

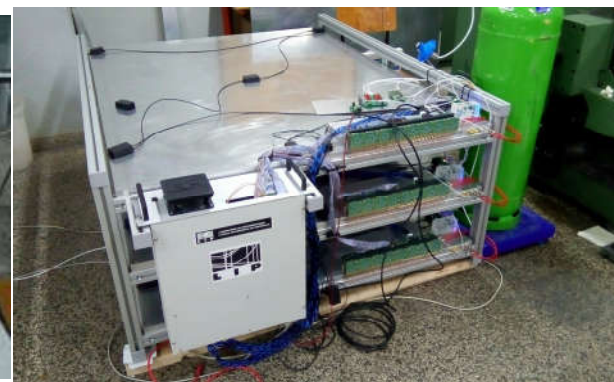
•RPC - MARTA - SÃO CARLOS

- 20 sensitive volumes
- 40 sets of support/monitoring systems.
- 20 HV power supplies
- In situ support



•RPC - Tristan

- 3 plan telescope fully instrumented
 - HV power supplies
 - Gas distribution and monitoring
 - Signal pickup pads and cabling



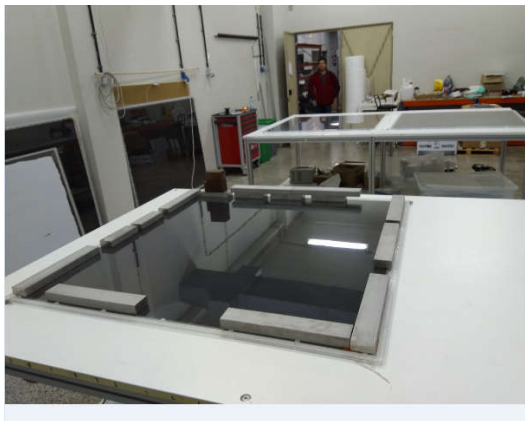
•RPC - APET

- Continuous involved in maintenance, support and upgrades.
- In situ installation



•RPC – Lousal, Mutom

- 4 plans telescope.
- 5 sensitive volumes
- 5 HV power supplies.
- Gas distribution and monitoring systems.



•RPC – SHiP & FD

- First prototype
- Unless front end electronics



•RPC – “School”

- Guent
- Clermont Ferrand



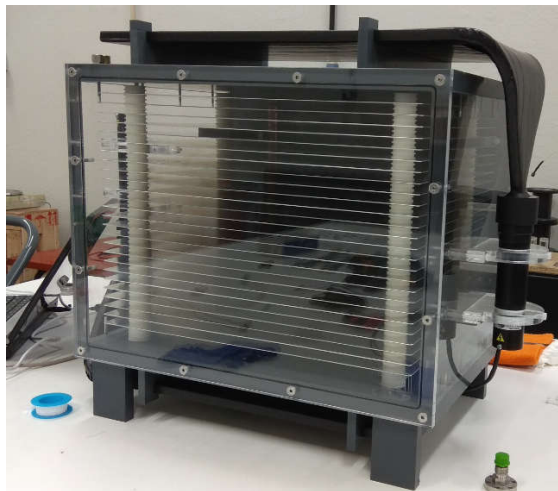
•SNO+, second Unit

- Sealing tests on all welded regions and O-ring lines.
- Routing and installation of all cables and pipes.



•Spark Chamber

- Production of 2 cameras
- In situ installation



•General, QC..

