

WA-105

CRP design status

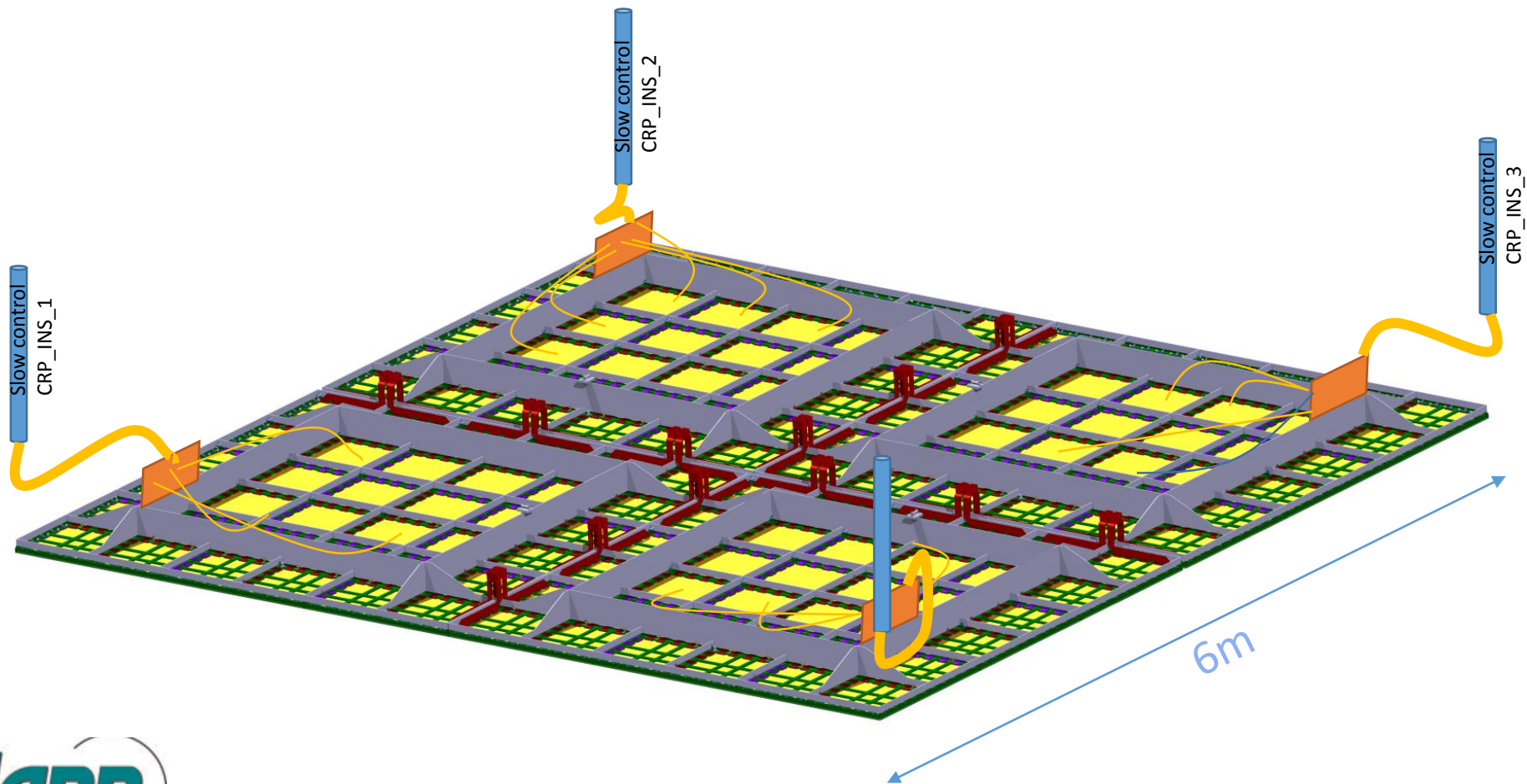
WA105 Technical Board – 5th of October 2016

