LAPP
Laboratoire d'Annecy-le-Vieux
de Physique des Particules

Statut de l'Embedded Camera Controller et qq nouvelles de NectarCAM

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cnrs
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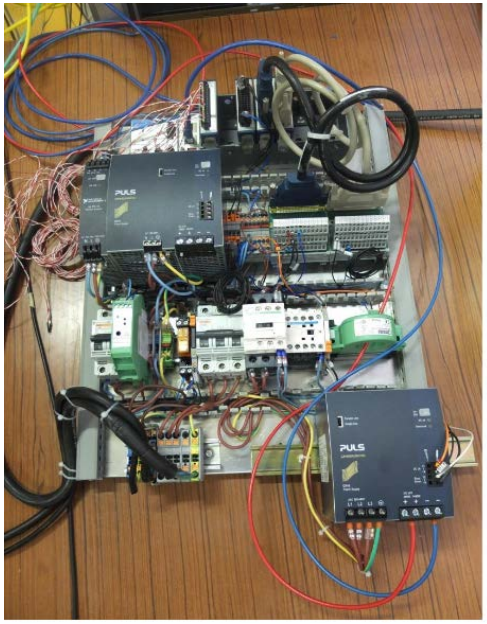
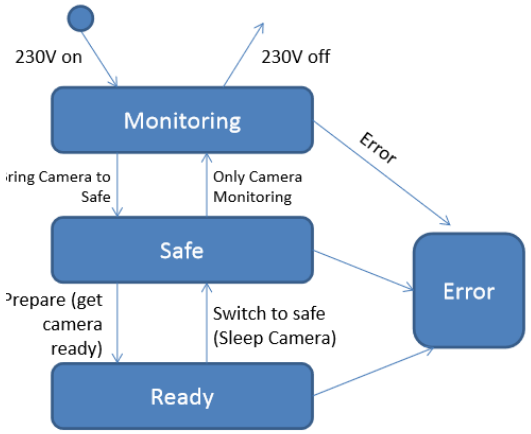
ECC prototype in NectarCAM Demonstrator

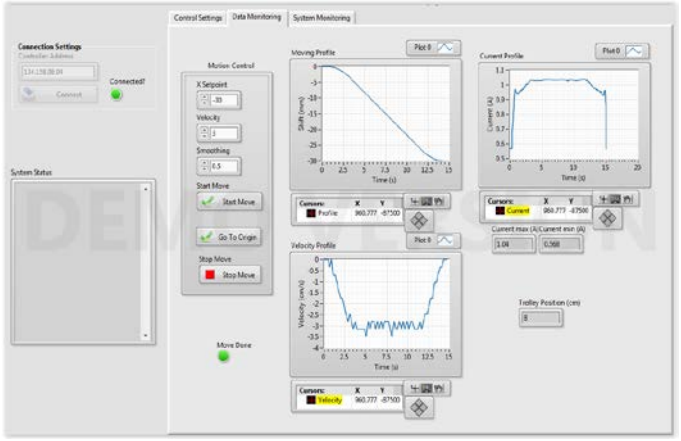
- NectarCAM ECC performed at Saclay in October 2015 (same as future LSTCAM's).
  - cRIO + IO modules & power supply
  - Temperature & current monitoring
  - 24 V PSU control & monitoring
  - Real Time Labview
  - OPCUA interface (MOS server)
- Update was done end of May 2016.
  - Optimization of real time software.
  - New state machine, controllable from RCC through OPCUA interface.
  - Error handling (on temperature & current monitoring).
  - Power supply unit control from the ECC
  - ECC can now work on standalone (no need of extra PC).
- ECC description and ECC ICD available
- Installation in LSTCAM1 foreseen in fall 2016 @Madrid + Barcelona.

