

A 3D wireframe model of the SIS100 By-pass line, showing a complex network of curved and straight sections.

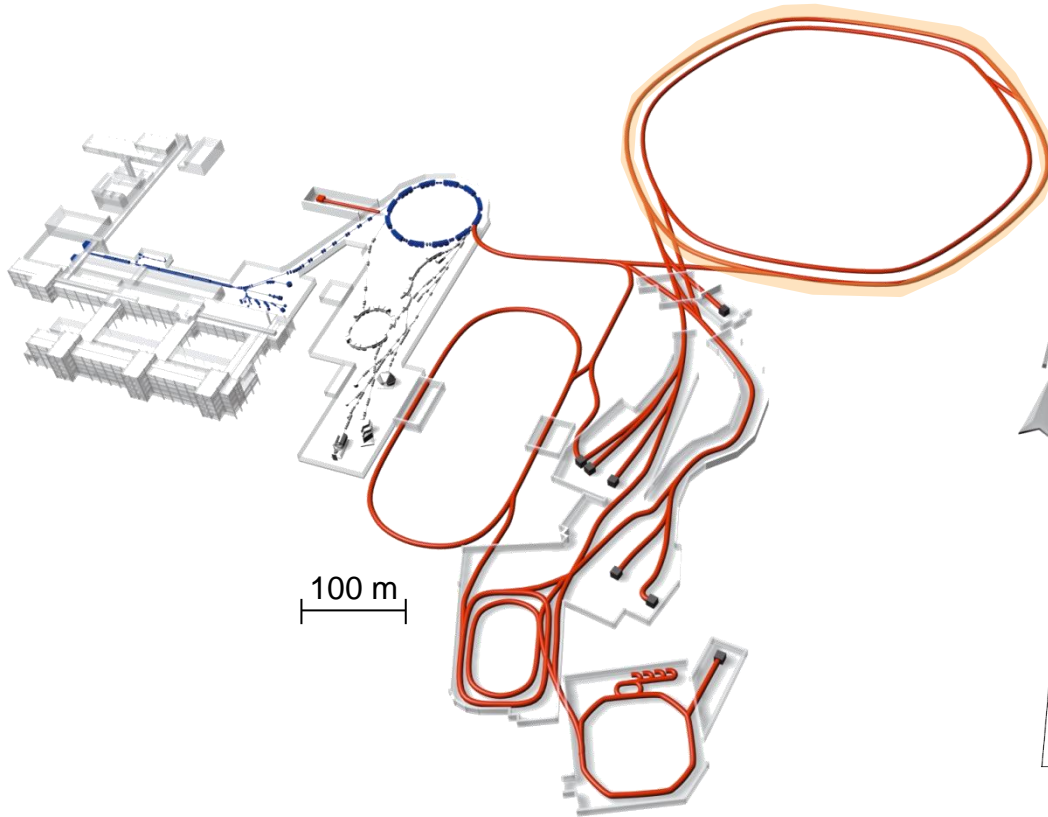
SIS100 By-pass line - from the sketch into the tunnel