- Support all R&D groups, Infrastructures and Competence Centres



•HADES

•RPC

- Re-integration of the sectors in the spectrometer

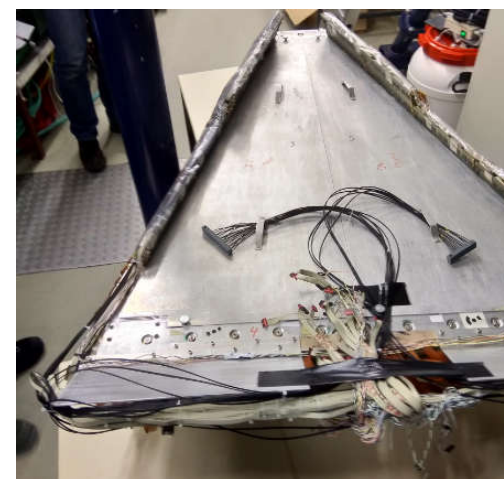
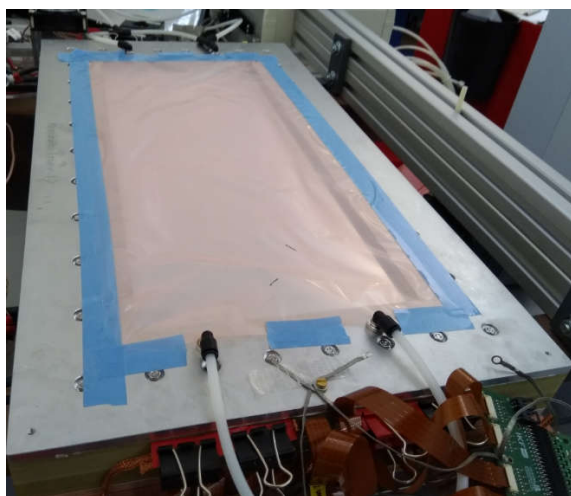
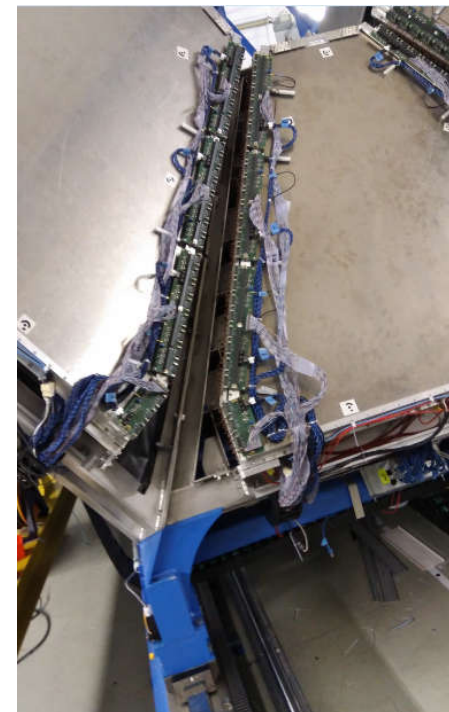
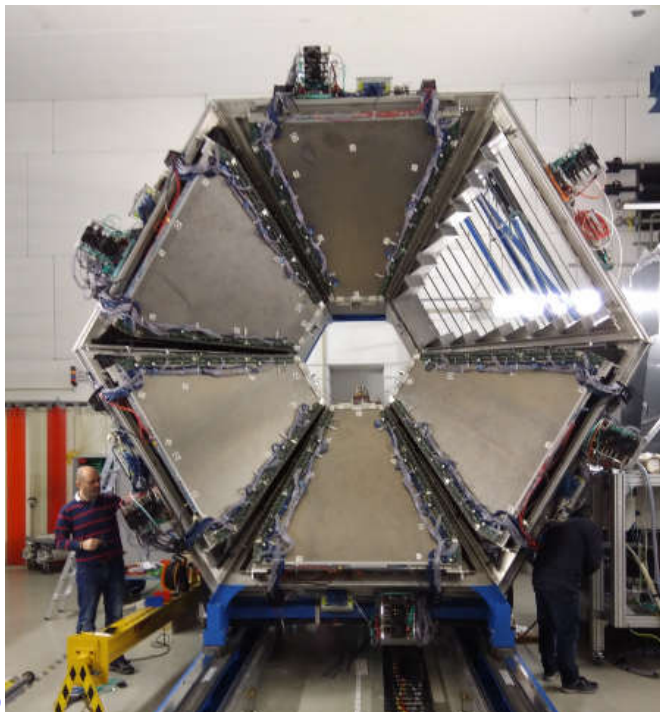
- Gas distribution system

•MDC

- Prototype R&D, design, construction and testing

- Assembly of the spare sector of plane I

- Planes I and II gas systems adjustments to operate with controlled water amount to assure smooth operation due to Malter effect



•External work

•Research Institutes

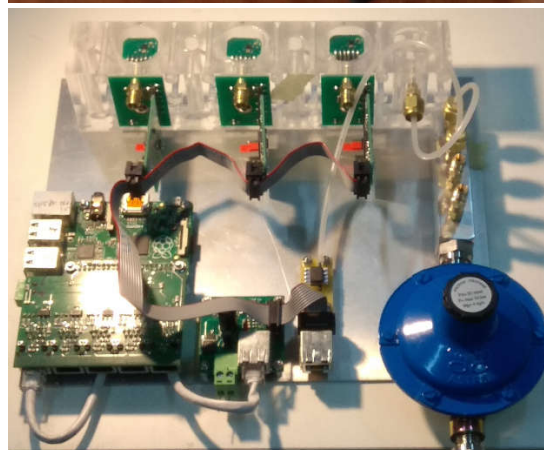
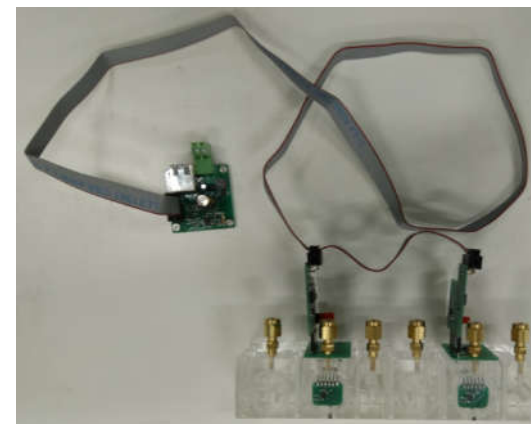
- GSI
- Heidelberg University
- ICNAS
- Santiago de Compostela University
- Coimbra University
- Clermont Ferrand University

