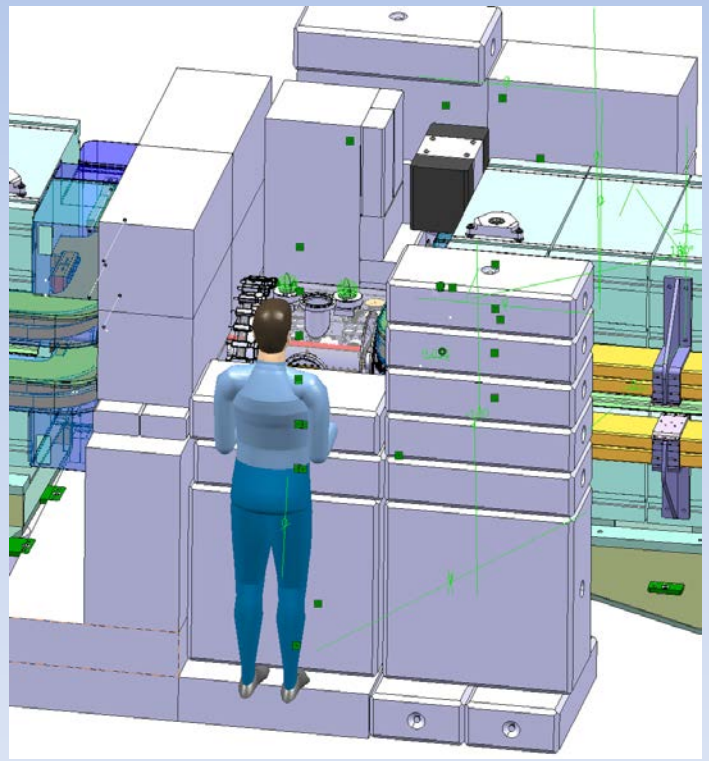
The pumping port is not mounted correctly on integration model.

Intervention Scenarios

- Beam Observation, vacuum test, cooling

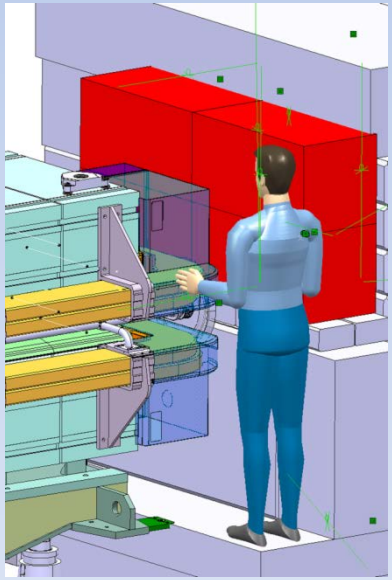
Remove 2 Roof shielding blocks
Remove 3 side blocks from PS external ring

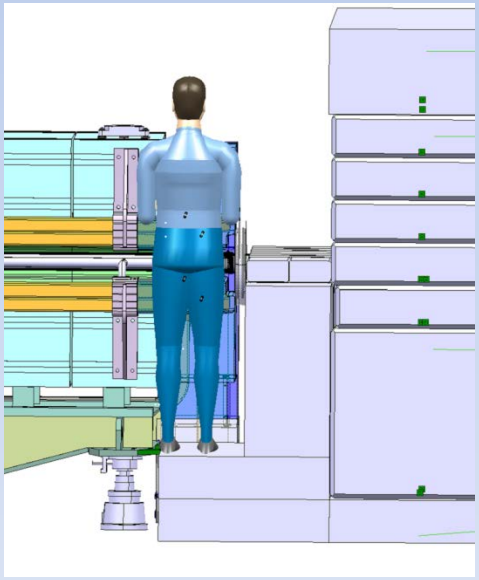
Shielding for intervening specialist is 1m40 high and allows a access window of 80 cm wide.
Note: The downstream chamber shielding remains in place