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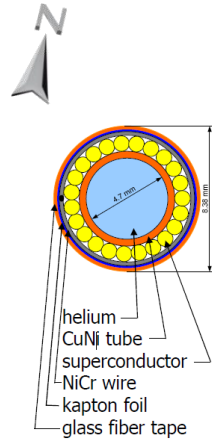
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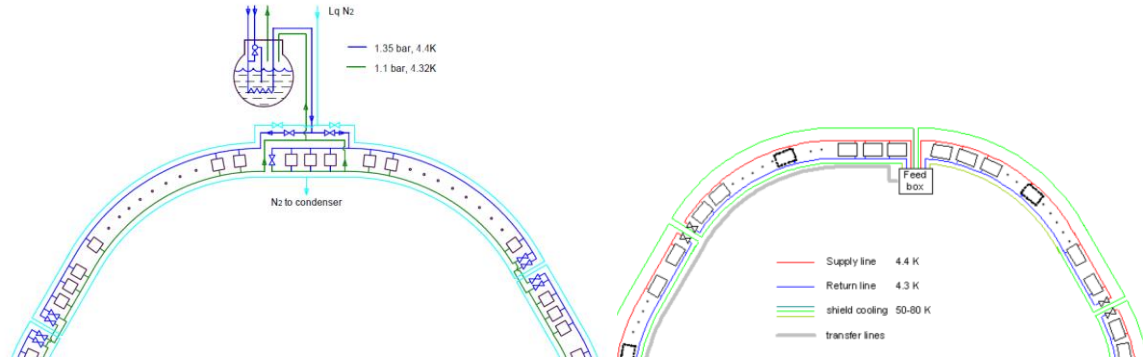
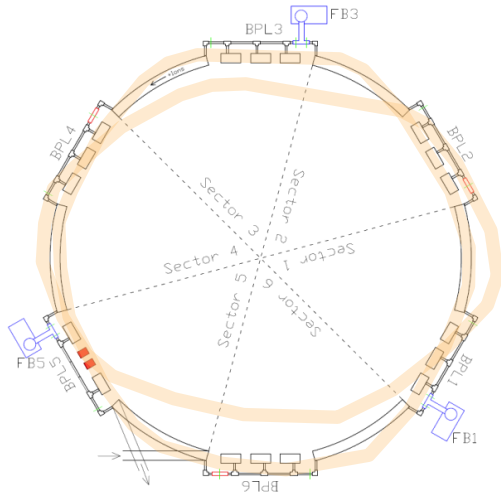
SIS 100 - superconducting magnets



Dipole: $B_{\max} = 1.9 \text{ T}$; 4 T/s; 108 St.
Quadrupole: $G_{\max} = 27 \text{ T/m}$; 168 St.

Includes beam pipe at cryogenic temperatures ($5 \cdot 10^{-12} \text{ mbar}$)

