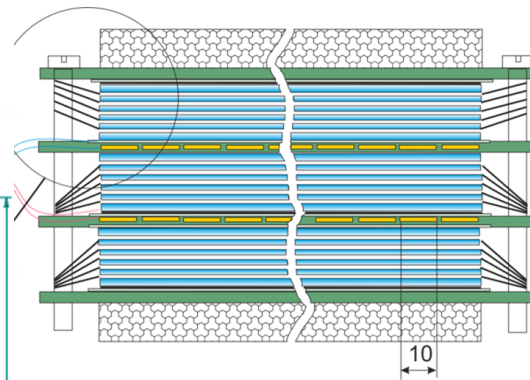
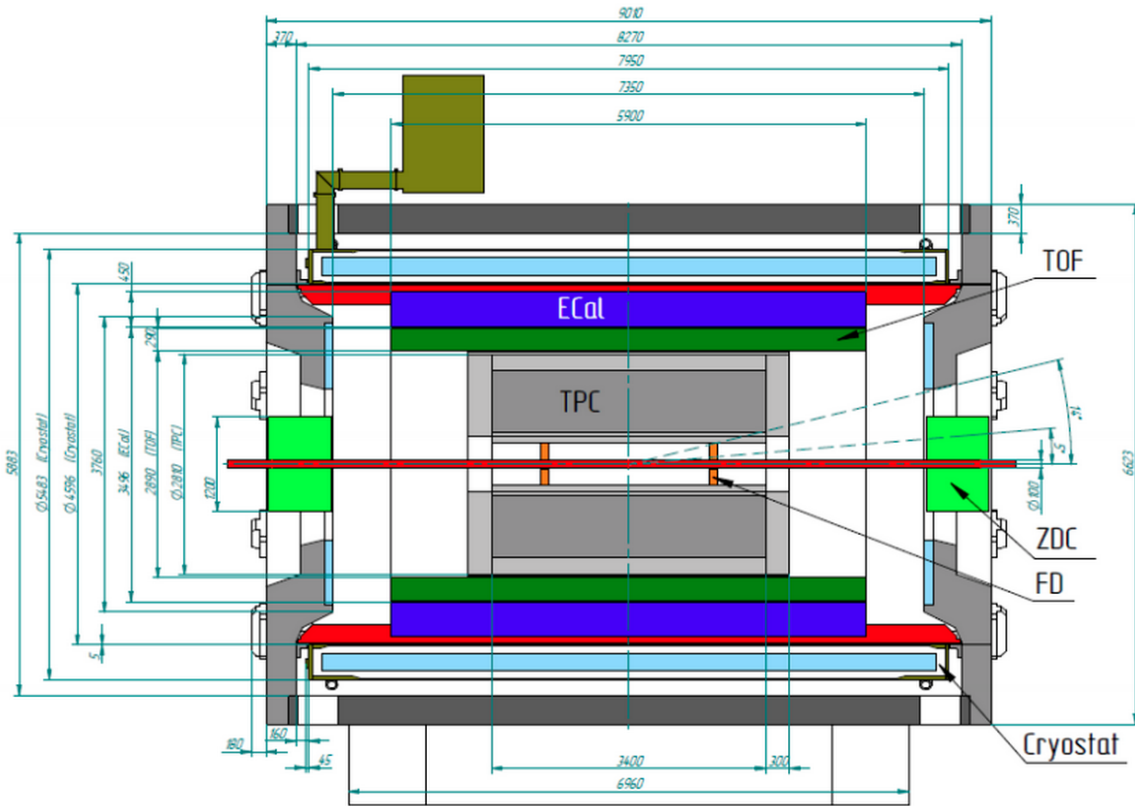
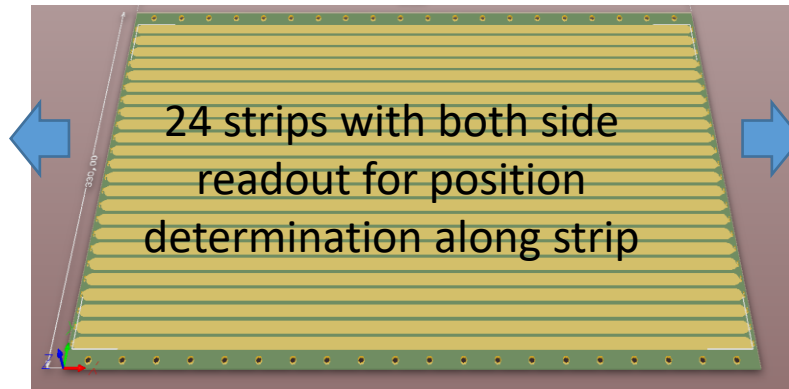