•Industry

- Te&M, general annealing
- STV, gas system supplier

•Total amount

•8.850 €



2019 Highlights

L.Lopes

DL – Detector Laboratory

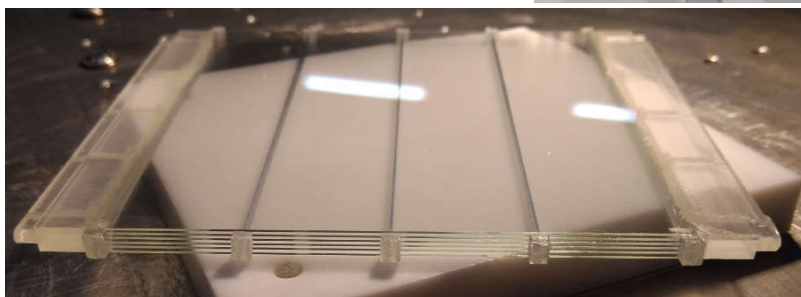
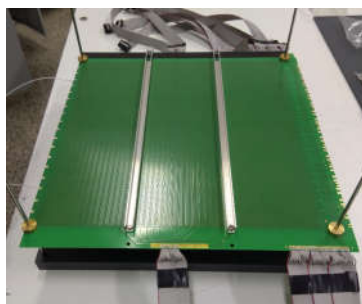
•RPC - MARTA – Malargue and Rio de Janeiro

- Field installation at Auger site
- Preparation for production in CBPF



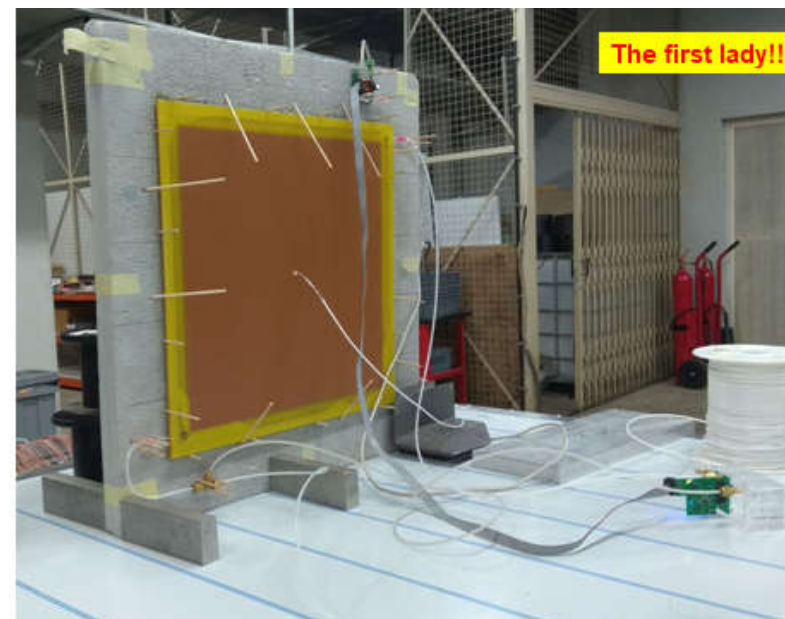
•RPC – APET & BET

- Continuous involved in maintenance, support and upgrades concerning APET
- Start the game with BPET



