LS2 Activities

LHC experimental areas

On behalf of BVO Josef Sestak and Giuseppe Bregliozzi

29th VSC LS2 Overview of activities

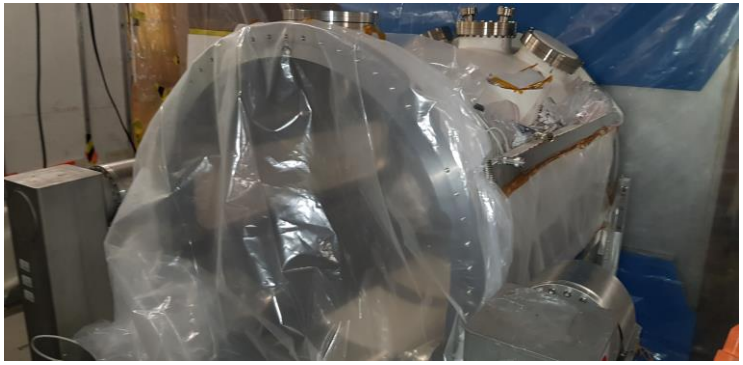
2020 Re-installation of the LHC experimental beam vacuum system

V 17_02_2020

Date	January	February	March	April	May	June	July	August	September	October	November	December
1												
2						LHCb						
3						Meca						
4												
5												
6				ALICE								
7				RB26 valve change								
8												
9												
10								ATLAS				
11					ALICE			Meca - C				
12					Post-meca					CMS		
13										Bake-out		
14				ALICE					CMS			
15				Meca IP		LHCb			Meca			
16						Bake-out						
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27				ALICE								
28				Bake-out								
29												
30												
31												

Activities during last two weeks

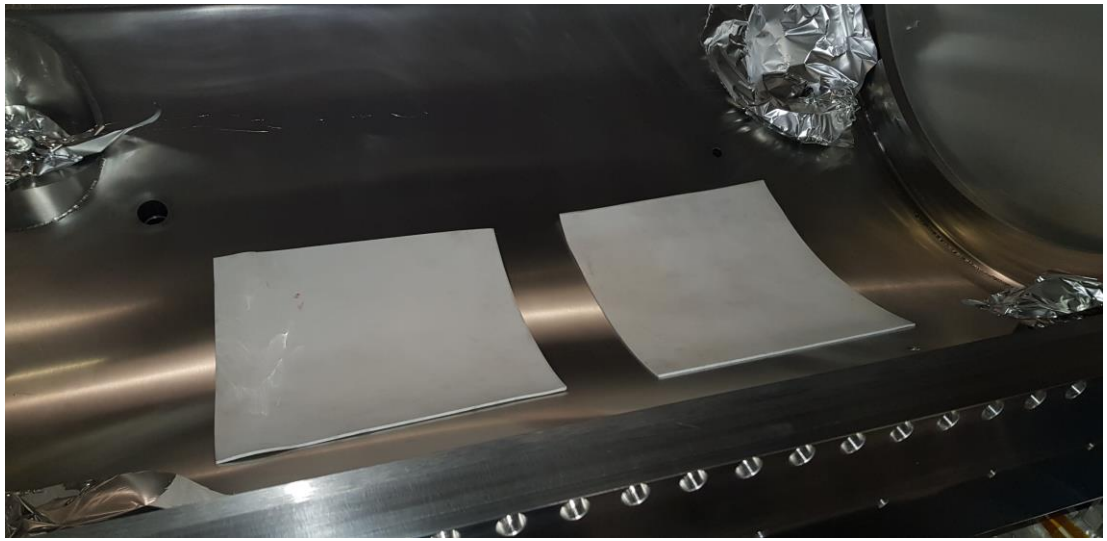
- Installation of dust protection covers on the VELO tank.
- 10/02/2020 Jerome, Nicolas, Josef.