Status of the MPD TOF System

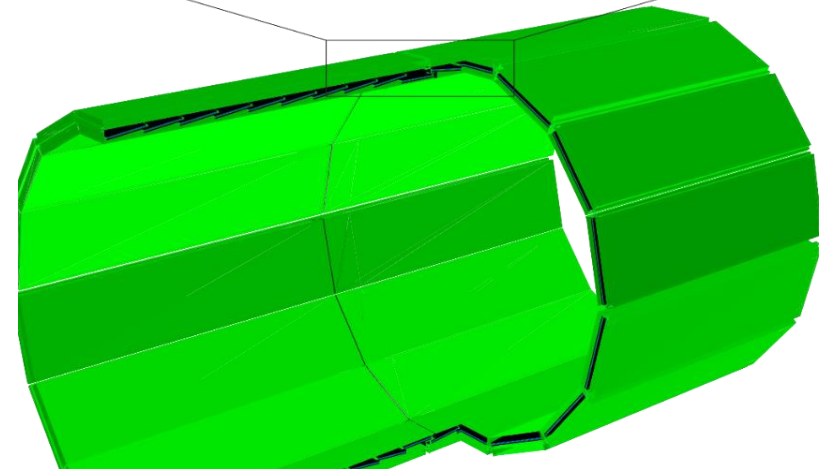
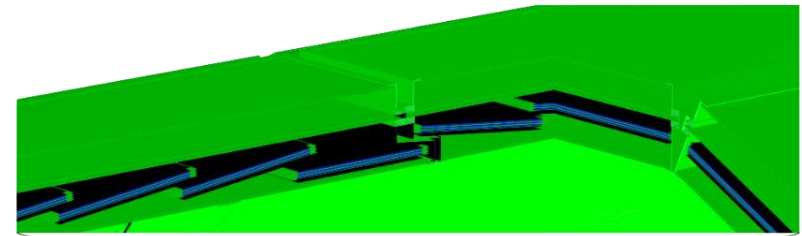
Time-of-Flight system in the basic configuration of MPD



