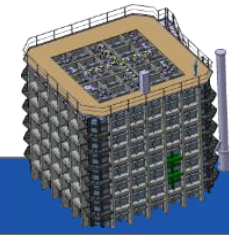


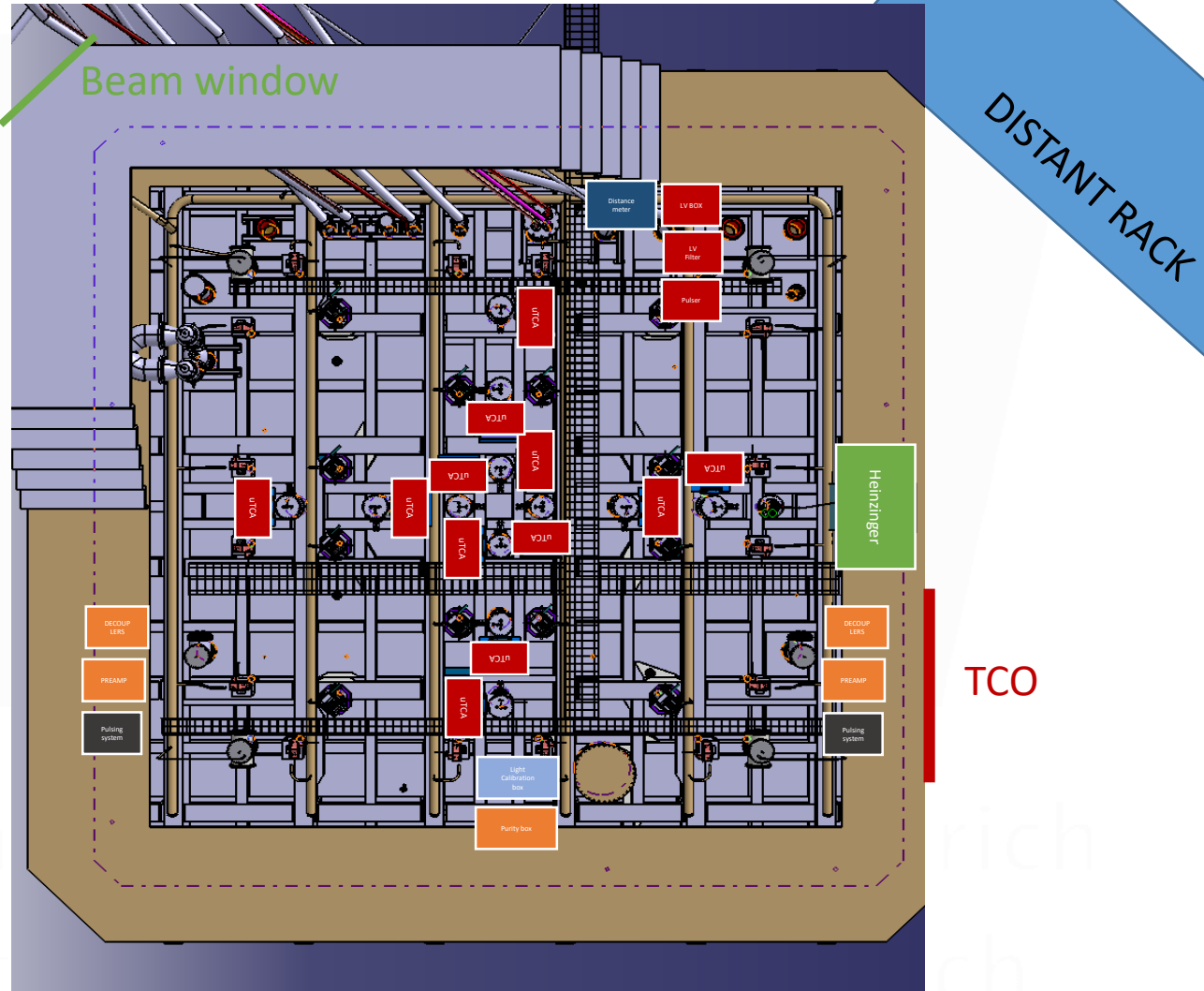
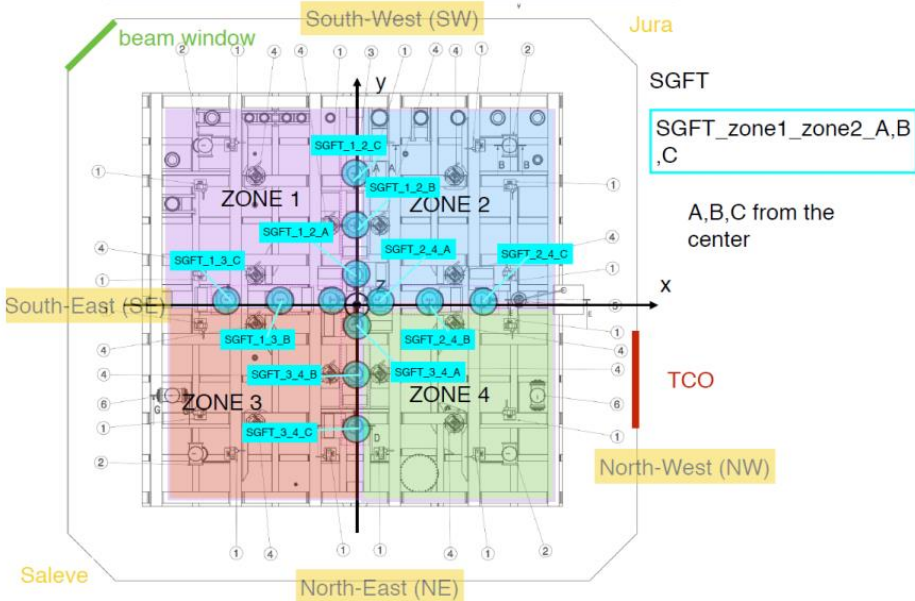
## Update on racks and external cabling

