Tentative scenario

Phase 1 (week 45): Baseline prototype (aerogel section)
Pressurized prototype (gas section)

Phase 2 (week 46): Real-scale prototype (aerogel+gas)

Two readouts can instrument each of the prototypes:

- MAPMT with MAROC3
- SiPM with ALCOR

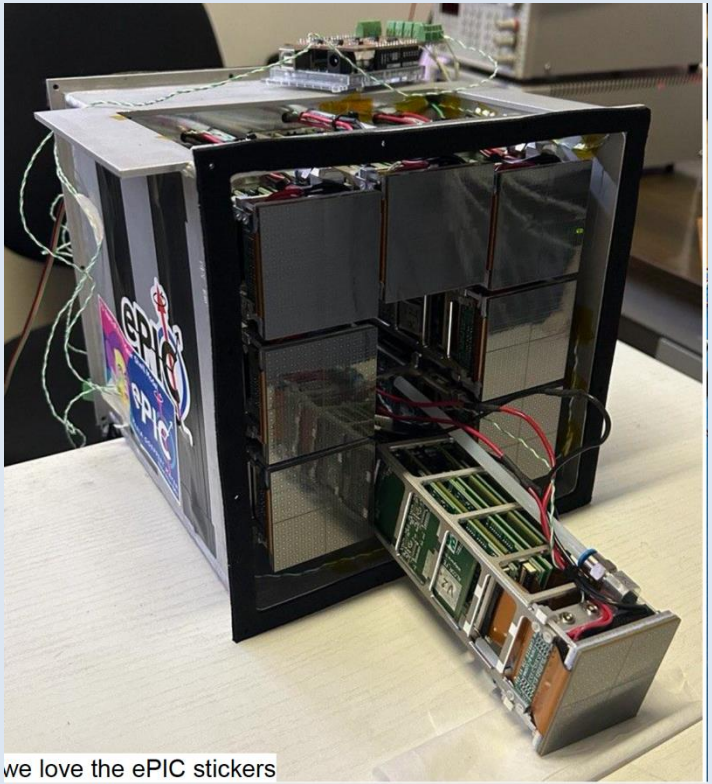
Detector Boxes

H13700 Hamamatsu **multi-anode PMTs**
No cooling but 1k HV ISEG power supply

DAQ: standard VME readout

S13360-3050 **SiPM** matrices of large area (5x5 cm^2)
Detector box for SiPM carriers and ALCOR chip
Cooling with Peltier cells plus chiller.

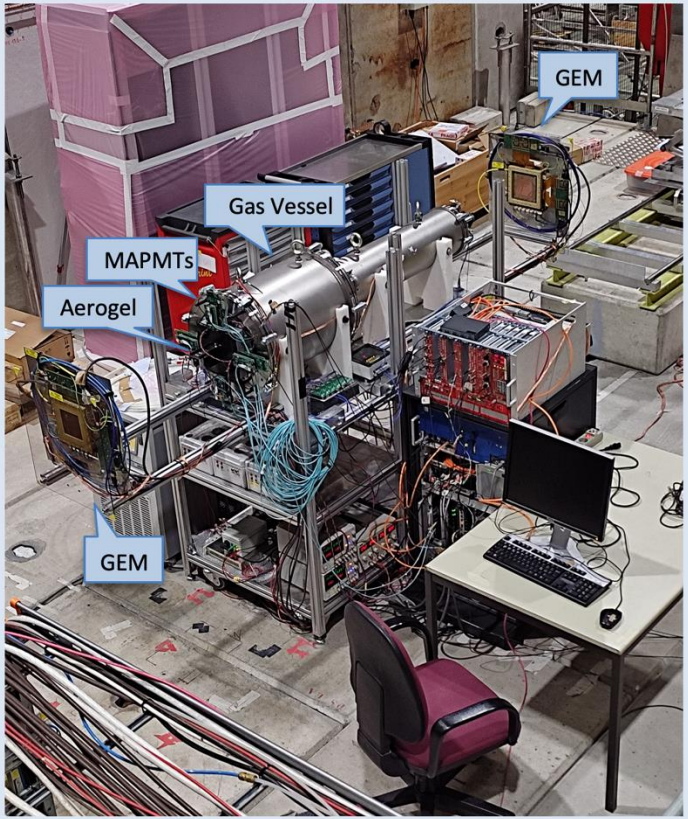
DAQ: standard VME readout + commercial power supplies



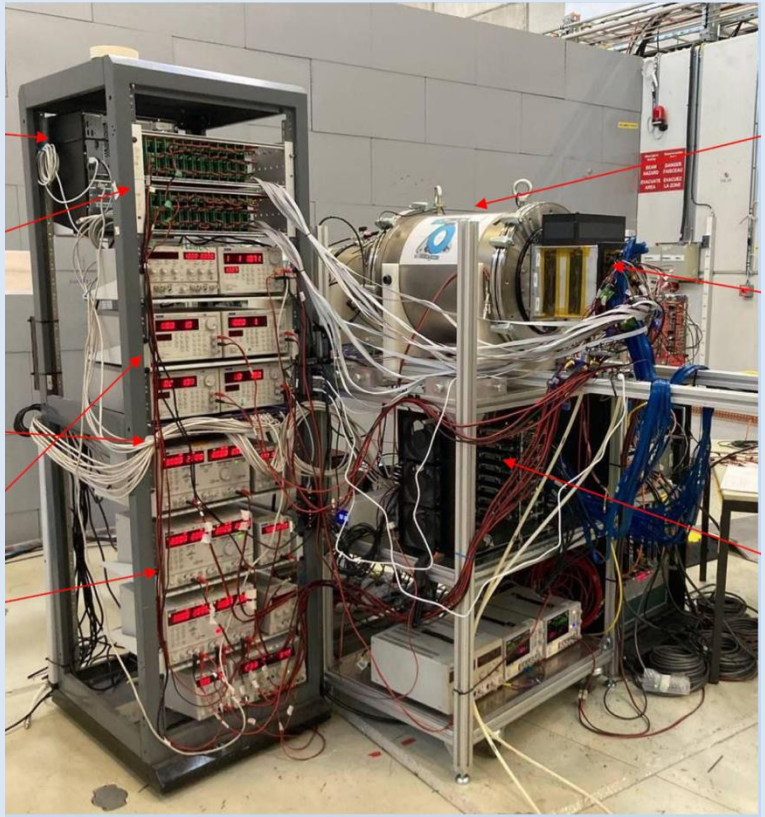
we love the ePIC stickers

No need of external support but 4 m (along the beam) x 4 m space required

CERN SPS-H8 beam line
Beam test with multianode-PMT



CERN PS-T19 beam line
Beam test with SiPM matrices



Goal 1 of 2025 is the test the ePIC-driven DAQ based on the compact readout-board (RDO)