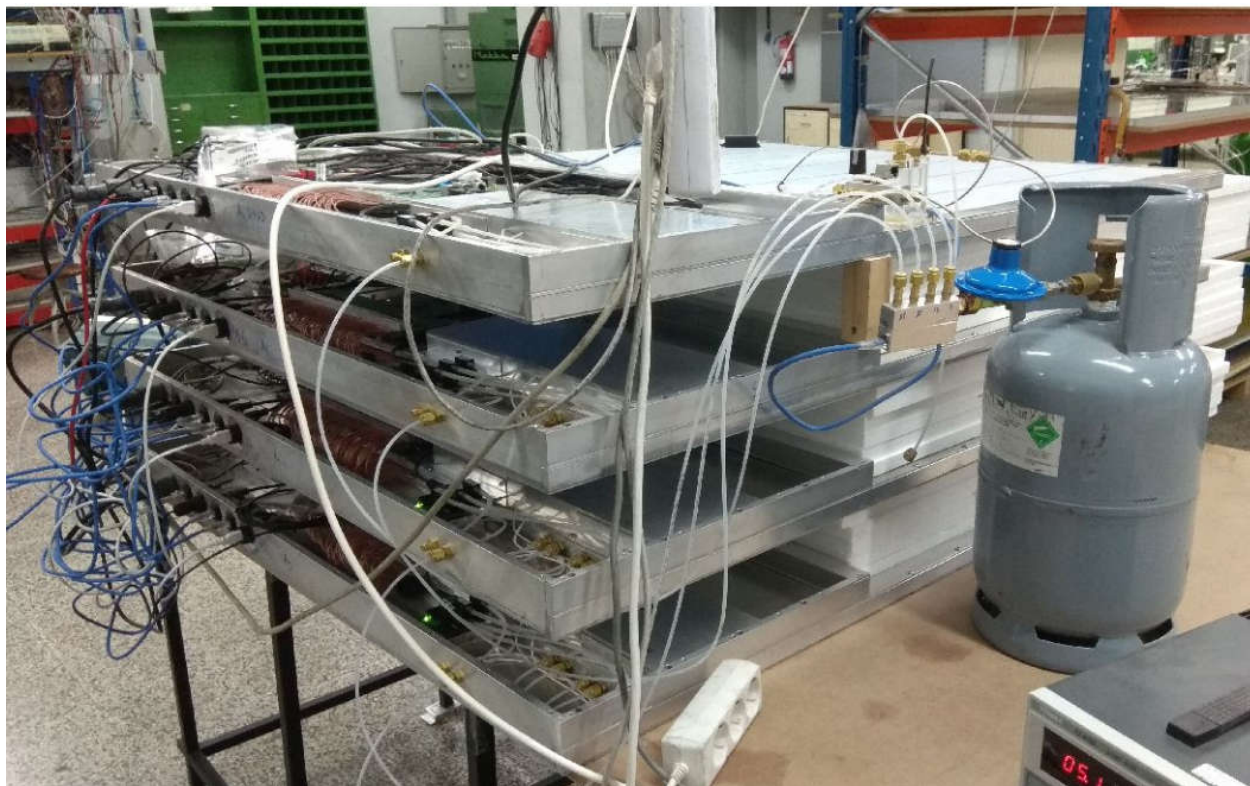
•RPC – Sealed RPC

- Final (3rd) version ☺☺☺☺,
- 2 months sealed
- Important for Astrophysics and outreach



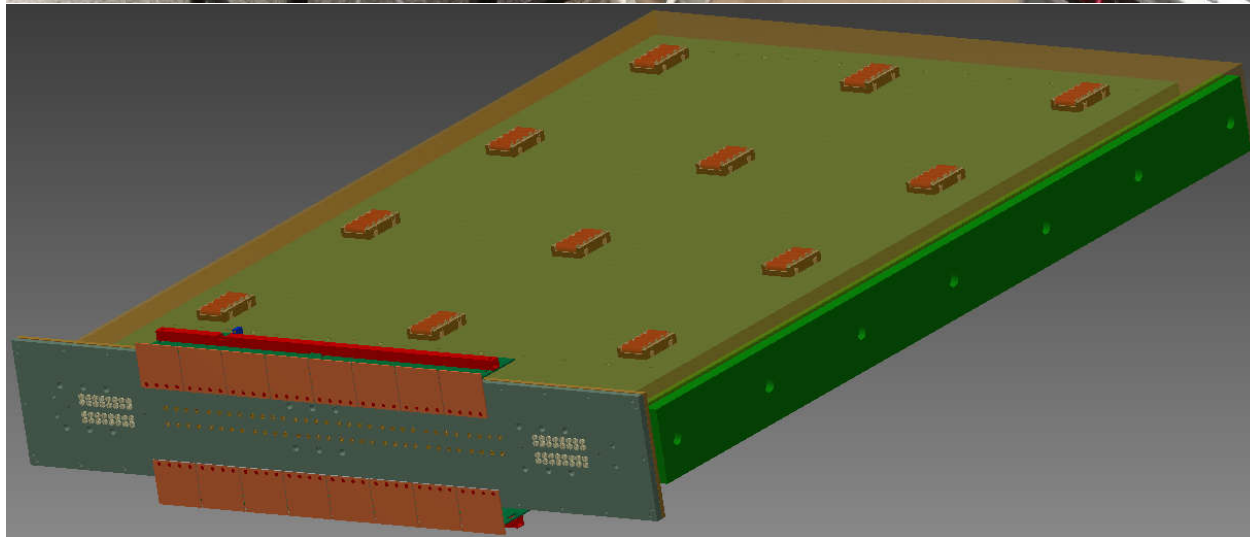
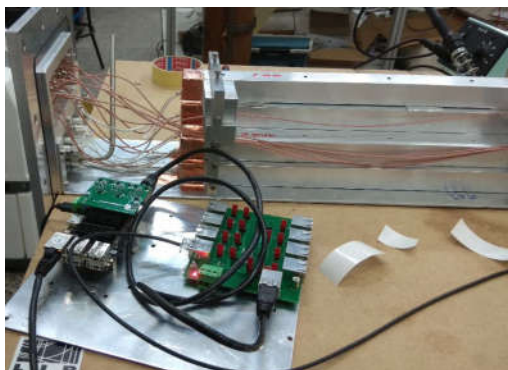
•RPC – Lousal, Mutom & SWGO

