

ProtoDUNE-DP integration meeting

D. Duchesneau / S. Murphy

Bi weekly protoDUNE-DP integration meeting



Friday, 15 September 2017 from 14:00 to 18:00 (Europe/Paris)
at 182 (2-010)

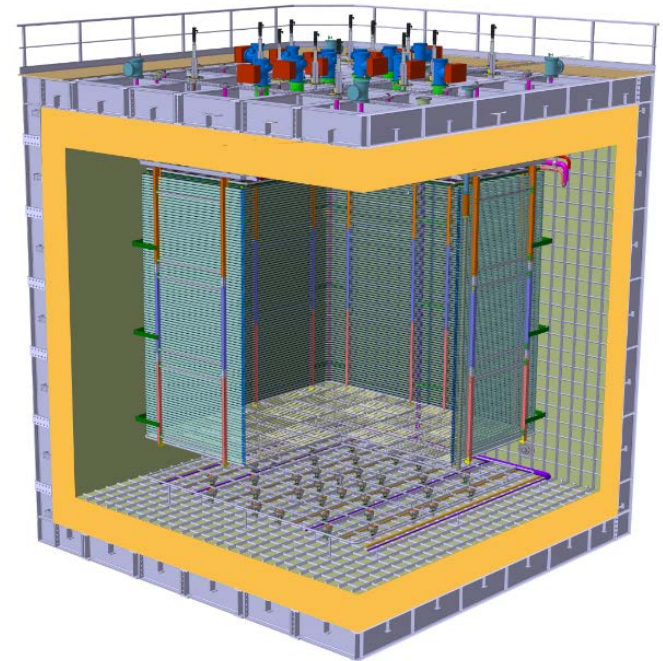
Manage ▾

Description **internet connection:** remote Vidyo connection can be found [here](#)

phone connection: explained [here](#) use room extension: 1010644826

Friday, 15 September 2017

- 14:00 - 14:10 **update and news 10'** ▾
 Speakers: Dominique Duchesneau (LAPP, CNRS-IN2P3), Dr. Sebastien Murphy (ETH Zurich)
- 14:10 - 14:25 **CRP- Status of LEMs 15'** ▾
 Speakers: Dr. Alain Delbart (Irfu), Dr. Edoardo Mazzucato (CEA Saclay)
- 14:25 - 14:45 **CRP: status of electrical components 20'** ▾
 Speaker: Cosimo Cantini (ETH)
- 14:45 - 15:05 **layout of HV system on roof (LEM+ PMT) 20'** ▾
 Speaker: Mr. Yann-Axel Rigaut (ETH Zurich)
 Material: [Slides](#) 
- 15:05 - 15:25 **plans for drift cage test assembly in December 20'** ▾
 Speakers: Prof. Jaehoon Yu (University of Texas at Arlington), Mr. Adamo Gendotti (ETHZ)
 Material: [Slides](#)  



15/09/2017

Integration News

EHN1

- Cryostat membrane of ProtoDUNE-DP may be finished by October: last soldering of membrane plates by end of next week
- CRB installation finished; painting of the floor should be done by next week
- Top roof: soldering of flanges on the chimneys should be done in a few weeks time => the allowed tolerances have been provided to Filippo and Dimitar
- DCS Racks: the actual design foresees the racks to be installed on the ground floor instead of the first level (more info next meeting)

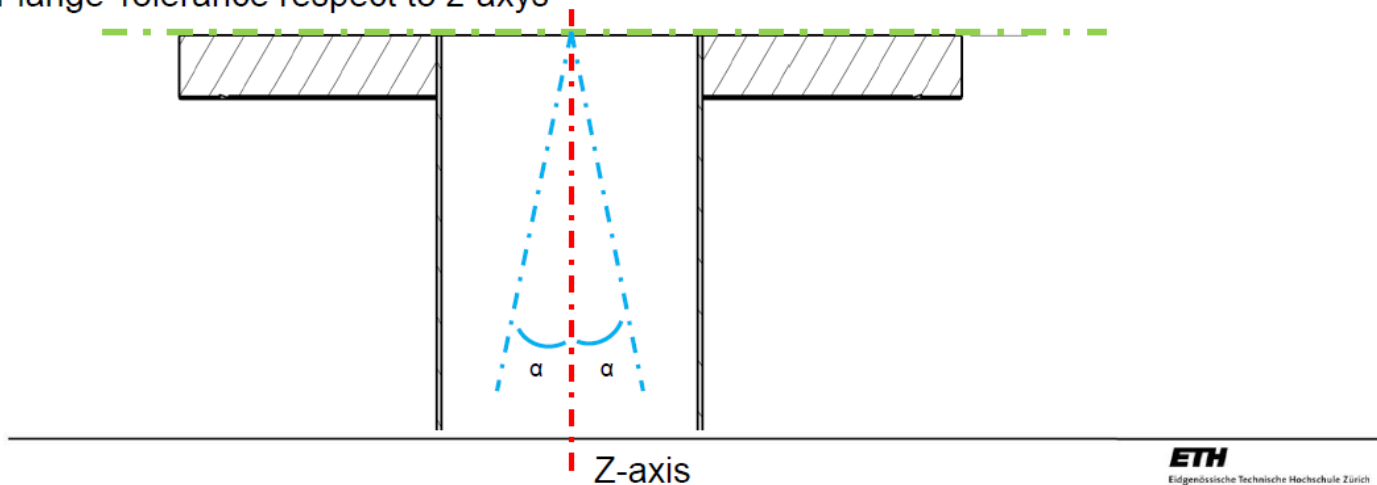
General items

- TPB coating of PMTs: due to the revision of the schedule (v3 presented at the last meeting on 1/09/2017) and to avoid long term storage after coating this activity using the Icarus facility has been moved to April-May 2018 instead of Oct-Nov 2017.
- Drift cage installation test in November: orders have been done, more in the talk from Jae and Adamo

