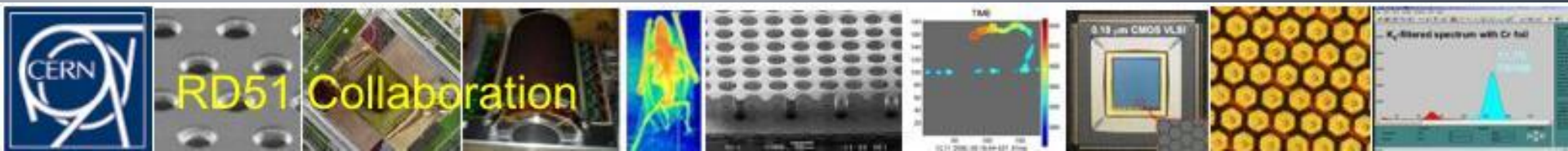


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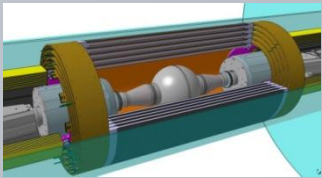


**Large size machines and workshop
upgrade news**

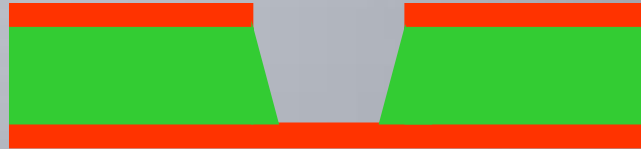
Rui de Oliveira

Summary

- ▣ Large size machines
 - Processes
 - Machine list
 - Schedule
- ▣ Workshop upgrade
 - Existing layout
 - Schedule