- we use IPBUS protocol over VTRX+ with SFP NIC cards on receiving end
- ”fake-FEB” (ALCOR v2.1 adaptor) : two FireFly connectors to reach existing FEB (with 2 ALCOR v2.1)

8x front-end electronics stacks each with
- 1 RDO
- 4 Fake-FEBs

8x FireFly cables

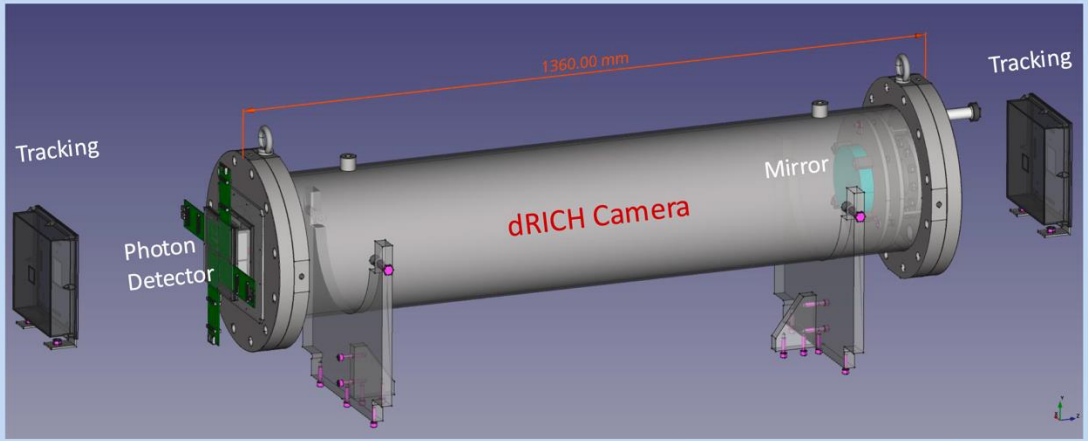
existing front-end electronics stack
4 ALCOR-dual boards
each with 2x wirebonded ALCOR v2

VTRX+ optical link to SFP

server bi-processore prestazionale con 8 link ottici SFP

outside | inside detector box

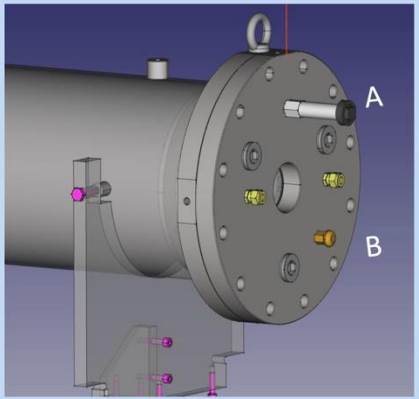
Goal 2 of 2025 is the performance comparison of pressurized Argon with C_2F_6



Cat-I Pressure Chamber (71 lt, +2.5 bar)
for comparing
- C_2F_6 at atmospheric pressure
- Ar at 3 bar (absolute)

A) Probe: Piezo APR_265_Pfeiffer

B) Pressure valve: CERN 40.10.40.250.1



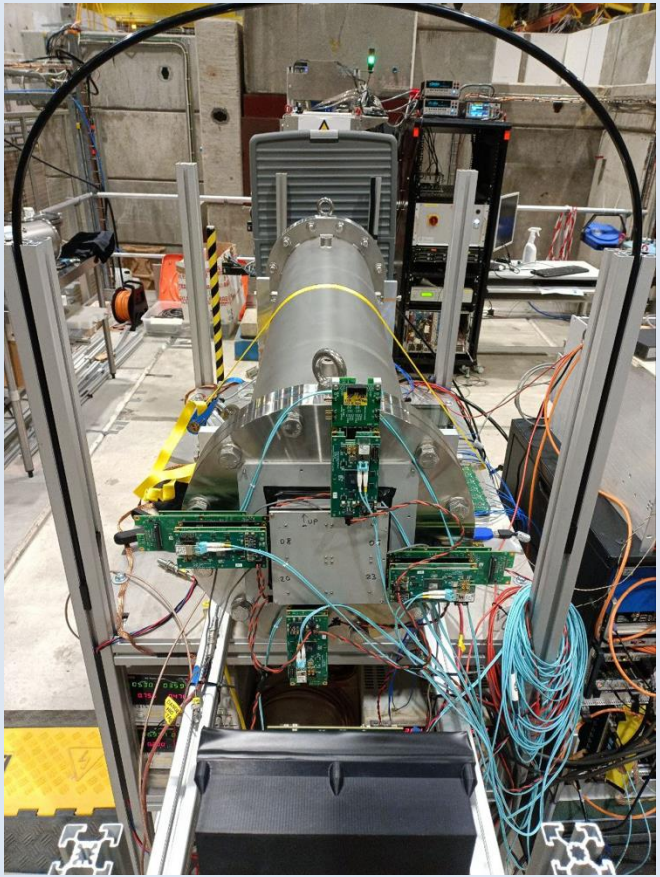
Goal 2 of 2025 is the performance comparison of pressurized Argon with C_2F_6