Officially
LHCb

Physically
VSC-BVO

Activities during last two weeks

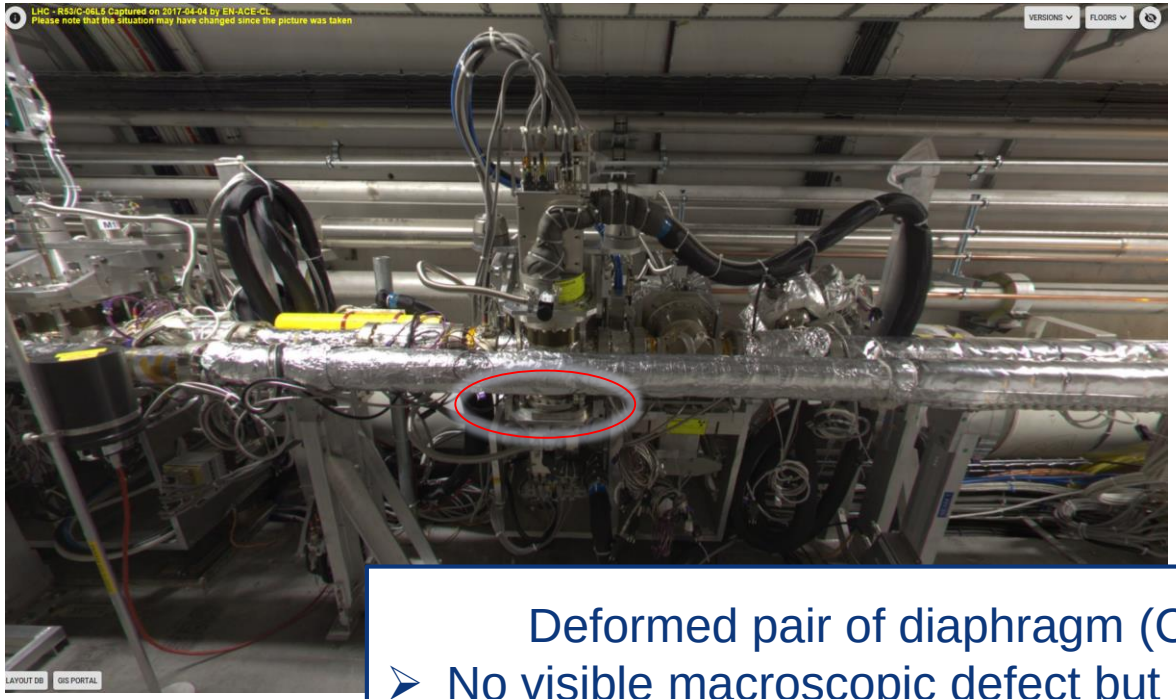


Thermal insulation foam was used (by VELO team) to “protect” the ports of the ion pumps on the VELO tank.

- Replaced by aluminium foil;
- Dust inside the tank;

Activities during last two weeks

- Inspection of the XRPT1.B6L5.B2 station
  - Slot 6738949; DCUM 13116.1276; External (Red)



Deformed pair of diaphragm (COMVAT EW bellow)

- ➢ No visible macroscopic defect but not reassuring;

Additional inspection to be scheduled, the idea is:

- ➢ Multiple cycling with VGI on and micro-camera on bellow.

Activities during last two weeks

- Additional inspection of the XRPT1.B6L5.B2

Dimples on diaphragm confirmed; Injection of He with SVT on did not show any pressure variation in 2e-11 mbar range.
NC use-as-is; Piquet to be informed; PVSS comment in place.

- **ATLAS** – VJ transport SX1-954 after Lucid maintenance.
- 12/02/2020 – Jerome, Josef, RP.
- Chamber OK, dose on the TAS side ≈ 4mSv.

Activities during last two weeks

- ALICE Central chamber #1 wrapping

- Chamber 1 wrapping finished;
- Transport back to b.113 (by next week);
- Heating under the vacuum (curing process);

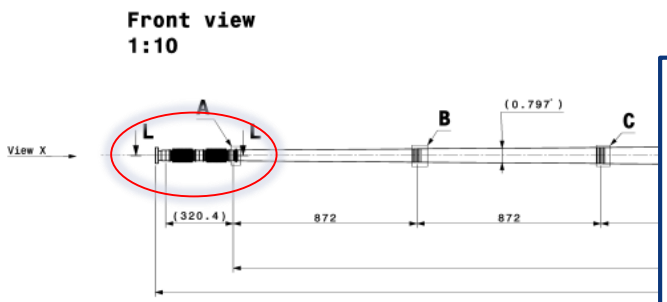
<u>Pipeline</u>

- ALICE Central chamber #2 (with Nicola R);
- CMS Forward chamber (3x);
- CMS Forward pumping (after acceptance);

CMS iBeam-pipe (fiber) method to be confirmed.