***B. Aimard, M. Cailles, G. Deleglise, D. Duchesneau,
N. Geffroy, Y.Karyotakis, T. Yildizkaya***

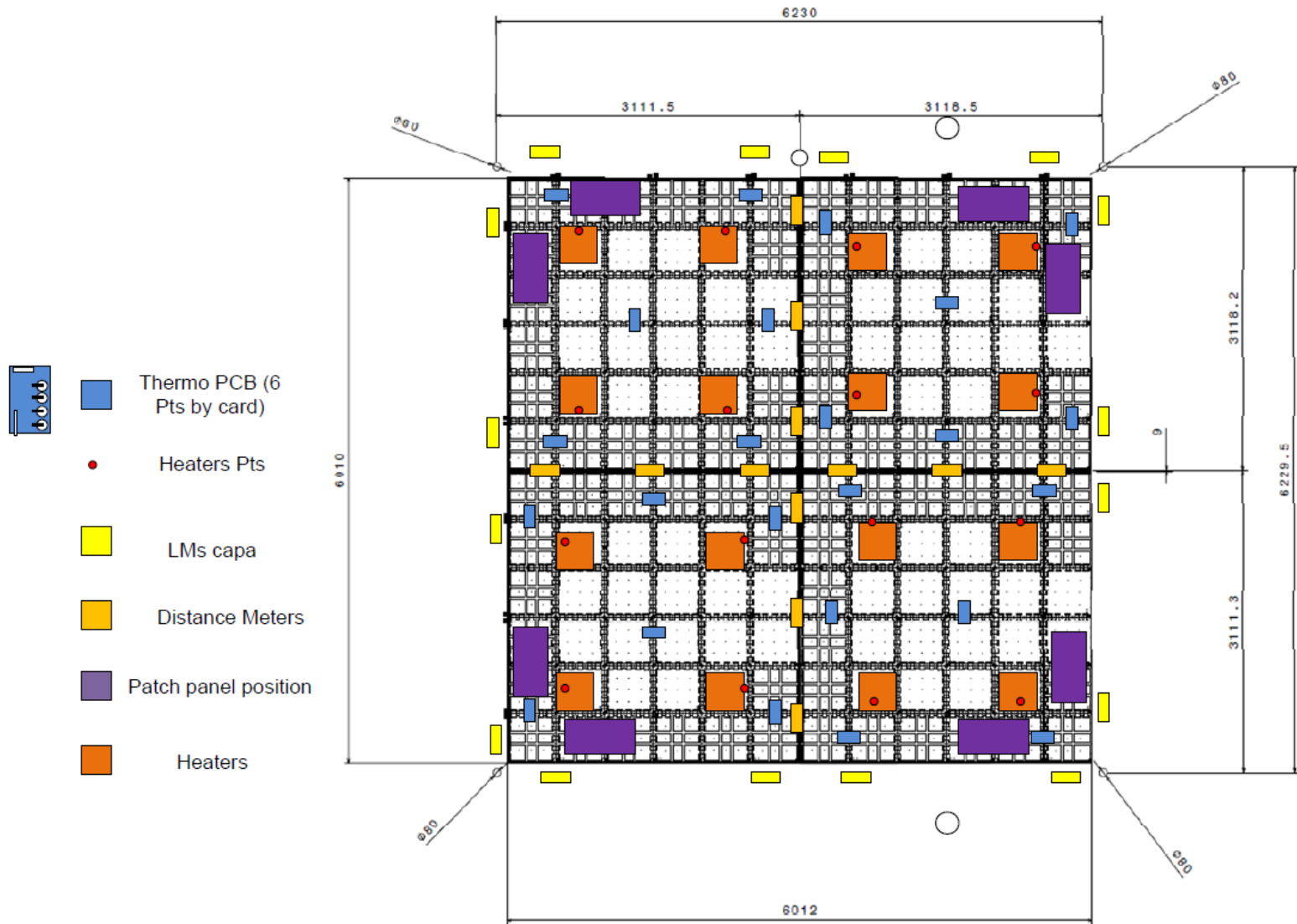
Electrical topics

Patch panel concept





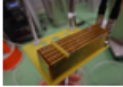







- CRP is assembled with a patch panel in clean room (bat. 185)
- Final connection only between slow control chimney and patch panel