Top cryostat feedthrough tolerances: (Adamo 11/09/17)

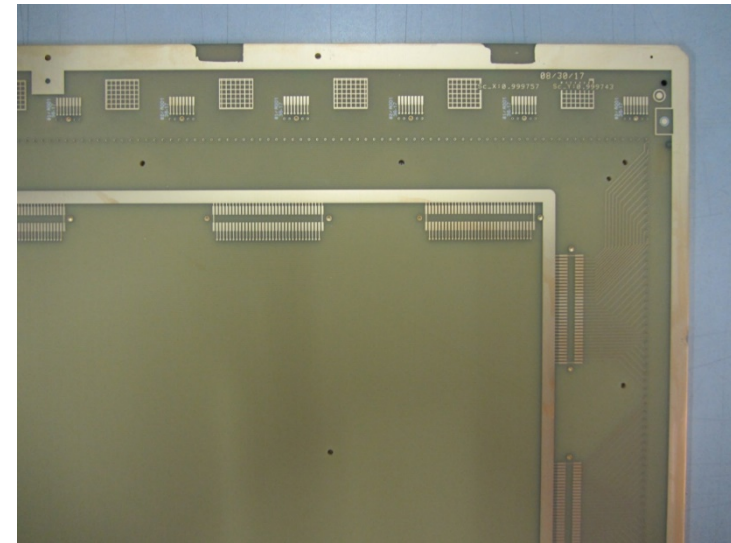
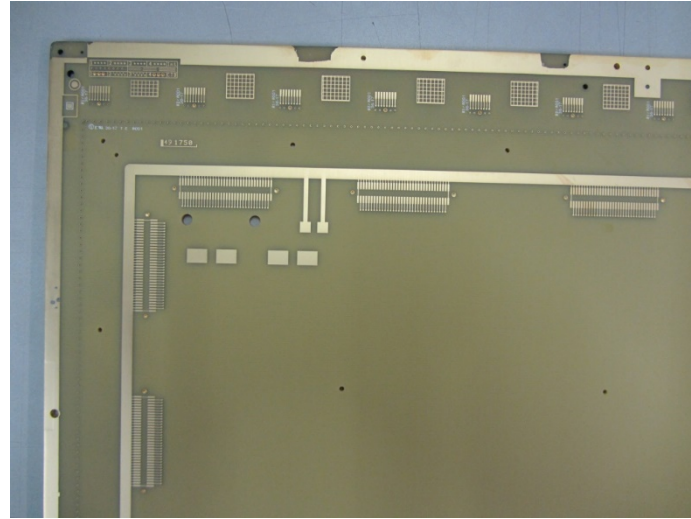
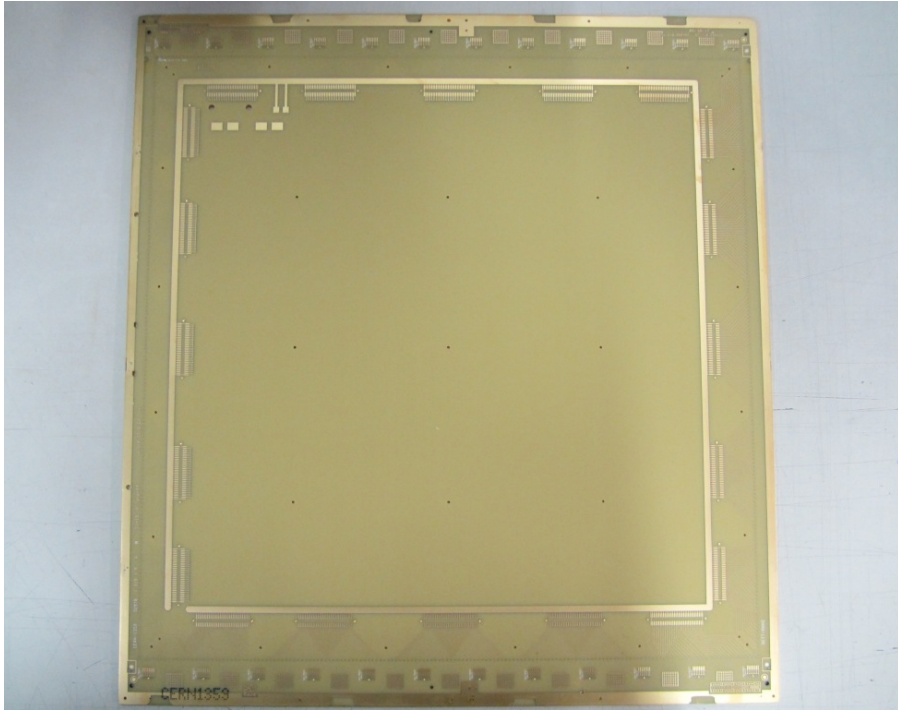
Po s	FT Name / Amount	Rotation Tolerance of the Flange β (x-y) slide 3	Flange Tolerance respect to z- axis (nominal 90 deg $\pm \alpha$)	Comments
1	Field Cage SPFT / #16	± 5 deg	± 5 deg	
2	CRP-INST / #4	No tolerance	No tolerance	Flange of the FT is rotational
3	SGFT / #12	± 5 deg	Critical	See slide #5 for proposal
4	CRP SPFT / #12	No tolerance	± 1 deg	Flange of the FT is rotational
5	HVFT / #1	No Tolerance	Critical	See slide #6 for proposal
6	TANK INS / #2	No tolerance	No tolerance	Flange of the FT is rotational