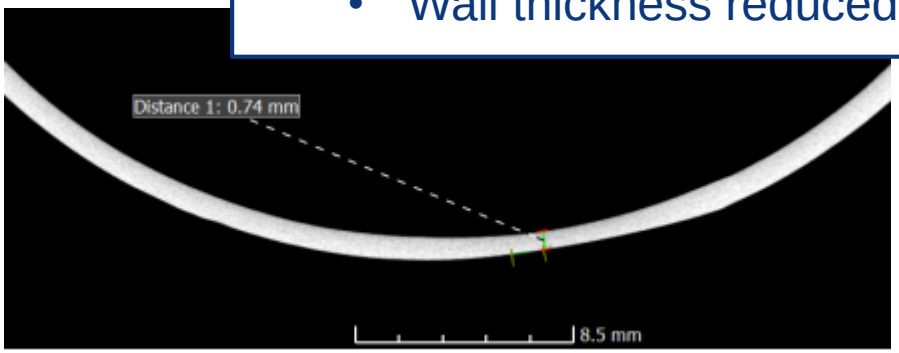
Activities during last two weeks

- Test of the CMS double bellow assemblies



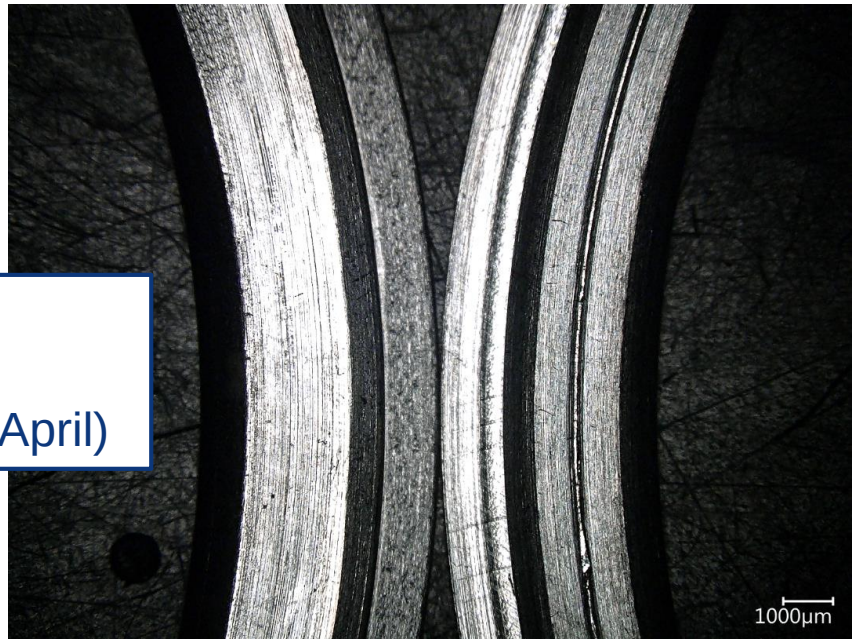
<u>Sub-assembly leak test before the last end-cap weld</u>

- 3 production assemblies prepared;
- Porosity issues on 2 assemblies – process issue;
- **Repaired by AP (re-welded)**
  - Porosity removed – **checked and leak tight**
  - Wall thickness reduced from 1 to 0.74mm



Activities during last two weeks

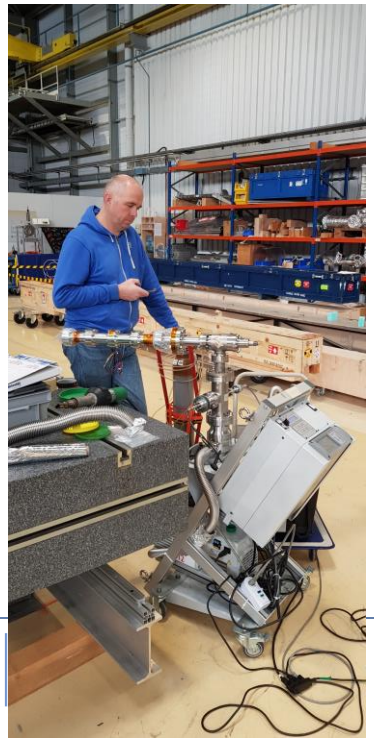
- **Helicoflex seals – tightness issues**
  - EDS – no important variations in composition!
  - Optical –doubts about topography (TBC).
  - Technetics at CERN;
  - Order with Bostec;

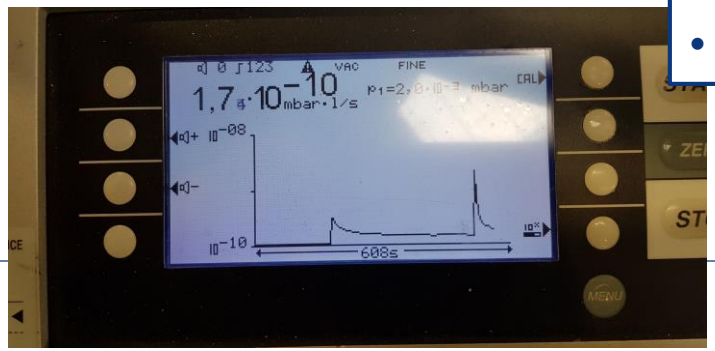


Acceptance needs:
- CMS central chamber;
- CMS end-cap chambers (3x) – (March/April)

Activities during last two weeks

- **Helicoflex seals – tightness issues**
  - ATLAS seals can be used (precautions needed);
  - Maximum temperature 120 degC on the flange;
  - Leak tightness of the seals 1e-10 mbar.l.s-1.





Go ahead with VC5C

- Acceptance by week 8.

Activities for next two weeks

- Wrapping of the forward chambers VC5F (NEG foreseen);
- Preparation of SMOG2 test setup;
- Design and production works for CMS & LHCb;

	Week 7	Week 8
TB EXP #1	Zero ongoing.	**VC5C VacAcc.**
TB EXP #2	Reinstalled	RGA after cleaning.
TB EXP #3	Zero ongoing.	**VC2C Heating for wrapping.**
TB SPS #1	Zero ongoing.	CMS qualification chambers thermal cycle.

- Resuming the NEG coating at 181;
  - NEG coating of the Forward chambers;
  - NEG coating of the CMS central chamber;

Thank you !