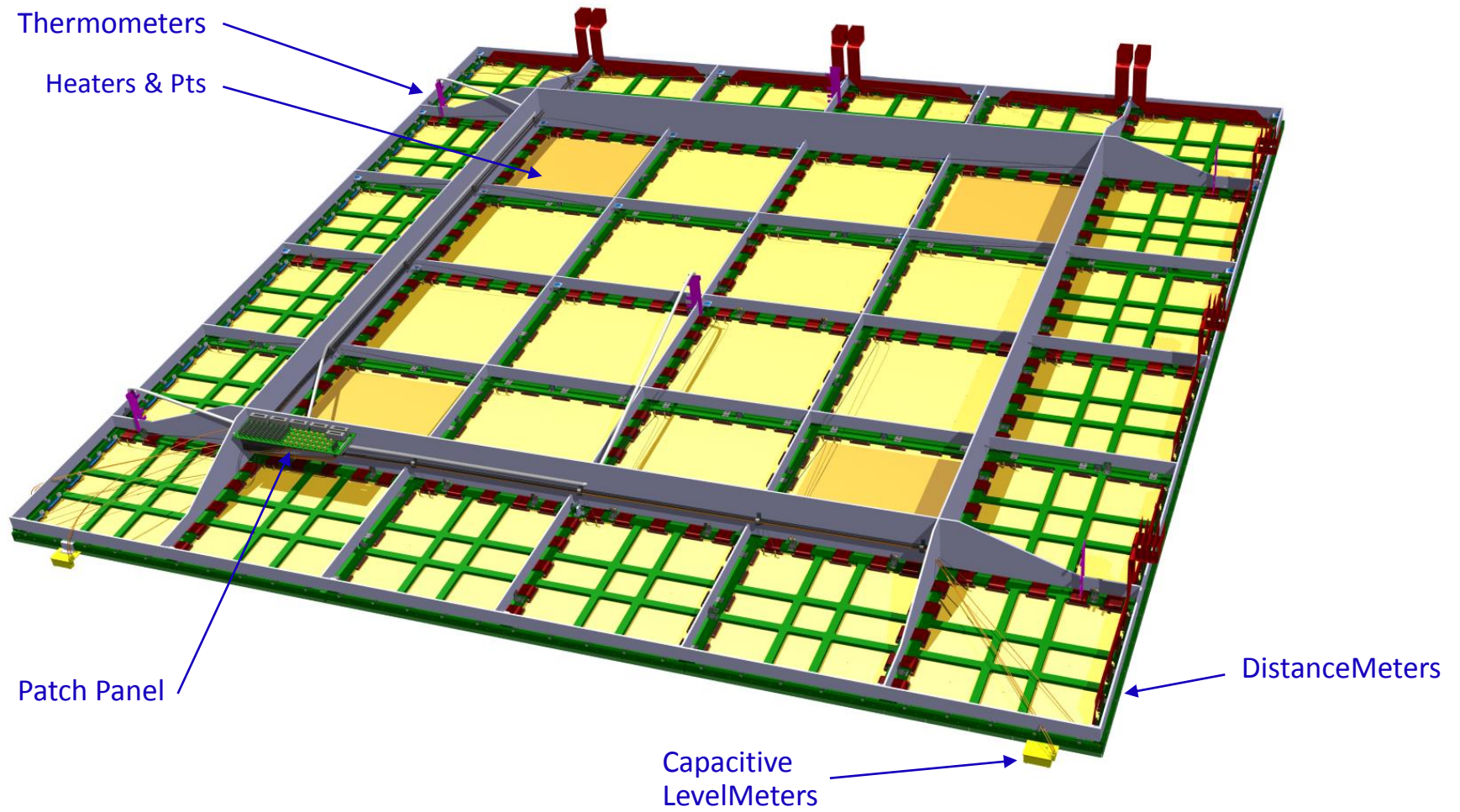
Electrical equipments on the CRP - Yann-Axel