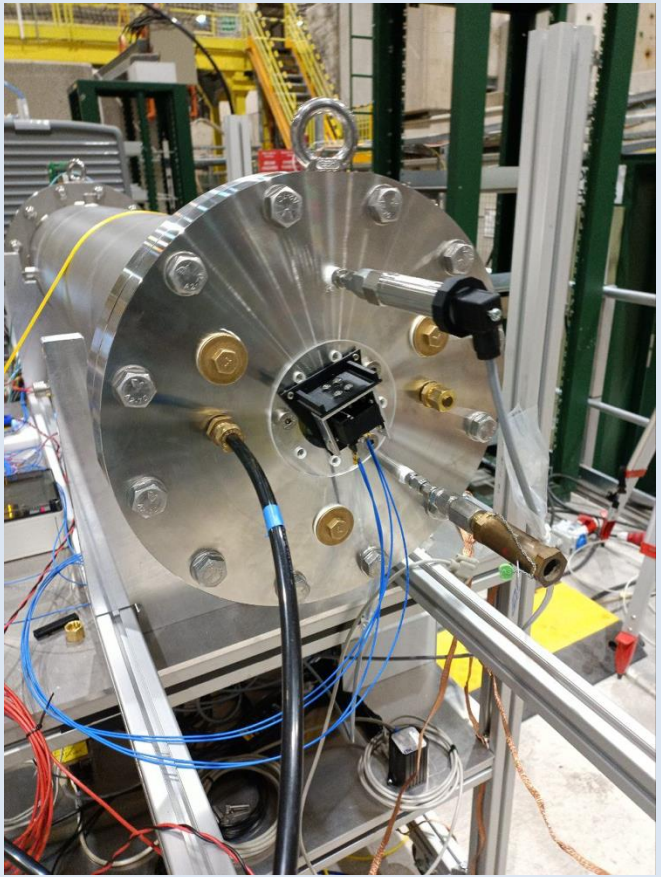
3 bar CE certified chamber

Compare C_2F_6 with other radiators,

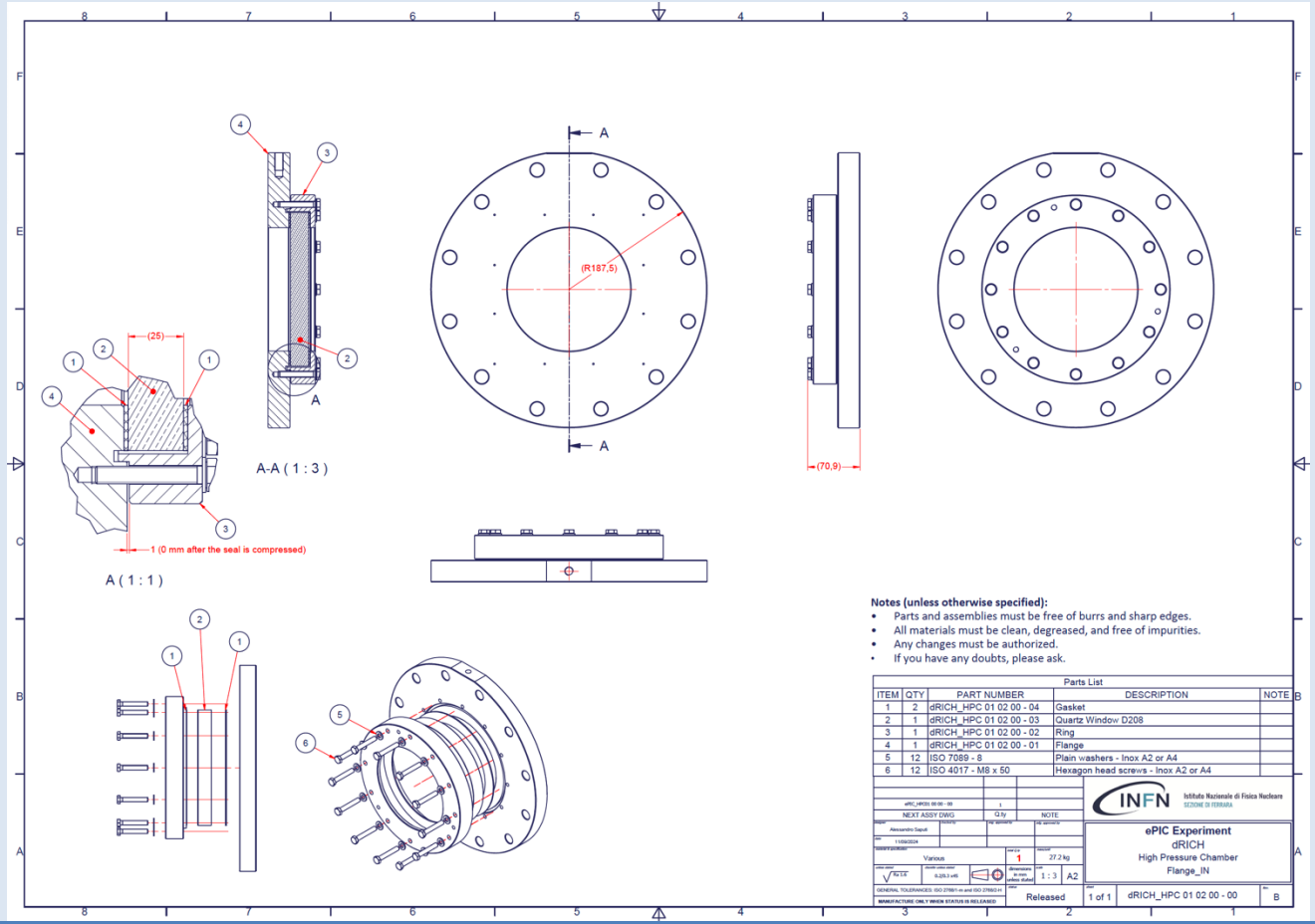
e.g. Argon, CO2
he for background study

in a close gas circuit (minimum leaks)