3-stack 15-gaps MRPC



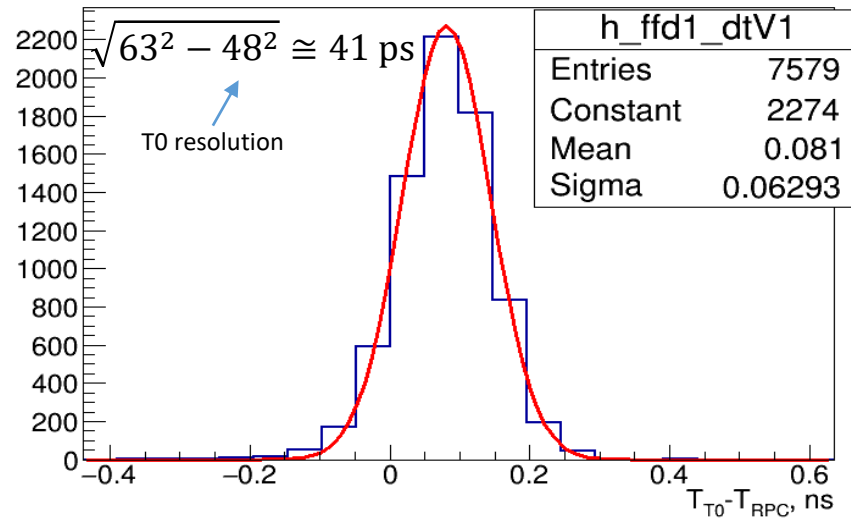
MRPC readout strips



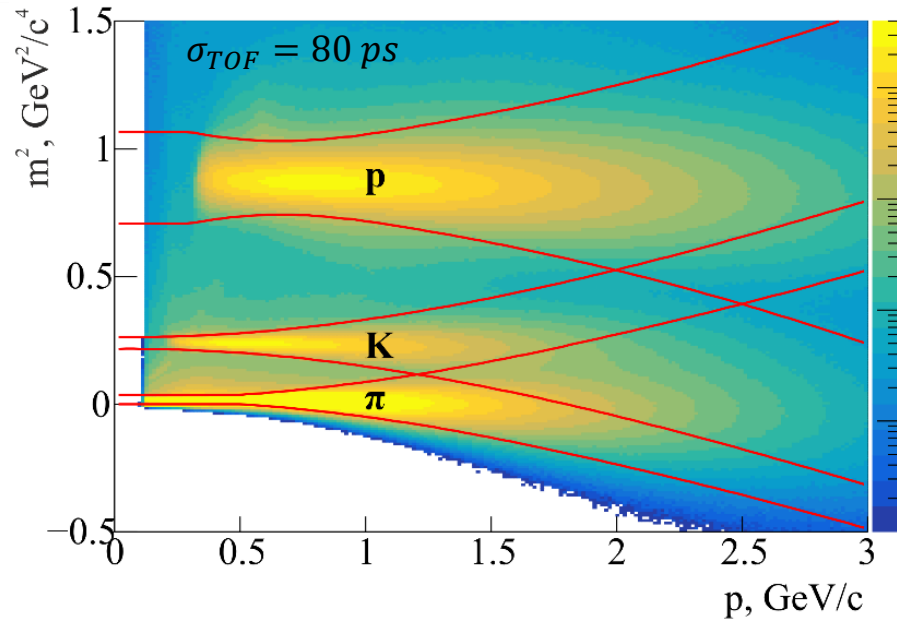
TOF Barrel

	Number of detectors	Number of readout strips	Sensitive area, m ²	Number of FEE cards	Number of FEE channels
MRPC	1	24	0.192	2	48
Module	10	240	1.848	20	480
Barrel (28 modules)	280	6720	51.8	560	13440

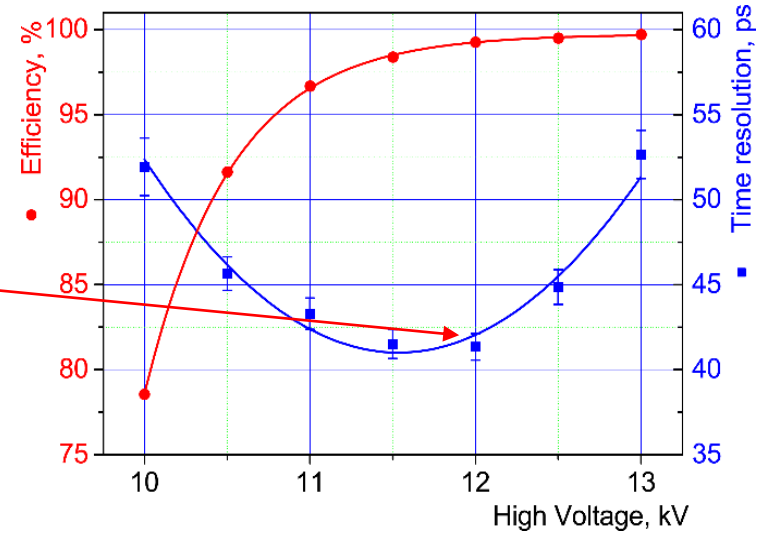
Particles identification by the time-of-flight in MPD