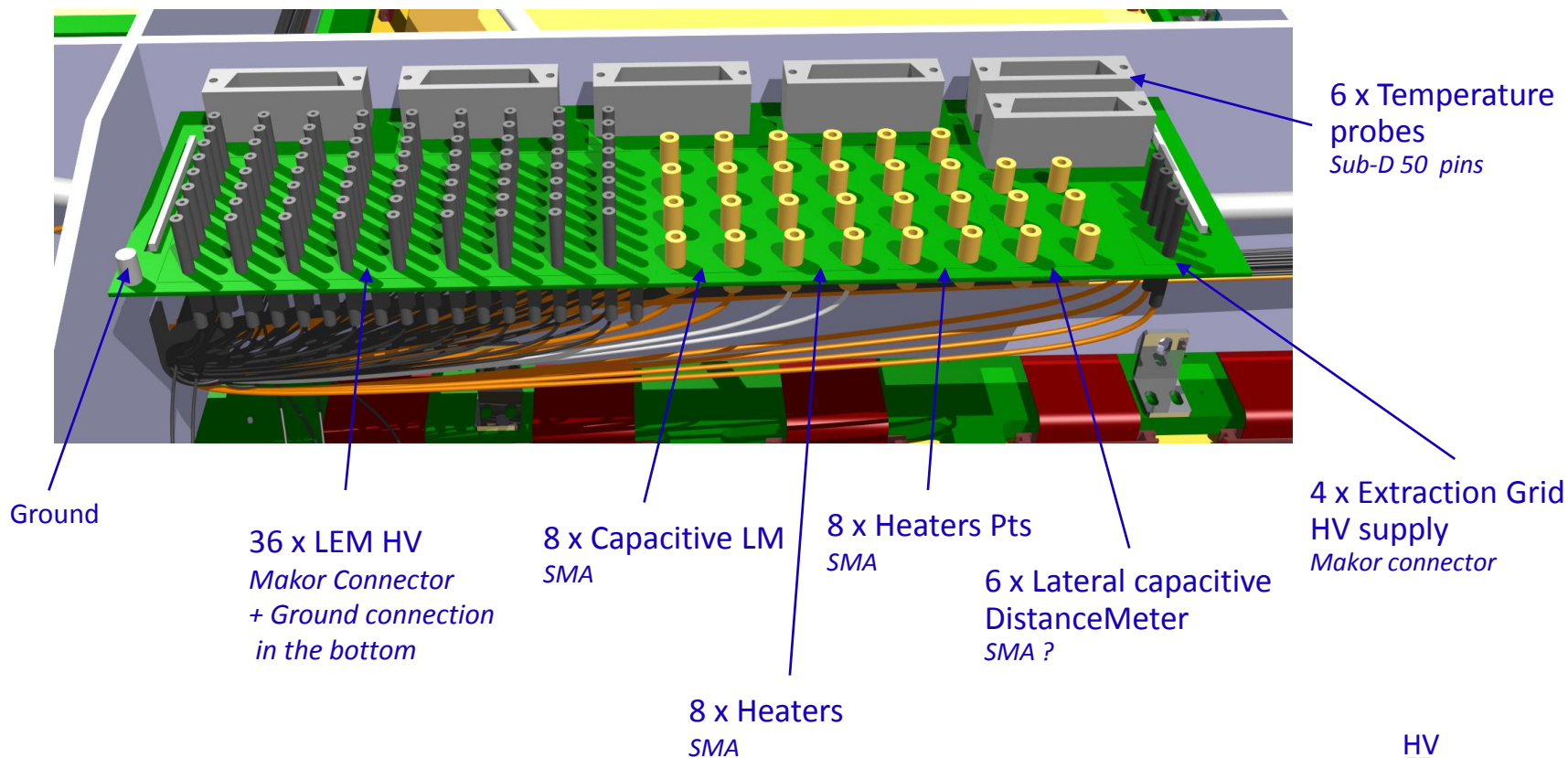
Electrical equipments on the CRP - Yann-Axel

		SENSOR -> PATCH PANEL							
	Measurement - Instrum.	Pictures	3m x 3m section (nb. Sensors)	Cables	SCEM	Pictures	Nombre de cable	Diameter	Connector on PP in
x4 CRP_INS_1, CRP_INS_2, CRP_INS_3, CRP_INS_4	Temperature (6 PCB composed by 6 Pts on the CRP)		36	CABLES PLATS PAIRES TORSADEES POUR IDC - PAS 1,27 mm	04.21.22.450.8		3	63.5mm	SUBD 50 pins
	Temperature for heaters (Pts for regulation loop with heaters)		4	CABLES PLATS PAIRES TORSADEES POUR IDC - PAS 1,27 mm	04.21.22.416.0		1	21mm	
	Capacitive level meters		4	CABLE COAXIAL 50 OHM - FAIBLE PERTE - TYPE C-50-11-1	04.61.11.265.8		8	4.2mm	SMA
	Distance meters		3	CABLE COAXIAL 50 OHM - FAIBLE PERTE - TYPE C-50-11-1	04.61.11.265.8		6	4.2mm	SMA
	Heaters (resistor with sheet size to avoid liquid on CRP)		4	FIL DE CABLAGE ELECTRONIQUE 1,5 mm2, SOUPLE - FAIBLE ENCOMBREMENT	04.01.61.900.1		8	1.5mm	
	HV LEM		72	kapton insulated KAPw50ohm or micro coax	04.61.11.010.9		72	2.1mm	
	Extraction Grid/FFS		4				4	3.2mm	

