



# Micromegas panels

## Status and plans

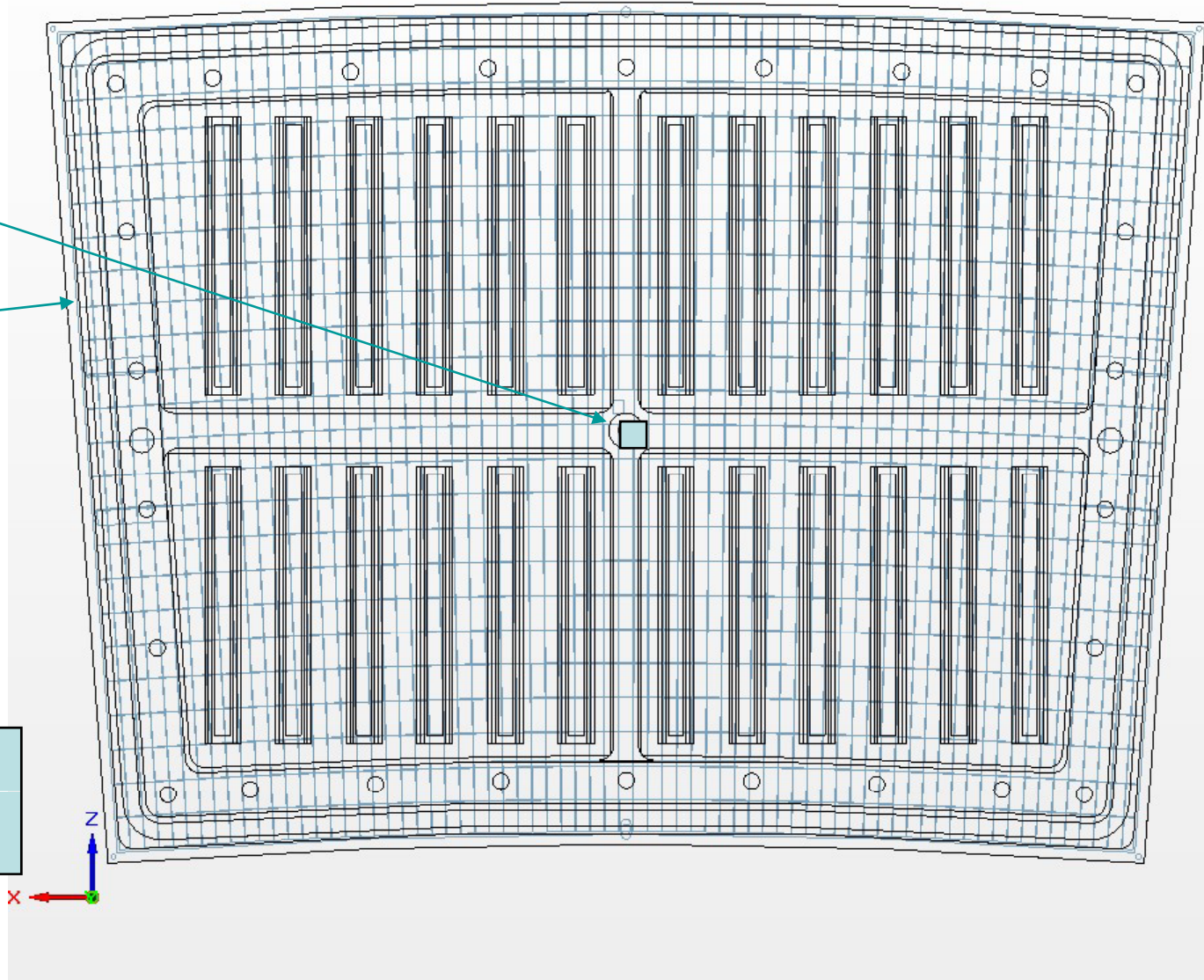
D. Attié, P. Colas, X. Coppolani, M. Dixit,  
M. Riallot, F. Sée, S. Turnbull