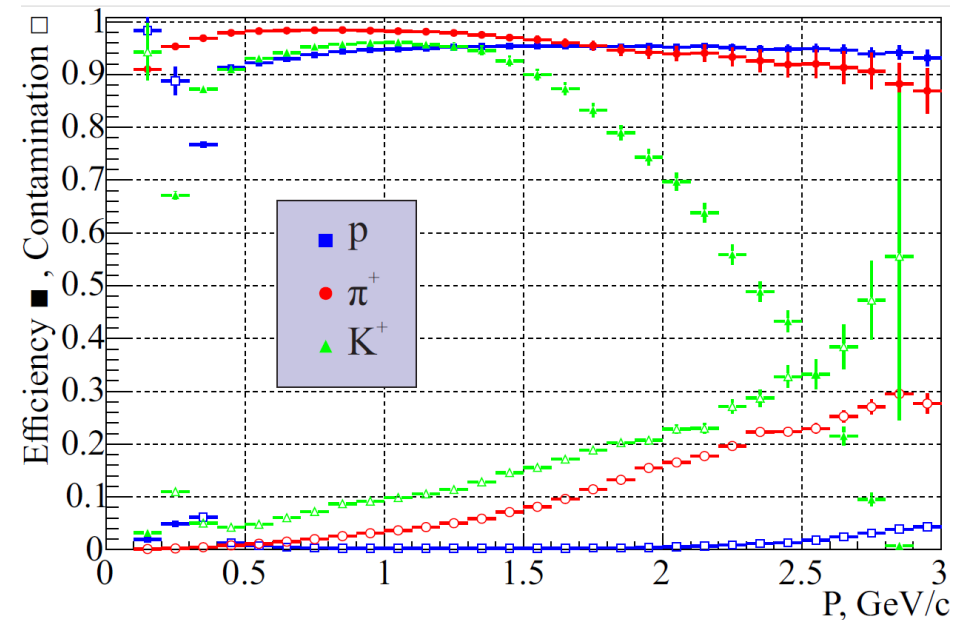
The best measured MRPC time resolution



Squared mass of particles from TOF



Efficiency vs applied HV



TOF PID efficiency

Progress of the TOF detectors and modules assembling

The production of MRPC detectors has been completed. Totally, to date, **300 (107%)** MRPC detectors were produced. All **28 (100%)** TOF MPD modules are already assembled, tested and stored.



We are ready for TOF installation into the MPD power frame

Progress of the TOF detectors and modules assembling

This year we recheck and upgrade of previously assembled modules.

We started the production of new spare modules this year.