Flange Tolerance respect to z-axis



Anode status:

- First pictures of the anode at ELTOS sent on 5/09/2017: all centering pins, connector positions etc ... are correct

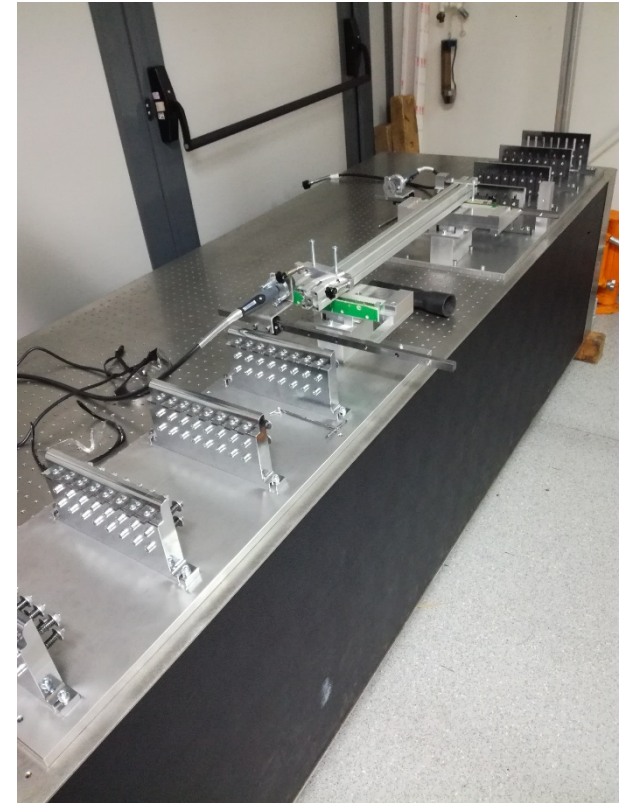
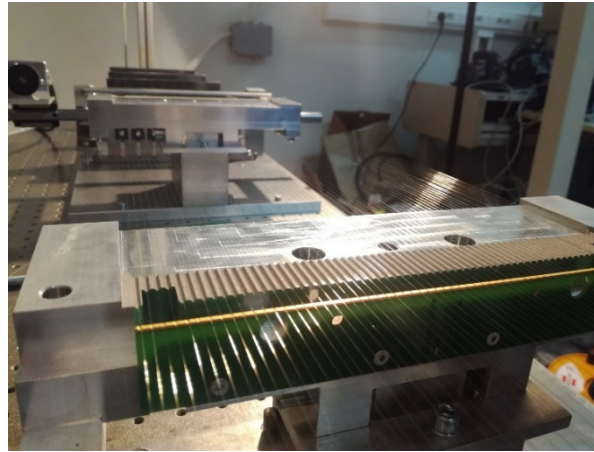


- First LEM should have arrived at CERN this week. After check validation will be given next week
- Full set (40) will be ready by end of October