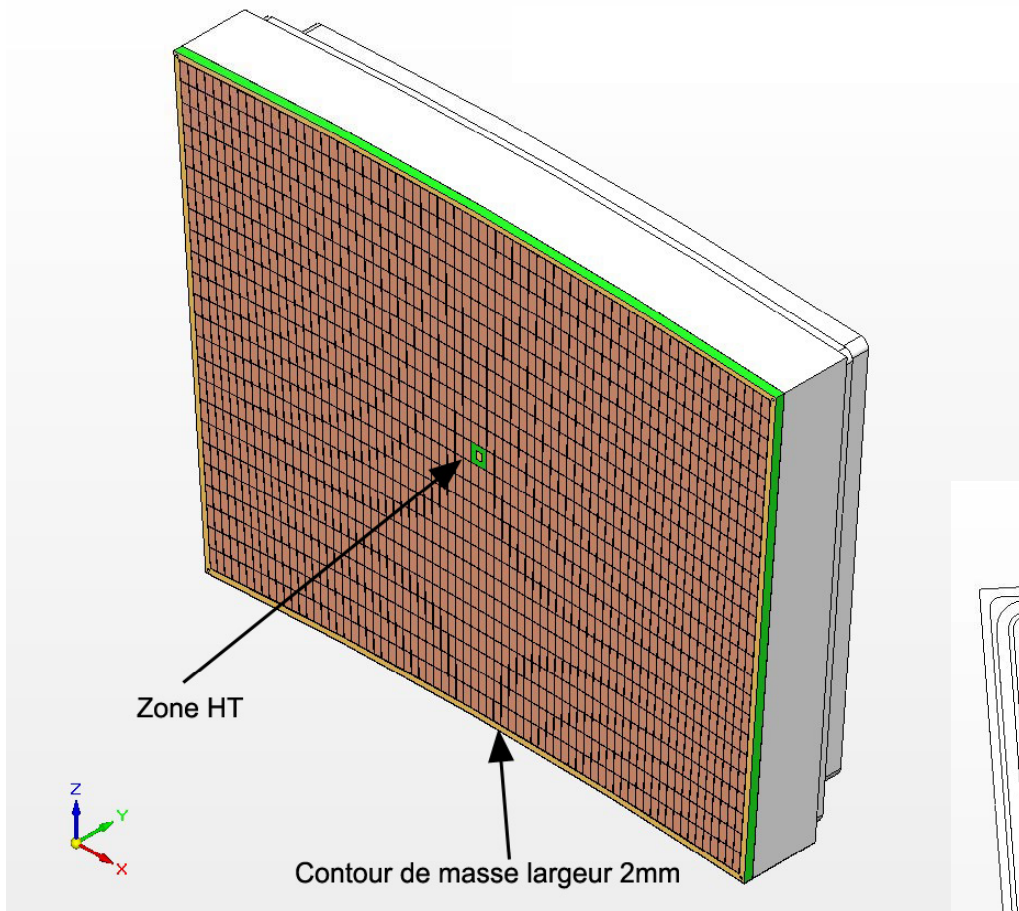
# MICROMEAS + RESIST. FOIL PANEL

24 rows x 72 pads

HV  
Resistive layer  
grounding

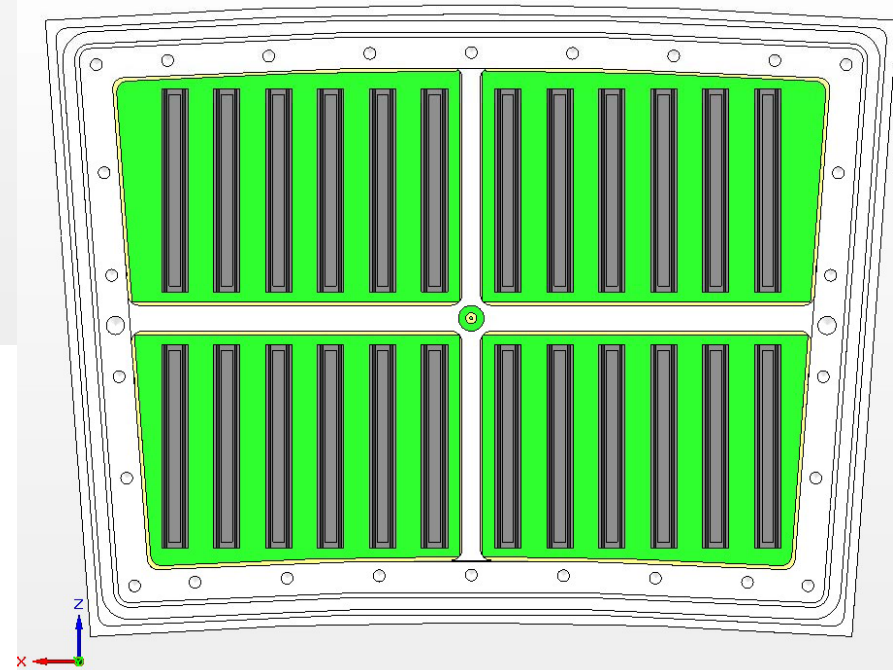
Av. Pad pitch  
3.2 x 7 mm





Detector side

connector side



# Resistive coating

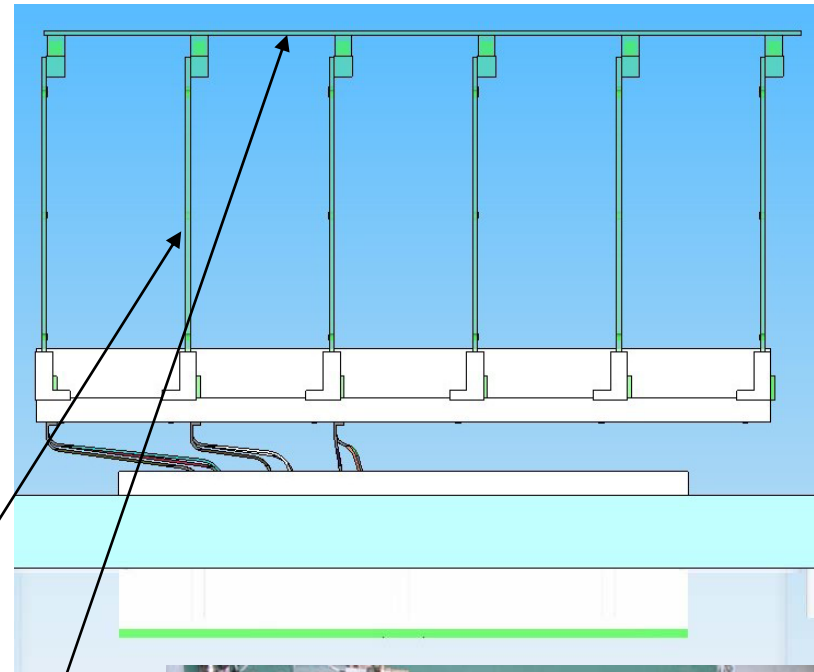
- 3 techniques
  - Pursue resistive foil with a solid thermic glue foil (satisfactory, but difficult to couple with bulk technique)
  - Try resistive ink serigraphy (Rui de Oliveira, CERN)