- Mutom 4 planes telescope.
- Fully instrumented
- SWGO, 2 MARTA like RPCs



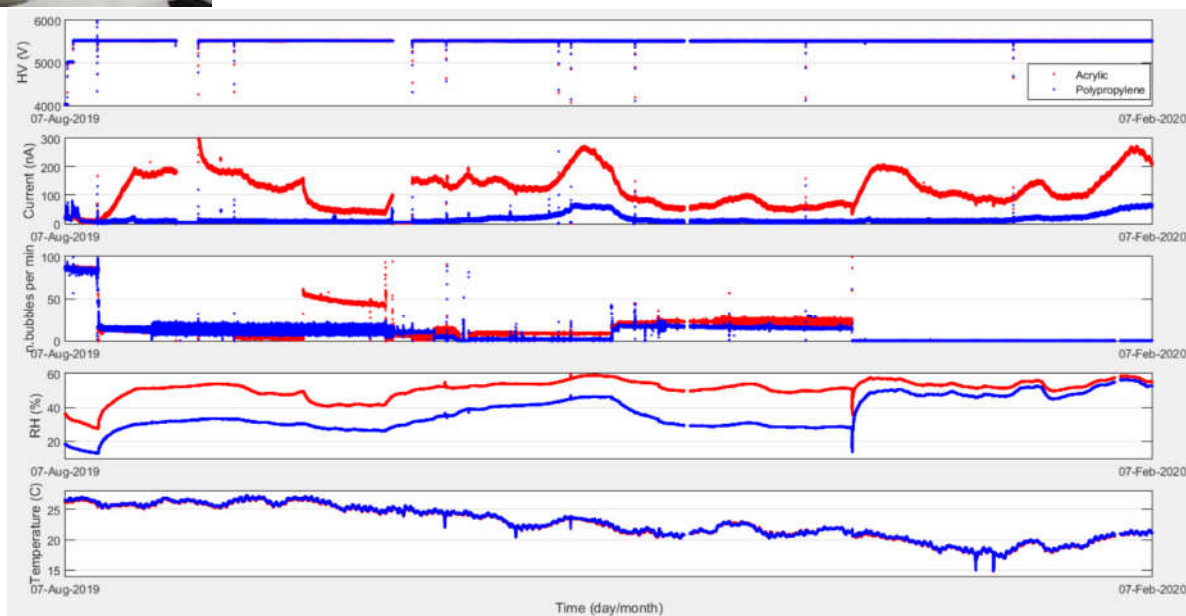
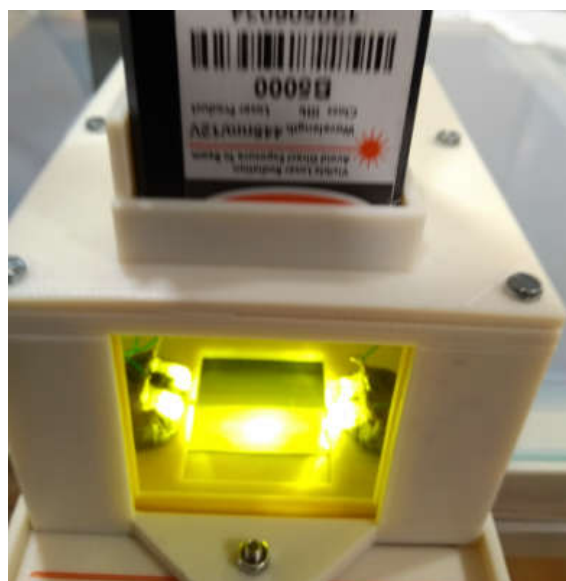
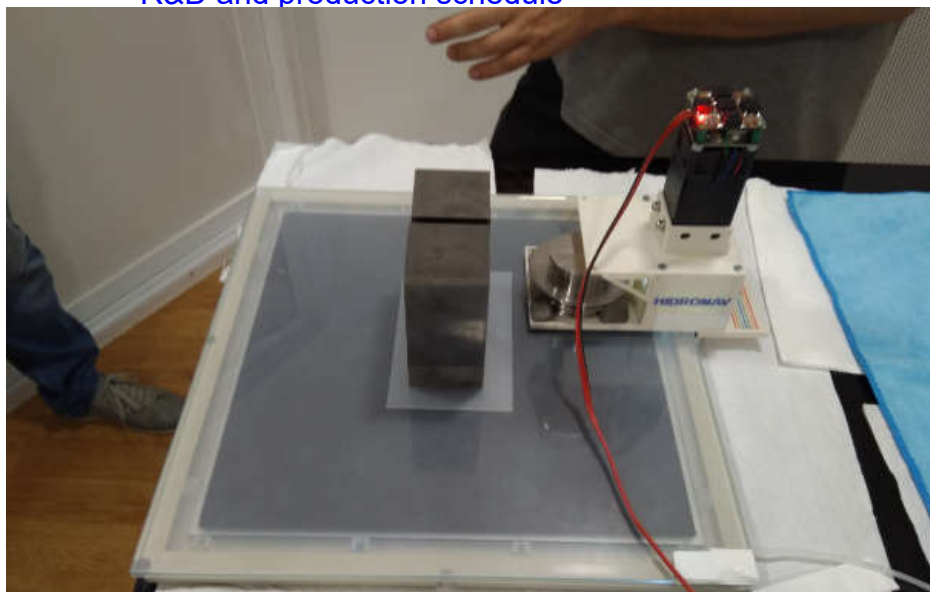
•RPC – FD

