WA-105

CRP design status

WA105 Technical Board – 7th of September 2016

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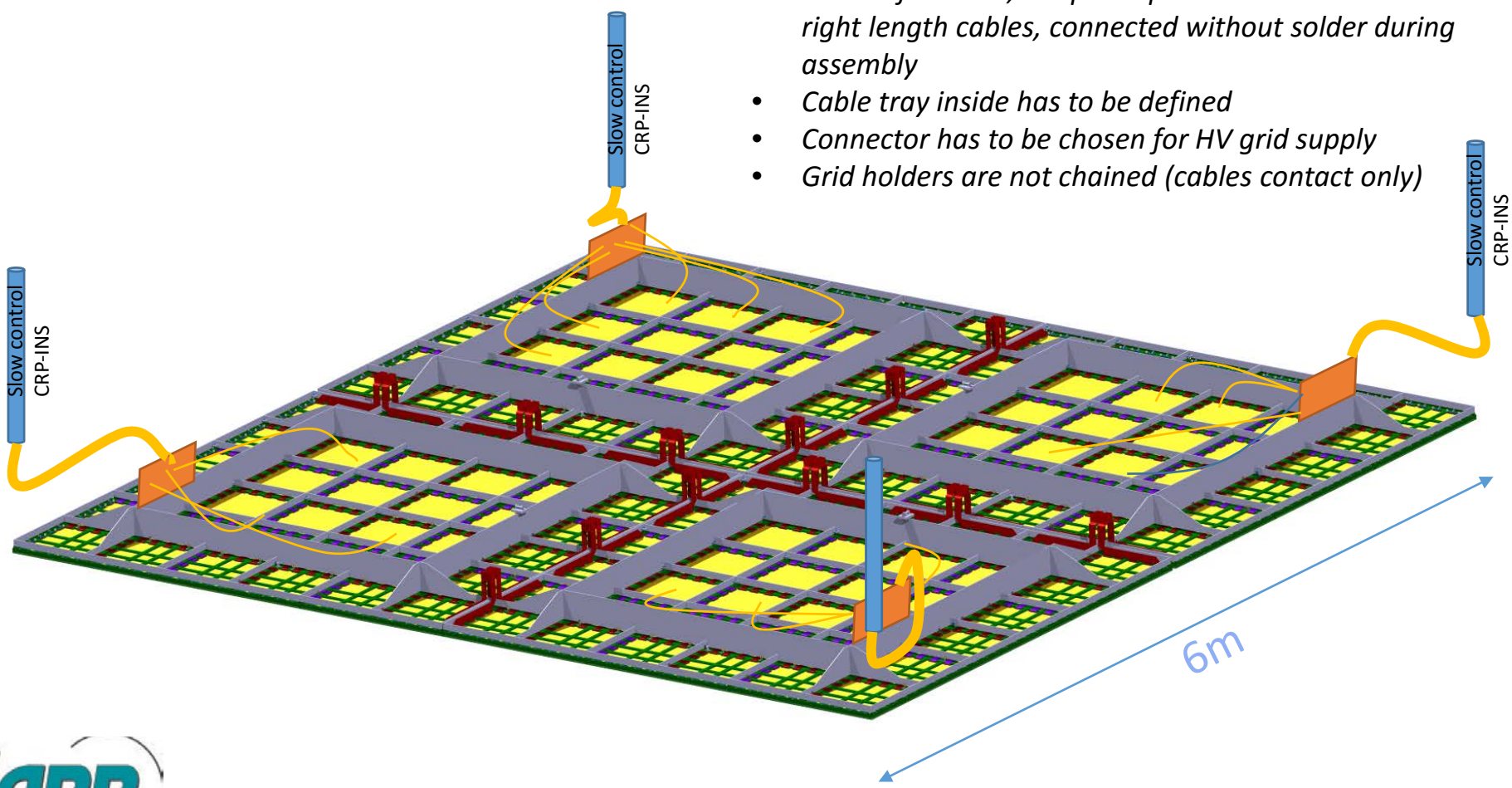
Electrical topics