  - Try photovoltaic techniques with vapour deposited thin layers (Neuchatel)
- Find the best way to ground the resistive coating on the panel perimeter, when needed
- This is a R&D, do not expect it works perfectly from first try.

# Connection to electronics

For the start: use T2K config. of the readout (6 cards, with 4 80-pin-connectors each), read out by 1 mezzanine card → single output optical fiber. Adapt with flat cables.

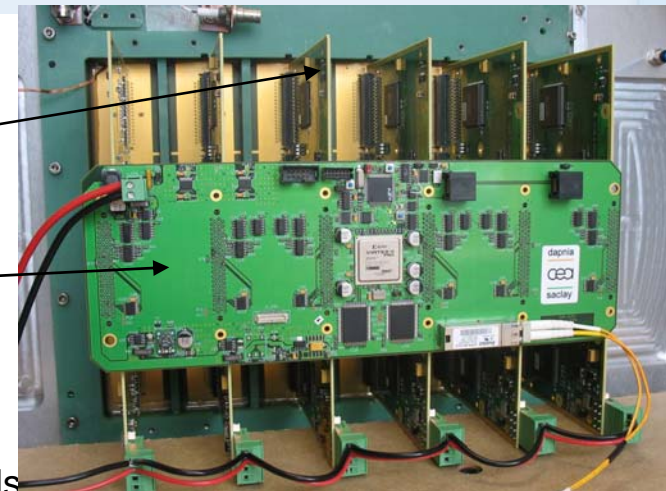
(next step: make 12 2-connector cards + new mezzanine)