- Prototype production
- module design



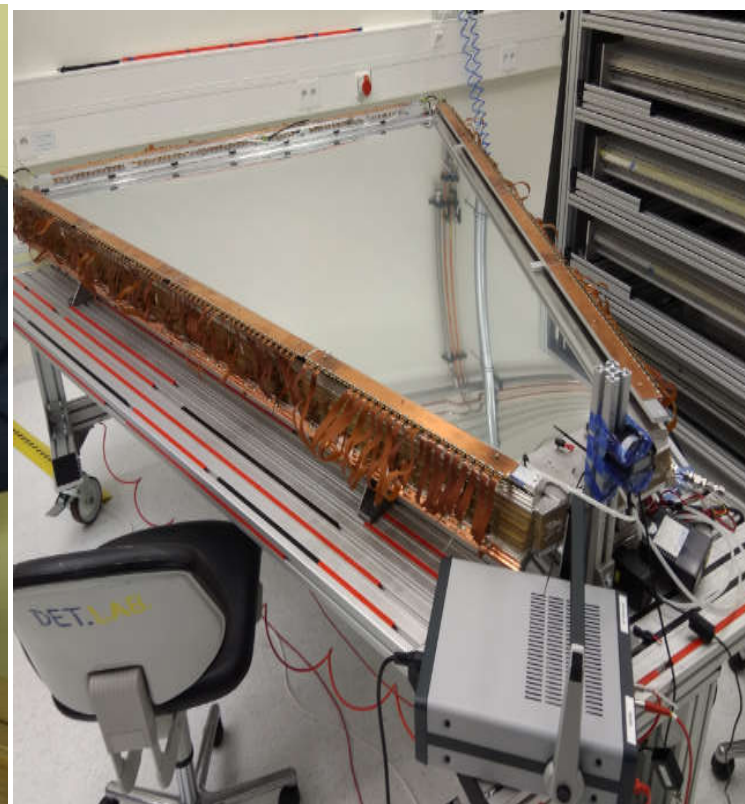
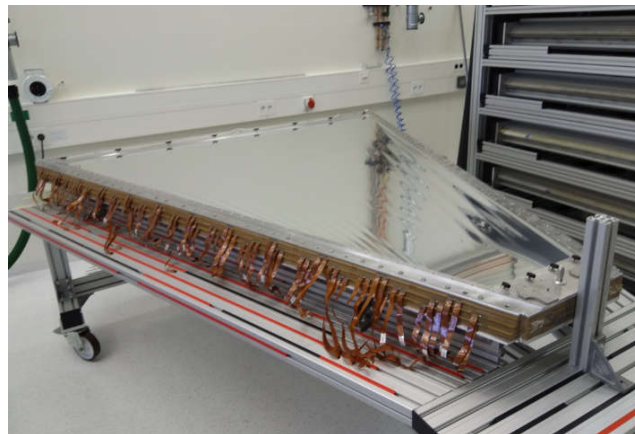
•RPC – STRATOS