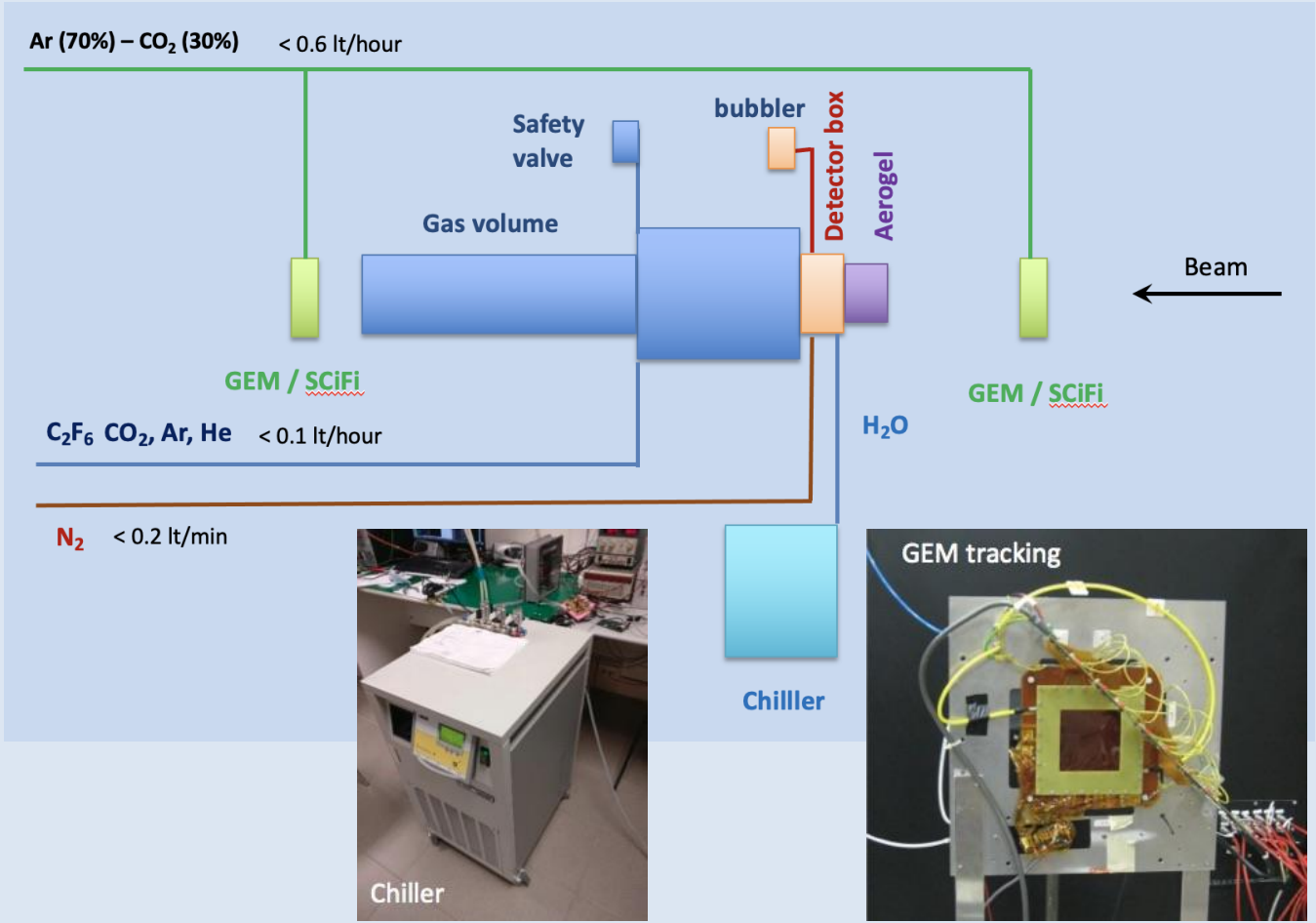


Quartz thickness choosen with safety factor 7 (fragile material with possible defects), flange assembling revised

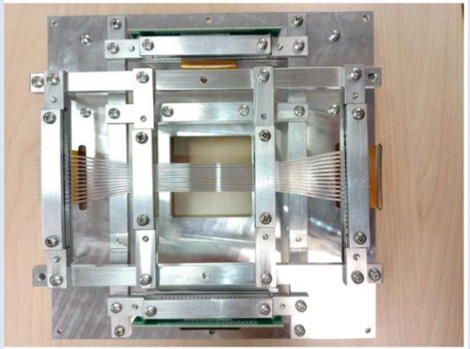


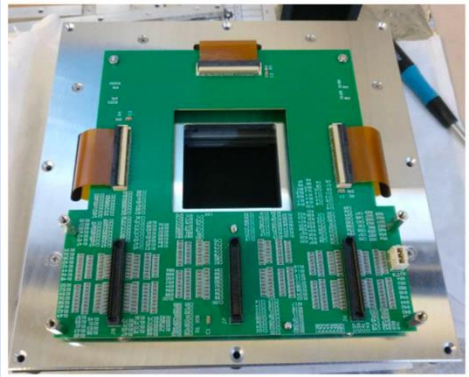
Quartz thickness choosen with safety factor 7 (fragile material with possible defects), flange assembling revised

