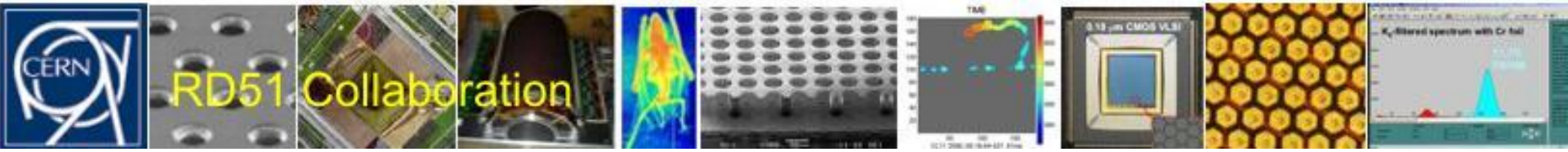


CERN Workshop upgrade status

Rui De Oliveira

RD51 22/11/2011

WG6

- **Equipment upgrade**
- **New building**

WG6: TE/MPE/EM Workshop upgrade

- Last year, agreement was reached with CERN management to purchase the subset of machines necessary to carry out R&D on large size GEM (2m x 0.5 m) & Micromegas (2m x 1m) and the associated large size read-out boards in the current CERN TE/MPE/ME facility.

	market survey	call for tender	order	received	ready
GEM					
– 1 continuous polyimide etcher	x	x	x	x	01/2012
– 1 Cu electro-etch line	x	x	x	x	x
– 1 stripping line	x	x	x	x	x
Micromegas					
– 1 large laminator	x	x	x	x	x
– 1 large Cu etcher	x	x	x		01/2012
– 1 large UV exposure unit	x	x	x	x	12/2011
– 1 large resist developer	x	x	x		01/2012
– 1 large resist stripper	x	x	x		01/2012
– 1 large oven	x	x	x	x	x
– 1 large dryer	x	x	x	x	x

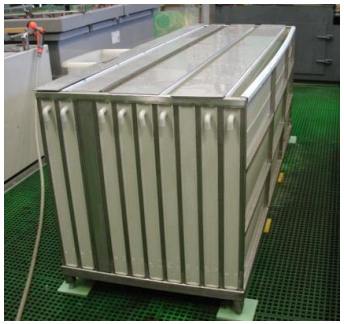
- **On top of introducing new machines we have to:**
  - **-redefine all the process parameter related to the new equipments**
  - **-Build some prototypes of the # detectors**
  - **-A fellow is already selected and will start running machines beginning of 2012**

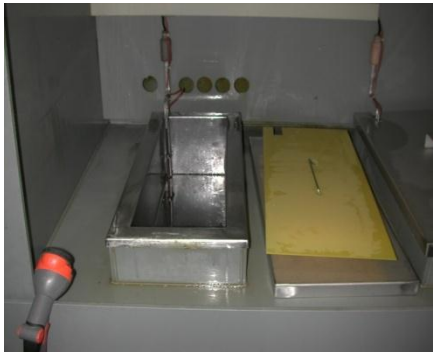
Machine investment for GEM production

- UV exposure unit
  moving from 2m x 0.6m → 2.2m x 1.4m
  30 years old equipment replacement
  TECHNIGRAPH (DE)

Not yet Installed
Already delivered

- GEM alcohol resist stripping
  1m x 0.6m → 2.2m x 0.6m
- GEM electro etch
  1m x 0.6m→ 2.2m x 0.6m
  10 baths compacted
  LECOULTRE (CH)





- GEM polyimide etch
  moving from 1m x 0.6m → ?
  10→ 30 GEM/day
  roll to roll compatible
  no tooling needed
  WISE (IT)

Machine investment for Micromegas production

- Laminator (resist and coverlay)
  0.6m width → 1.4m

WESTERN MAGNUM (US)

- Ovens (cure the coverlay)
  1.5m x 0.6m → 2.2m x 1.4m

JLS (UK)

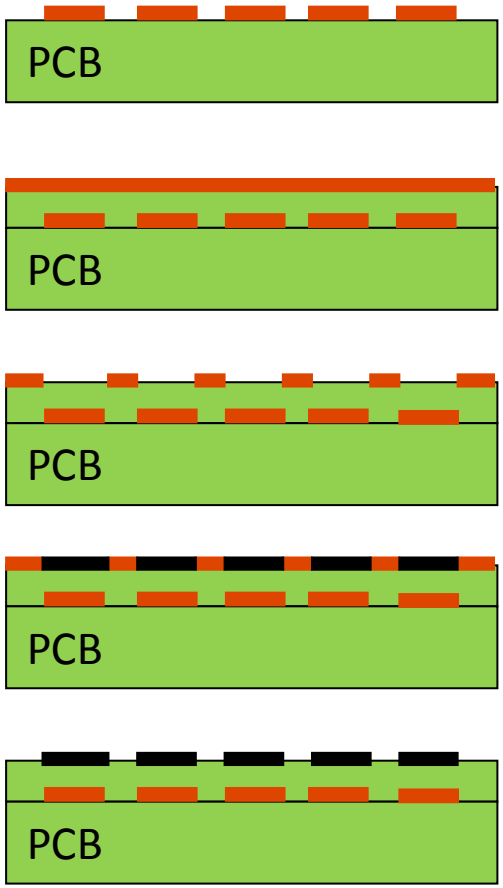
- Resist developer
- Resist stripper
- Copper etcher
  0.6m width → 1.2m