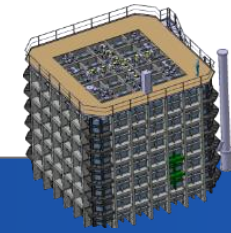
Y. RIGAUT on behalf of ETHZ group



## 3 & 4 | BOXES/ RACKS ON ROOF

All the integration on the roof is almost done thanks to everybody, so next step is to finalize last system and see if integration is possible.

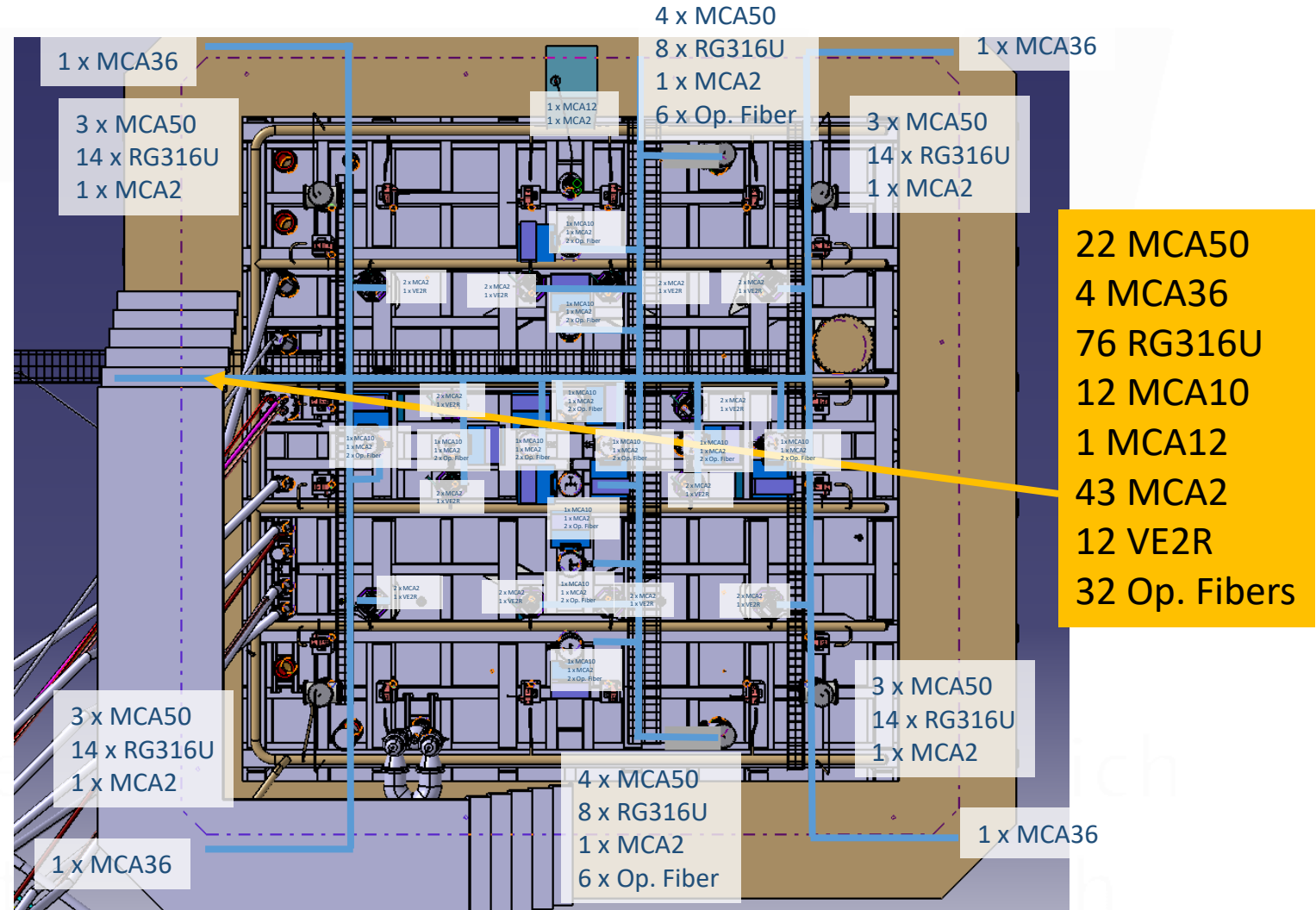




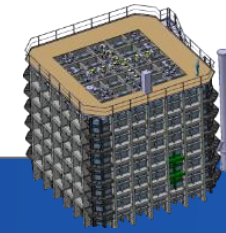
**3 & 4 | SIGNAL DISTRIBUTION ON ROOF**



Cable tray 400mm prototyping (without optical fibers).



