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Minutes of NectarCAM PC meeting – 30 November 2017

Subject / <i>Objet</i>	NectarCAM PC meeting
Date of meeting	30/11/2017
Location / <i>Lieu</i>	SeeVogh
Writer / <i>Rédacteur</i>	Julie

Chairperson	Julie
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Participants : Christophe Marty (in replacement of Pierre), Philippe Galdemard, Patrick Sizun, Francois Toussinel, Steve Fegan, Frederic Louis, Julie , Jean-Francois (JF), Julien Houles, Dirk, Sandrine.
Excused : Pierre

Indico : <https://indico.in2p3.fr/event/16776/>

1. SUMMARY OF DISCUSSION

1.1. Redmine

ACTION: Have a look into the opened actions forge.in2p3.fr (at least the ones assigned to you) and make clean up ! (see Sandrine's email)

1.2. JAMA review

ACTION: JAMA review : A new review has started in JAMA. Please have a look and send your comments on the PC list. JF & JP will centralized comments. Review will occur in 2 steps : have first look for Dec 6th, and send detailed comments for Dec, 19th. (See Julie's email).

<https://jama.cta-observatory.org/perspective.req#/projects/11/dashboard>

1.3. Camera Mechanics :

Oscar went through the slides he has prepared (see indico).

1.3.1. General status

For Oscar, it seems impossible that the camera mechanics is ready for September 2018. JF asked for more explanations.


DECISION:

- Oscar will give a detailed schedule before the NectarCAM F2F
- The schedule will indicate when we could be ready (complete mechanics).
- And what could be achievable for September (For instance, could a prototype structure without all finalized internal elements be ready?)

1.3.2. Auxiliary Boxes

Oscar needs to know at the latest end of January if PDB, PSB, ECC boxes need any modification compared to the boxes currently available for LSTCAM.=>**ACTION:** Julie will organize the feedback.

1.3.3. Front door

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Opening the front door by the top, à la LST, while the camera is still attached on the telescope, is not possible due to telescope arms. Lateral opening will also be difficult due to large thickness of the door. => LST design is not compatible with front door opening while the camera is attached on the telescope.

An alternative is to open only the plexi window (like a washing machine). This is a completely different design, which would require additional 3 months.

DECISION: It is decided that for the first camera, we accept not to open the front door while the camera is attached on the telescope and take similar design as the LST one. The camera will need to be downloaded to replace modules. By consequences, a reliable CMS (Camera mounting structure) is required.

1.3.4.DAQ switches.

See Dirk's slides on indico.

Architecture with 6 DELL S60 is validated, but the switches are now obsolete. The new architecture at 2 levels (6/7 standard switches +1 deep memory switch) is not validated yet. CPPM stimulator will be started again in January, but does not allow sending synchronous packets. There is the possibility to hire someone to modify FW of existing boards to make a synchronous generator. In the best case, the task would end in MARCH, whereas the 60 FEB are expected beginning of April. Oscar said that in both scenarios, the camera rear structure will be similar.

DECISION:

- The structure will be designed to accommodate both designs and will be finalized when the decision will be taken. It does not affect the schedule for DESY, as the final rear structure is not needed at that time.
- The CPPM synchronous generator is not necessary. The validation will be done with the new FEB.

1.3.5.Slow Control Switch

The SC switch can be changed for a more reliable one than the current Netgear, but the new reference must not be deeper than the UCTS & TIB. Julien will make proposals.

2. REPORTS :

Last news regarding FEE by François:

13 FEB V5 delivered yesterday morning. all 13 boards went through the Test auto software yesterday (details here as usual : https://forge.in2p3.fr/projects/nectarcam/wiki/Production_13_FEB2_V5). 12 are fully operational regarding this test. 2 need a slight optimisation regarding noise.

For the Last board, 1 channel (ch3) of the L0 trigger is not configurable while the 6 others are working as expected. The other functionalities of the board are ok.


Ongoing work on software . Improvement on NMC (following feedback from IRFU)

Ongoing work on TestAuto software . Improve SW regarding margins, stability, ... using results and experience we got with the test of the 13 new FEBs.

Question @ AIV team : do you need urgently a new FEB V5 for FPM modules comparison ?

News regarding the FPI WP by Pierre

- We asked to Microtec a quotation to produce 15 modules
- We received mechanical structure for the test benches. (photo)
- Cabling electronics boards for test benches in progress
- We received tools needed to flash the code in the microcontroller of IBs during the production phases.
- Documentation: Technical specifications (to prepare the MRR) still in progress.

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Report on Trigger Work Package

* TIB:


- TIBv4 fully tested. Only a minor problem with the Poissonian random generator, which shows a 1/f noise in addition to the shot noise. Investigating ways to remove it.
- Very soon we will send for production another TIBv4, to be installed in Saclay-minicam/MSTN1
- TIBv2.4 problems at high rate (\sim random 10 kHz) found, likely only in TIB timestamp delivery to CS (not in Trigger delivery to FEBs or UCTS). Likely connected with the old version (v1) of the RPi Compute module in the Board at Saclay. A RPi Compute Module v3 to be send to Saclay asap. NectarCAM meeting on Dec. 4th, to deal with this problem, with the scope to improve the TIB delivery t CS up to 15 kHz