Gas Distribution Proto 2



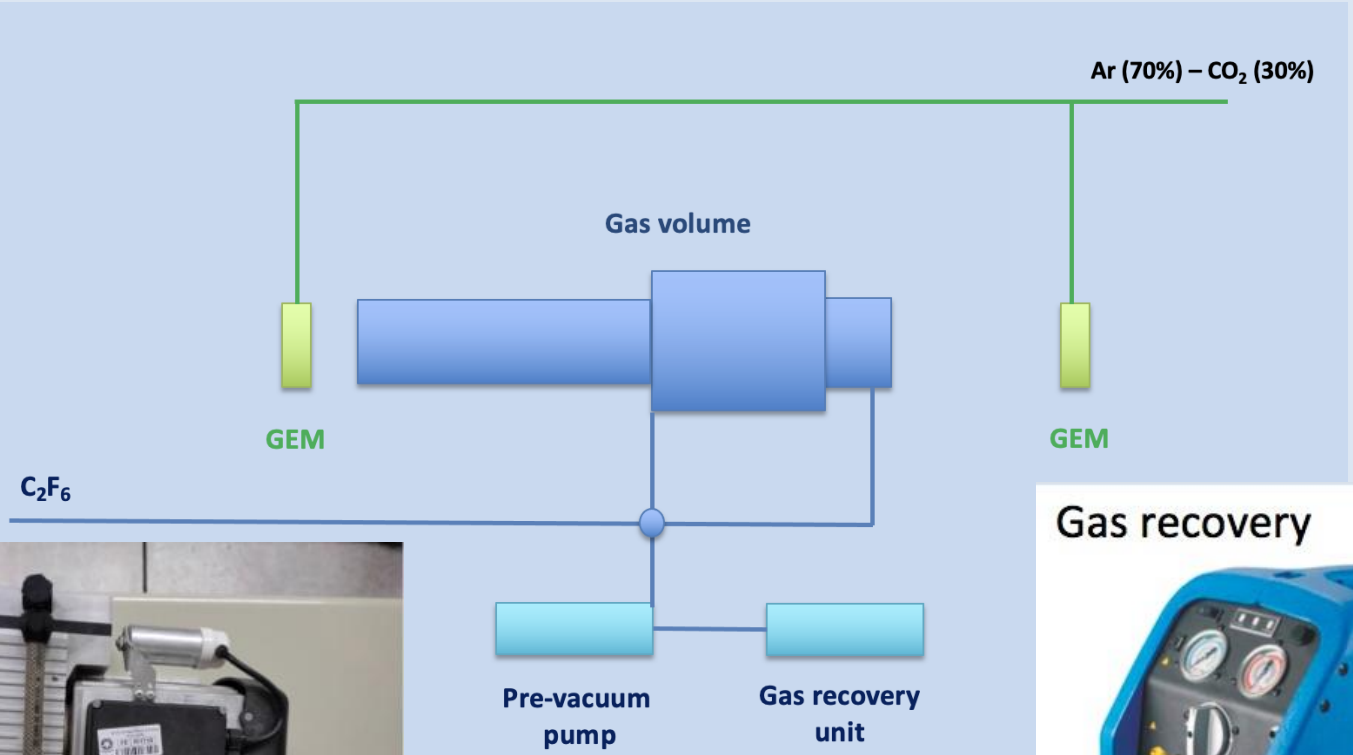
Sci-Fi + SiPM tracking





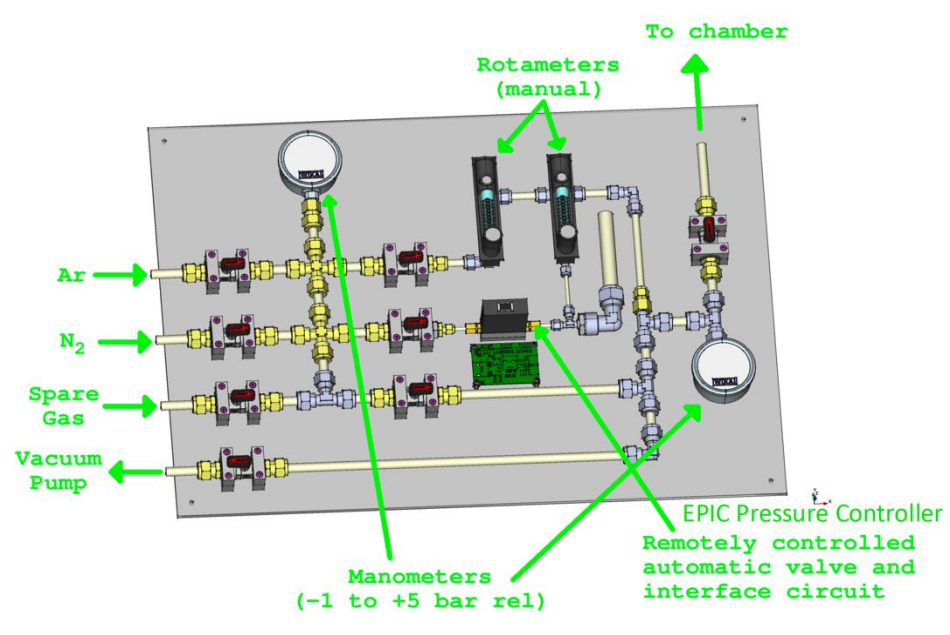
Require a Trigger

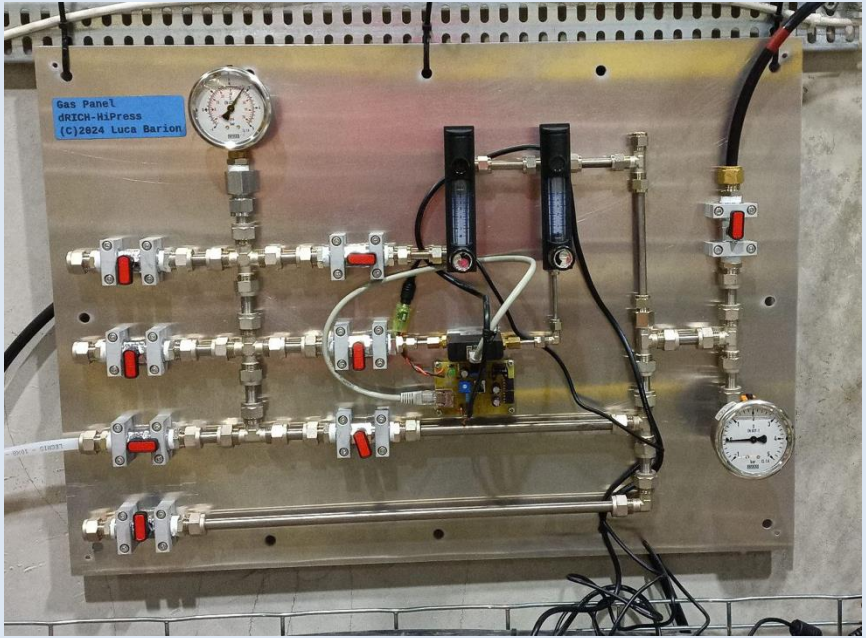
Evacuation and Gas Exchange Proto 2



Gas recovery

Gas panel for different flows with remote control

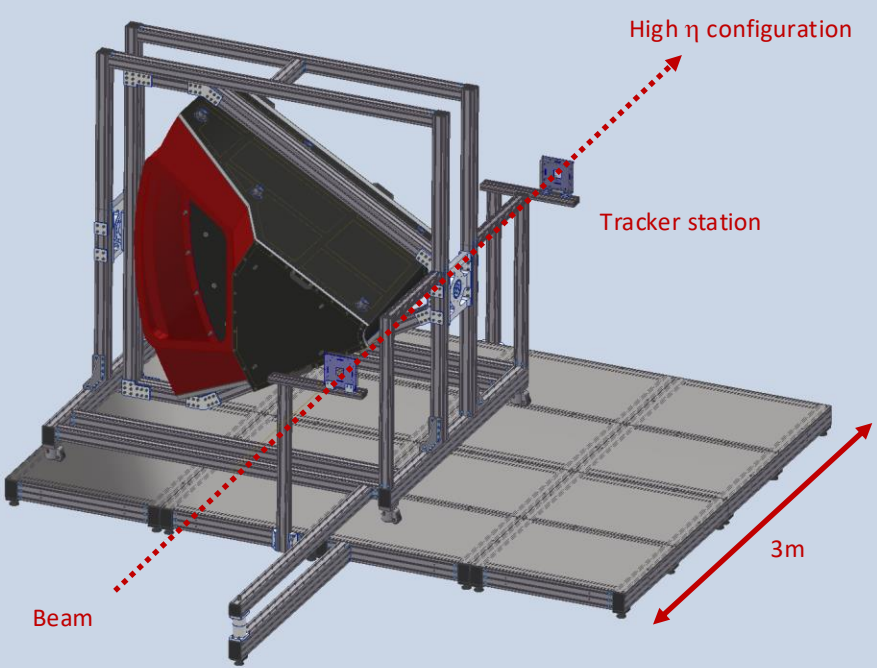


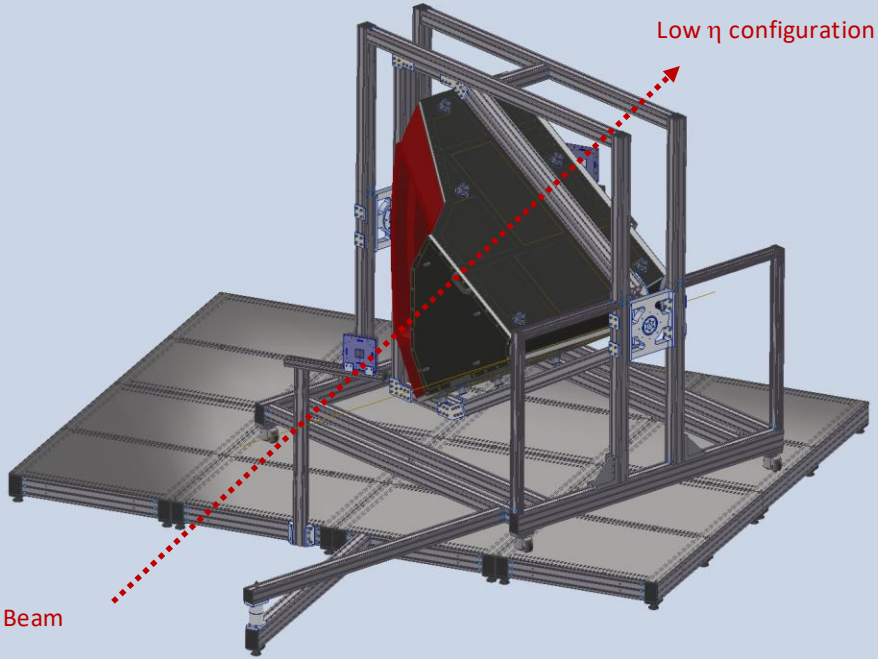


Prototype 3 (Real Scale)