•R&D and production schedule



•HADES @ GSI

- RPC
- Production beam
- MDC
 - Reparation of P3S1
 - Reparation of P2S1
- Support to both detectors during beam production



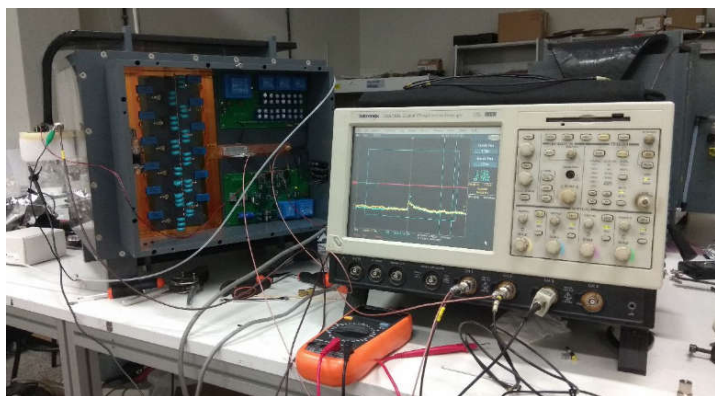
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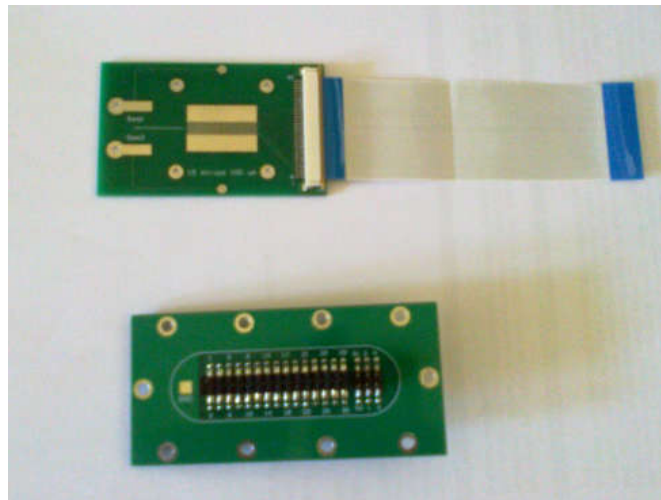
•Spark Chamber

- Production of 3 cameras
- Repairing and maintenance to few others
- R&D change from PMTs to SiPMs, reduction in material costs close to a factor 2.