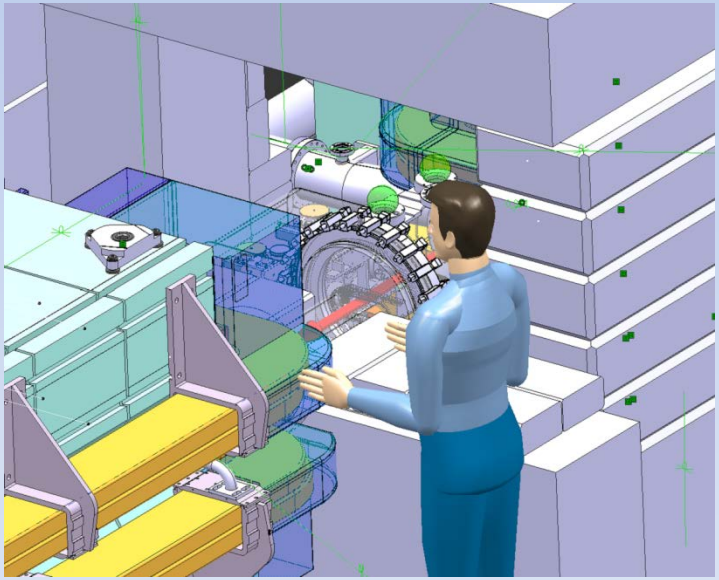


RF / Vacuum intervention on downstream flange

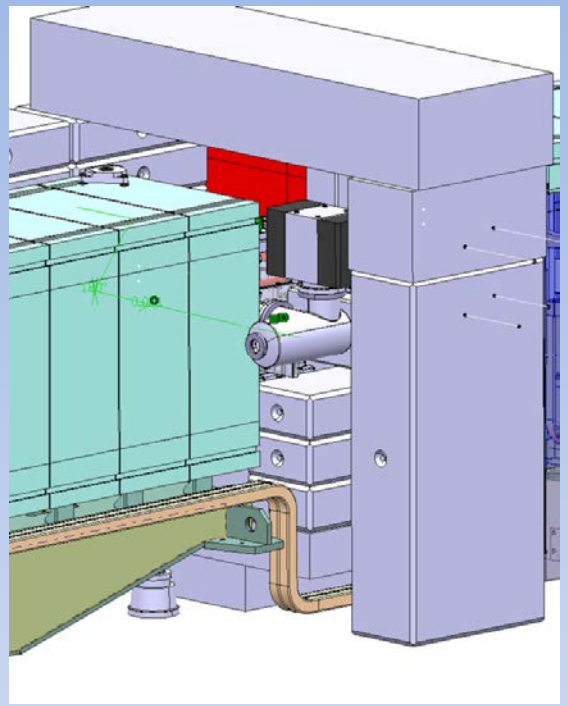
If the flange cannot be accessed with all shielding in place,
Removal of 4 upstream blocks (Red)
Advantage: Easy access
Disadvantage: This would expose the complete TPS15 to the specialist







Vacuum Intervention (External PS ring)

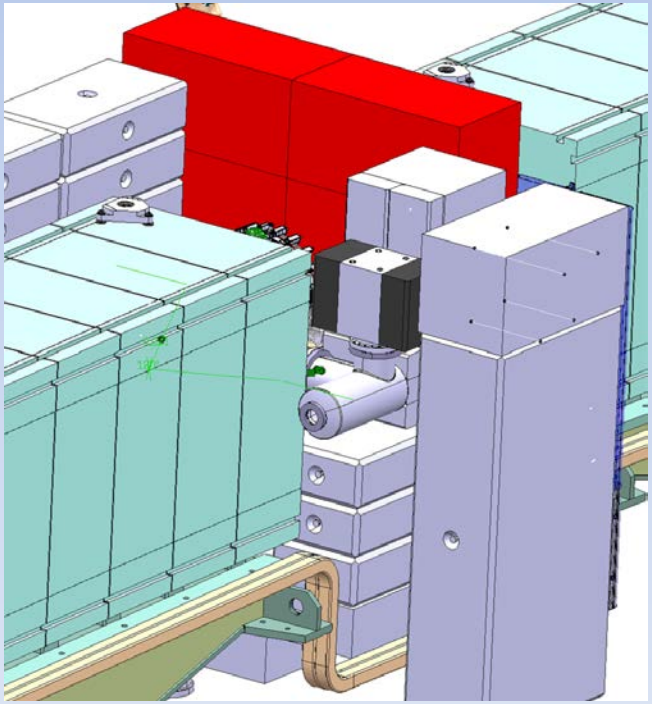


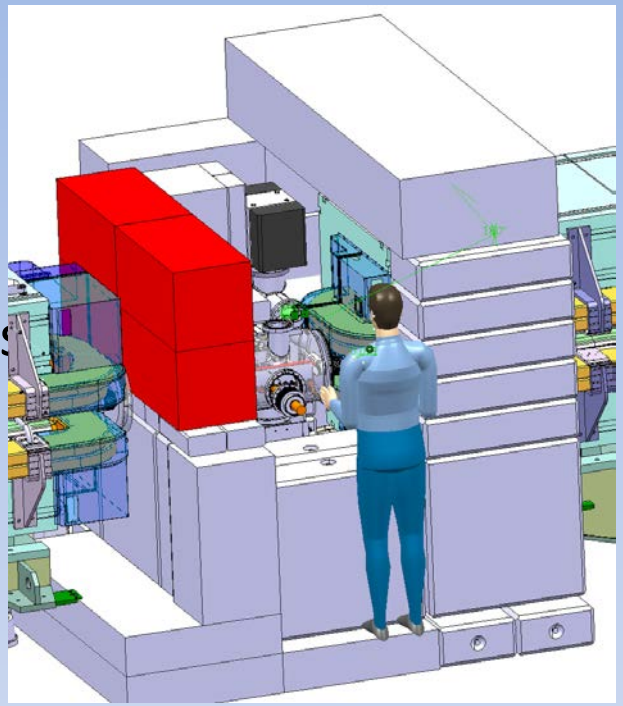
…on sublimator, ion pump feedthrough

Remove 1 roof block and 2 roof support block,

…Replacement of ion pump

Remove 2 roof blocks and 2 roof support blocks





..Access to upstream flange

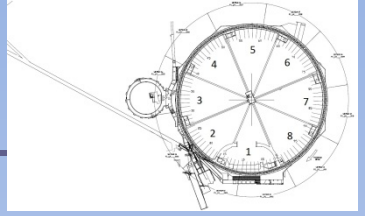
Remove 1 roof block 4-5 side wall blocks