Y. RIGAUT, protoDUNE-DP Integration meeting «Racks and external cabling»

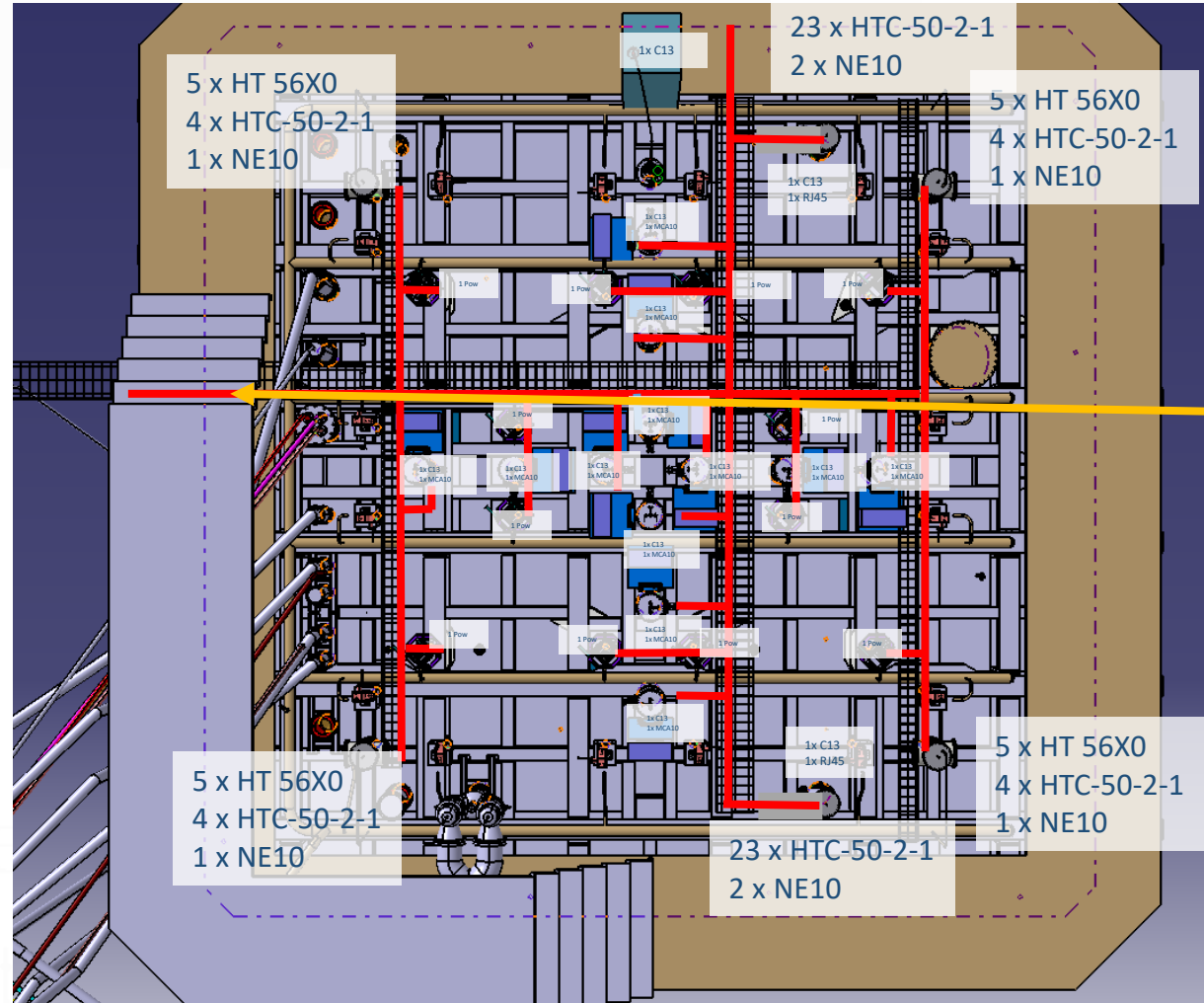


**3 & 4 | POWER DISTRIBUTION ON ROOF**

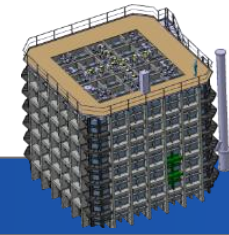
PROTO in progress

Cable tray 400mm prototyping (without power plug/Purity monitor/Calibration Light readout).