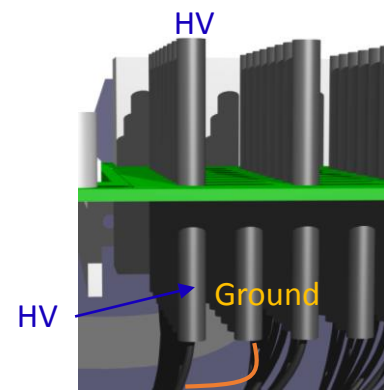
Cabled CRP



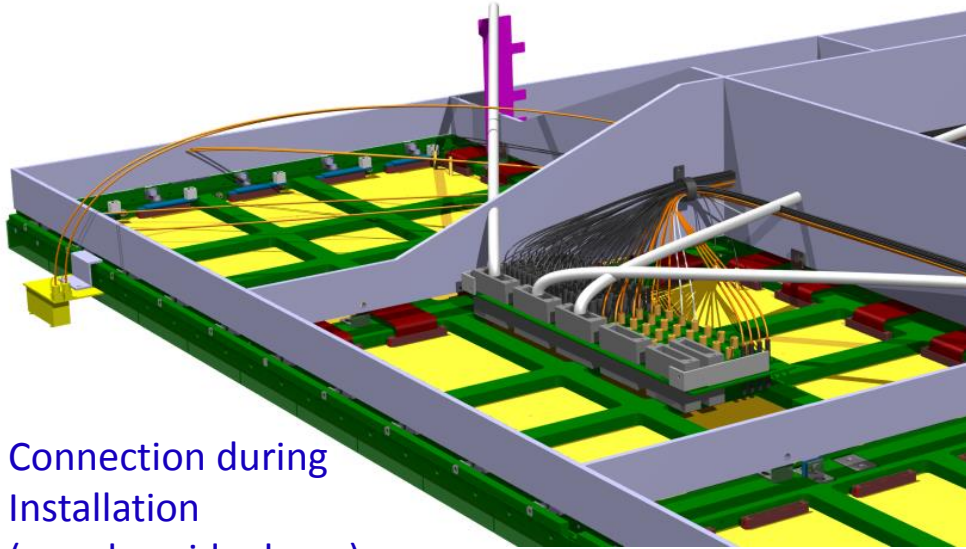
Patch Panel integration



- Patch Panel dimensions : 325 x 100 mm
- 77 connectors on the top,
- 113 connectors on the bottom