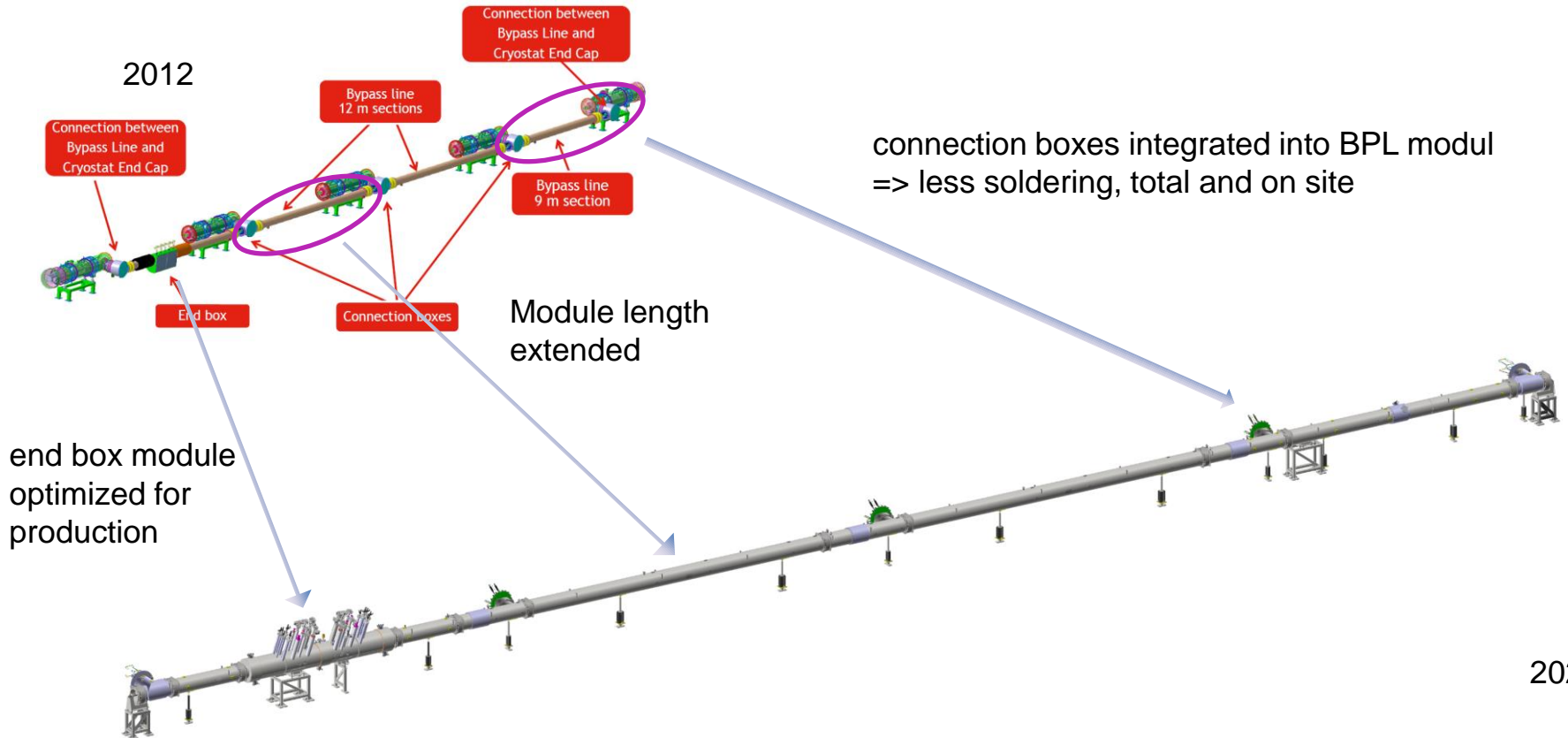


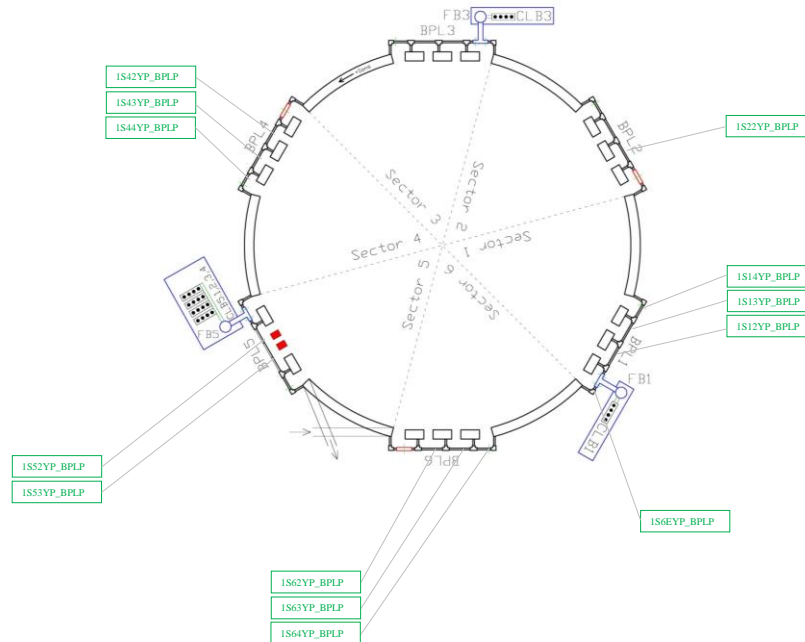


SIS100 EoI-Meeting
Monday 15 Sep 2008