PROTO in progress



- 20 HT 56X0
- 62 HTC-50-2-1
- 8 NE10
- 12 Pow M
- 12 MCA10
- 2 RJ45
- 15 C13



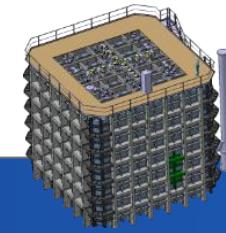
## Racks position



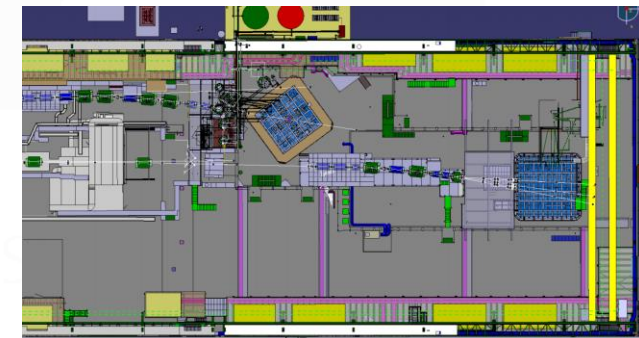
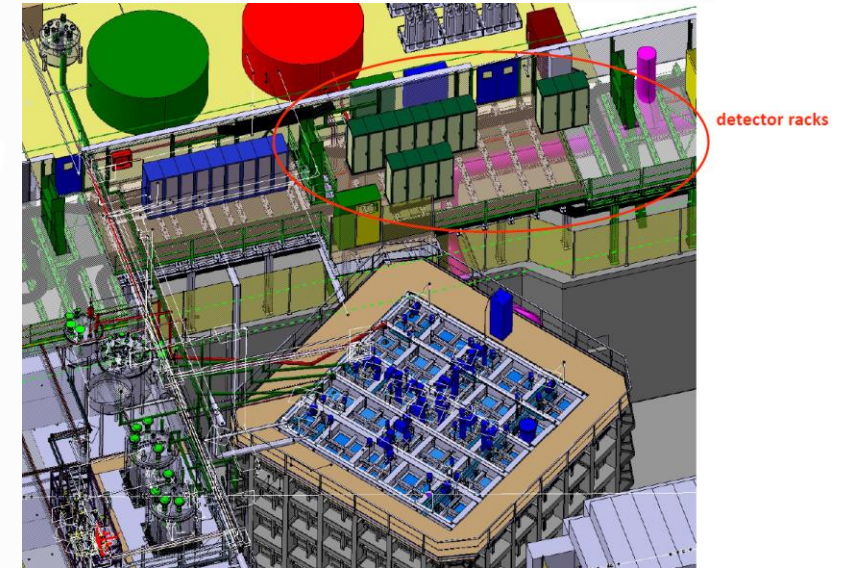
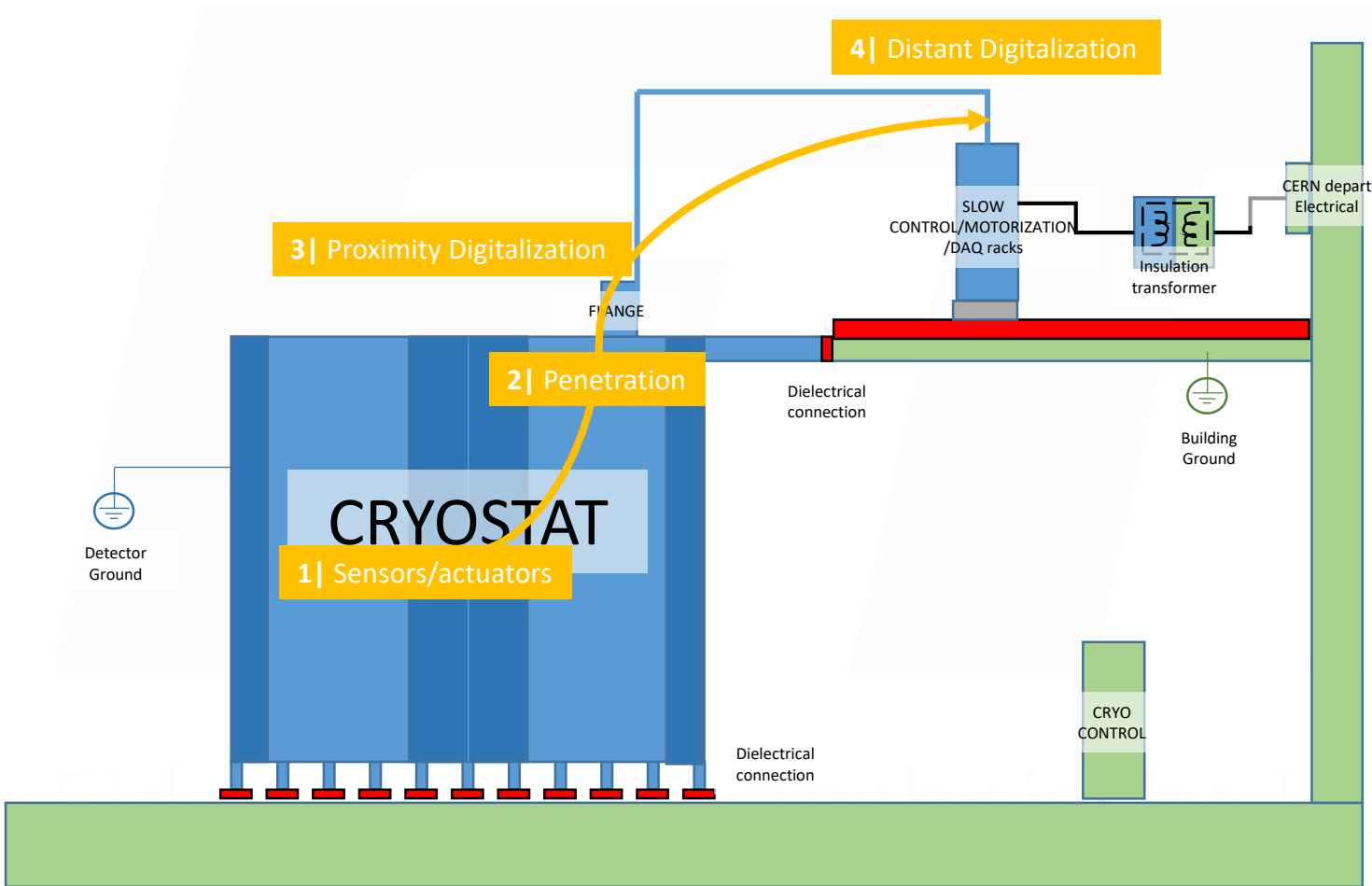
10/08/2017