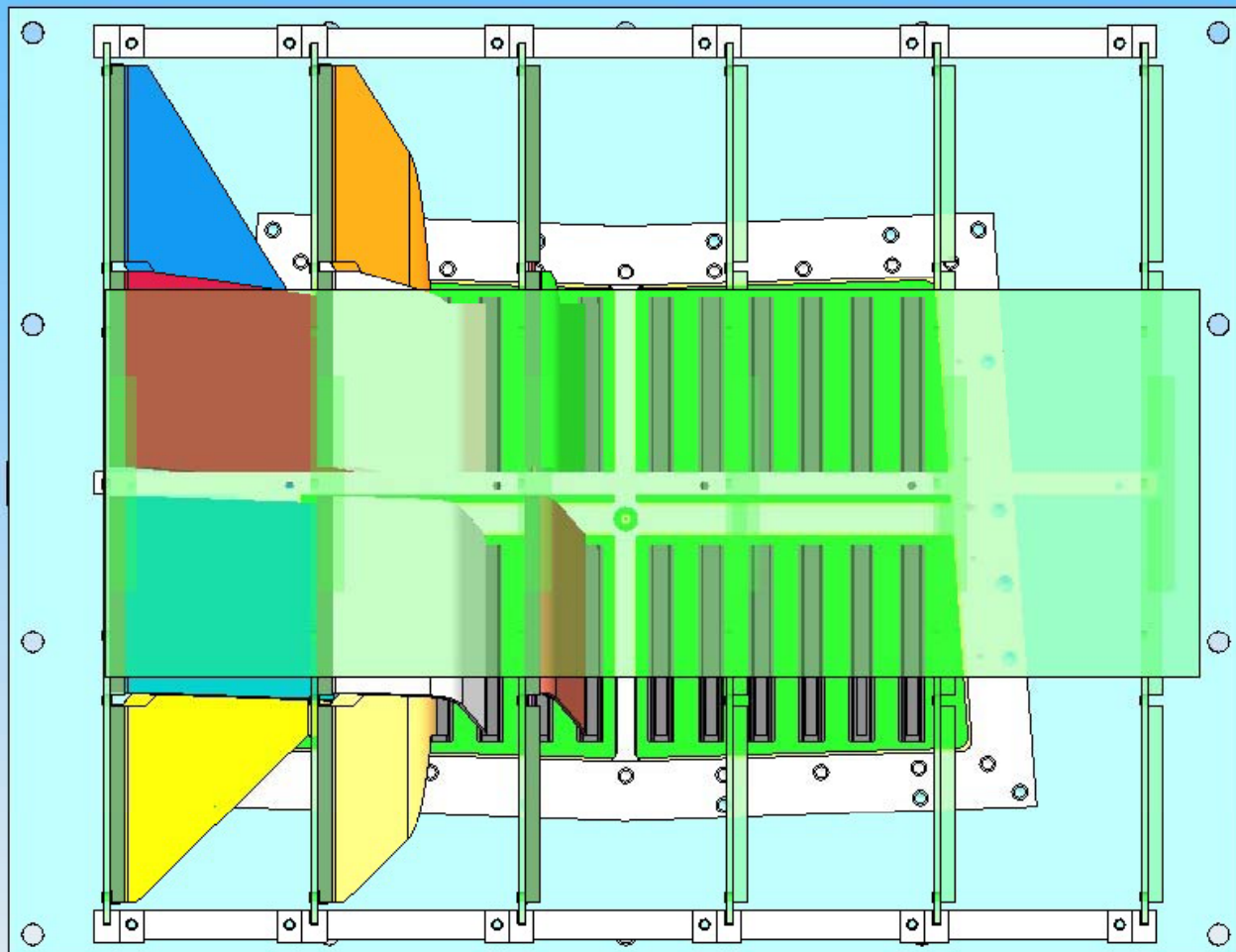
For the 10000 channels (end 2009) integrate 900 channels at a time and replace all front-end by 2 mezzanines with special connectors