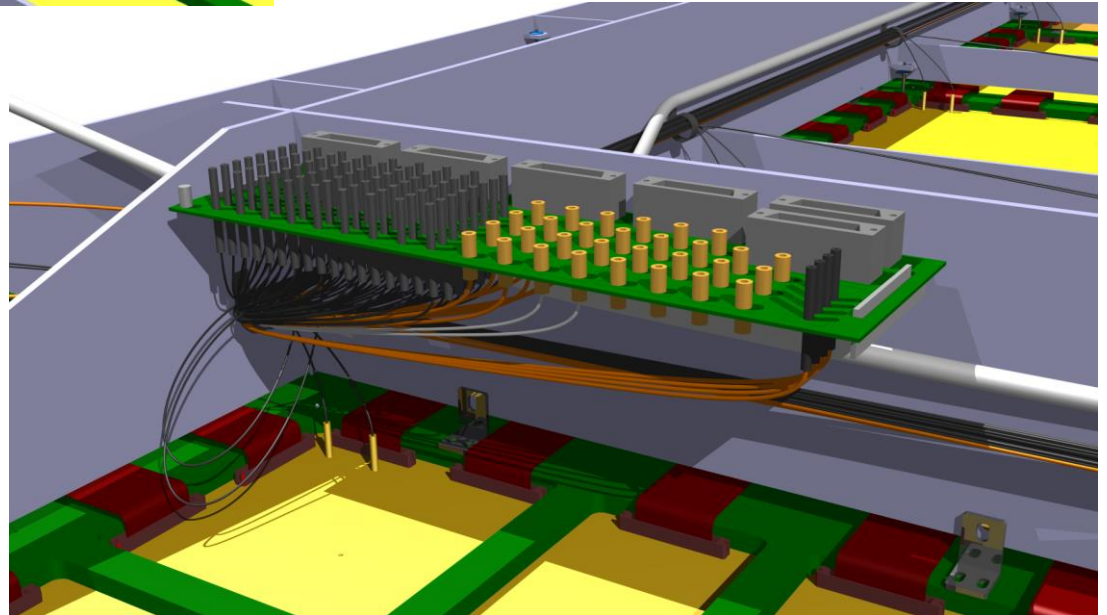


Patch Panel

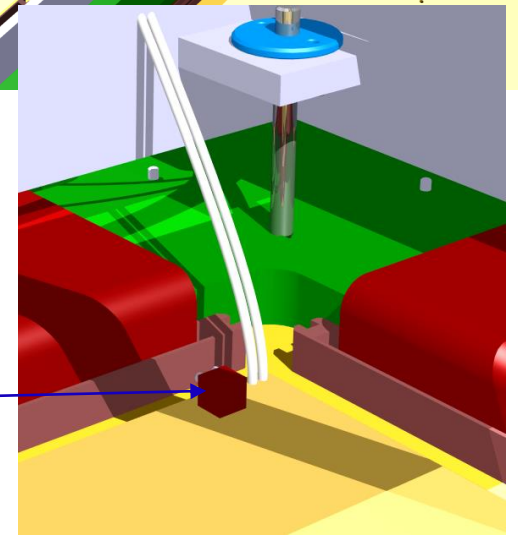