GEM single mask process



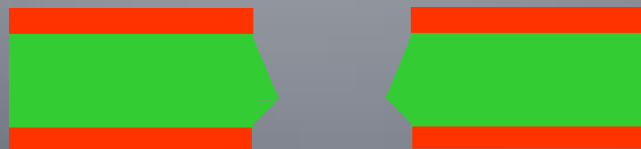
Chemical Polyimide etching



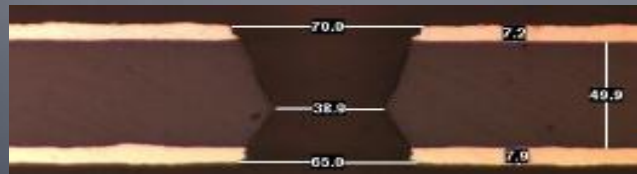
Copper electro etching



Stripping



Second Polyimide etching



reality



GEM equipment expected in the existing premises

▣ GEM

■ -1 polyimide etch machine 100 kchF

■ -1 Cu electro etch line 140 kchF

total: 240 kchF

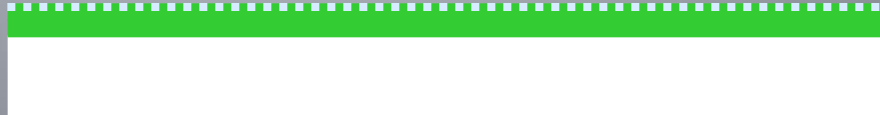
Micromegas bulk production process



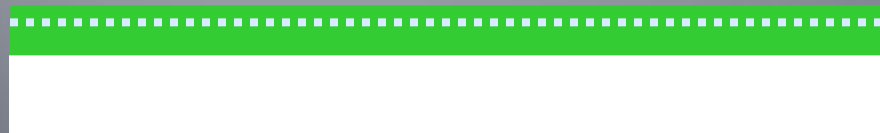
Read-out board



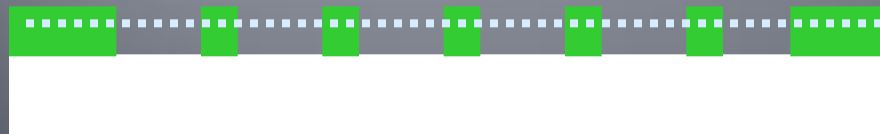
Coverlay lamination



Mesh deposition



Coverlay lamination



Exposure , development , cure

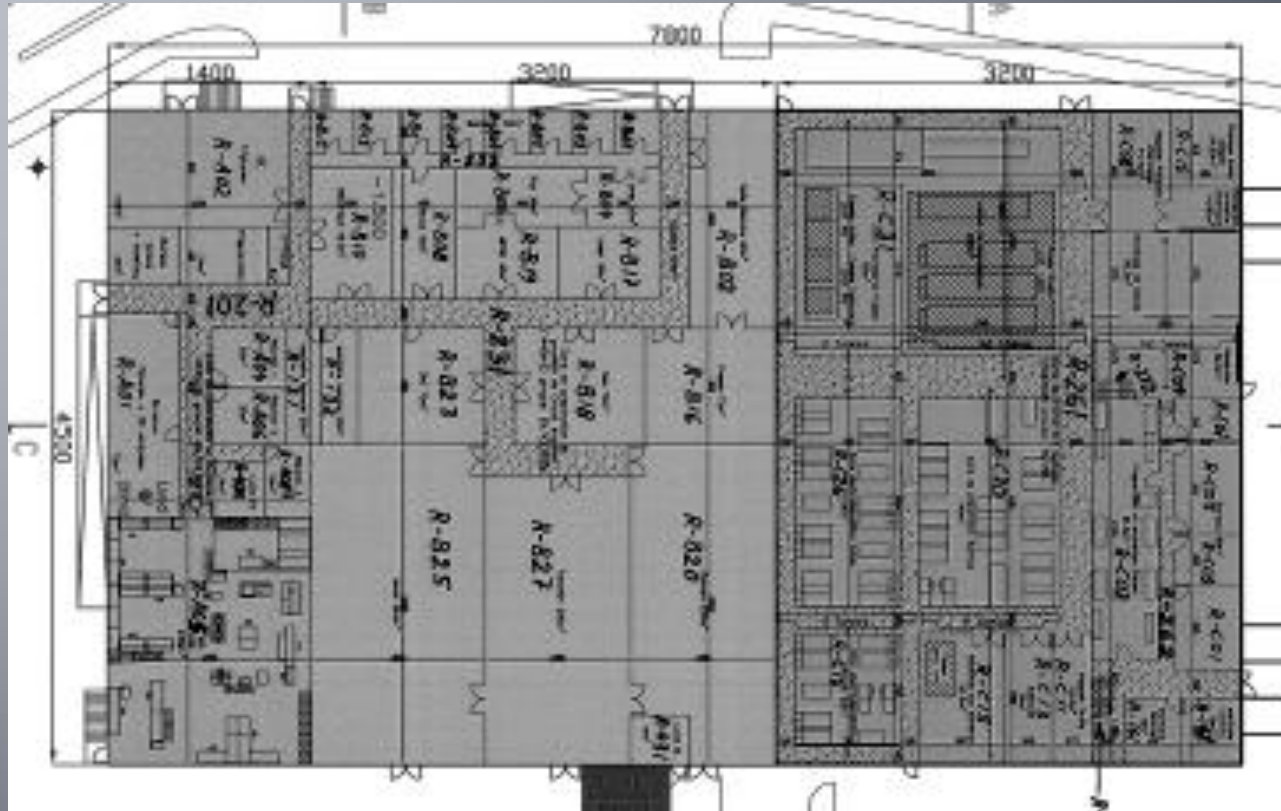
Micromegas equipments expected in the existing premises

▣ Micromegas

▪ -1 large laminator	60 kCHF
▪ -1 large oven	15 kCHF
▪ -1 large size exposure unit	70 kCHF
▪ -1 large machine for coverlay development	100 kCHF
▪ -1 large Dryer	50 kCHF
▪ -1 large stripping machine	130 kCHF
▪ -1 large Cu etching machines	120 kCHF
total:	545 kCHF

- ▣ Minimum to do large size MPGD
- ▣ Fits in the existing building 102
- ▣ Possibilities:
 - GEM : 2m x 0.5m
 - Micromegas BULK: 2m x 1m
 - Read-out : depends on complexity
- ▣ Machine technical description are ready
- ▣ The purchasing process just started
- ▣ Should be installed before first quarter of 2011