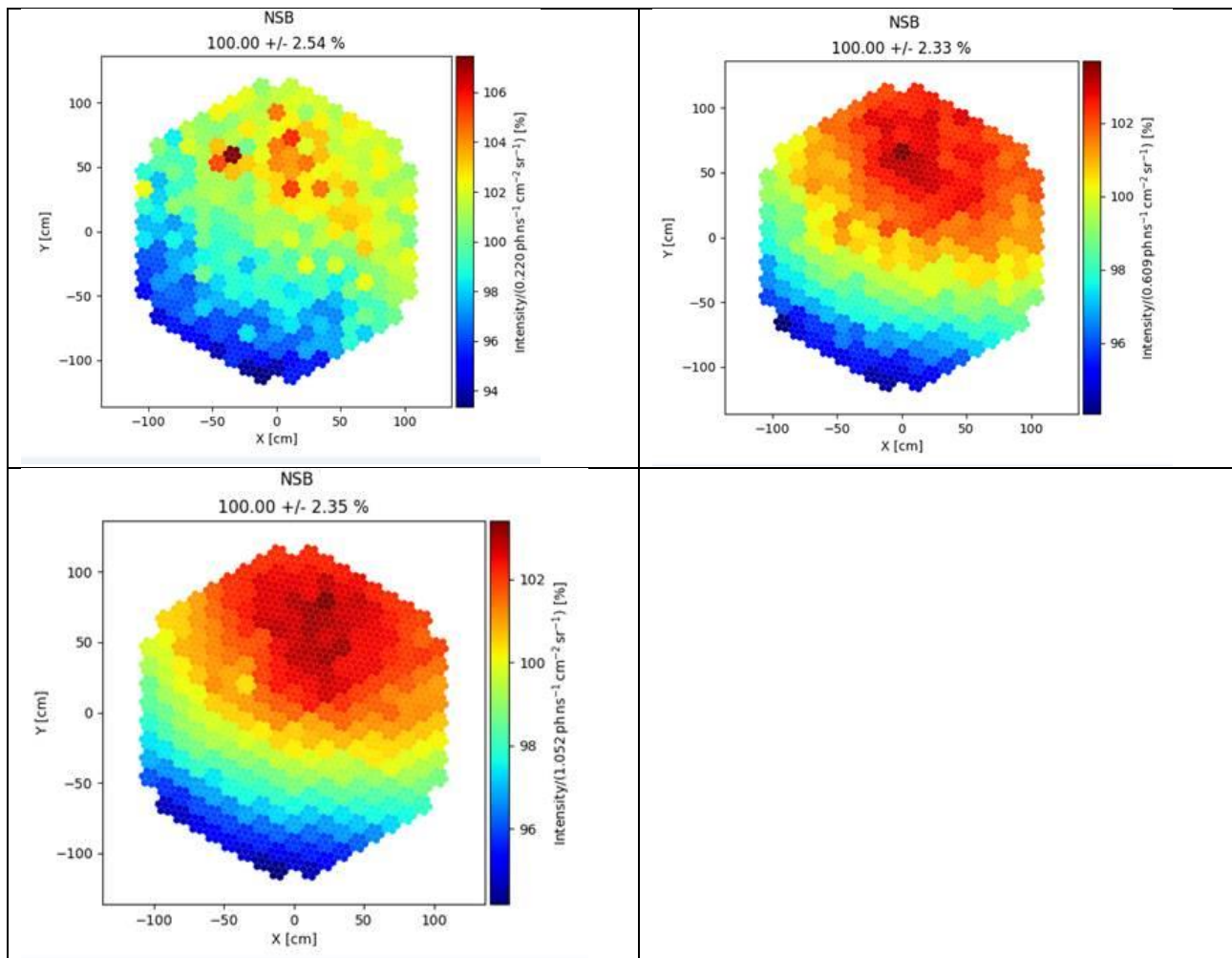
* CDTs: Discussions started, including NCAM-TC, NCAM-Processing, LSTCAM and SWAT people, to implement a prototype SWAT at CTA-N that could serve both for LSTs and NCAM-MSTs, allowing to further develop EVB

Report for Mechanical WP by Oscar. Ferreira : see slides

News from AIV (Frederic):

- We have received 4 offers for the 60 Febs production with prices between 60247€ and 91535€ including all options.
The choice will be made this afternoon by IRFU & LPNHE teams.
- In the new configuration (see previous report) NSB flat field plots have been realized with various levels (from 0,2 to 1,35 ph)
The results are compliant with the CTF requirement specifications. However, we need extra work to reduce the unwanted rays around the light cone which create non homogeneity by reflection with the panels of the dark room.
- A batch of 49 runs have been taken with different NSB (0,2 to 1, 35) and pulsed source intensity (1 to about 2000pe) levels.

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Quality Work package

- Philippe Galdemard's integration into the project tools I have mastered Online OBS change and directory accordingly
- Philippe meeting: presentation of current PA activities
- Mechanical meeting point of Tuesday (Julie, Philippe, Oscar)

ACTION on going : update the task manager online, on forge.in2p3.fr. See my email yesterday.

Thank you in advance for your cooperation

DAQ work package

Last week, we installed a new version of camera server software (iDAQ), fixed some bugs.

Still many problems with the TIB at high trigger rate (10 kHz) and with random trigger and with UCTS/CDTS server.

A new camera server integration week should be organized.