CRP production status

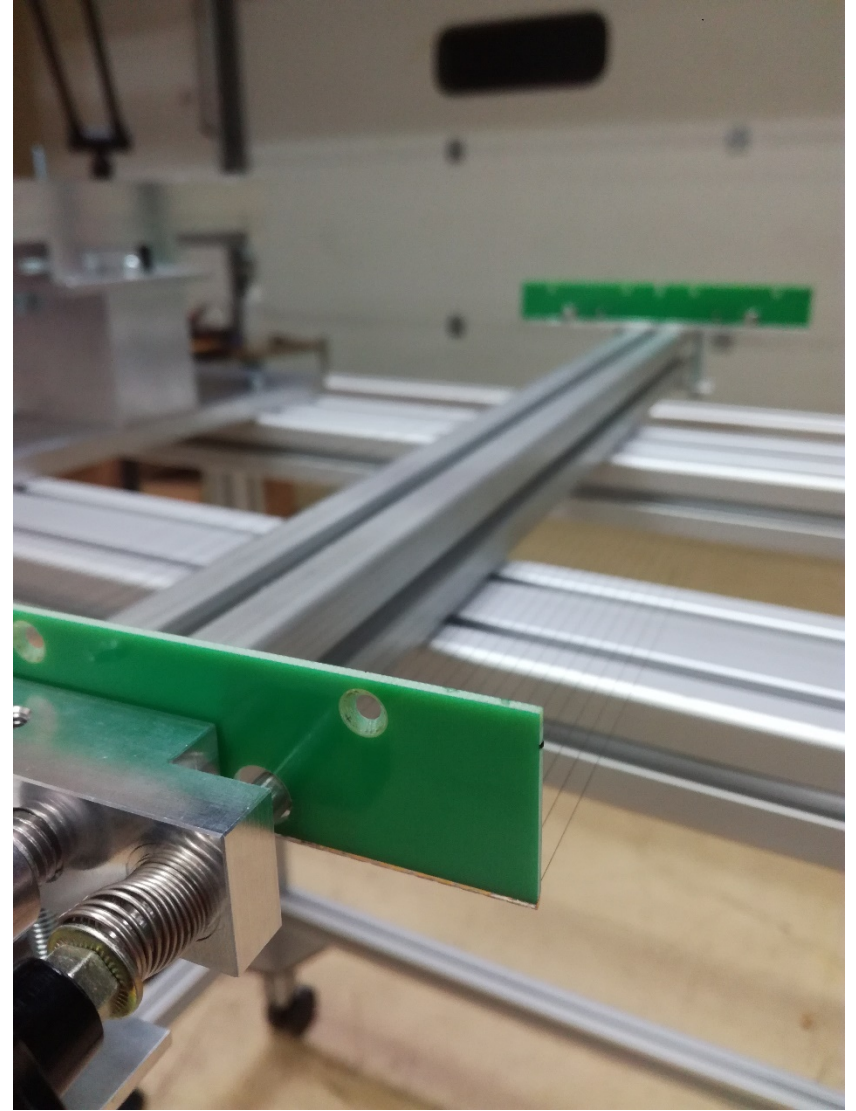
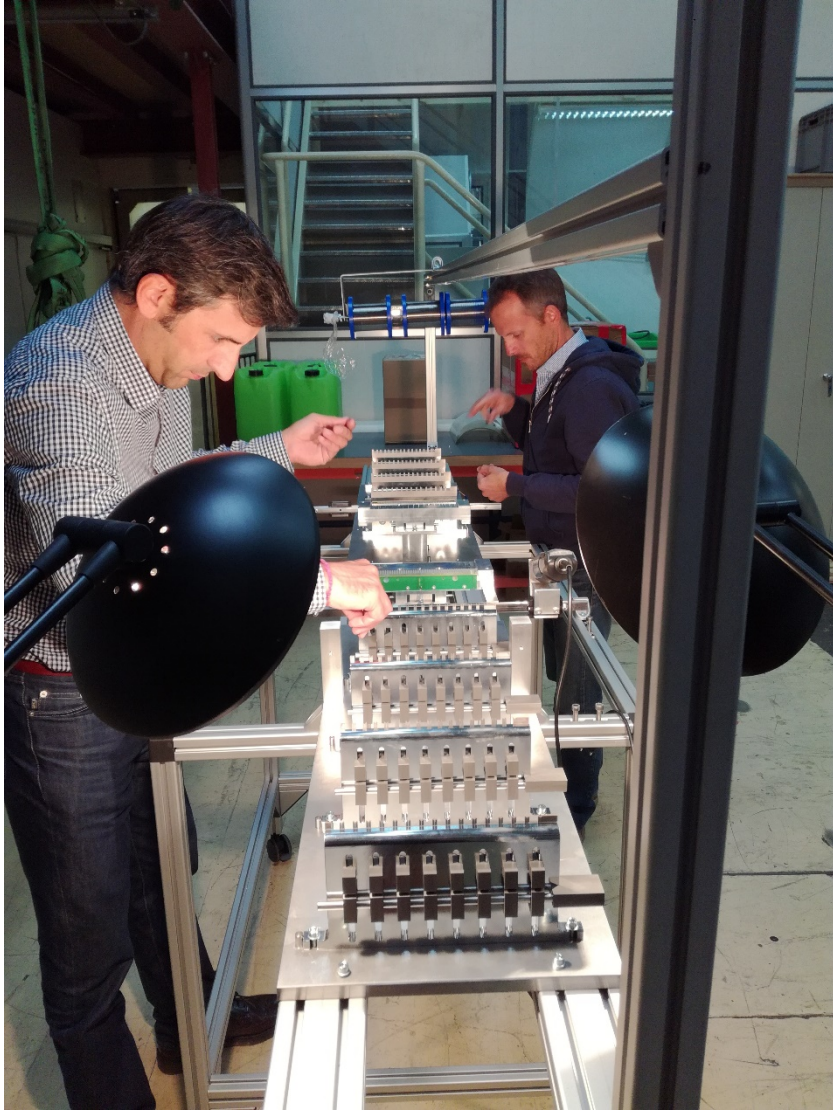
- CRP main structure elements:
 - ❑ G10 modules should arrive end of the month
 - ❑ First Invar frame should arrive beginning of October