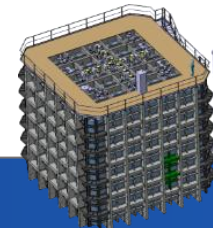


Y. RIGAUT, protoDUNE-DP Integration meeting «Racks and external cabling»



## GENERAL VIEW OF PROTODUNE DP



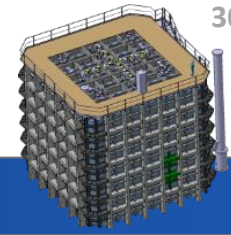


Racks position

1	2	3	4	5	6	7	8	9
		<b>EP-DT</b> Detector Technologies		<b>Implantation Racks</b>			27802015	
				main cranshparsim.../projec.../ch.../... WA105			Mise à jour : 02.08.2017	
				Copy (1) of implantation des racks.vsd			Dessiné par : Yann Rigaut	
							Folio 3/8	

detector racks

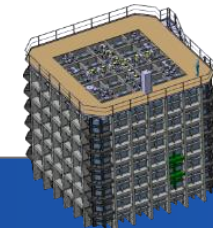
nal situation



Back up slides...

Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

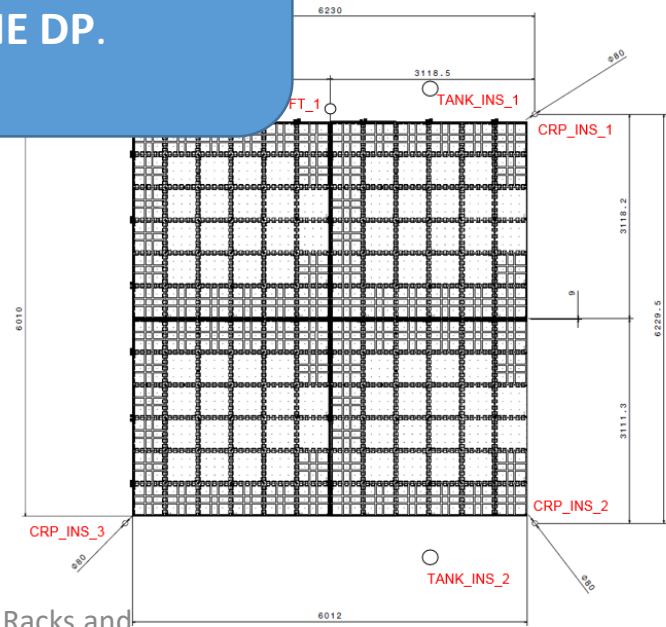


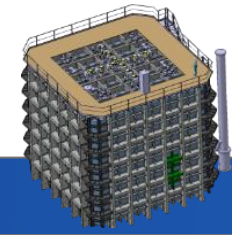


## 1 | SENSORS/ACTUATORS

Quantity	Measurement System				CABLE PLATE										CABLE COAXIAL											
	Picture	Qty	Price (unit)	Total Price	Label	SKU	Picture	Number of cables	Length	Price (unit)	Total Price	Thickness	Connector on PCB	Label	SKU	Picture	Number of cables	Length	Price (unit)	Total Price	Thickness	Range	Picture	Comment		
x4	Temperature for PCB (composed by 6 Pcs 12 on the CRP)		6	200	1200	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm	DR.21.22.462.A		3	7	21	63.5mm	SUBD 50 pins	Patch Panel 1	SUBD 50 pins	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm	DR.21.22.462.A		3	7	0	63.5mm	SUBD 50 pins			
	Temperature for heaters (Pcs 12 for regulator loop with heaters)		4	20	80	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm	DR.21.22.438.D		1	7	7	21mm	SUBD 50 pins		SUBD 50 pins	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm	DR.21.22.438.D		1	7	0	21mm	SUBD 50 pins			
	Capacitive level meters		4		0	CABLE COAXIAL NO CHRM - PAREE PAFER - TYPE C-50-13-E	DR.81.11.368.A		8	5	40	4.2mm	SMA		SMA	CABLE COAXIAL NO CHRM - PAREE PAFER - TYPE C-50-13-E	DR.81.11.368.A		8	5	0	4.2mm	SMA			