No need of external support but 4 m (along the beam) x 4 m space required

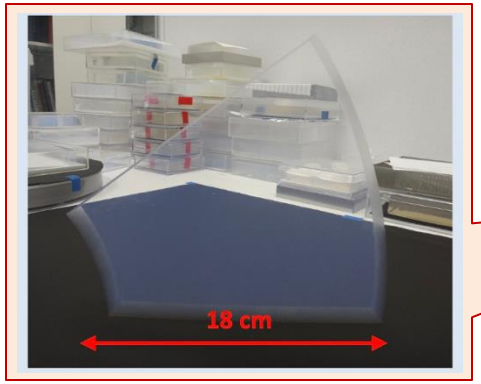
Saddle for safe operations (+ Platform for future pseudorapidity scan)

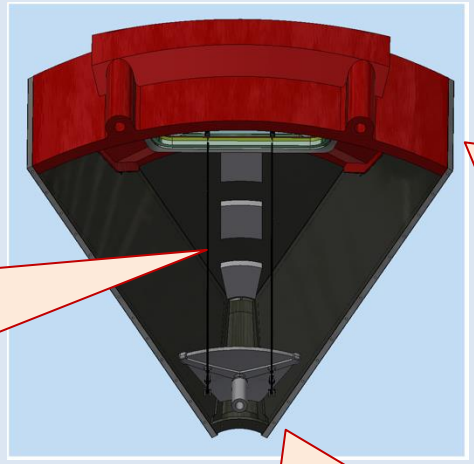




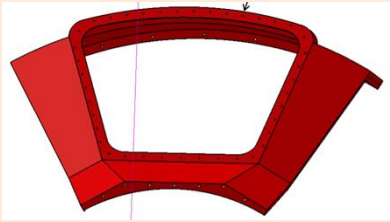
Goal 2 of 2025 is the commissioning of the new prototype and realistic component demonstrators in a off-axis otics