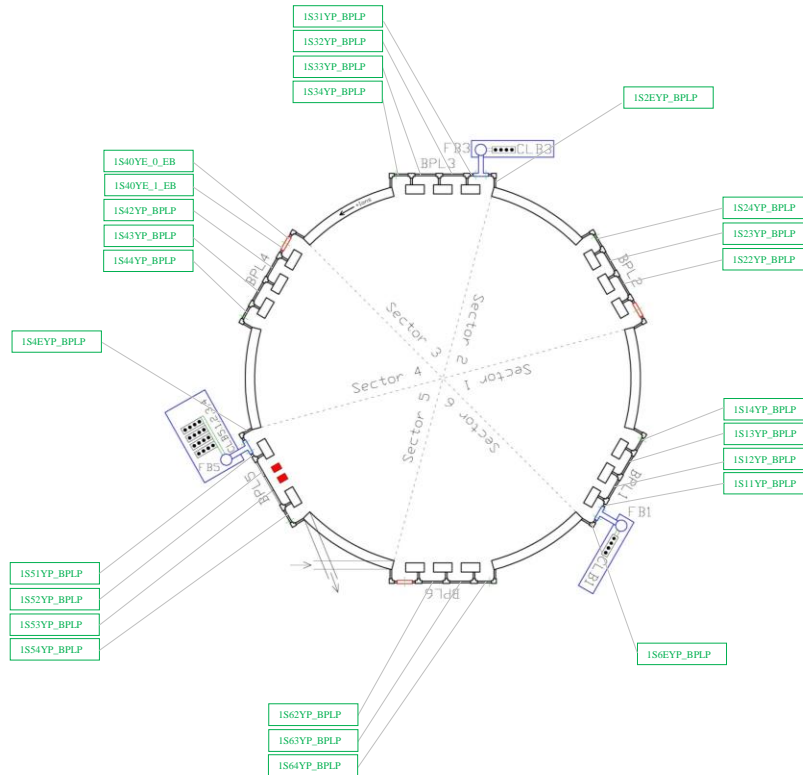
Contract for the In-Kind Contribution of the Bypass System October 2013