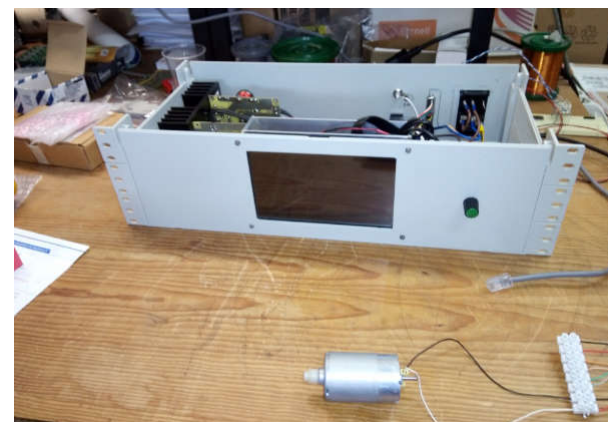
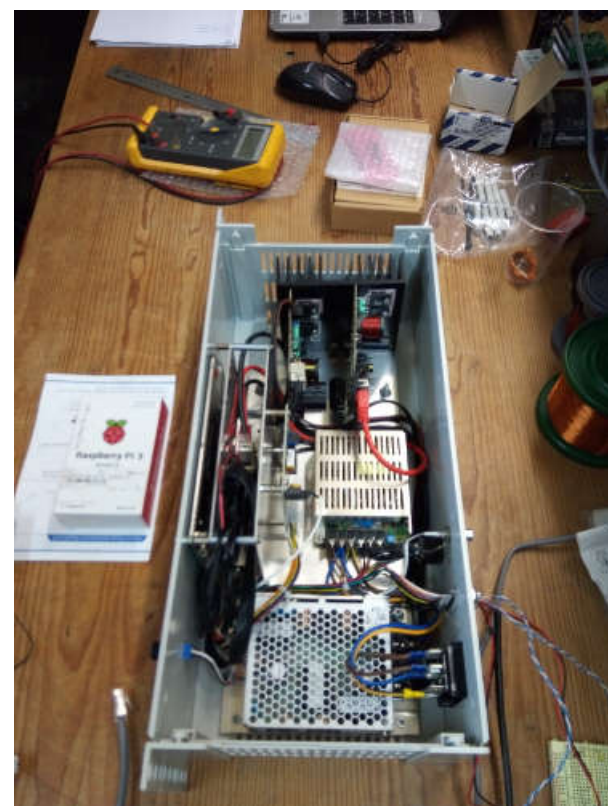
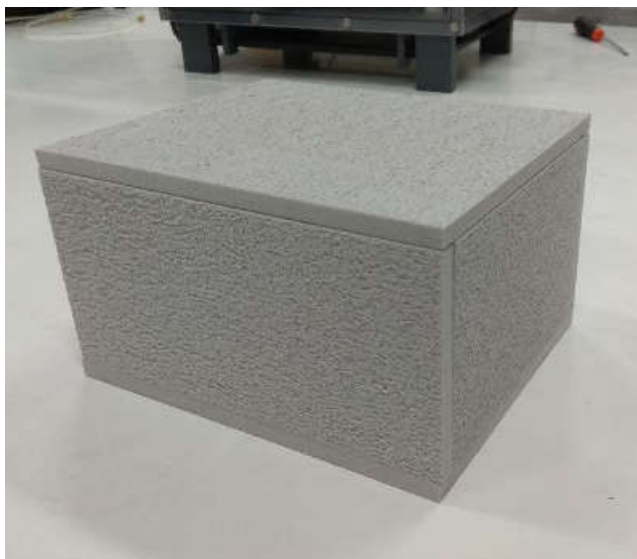
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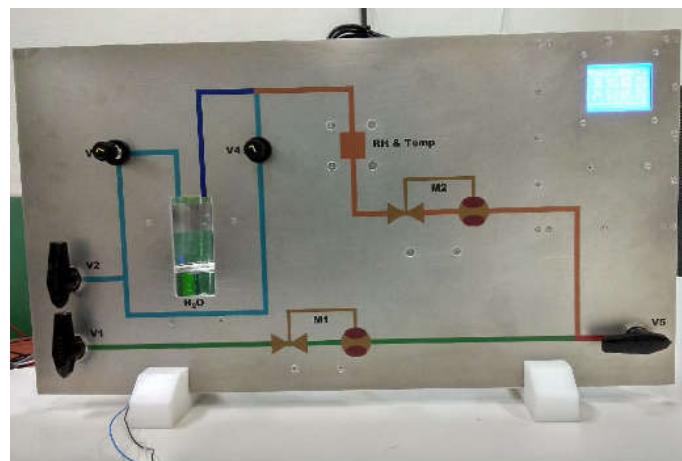
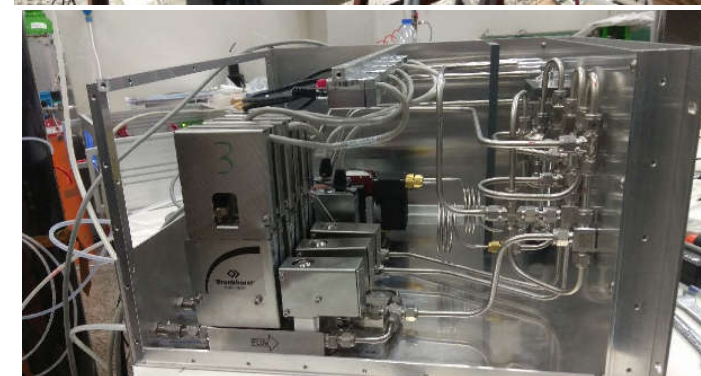
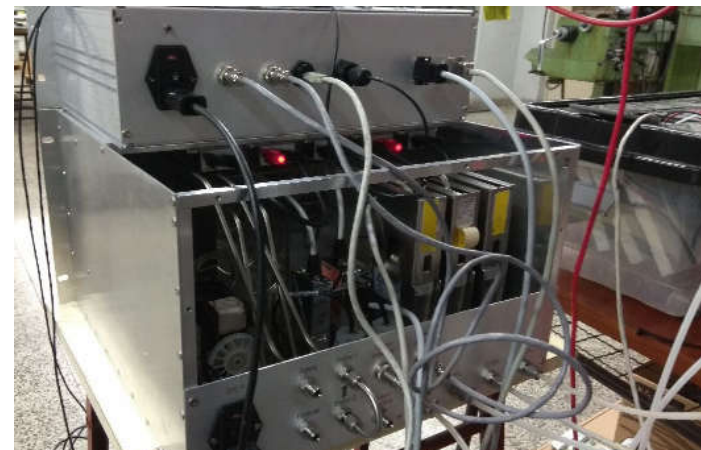
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- STV, gas system supplier

•Total amount

- 25.860 €



**For 2020 most of our time is already booked
But its always possible to stretch a bit...**

One travels a lot

while others work too much



**Detector Lab is here to make your life easier!!
Why complicate!!**