Future building 107



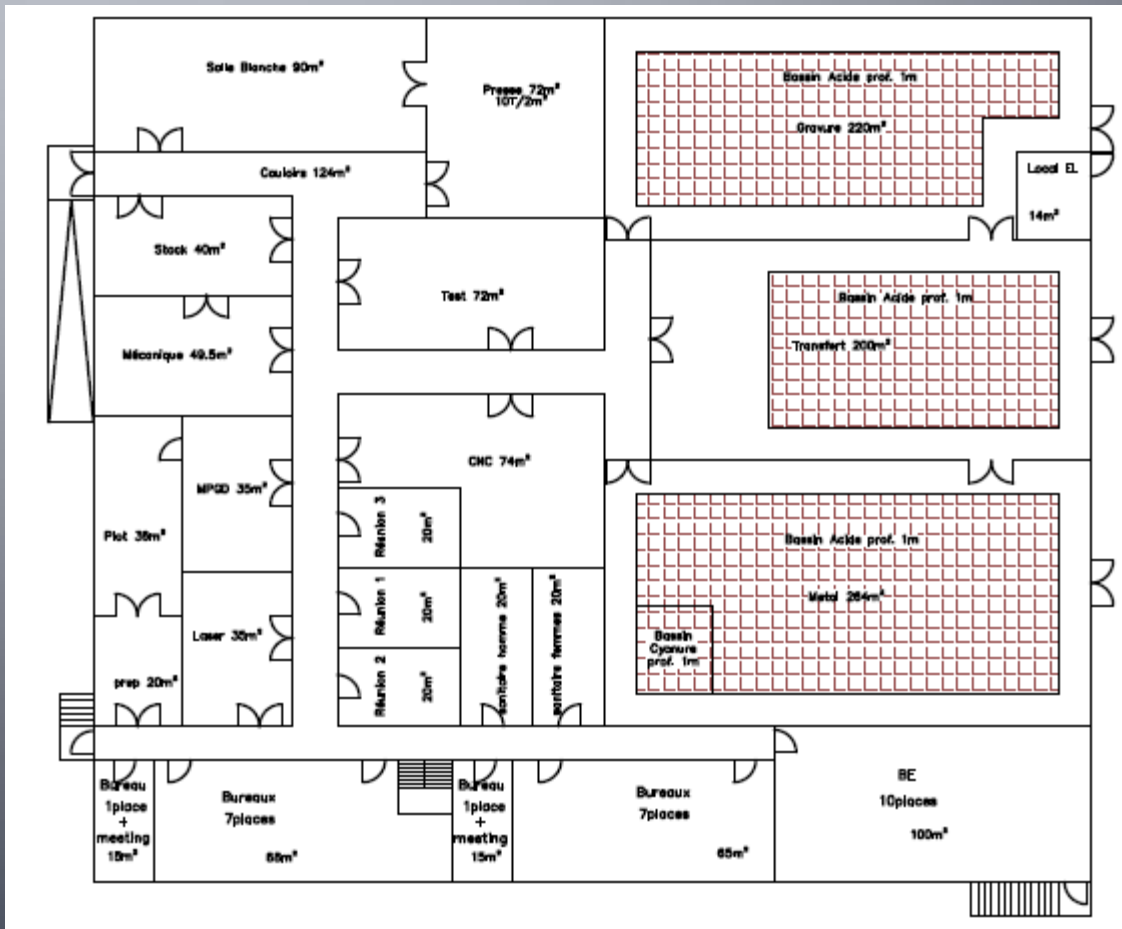
PCB workshop : 1 400 M2 (currently we have 900m2)

Surface treatment : 1 600 m2

Design office: 200m2

Component assembly : 300m2

layout



We have reserved 30m² for any new Process for MPGD

The building will follow the highest grade safety rules existing in all the CERN member states

Time scale

- ▣ We are going to present the pre-project to the CERN site committee in June
 - It include the description and prices for:
 - ▣ Civil engineering
 - ▣ Electricity
 - ▣ Cooling and ventilation
 - ▣ Security
 - ▣ Std services (water, air, phone etc)
 - ▣ Building 102 and 174 dismantling
- ▣ We will then enter in the real project
 - 1 year for the full definitive design
 - 2 to 2.5 years to build it.