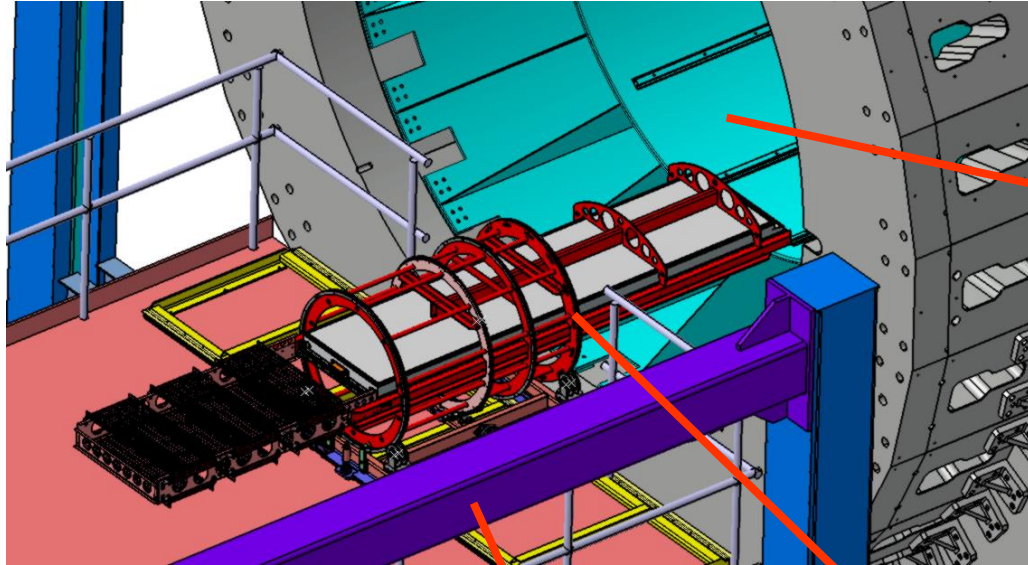
HV and leakage test of stored modules



Nomex
honeycomb
panel

First new spare module under assembling

Equipment for TOF installation



TOF module

Aluminum rails for TOF are installed on the MPD Power Frame



Lifting platform

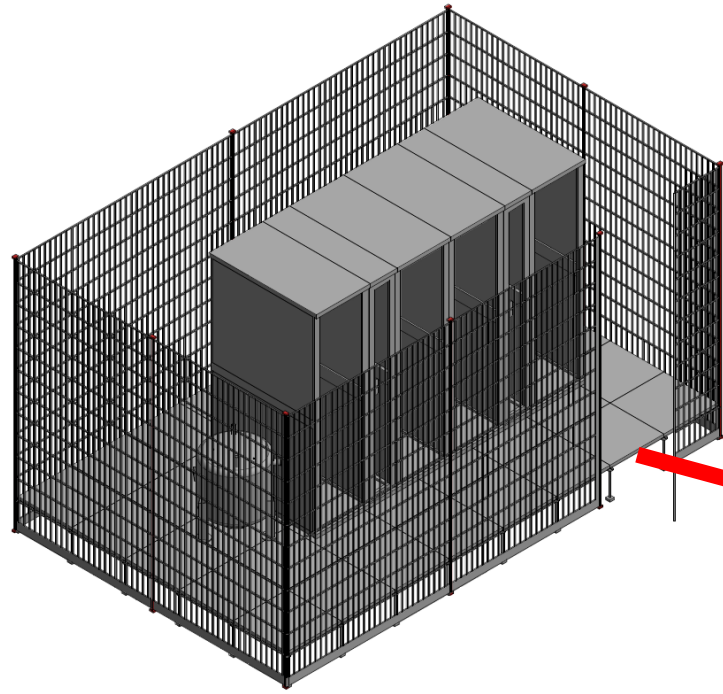


The TOF installation bench is fully assembled and stored in the VBLHEP

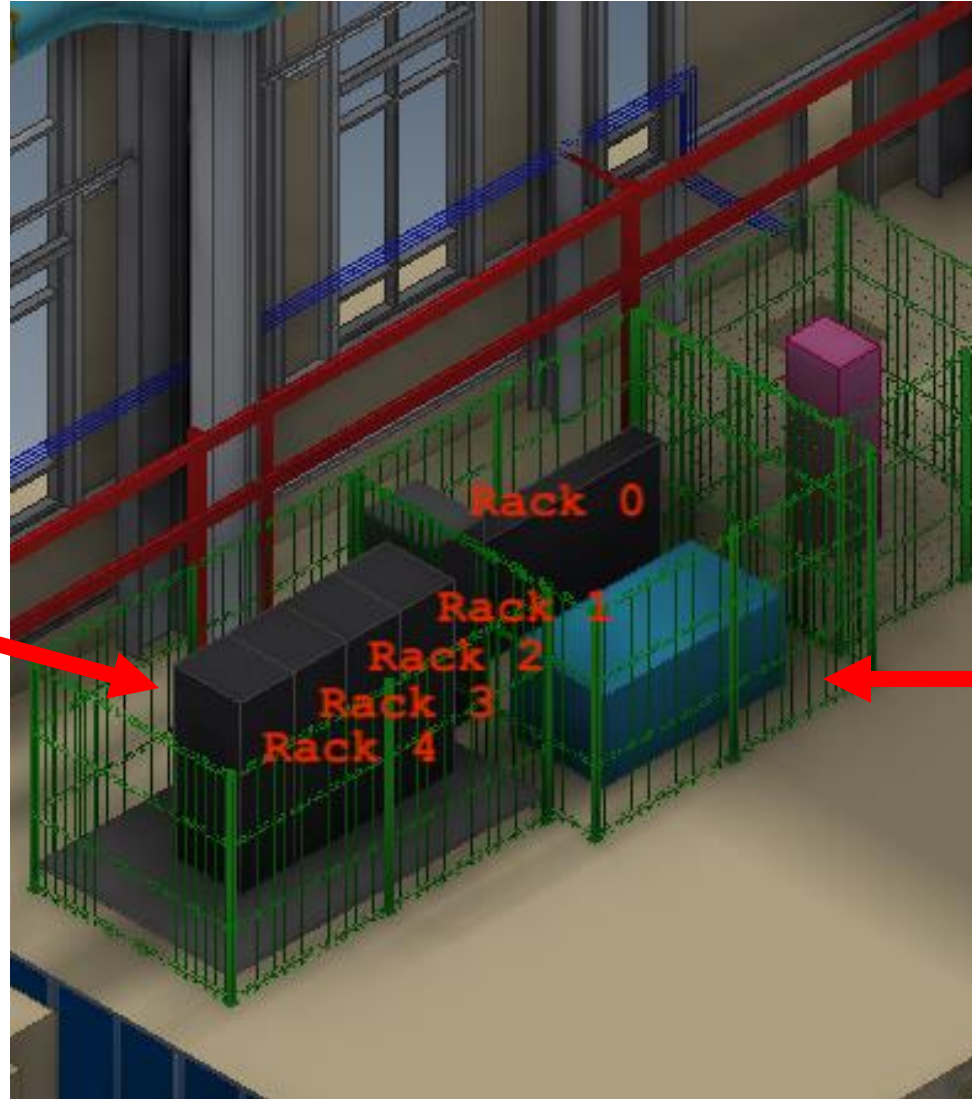
TOF readout crates at the MPD



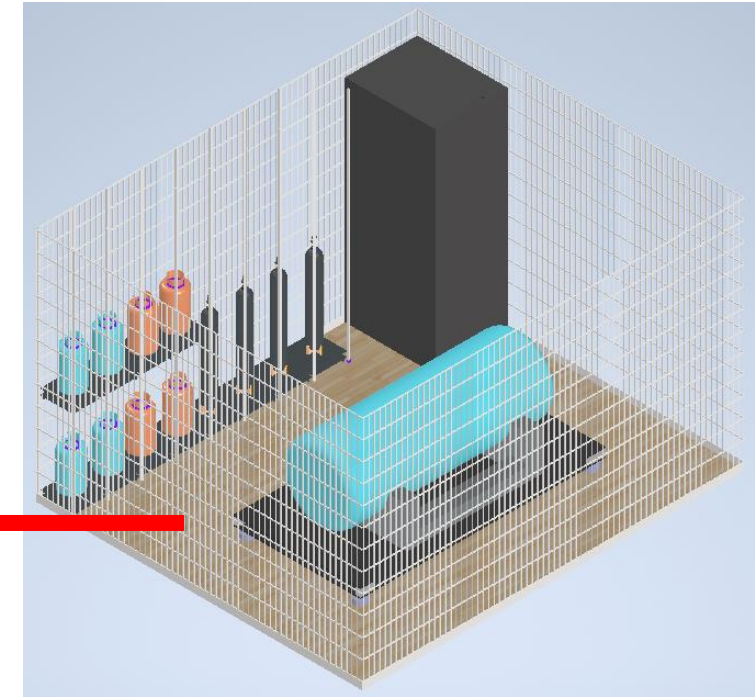