- Grid tooling: tests done at LAPP during the summer and in september



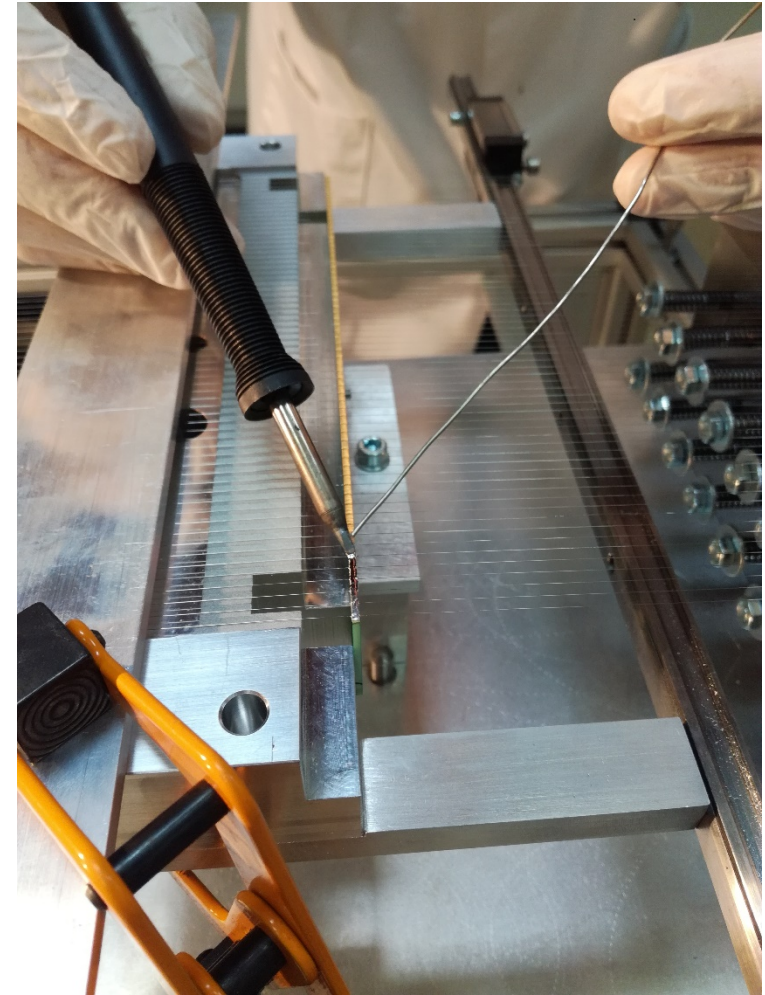
- => some modification of parts and optimisation of the setup hves been done; tests of soldering performed.
- Installation of the tooling in bld185 should occur by mid-October

Grid tooling test and tuning at LAPP (14/09/17)



Grid tooling test and tuning at LAPP (14/09/17)

Soldering of grid wires



QA/QC tests of CRP

- A DAQ system provided by Saclay to read 320 channels at once to test the anodes. Should be available by October.
- Lyon is developing a portable system to check the continuity which will be used in 185 and also for SGFT test during assembly

Holidays in Switzerland, Week Numbers

Sep 2017 (Paris)

Mon	Tue	Wed	Thu	Fri	Sat	Sun
28 Week 35 of 2017	29	30	31	1	2	3
4 Week 36 of 2017	5	6	7 Jeune Genevois	8	9 Knabenschlessen	10 Knabenschlessen
11 Knabenschlessen Week 37 of 2017	12	13	14	15 installation of grid tooling supports	16	17 Swiss federal fast
18 Week 38 of 2017	19	20	21	22	23	24
preparation and installation of CR185 LEM QA/QC in Saclay						
25 Week 39 of 2017 3x1x1 CERN review	26 LEM QA/QC in Saclay	27 preparation and installation of CR185	28	29 185 is clean room	30	1