	Distance meters		3		0	CABLE COAXIAL NO CHRM - PAREE PAFER - TYPE C-50-13-E										CABLE COAXIAL NO					0	4.2mm	SMA			
	Heaters (heater will allow air to avoid liquid on CRP) - 60W		4	350	1400	PL DE CARBONE FUSIONNEE L'FOND, MARGE TABLE ENCROUSSEMENT	DR.01.81.900.1						1.5mm		AMPHEMCL MDC 10 pins	Number of heaters on bottom need to be define					0	1.5mm	AMPHEMCL MDC 10 pins			
	HV LHM		72	0	0																0	2.1mm	SHV			
	Extractor 0.6x1.5		4	0	0																0	3.2mm	BNC			
x2	Clair of Pcs 12 (composed by 12 Pcs)		24	800	800	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm								Patch Panel 2	SUBD 50 pins	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm										
	Purity Monitor		1																							
	PMs		18			Kapton Insul KAPW5000																				
	Heaters on the bottom				400	PL DE CARBONE FUSIONNEE L'FOND, MARGE TABLE ENCROUSSEMENT	DR.01.81.900.1				4		1.5mm		AMPHEMCL MDC 10 pins	Number of heaters on bottom need to be define										
	Temperature for heaters (Pcs 12 for regulator loop with heaters)				20	CABLE PLATE PAREE TORADERE POUR DC - PAF L37 mm	DR.21.22.438.D				7				SUBD 50 pins	Depend on heaters number										
	120s - 1270 Volt according ambient temperature		3		40	PL DE CARBONE FUSIONNEE L'FOND, MARGE TABLE ENCROUSSEMENT	DR.01.81.900.1		6		4		1.5		AMPHEMCL MDC 10 pins	Maybe some additional on the bottom										
	Camera					Kapton Insul KAPW5000	NO								SUBD 50 pins	Number and position need to be define										
Coaxial level meters		1					1					??														
Pressure		1																								
HW_1	HV cathode		1																							
HW_1_1, HW_1_2, HW_1_3, HW_1_4, HW_1_5, HW_1_6, HW_1_7, HW_1_8, HW_1_9, HW_1_10, HW_1_11, HW_1_12																										