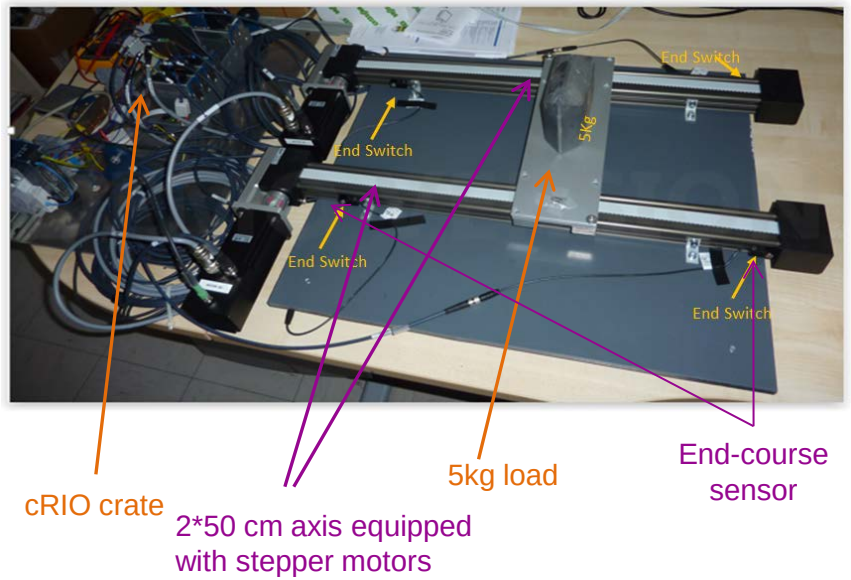




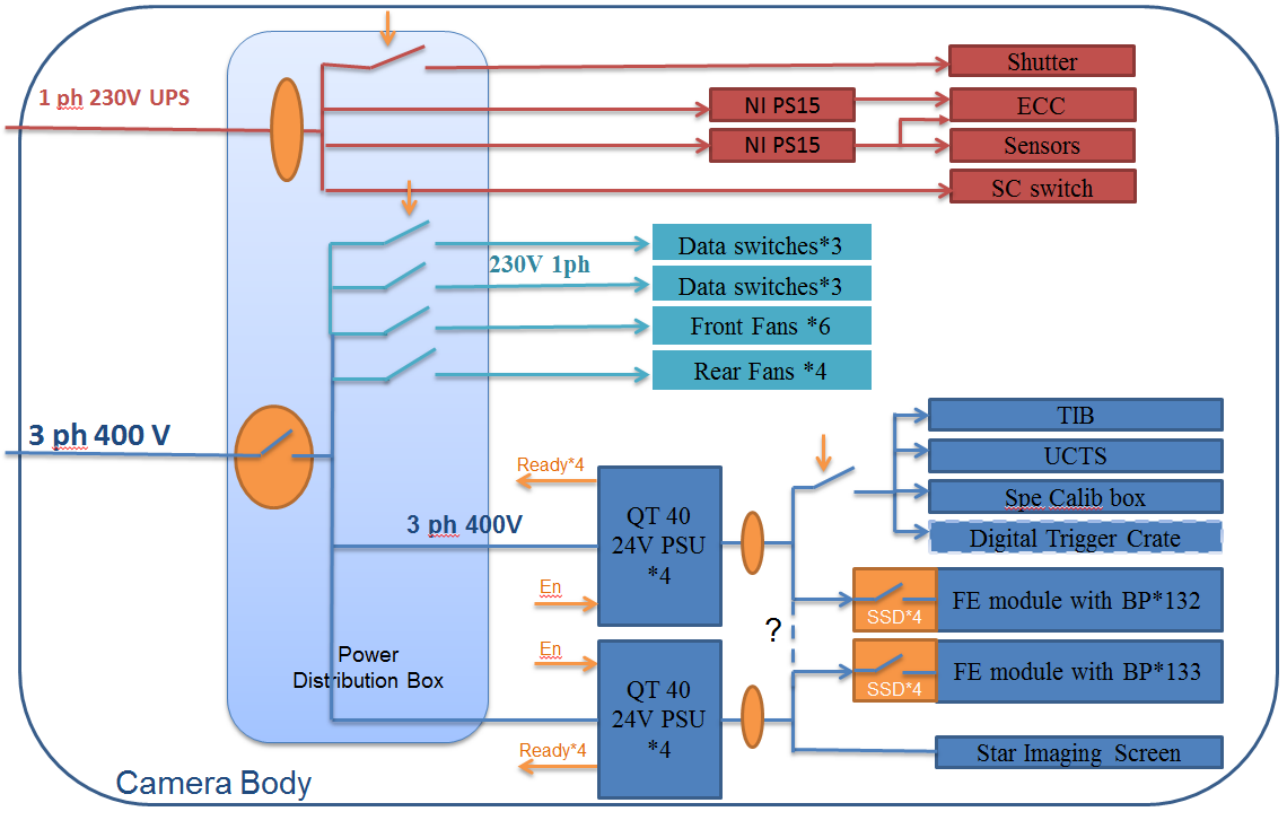
Reflective Target control

- Control system of the reflective panel with the cRIO has been validated.
- Hardware configuration fixed.
- Final program will integrate 3 motors (2 only in current testbench).
- Final validation on first LSTCAM at CIEMAT this fall.

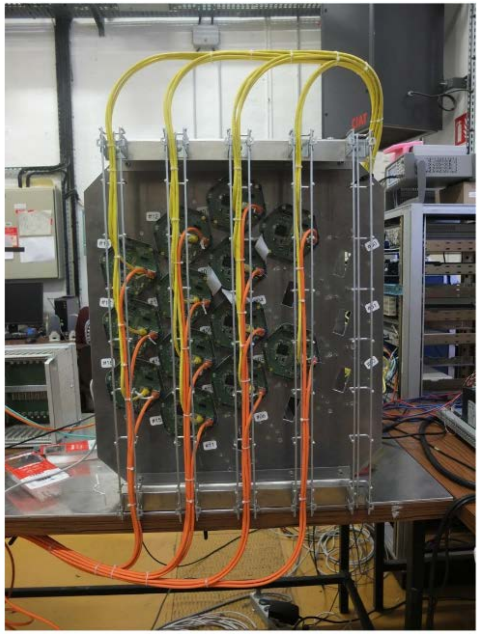




- Ongoing efforts on detailed definition & documentation on ECC cabling and external interfaces.
- Ex of power interface:



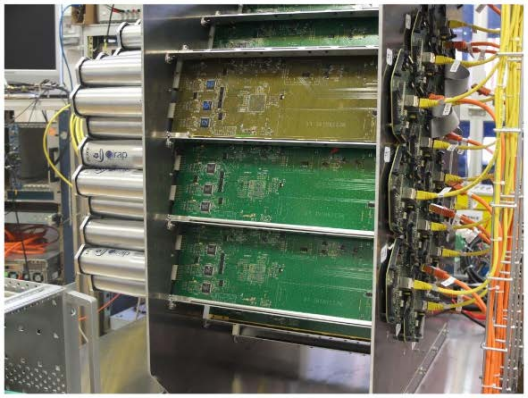
QQ nouvelles de NectarCAM

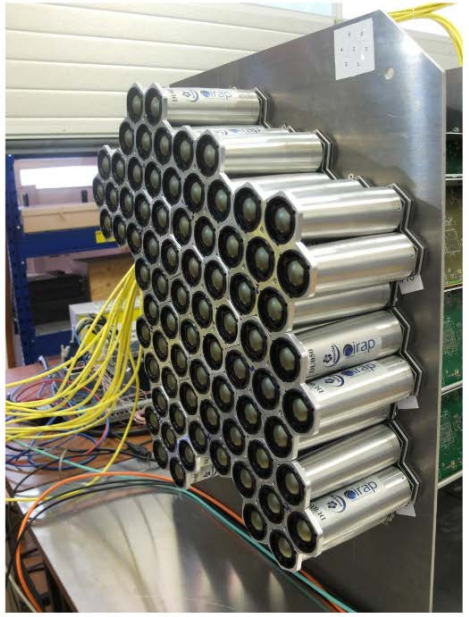


19 modules Mechanical Frame

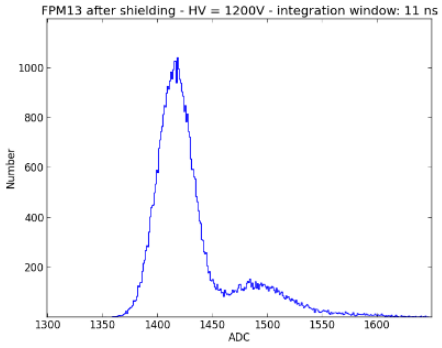
Integration and various news

- 13 FEB are now equipped with focal planes and mounted on the mini camera frame





Cones de Winston



Spectre au photon electron unique

Back structure

Dark room

NectarCAM Qualification Model

- Discussions with IAC for a **future agreement to build a full MST- NectarCAM**: the process is very slow.
- **No impact on short term NectarCAM program**
  - Start to build the QM in September.
  - The QM is partially funded: mechanics + 1/6 Focal plane + ¼ Front-end.
  - Try to reach the ¼ of camera (68 modules) with help of grant from institutes.
  - In parallel, try to find funds to complete the camera.
- **Current schedule**
  - Trigger decision for the QM : mid-October 2016
  - Validation of F2B V4: January 2017
  - Production of HVPA: March 2017
  - Module assembly: July 2017
  - End of test of QM (partially equipped): December 2017
- Need to find a solution to produce **ASICs** (PACTA, L0, L1) ASAP (in discussion with UB).

Slide from Michel Fesquet 30/6/2016

- -> septembre: poursuite définition fine des interfaces, mise au point du système, documentation technique.

- LSTCAM
  - Oct/nov : 2 missions installation @ Madrid
    1. Doors & lids, LEDs, reflective target,
    2. Cooling & sensors
  - Début 2017: mission d'installation @ Barcelone
    - Intégration software
  - ???? : Installation à la Palma

- NectarCAM QM
  - Fin 2016-1er semestre 2017: Poursuite complétion du prototype ECC vers qqch de similaire à LST (matériel complémentaire majoritairement requis en 2017).
  - But pour2017 : une structure complète, ¼ modules ou plus, et toute l'electronique auxiliaire.

Demande de budget 2017

	A	B	C	D	E	F
1		Investissement			Missions	
2	**Depenses prévissionnelles 2eme semestre 2016**	**NectarCAM**	**LSTCAM**	**Testbench ou commun LST&NCAM**	**NectarCAM**	**LSTCAM**
3	Siemens Smart Ethernet link pour évaluation			500		
4	Contrôle cible reflechissante et unités de puissance associées (3 moteurs)		2514			
5	Alim redondante ECC		205			
6	1 module 9216 (PT100 8 voies)		877,5			
7	Petit materiel (cables, relais, blocs de jonction, goulottes, plaque de fixation…)		1000	500		
8	Capteurs suplementaires (accelerometres…)		1000			
9						
10	2 Missions d'installation 2 personnes @Madrid 4j					1850
11	2 Missions d'installation 2 personnes @IRFU 3j				1240	
12	Mission reunion de collaboration NCAM @ Toulouse fin nov (2 pers)				1840	
13	Une mission de travail IRFU Si fin 2017, 2j				480	
14	Une mission de travail Berlin SI fin 2017, 2j				660	
15		0	5596,5	1000	4220	1850
16		6596,5			6070	
17						
18		Investissement			Missions	
19	**2017**	**NectarCAM**	**LSTCAM**	**Testbench ou commun LST&NCAM**	**NectarCAM**	**LSTCAM**
20	Contrôle cible reflechissante et unités de puissance associées	2514				
21	Alimentation redondante	205				
22	Modules NI pour cRIO, capteurs, actionneurs	5000				
23	Chassis d'extension 4 slots	980				
24	Evaluation nouvelle generation CRIO(NI9036)			4000		
25	Spares capteurs + modules NCAM1 et LST1 (10% système)			4000		
26	Petit materiel (cables, relais, blocs de jonction, goulottes, plaque de fixation…)	2000	1500	1500		
27	Missions forfaits Nadia (100%)				2000	2000
28	Missions forfaits JL (20%)				400	400
29	Missiosn forfaits Julie (100%)				10000	
30	Mission installation 2 personnes @Barcelone 3j					1600
31	Missions installation 2 personnes La Palma 4j					3000
32		10699	1500	9500	12400	4000
33		21699			16400	
34						