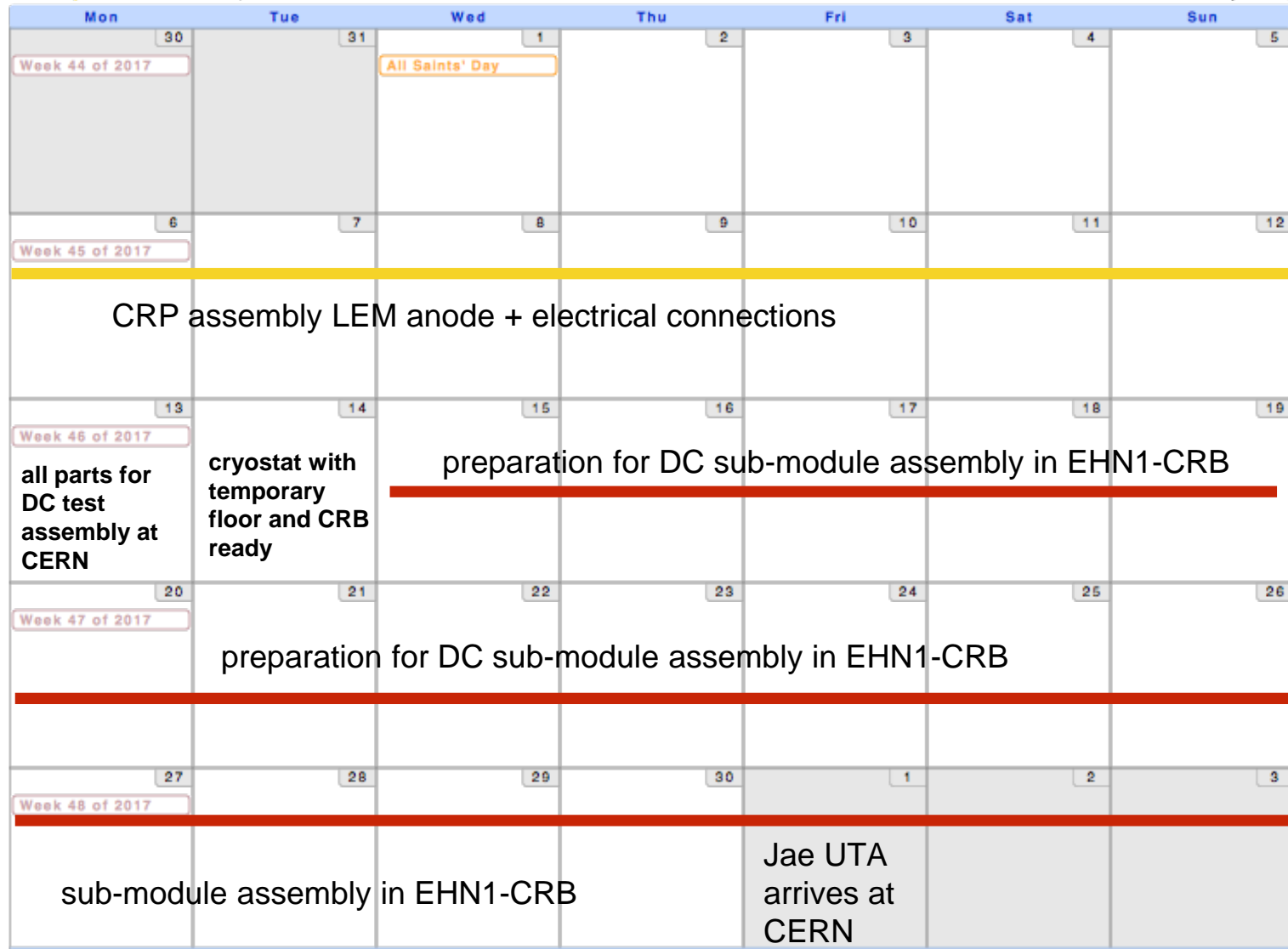
Holidays in Switzerland, Week Numbers

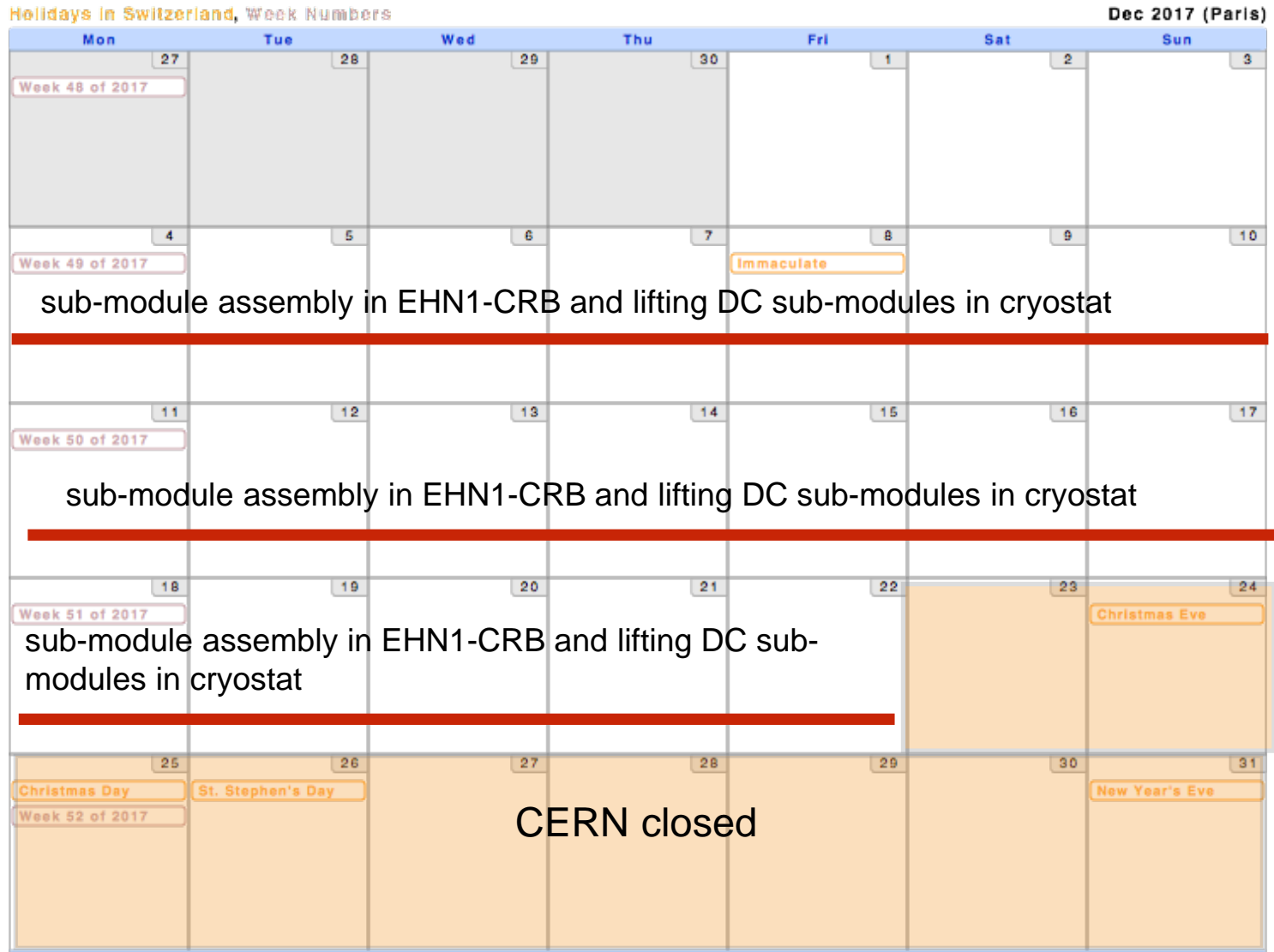
Oct 2017 (Paris)

Mon	Tue	Wed	Thu	Fri	Sat	Sun
25 Week 39 of 2017	26	27	28	29	30	1
2 Week 40 of 2017	3	4	5	6	7	8
G10 and INVAR frame arrives in 185						
G10 structure assembly						
9	10	11	12	13	14	15
position INVAR frame on assembly structure						
16 Week 42 of 2017	17	18	19	20	21	22
GRID tooling arrives in 185						
23 Week 43 of 2017	24	25	26	27	28	29
40 accepted LEMs in 185						
40 accepted anodes in 185						
30 Week 44 of 2017	31	1 All Saints' Day	2	3	4	5
CRP assembly LEM anode + electrical connections + QA/QC						