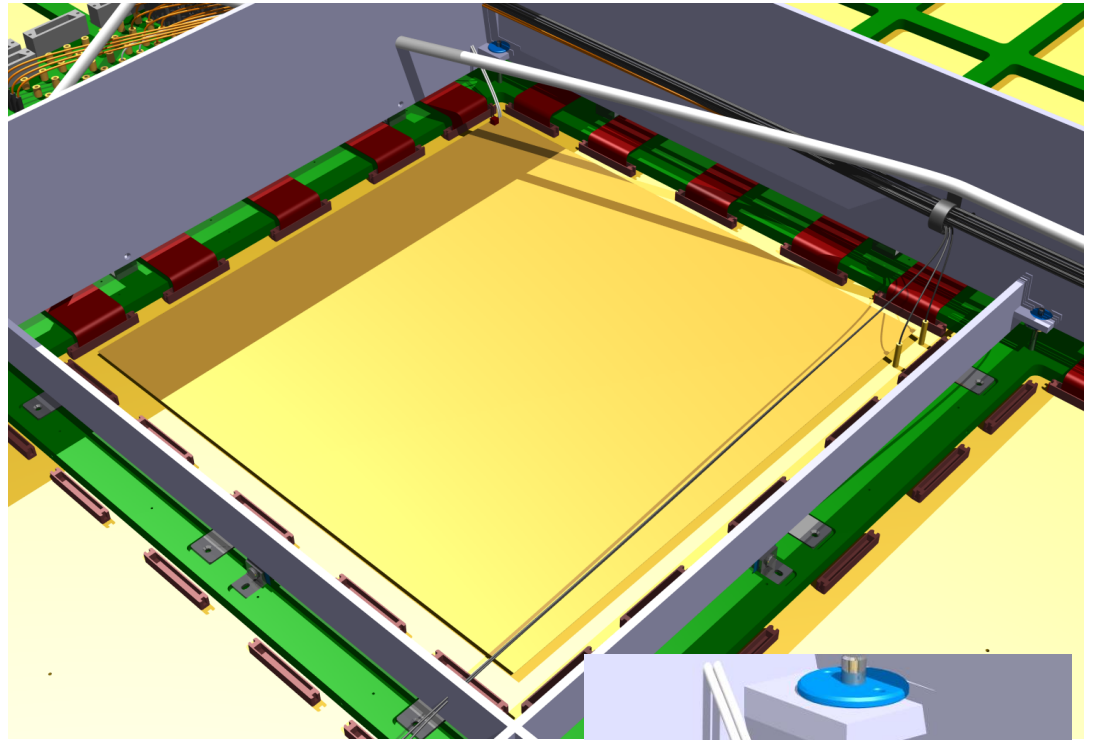
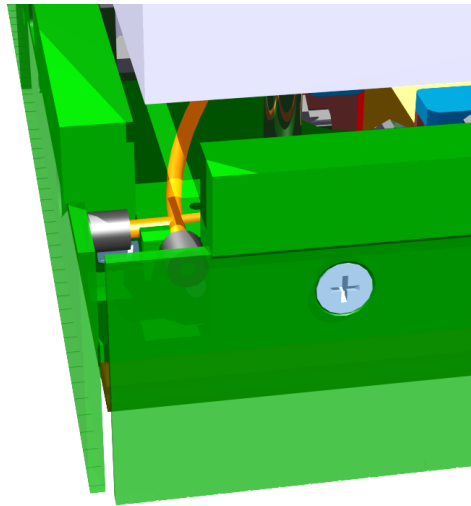
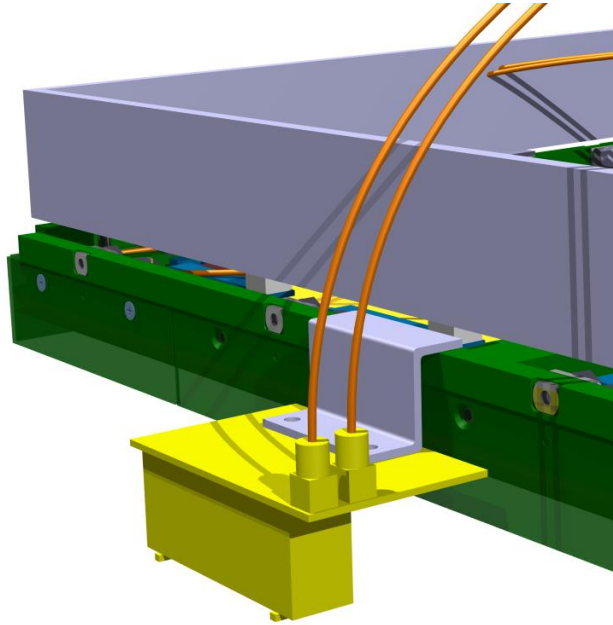