Evolution





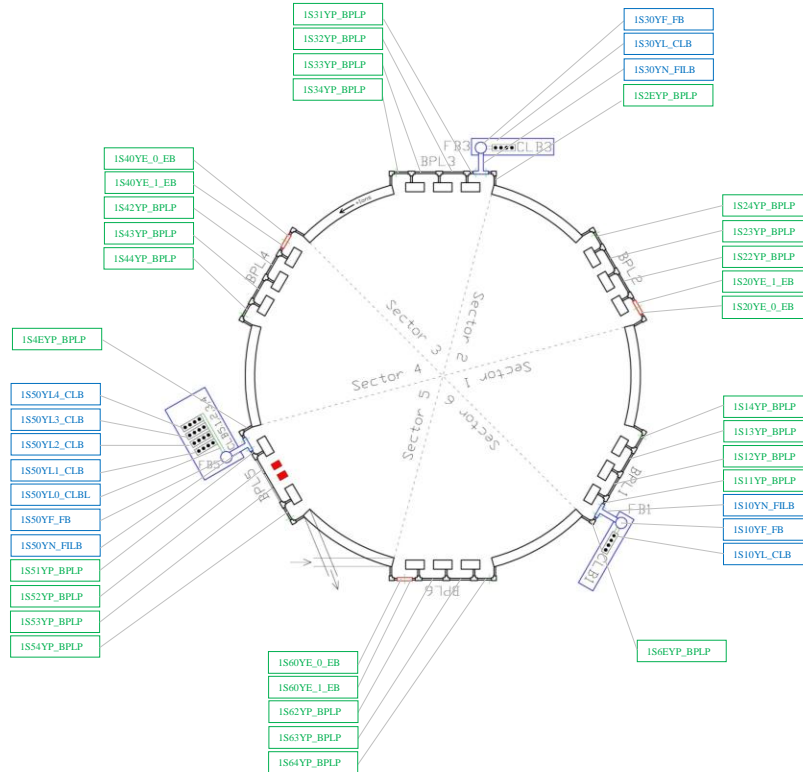
2021



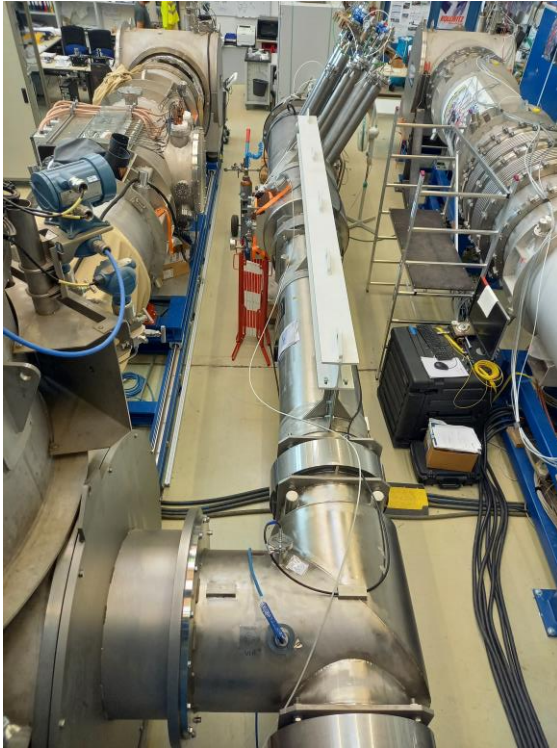
2023



2024



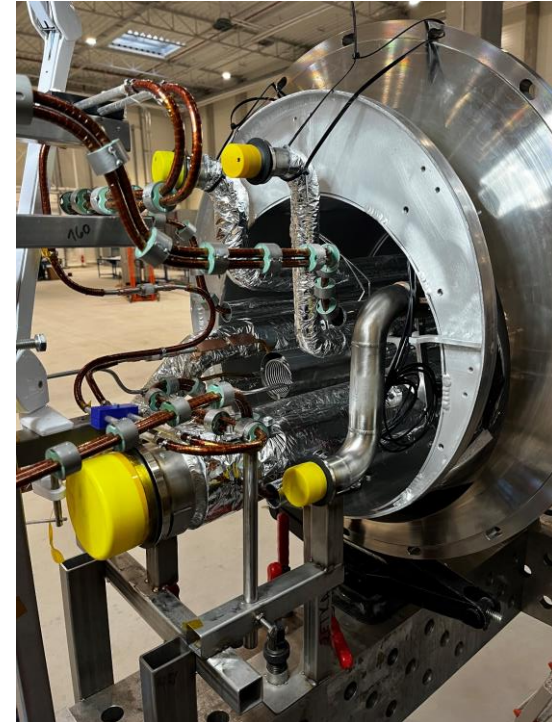
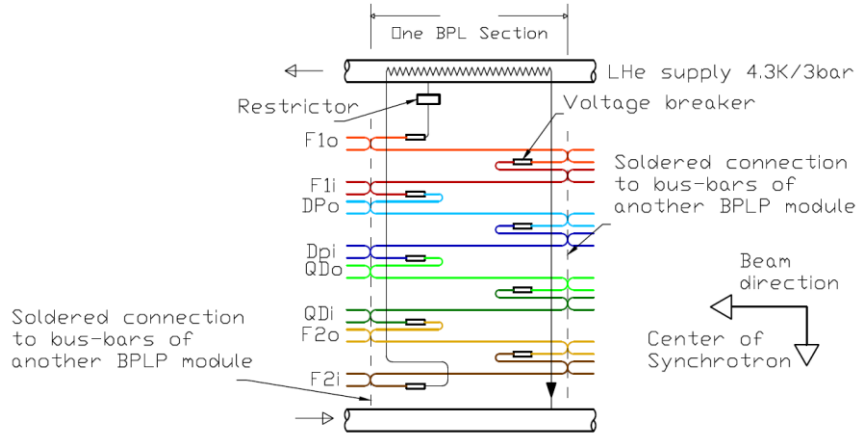
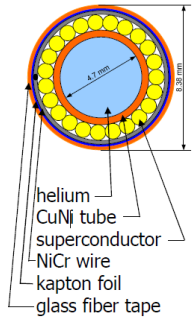
heat load measurements



Type	Amount	@4K		@50K	
		Calc. [W/pc]	Tested [W/pc]	Calc. [W/pc]	Tested [W/pc]
Standard BPL piece (13m)	12	15	15	70	79
Short BPL piece (9m) incl. Vacuum barriers (1S1..64YP)	6	17		50	
Short BPL piece (9m) incl. Vacuum barrier (1S2,4,6E1YP)	3	17	17	50	71
Very short BPL piece incl. Vacuum barrier (1S1,3,51YP)	3	15		50	
BPL incl end box incl. Vacuum barriers (1S2,4,6YE)	3	40	48	120	< 85