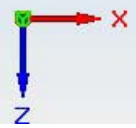
Front-end cards

Front-end mezzanine

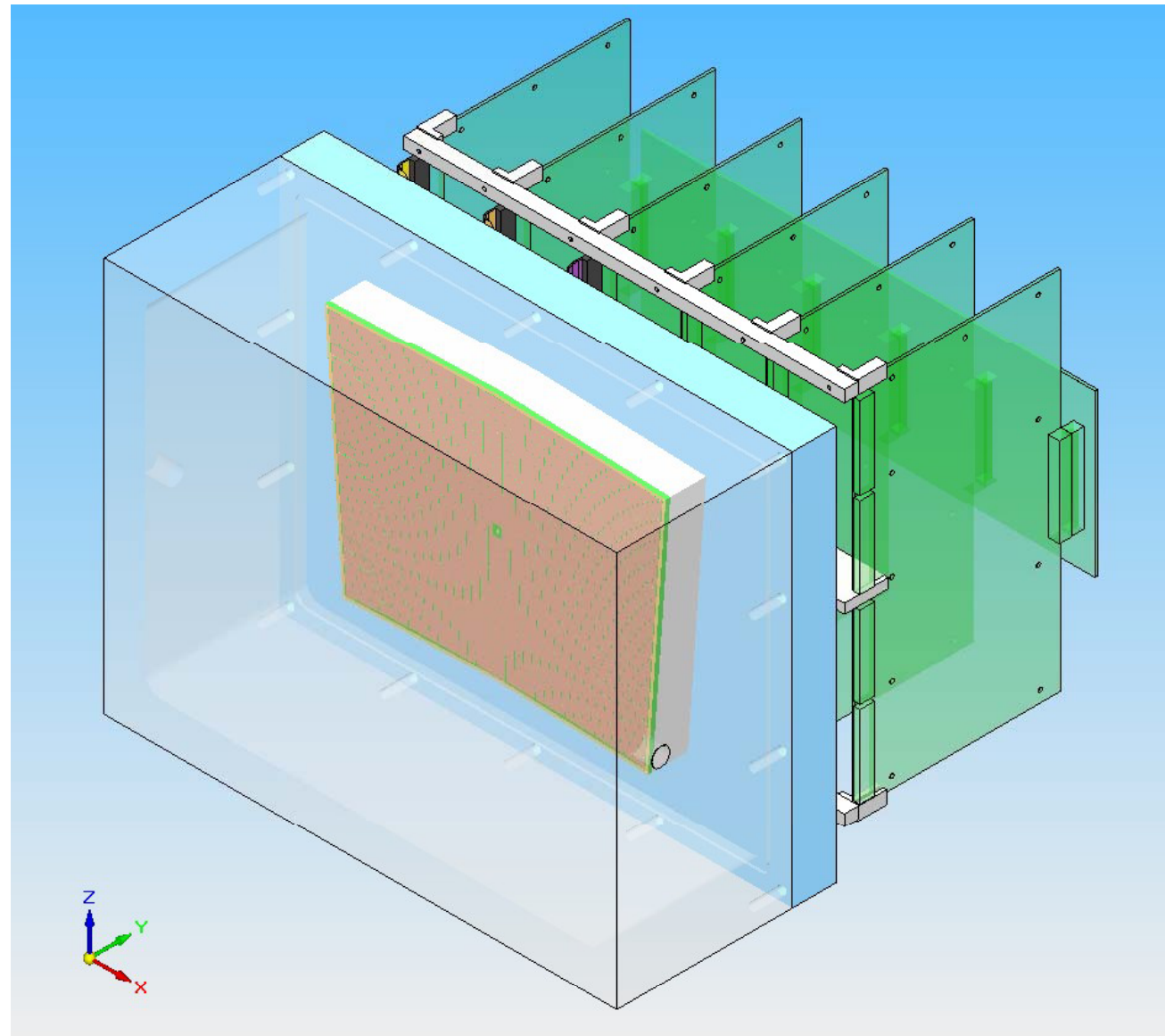




Zeuthen, J

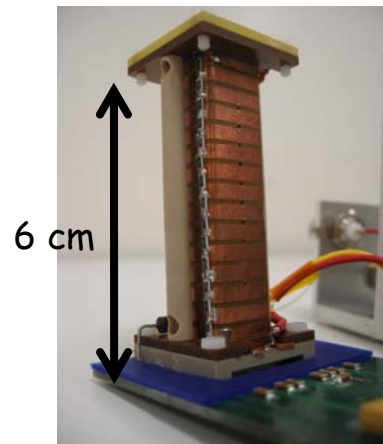


# Test box



# Single-chip SiTPC 'diagnostic detector'

D. Attié, P.C,  
J. Derré, M. Riallot



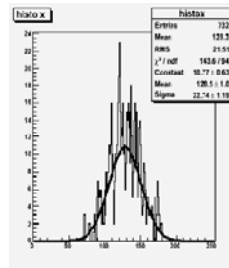
Zeuthen, January 16, 2008

Deliverable for EUDET end 2007, Saclay responsibility.  
Equipped with a 20 micron SiProt resistive layer