WISE (IT)

Not yet delivered ordered

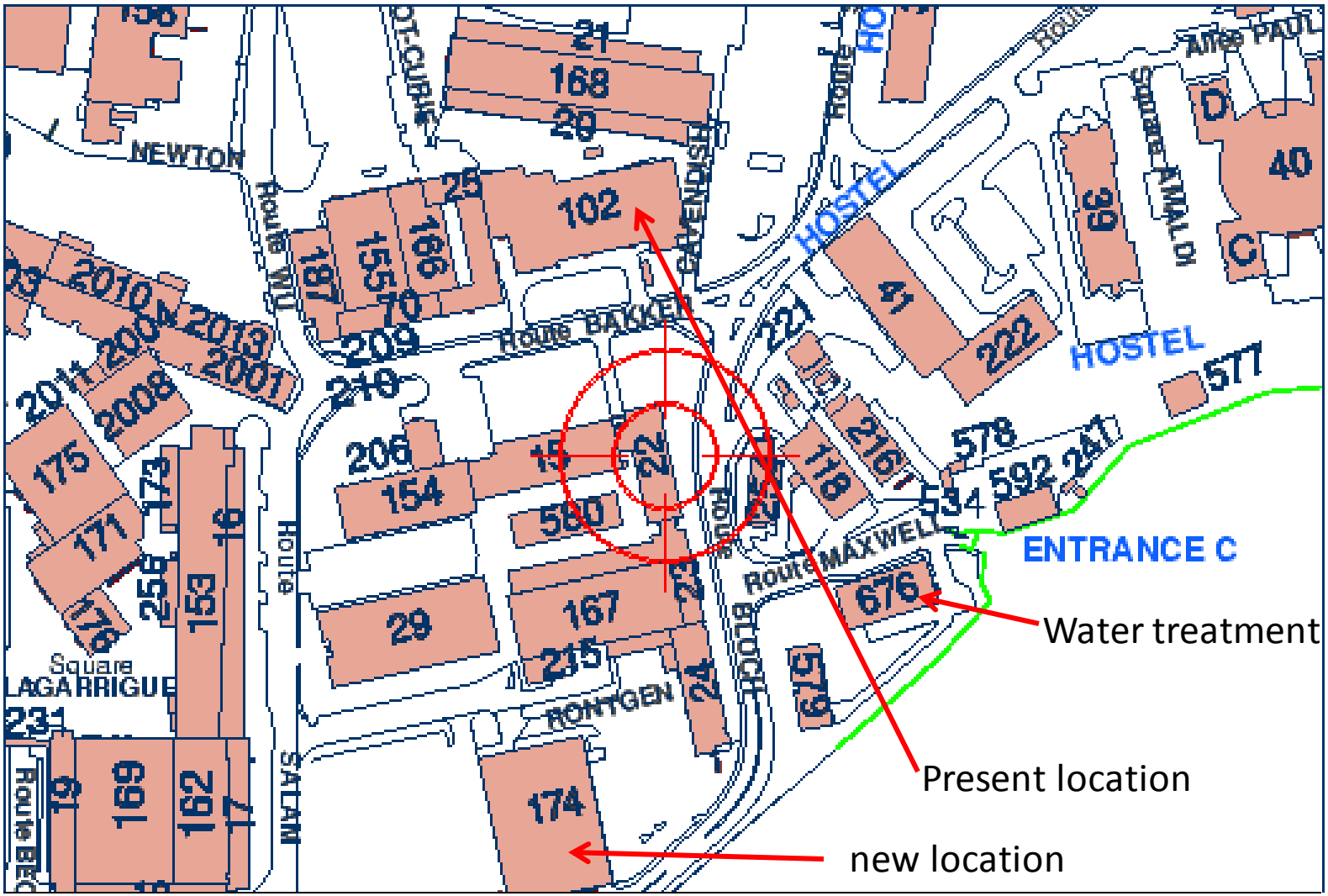
Resistive deposition equipment

- This process was not existing when we ask for the subset of machines
- Different techniques are envisaged:
  - Paste filling + polishing (no size limitation)
  - Screen printing (80cm x80cm)
  - Spray deposition (no equipment at CERN)
- In the coming month we are going to study the best solution for mass production.



- Equipment upgrade
- **New building**

New Building 107


NEWTON
Route WU
Route BAKKER
Route MAXWELL
Route RONTGEN
Route BLOCH
Route HO
HOSTEL
HOSTEL
ENTRANCE C
Square LAGARRIGUE
Square AMALDI
Allée PAUL
Water treatment plant
Present location
new location

New Building 107

New Building 107

CERN Building 107
Basis of Design

New building 107

- The construction should start beginning of 2012
- The construction should end November 2013

- 40 square meter room reserved for MPGD assembly
- All the machines for large size detectors production are in the layout
- Area 900 m2 → 1400m2 with optimized layout
- Most of the baths will be replaced by compact machines
- Rooms are reserved for new processes (laser and plasma)

Thank you