Patch panel concept

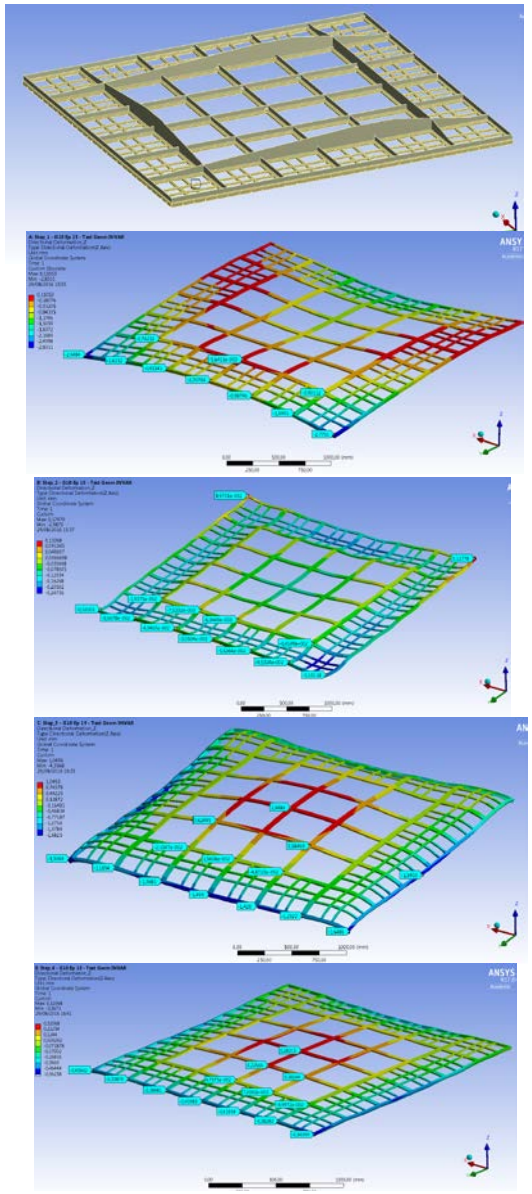
- CRP is assembled with a patch pannel in clean room
- Final connection only between slow control chimney and patch panel

- *Inside of the CRP, the patch panel is assembled with right length cables, connected without solder during assembly*
- *Cable tray inside has to be defined*
- *Connector has to be chosen for HV grid supply*
- *Grid holders are not chained (cables contact only)*



CRP simulation for deformation and planarity tuning simulation

- Includes Invar frame, G10 frame, thermal decoupling, « detection plane » and other masses.
- Four steps to simulate each configuration :
  - Step 1 : gravity to simulate the CRP after assembly
  - Step 2 : gravity + planarity tuning (simulates planarity tuning in the cryostat)
  - Step 3 : gravity + planarity tuning + grid thermal contraction (simulate cold bath test : warm module with cold grid : the worst case)
  - Step 4 : final config in cold condition, with initial planarity tuning

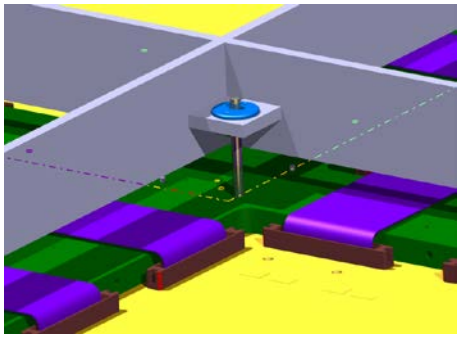


- ➢ Deformation calculation and planarity estimation under +/- 0,5mm on the 3m x 3m
- ➢ Final geometry about to be fixed

Metrology and planarity tuning

Metrology operations discussed with Dirk on 06/09/16

- Metrology needs for CRP assembly and installation have been defined
- First quality controls on the invar frame
- First planarity tuning after CRP assembly in the clean room (with optical device)
- Final planarity tuning in the cryostat if necessary (at least control)
- Lateral positioning in the cryostat performed with lateral capacitive probes (currently in design) and a plumb-line system



Thermal decoupling and planarity tuning pawn

Space reduction above CRP

Chimney height and free space above CRP has to be discussed with Adamo especially because of the patch panel discussed yesterday.

(should be at least 200 mm, measured on the CAD, to be confirmed)