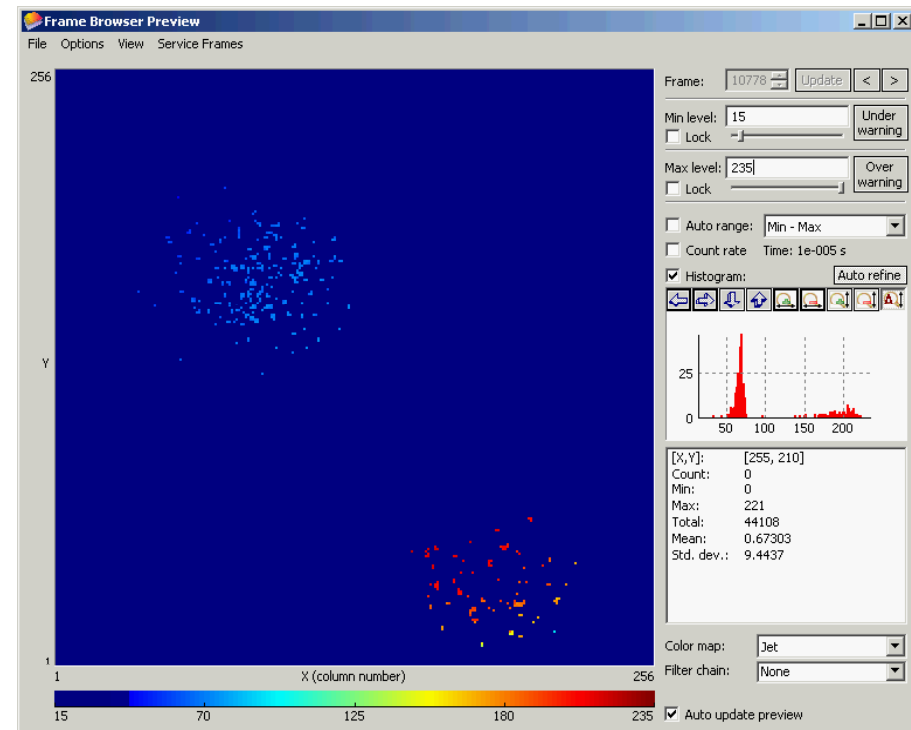
In operation since mid-October, analysis started