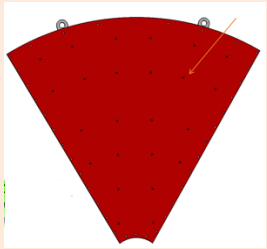
Aerogel demonstrator

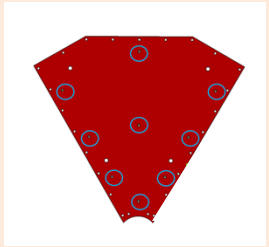


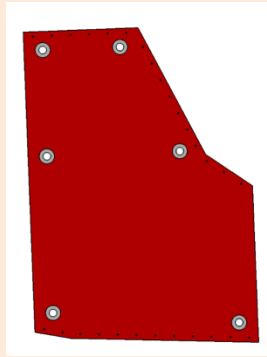


Under Construction



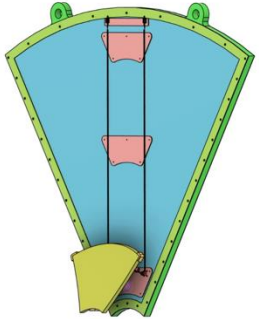


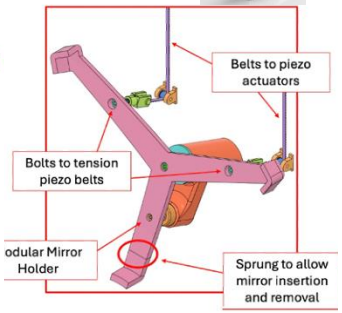




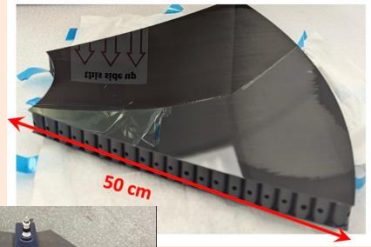
CFRP layer samples

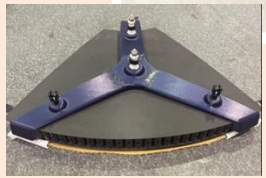
Mirror mounting and holder



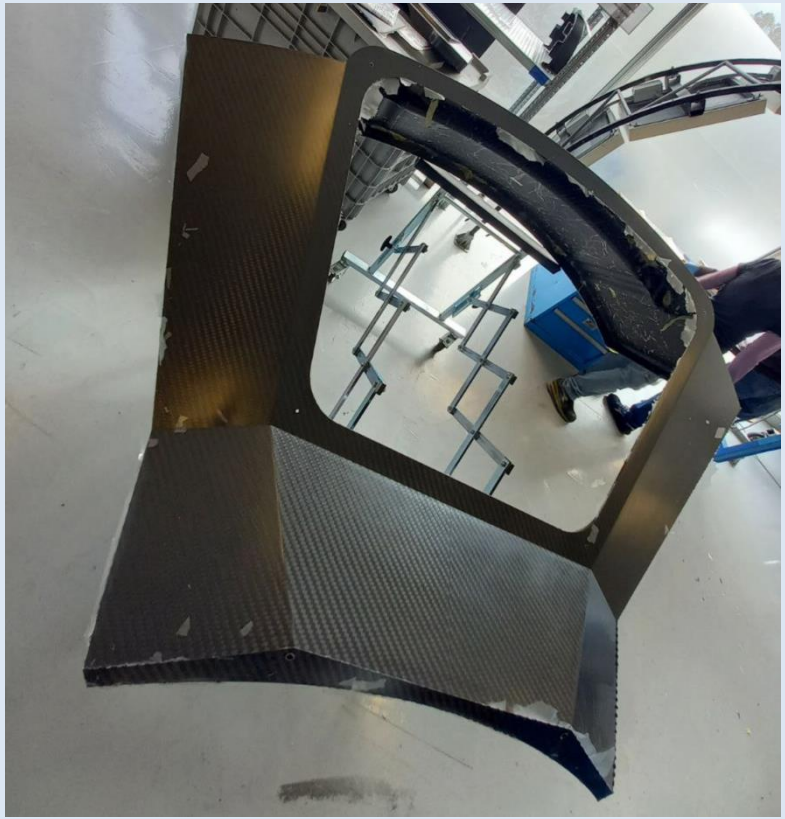


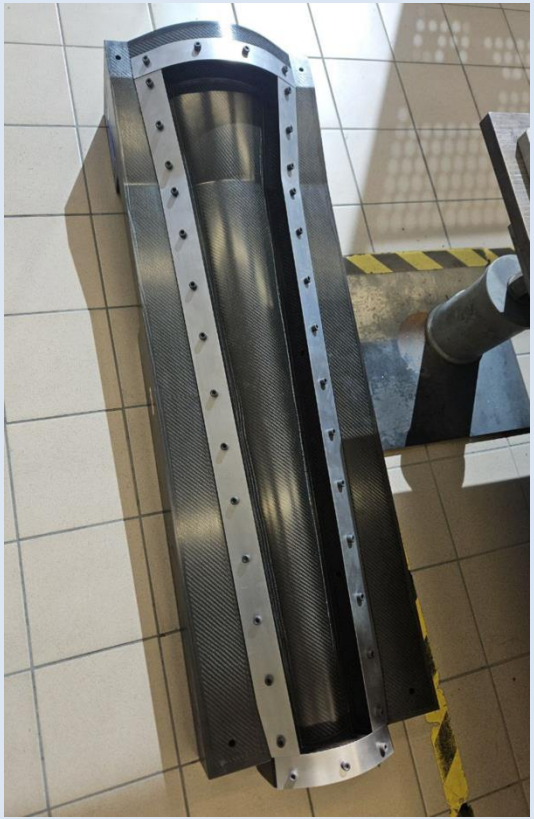
JLab





Real-scale prototype assembling ongoing at ACS, mid-size mirror demonstrator at ECI for coating
Support assembling ongoing at INFN FE