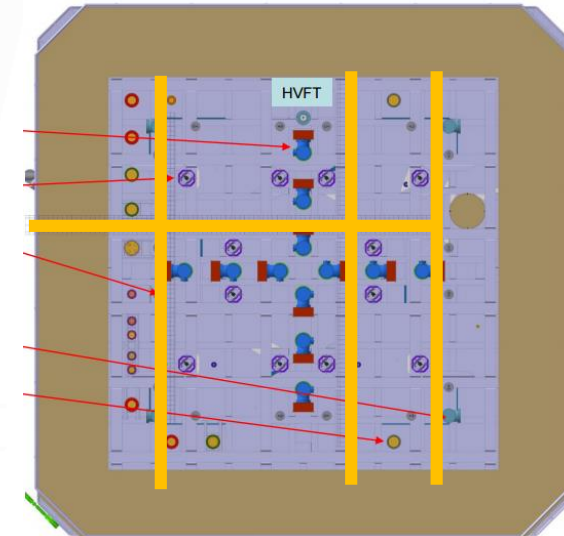
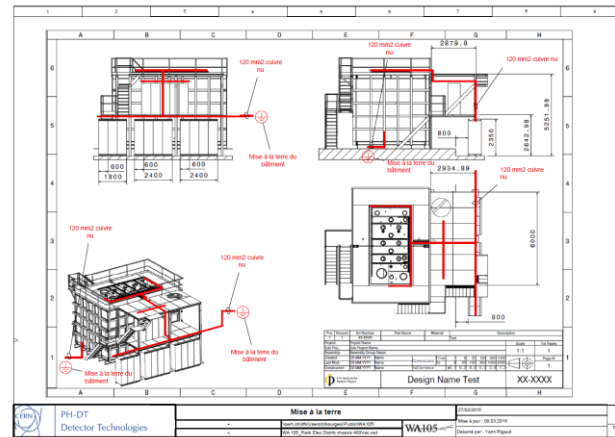
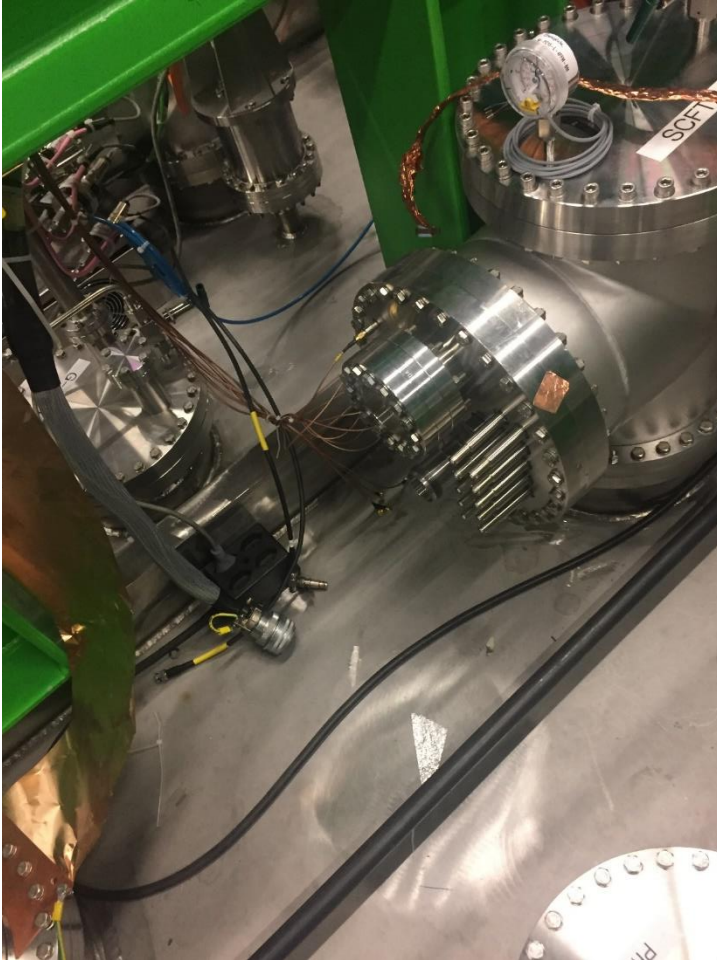
With 3m x 1m x 1m, we have a better understanding of which sensors we need and where to place them. So with this informations we have built the instrumentation list for **ProtoDUNE DP**.  
 See Cosimo/Thierry talk

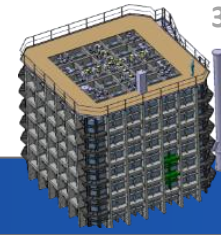




3 & 4 | GND ON ROOF

Simple drawing for copper plates implementation used for GND.





**POWER DISTRIBUTION (SIMPLE VERSION)**