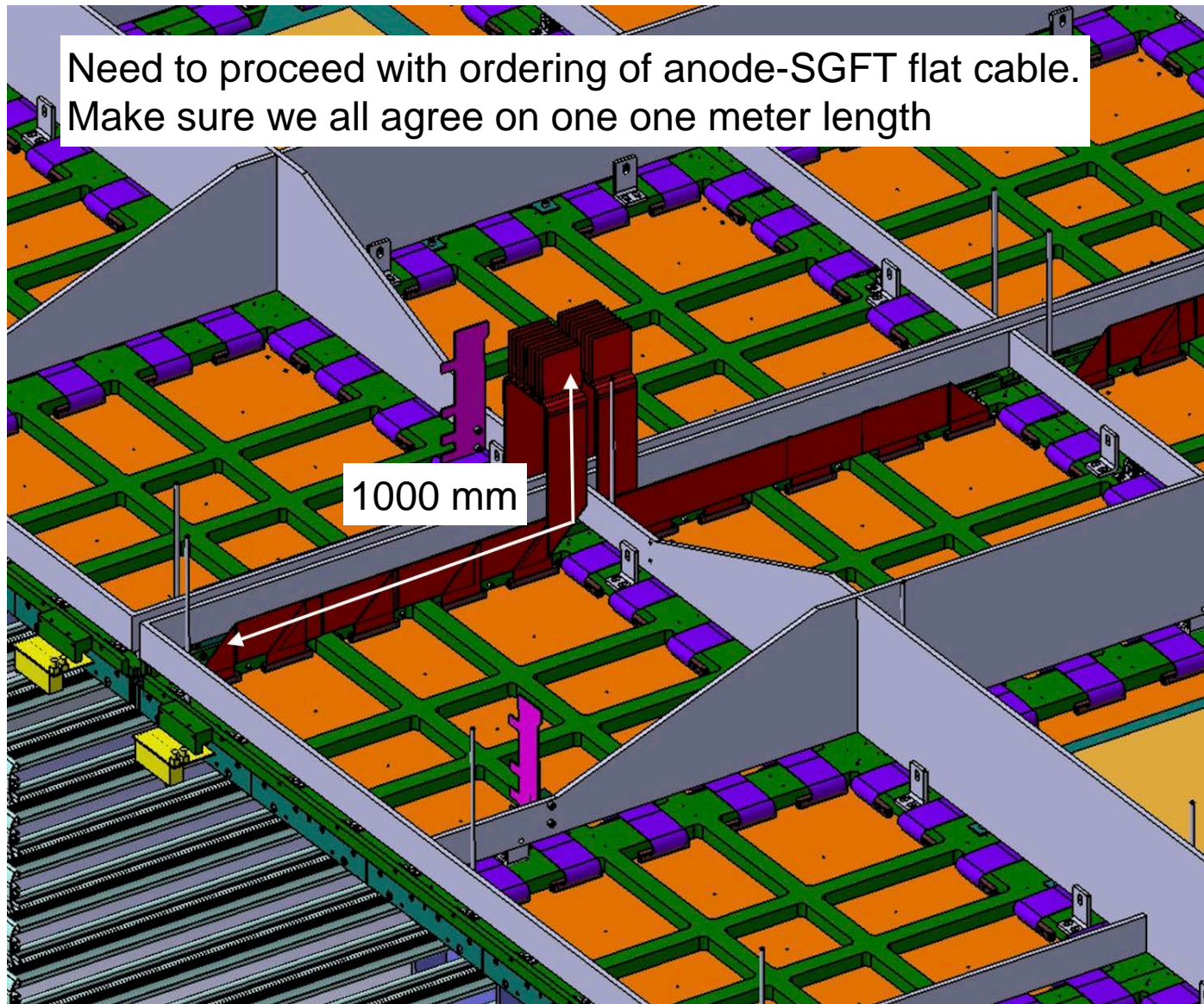
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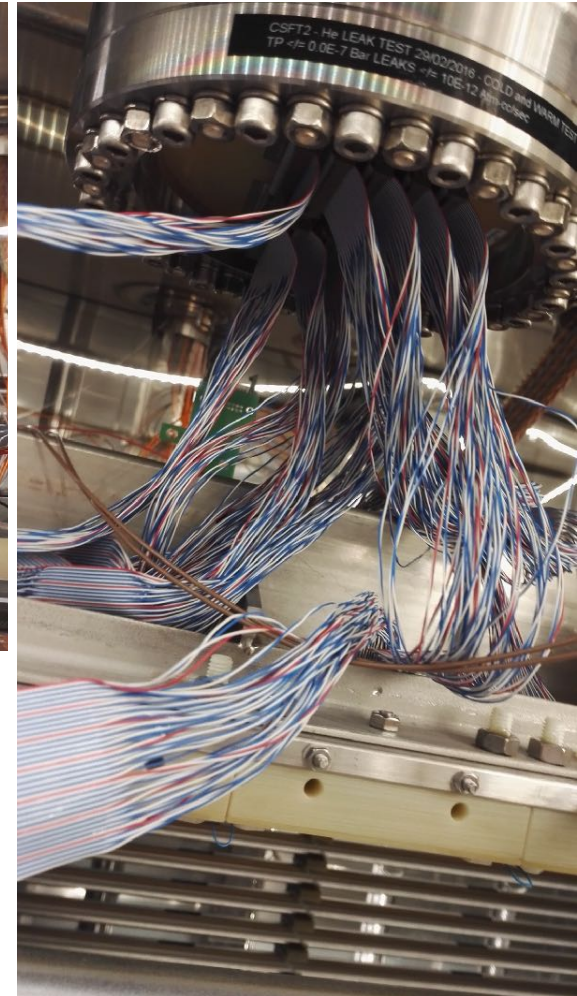
Nov 2017 (Paris)