On av. 3-pad clusters  
as expected due to  
resist. coating



P. Coias - Micromegas panels





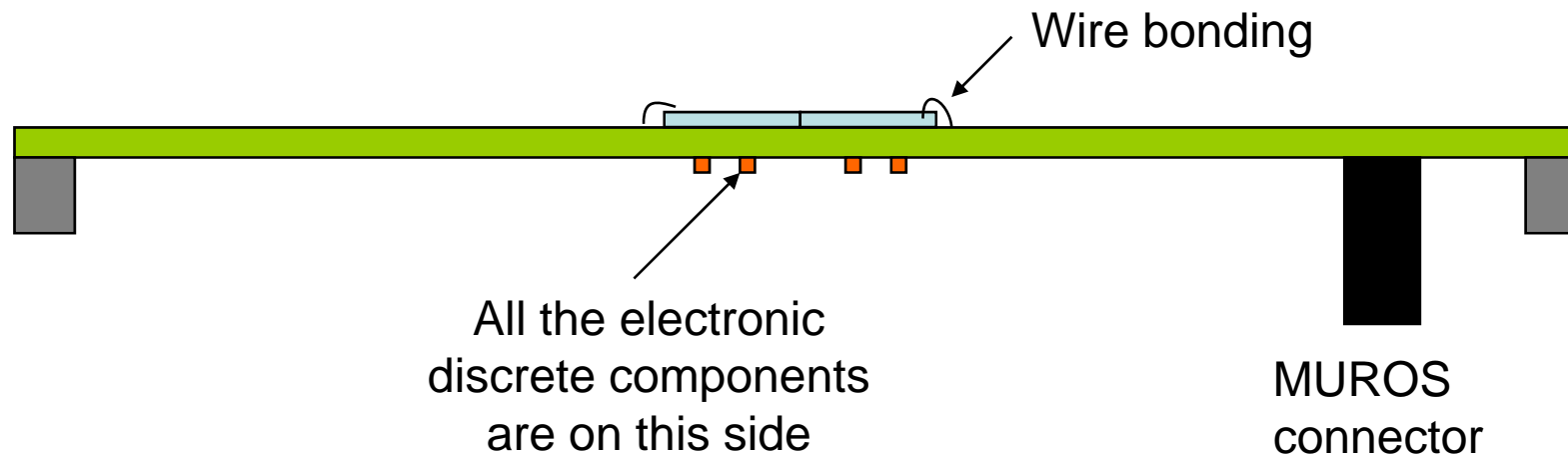
# Multi-chip SiTPC panel



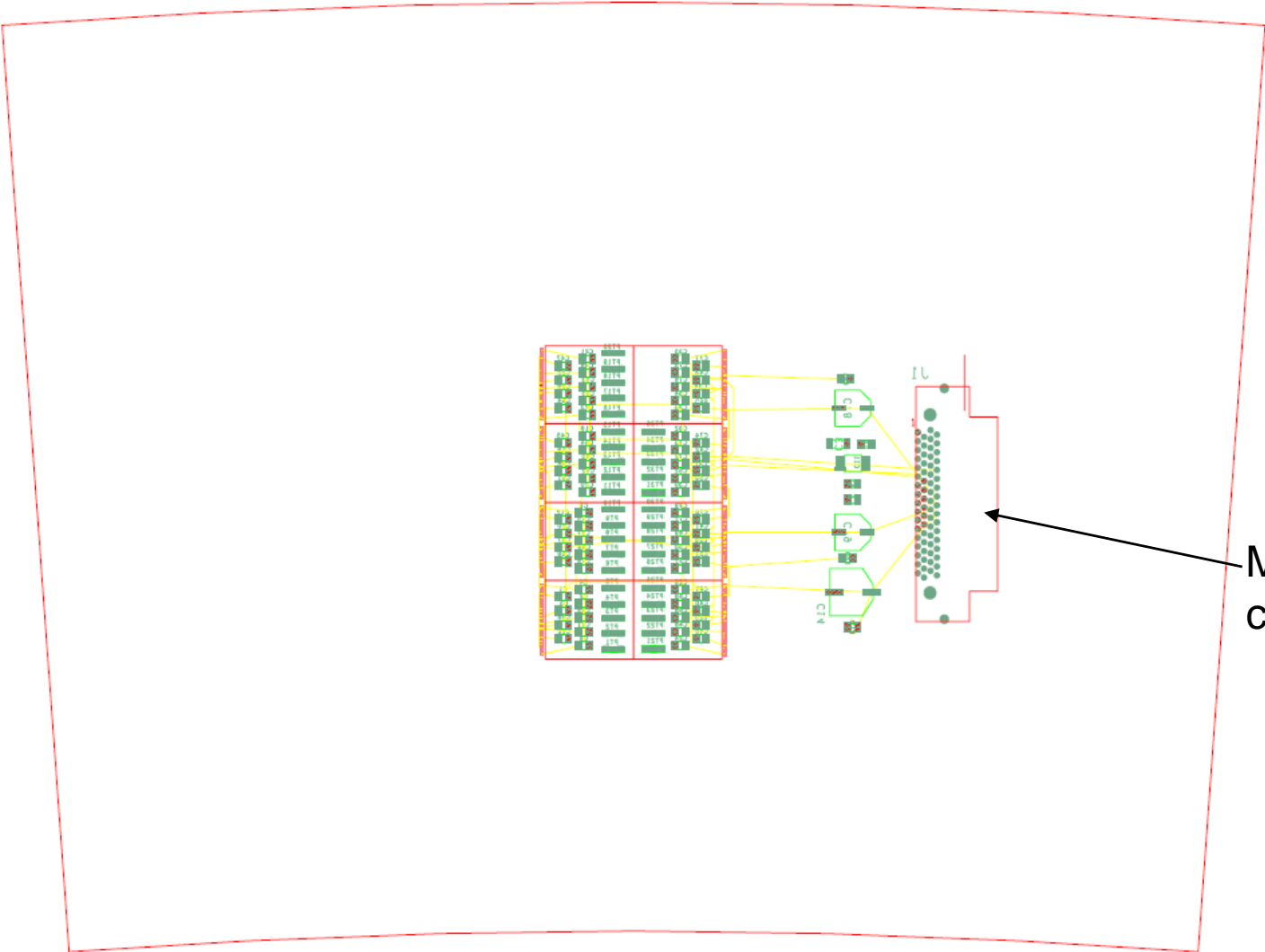
Deliverable for EUDET ('endplate infrastructure') end 2007,  
Saclay responsibility. Routing in progress, submission in 10 days