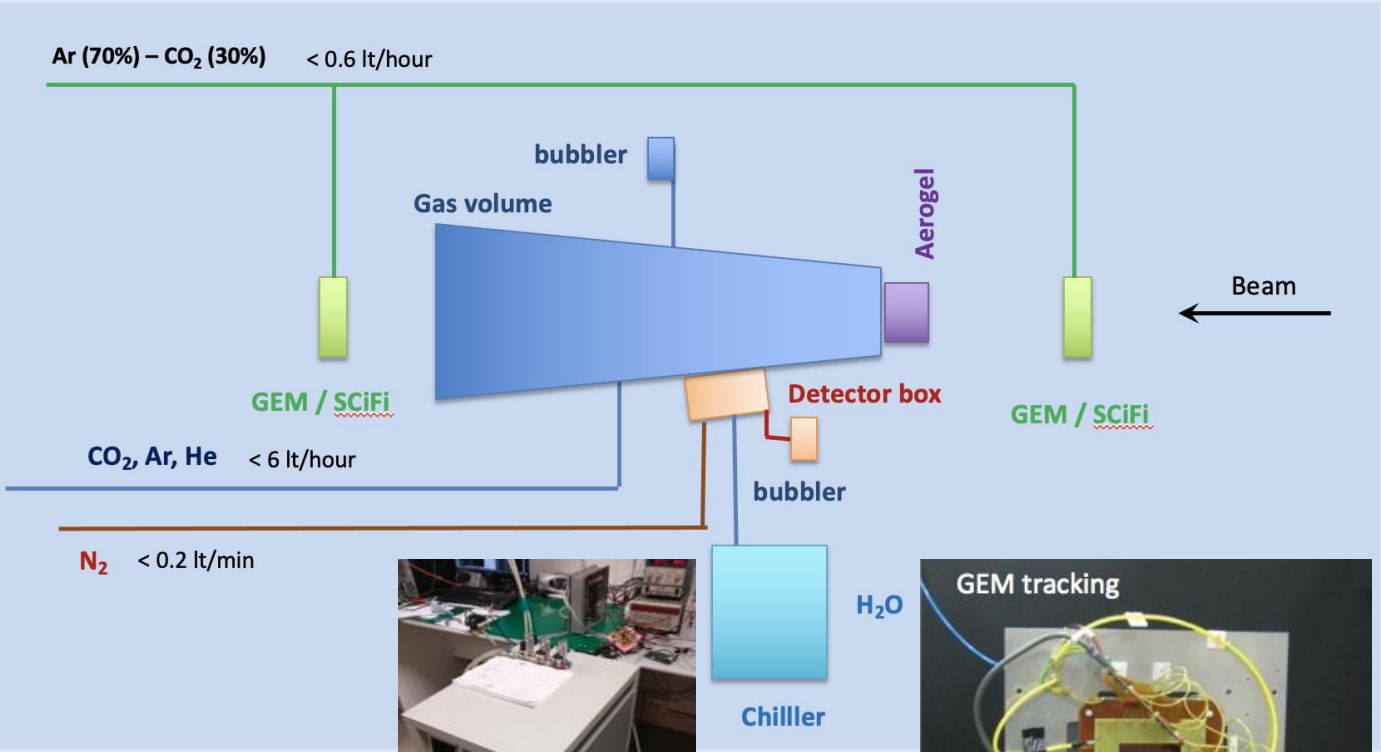


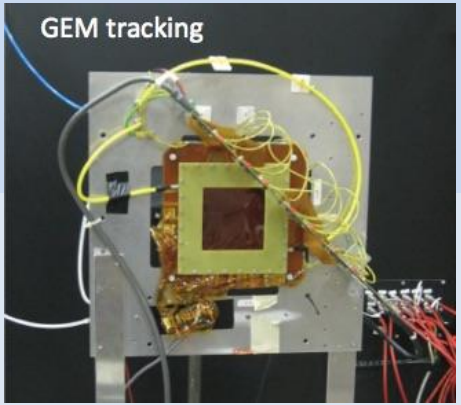
Real-scale prototype assembling ongoing at ACS, mid-size mirror demonstrator at ECI for coating
Support assembling ongoing at INFN FE

Real-scale prototype assembling ongoing at ACS, mid-size mirror demonstrator at ECI for coating
Support assembling ongoing at INFN FE

			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Available			Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
Marco C.	FE			travel	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	travel
Luigi R.	BO			travel	x	x	x	travel										travel	travel	
Sandro G.	BO			travel	x	x	x	x	x	x	x	x	travel							
Rajesh A.	BO			travel	x	x	x	travel												
Roberto P.	BO			travel	x	x	x	x	travel									travel	travel	
Pietro A.	BO				travel	x	x	x	travel											
Davide F.	BO				travel	x	x	x	travel											
Nicola R.	BO						travel	x	x	x	x	x	x	x	x	x	x	x	travel	
Riccardo R.	BO														travel	x	x	x	travel	
Edoardo R.	BO	no money																		
Fabio C.	TO				travel	x	x	x	travel											
Chiara A.	TO		x	x	x												x	x	x	x
Lorenzo P.	FE			travel	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	travel
Francesco N.	LNS					travel	x	x	x	travel			travel	x	x	x	travel			
Francesco M.	LNS					travel	x	x	x	travel			travel	x	x	x	travel			
Nicola F.	SA		travel	x	x	x	x	x	x	x	travel									
Cristina R.	SA		travel	x	x	x	x	x	travel											
Cristina T	CT											travel	x	x	x	travel				
Marta	TO													travel	x	x	x	x	travel	
Giacomo V.	BA		x	x	x	x	x	travel												
Fateme F.	LNS								travel	x	x	x	x	x	x	x	x	x	x	travel
Nicolò J.	TO				x	x	x	x	x	travel										
Fulvio T.	TS		travel	x	x	x	x	x	x	x	x	x	x	x	travel					
Livio R.	TS		travel	x	x	x	x	travel												
Chandra C.	TS							travel	x	x	x	x	x	x	travel					
Raman K.	TS													travel	x	x	x	x	x	travel
Simone V.	GE			travel	x	x	x	x	x	x	x	x	x	travel						
Alessandro L.	RM1				travel	x	x	travel												
Ottorino F.	RM1				travel	x	x	travel												
Luca P.	RM1				travel	x	x	travel												
Cristian R.	RM1				travel	x	x	travel												
Michele C.	FE										travel	x	x	travel						
Federico E.	FE										travel	x	x	travel						

Gas Distribution Proto 3





Sci-Fi + SiPM tracking