only static; +dynamic: 0.055 W/m, 0.25 W/joint

bus bar system



production



production



test set-up

bus bar system



Evolution-length



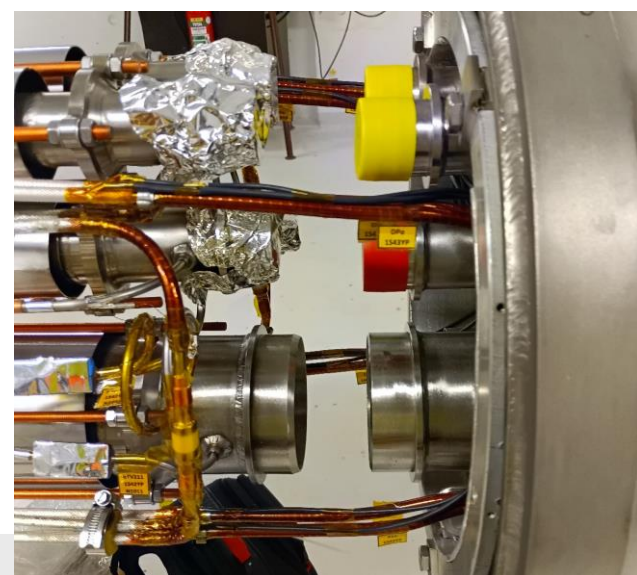
Module length extended

shaft size was fixed
=> increasing of the module length only
possible by tilding of the module
=> design feature





Positioning in
tunnel

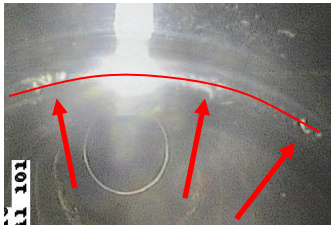


End box testing

SAT 2/24



3/24



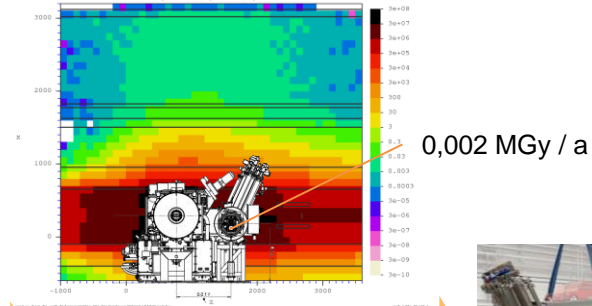
Leakrate
> 10^{-1} mbar l/s

3/24



Leakrate
< 10^{-4} mbar l/s

6/24



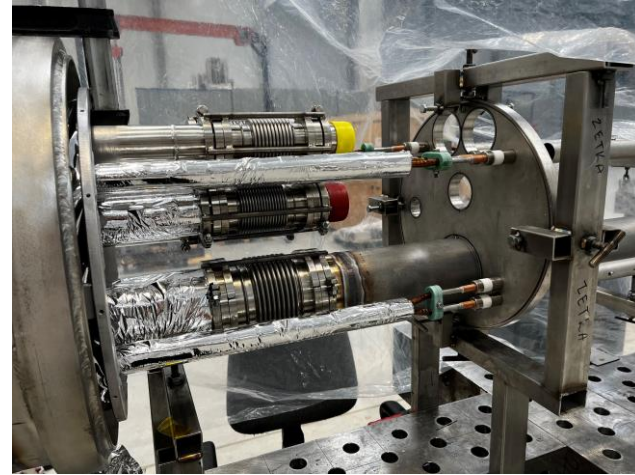
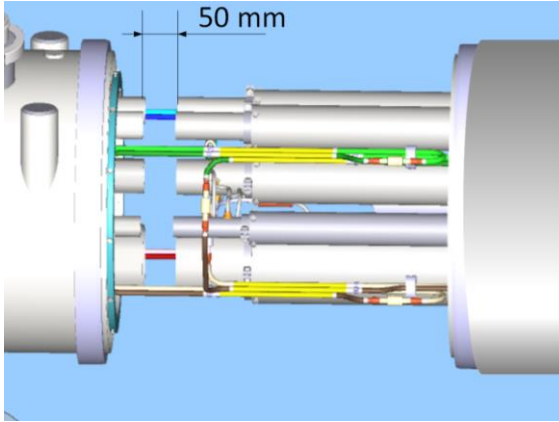
Leakrate
< 10^{-6} mbar l/s

7/24



Installation

Integration



Mock-up

⇒ PED requirements

⇒ documentation

⇒ qualification

To be continued...



Follow our progress:
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