Need more chips to test it

End 2008: working multichip endplate (InGrid-equipped)



# 8-TimePix panel (1 MUROS)


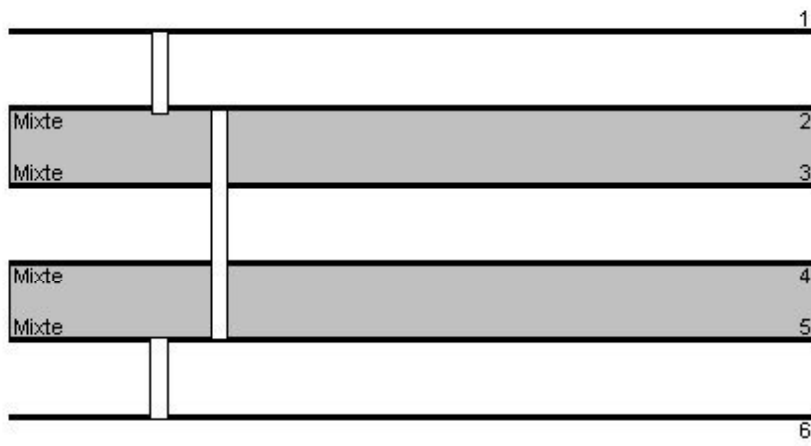


MUROS connector

FACE SONDRES  
N: 828A

# PCB structure

- 6 layers
- Details of vias, etc, decided in a meeting with CIRE on December 15
- several plain anode (dummy) modules ordered for tests (mechanics, bulk manufacturing, glueing)

 SOCIETE PROTOTYPES CIRCUITS IMPRIMÉS		FEUILLE D'EMPILAGE			BP
		Epaisseur finale	Epaisseur stratif théorique	Format	
Empilage SPCI		3,2 +/- 10% fini	3111 µm		
				Date de création:	11/01/2008
				Date de modification:	11/01/2008
				Date d'édition:	11/01/2008
Imposition client	Epaisseur théorique				
	12 µm				
	240 µm				
	35 µm				
	711 µm				
	35 µm				
	1080 µm				
	35 µm				
	711 µm				
	35 µm				
	240 µm				
	12 µm				

# Routing

- 2 routings in Progress (at Saclay and at CERN). Allows optimization of cross-talk, noise minimization, etc...
- CERN routing submitted before Christmas. Plan to review the progress on January 21st
- Saclay routing to be starting January 27 (review meeting on January 17 with Madhu Dixit at Saclay)

# Schedule

- Tests of the various methods for resistive layers and bulk fabrication : in progress with plain copper anodes. 5 'dummy' panels ordered before Christmas.
- Routings ready by end of February
- Submit PCB and get them back by March 20
- First detector ready by mid-April.
- Source tests, then cosmic tests, then beam tests this summer

end plate

[Jerwin \[info@hlxgroup.com\]](mailto:Jerwin [info@hlxgroup.com])

À: [Colas Paul](#)

Cc:

***A mail I got this morning***

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Dear purchasing manager,

Thank you for reading this email despite your busy schedule.

We manufacture end plates which are used for spun concrete piles . We own two factories. Our company adheres to the policy of “good quality, reasonable price and on-time delivery” We enjoy this good reputation among our well-satisfied clients. Our products are of good quality, and more reasonably priced than others. As such, we are sure that you would be interested in our products if you need them.

If you need more information or assistance, please don't hesitate to contact or email us.. We hope that we can start and establish a good business relationship with you now or in the near future. OEM service are welcome. You are welcome to visit our factory.

With much interest, we look forward to hearing from you.

Best regards  
Jerwin

Xiamen HengLiXing Imp&Exp Co.,LTD.  
Room2105 Dexin building Xianyue Road ,Siming District,Xiamen,China

~~Zeuthen, January 16, 2008~~ ~~P. Colas – Micromegas panels~~