Connection during
Installation
(panel upside down)

Then flipped and hooked to
the frame in final position



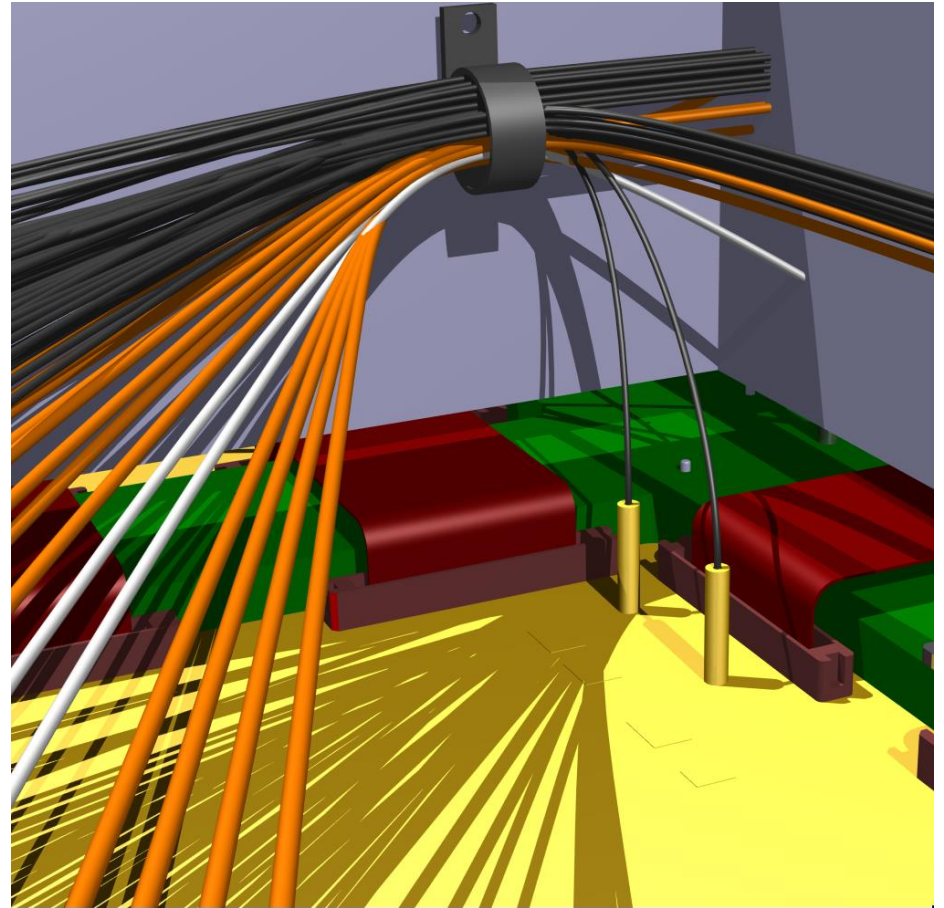
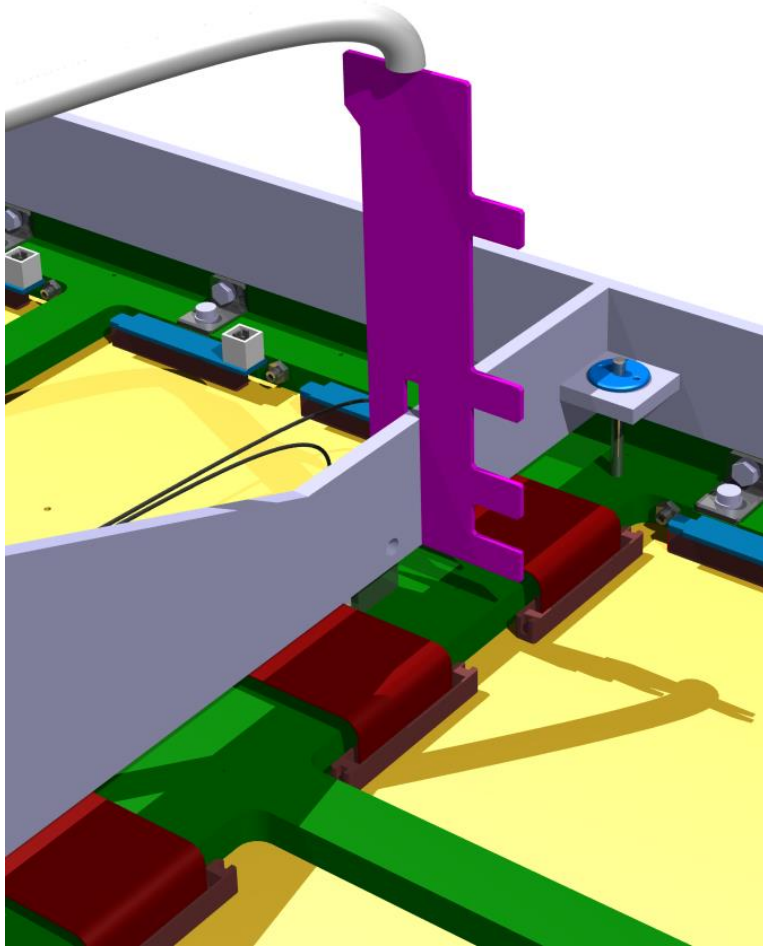
LevelMeter, Heater foils and Extraction Grid HV supply



Heaters Pts



Thermometers (to be actualised) & LEM Macor connection



Conclusions

- Cabling :
 - Some missing parts have to be included (e.g. DistanceMeters)
 - Final cable paths have to be set to calculate cable lengths
 - Patch Panel have to be designed and realised (by Conflectronics?)
 - Meetings and communication are frequent to insure good coordination

- CRP design and fabrication
 - Invar and G10 frames final dimensions have been set
 - Discussion are already on going with manufacturers
 - Von Roll for G10 and Pinette-Emidecau for Invar
 - Invar samples will be received soon to evaluate quality and resistance to corrosion
 - *Tests foreseen for cycles in LAr with Cryolab*
 - CAD models shared with Adamo for global integration (very soon, maybe this afternoon)
 - CRP and SPFT motors