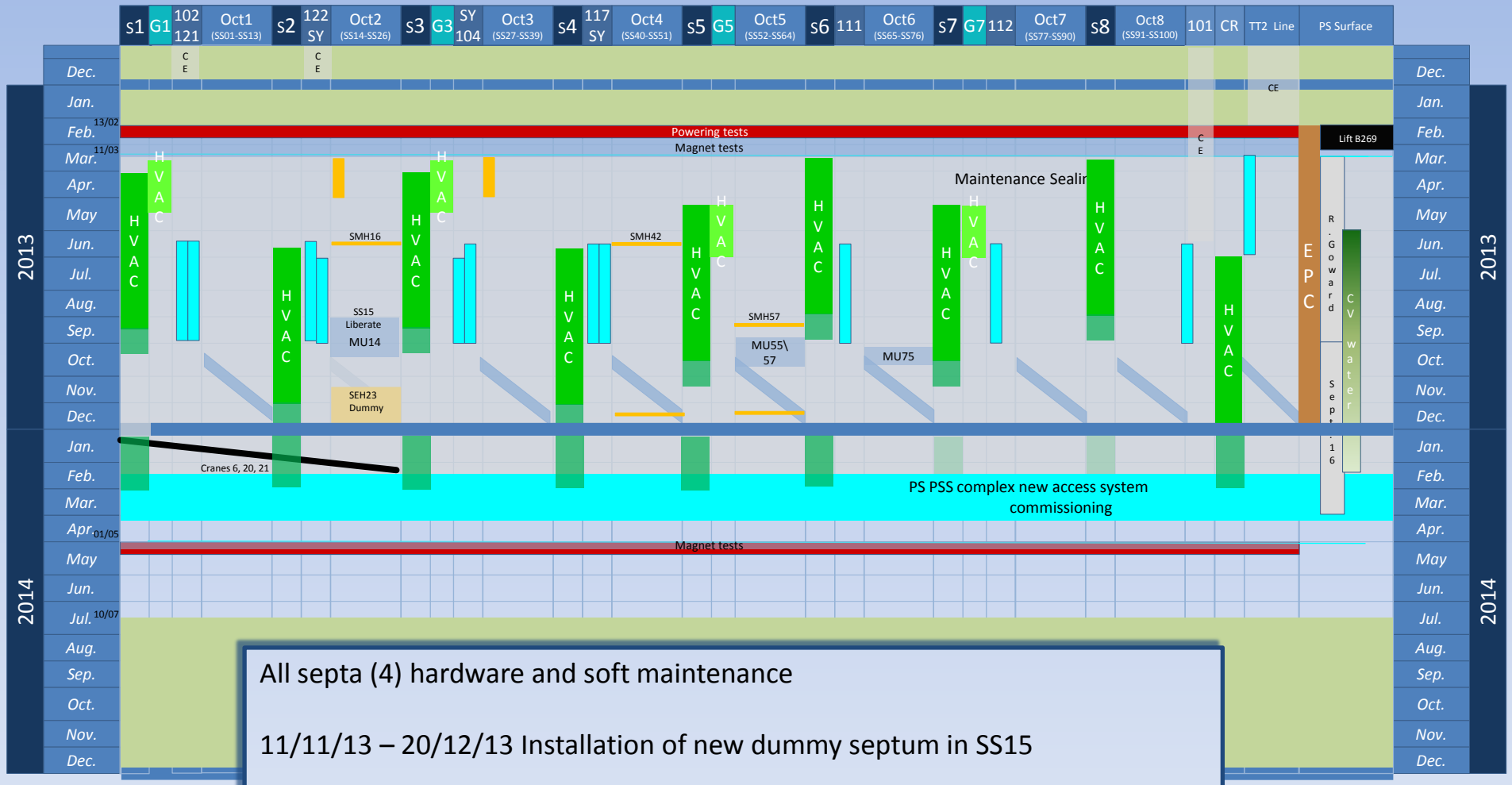
Provisional requirements

Size	Quantity	Location	No.	Mass/block (kg)	Mass total (kg)
800x400x200	17	Inner Shielding and Tank Base	842	173	2941
1600x800x200	4	Base assembly	1682	690	2760
800x400x400	8	Outside shielding	884	345	2760
1600x400x800	2	Downstream Lower	1684	1382	2764
400x200x100	15	Downstream Chamber	421	21	315
2400x400x800	2	Roof	2484	2073	4147
					15687

LS1 CPS Planning

Opening : 11/03/13
End LS1 : 01/05/14





All septa (4) hardware and soft maintenance

11/11/13 – 20/12/13 Installation of new dummy septum in SS15

Powering Tests | EPC | Magnet | Civil engineering | Lift & crane | Access | CV Ventil | CV water | Septa (SE)