Gas system for the TOF in the MPD hall



Gas mixture preparation area



Scheme of gas systems position in the MPD hall



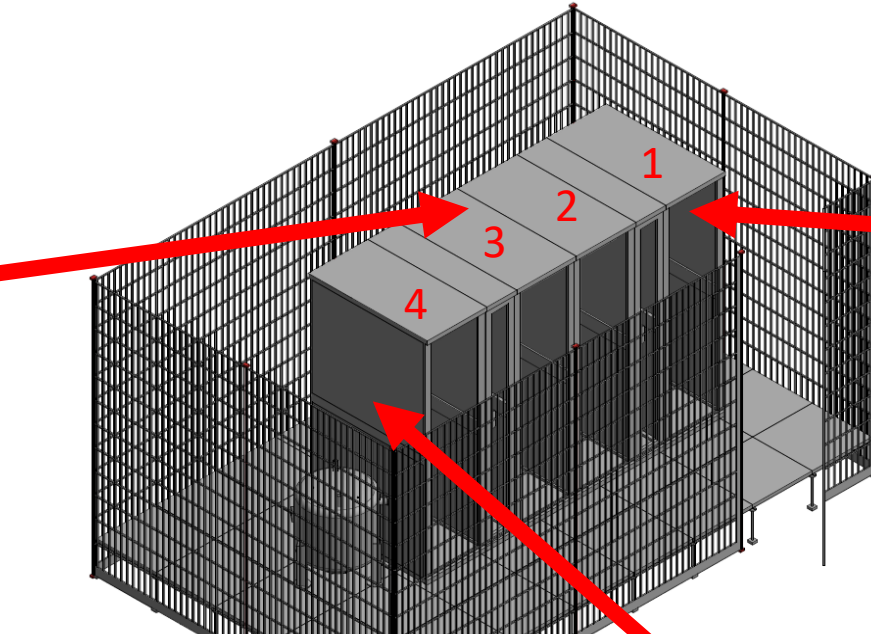
Gas supply area

Gas system for the TOF in the MPD hall

Rack #2,3 – Mixer, Recirculation, Analyzer



Rack #1 – Main Control System



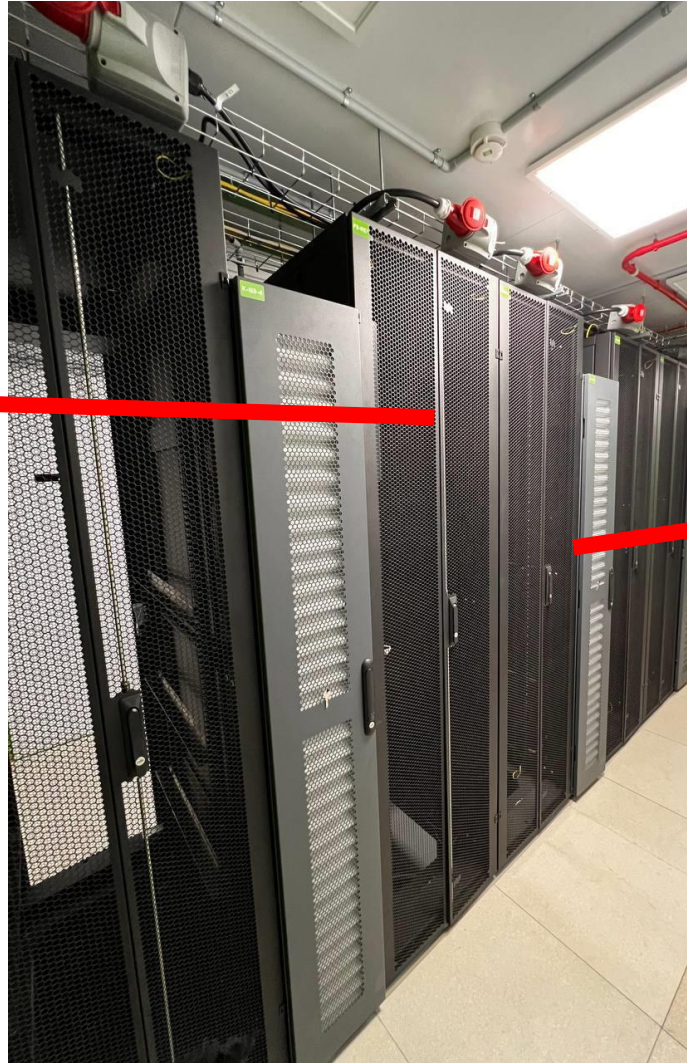
Rack #4 – Gas mixture purifier

Gas distribution system for the TOF in the MPD Electronics Platform

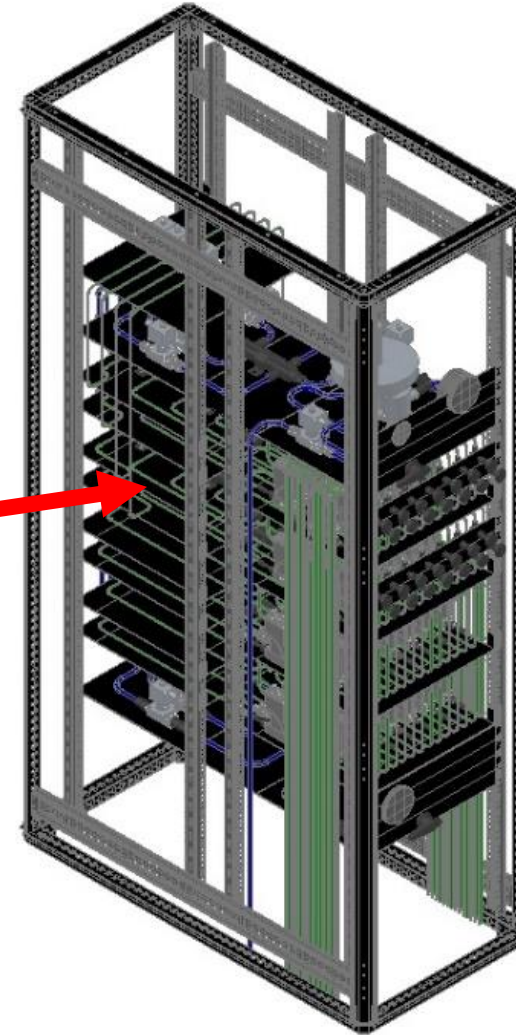
Distribution control rack



3-rd floor (rack #2-3)



Gas distribution rack



Conclusions and plans

- 1) Mass production of MRPCs – 300 of 280 are ready (~107%)
- 2) Mass production of TOF modules – 28 of 28 are ready (~100%)
- 3) Integration equipment – completed
- 4) TOF slow control – in development
- 5) TOF trigger system – in development
- 6) VME crates, cables, and HV distributors on the MPD yoke – in development
- 7) Gas supply and storage for the gas system in building 17 – in the assembly

TOF plans in accordance of the MPD assembling milestones

April-June 2024 – upgrade of existed TOF modules (remove any leakages, update FEE, etc.)

May-June 2024 – building of TOF gas system area in the MPD hall

June-Sept 2024 – assembling of the TOF gas system

Oct-Nov 2024 – commissioning of the TOF gas system

Nov-Dec 2024 – organizing of the TOF modules installation area and assembling of equipment

January 2025 – TOF modules installation into the MPD power frame

Thank you for the attention!