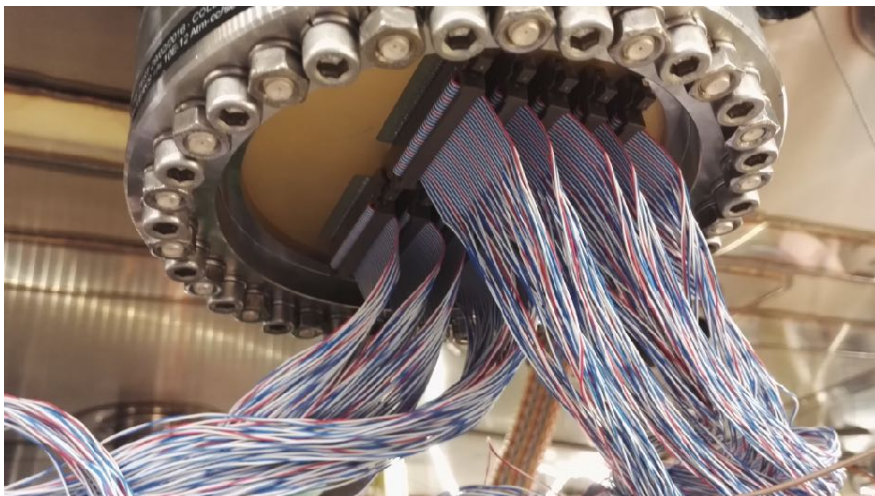
Need to proceed with ordering of anode-SGFT flat cable.
Make sure we all agree on one one meter length





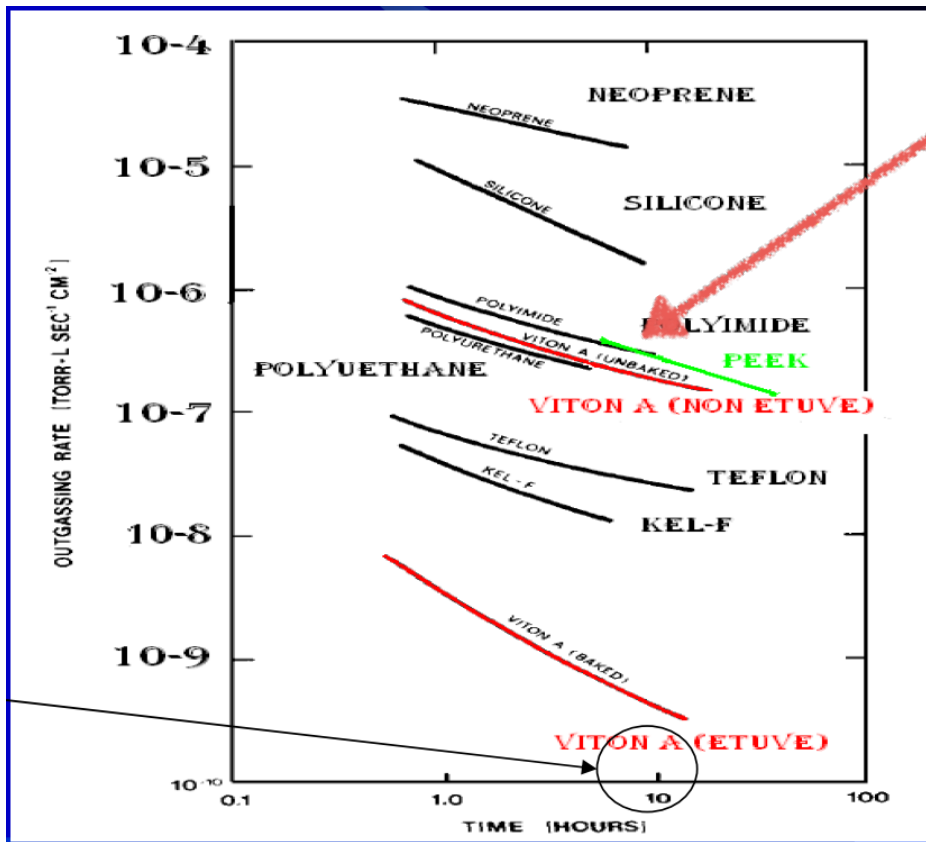
experience from 3x1x1

Each cable has the same length. Create quite a bundle of cable that can get easily caught and damaged.



propose to group the cables in a jacket for easy guiding along the CRP frame. Material of the jacket Polyimide.

outgassing



polyimide

for comparison G10
 (~10⁻⁷-10⁻⁸ T.l/(sec cm²))

<https://cernbox.cern.ch/index.php/s/I0xSb9WveR3EJJW>

Next ProtoDUNE-DP Integration meeting (29/09/2017) we foresee status updates about:

- SGFT status (call for tenders...)
- Detector Control System racks
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