KM3NeT
Opens a new window on our universe

DOM Integration Meeting
09 December 2020

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ARCA-Phase1: short term planning

The issue: all the 18 DOMs of OLD-ORCA-DU1 (recently refurbished by Oleg @ECAP) have a non-conform AHRS

- AHRS FW v0
- Impossible to re-flash (flashing pins are un-accessible)
- To be considered like "not working" or missing AHRS

The possibilities: two alternatives are possible

1. Find an adequate waiving strategy
2. Replace the CLBs (and hence re-re-open the DOMs and destroy the TOP hemisphere)

The waiving purposes

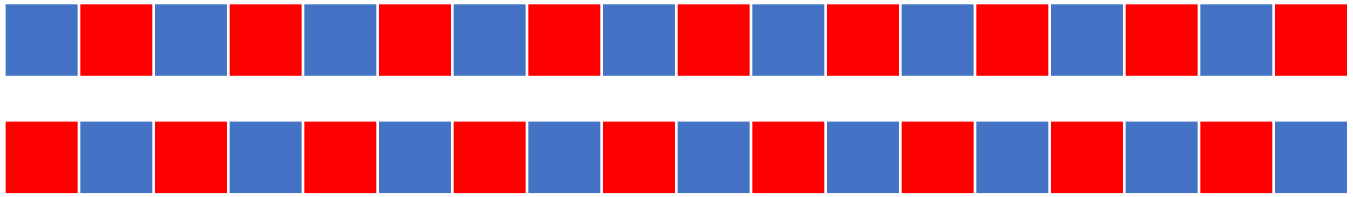
1. DILUTE

- Distribute the bad DOMs among different A-type DUs

REMARK: according to the current waiving strategy, we can accept up to 2 compass-failing DOMs in one DU, provided that they are not consecutive

According to the residual availability of A-type DOMs, 3 options are possible

1.a distributing in two lines



2. DILUTE++

- Distribute the bad DOMs among different ALL-TYPE DUs

Quite a dirty job: some* of the DOMs should be opened again, replacing the SFP.
More handling, administration nightmare

*depending on the maximum number of failing DOMs allowed in a DU

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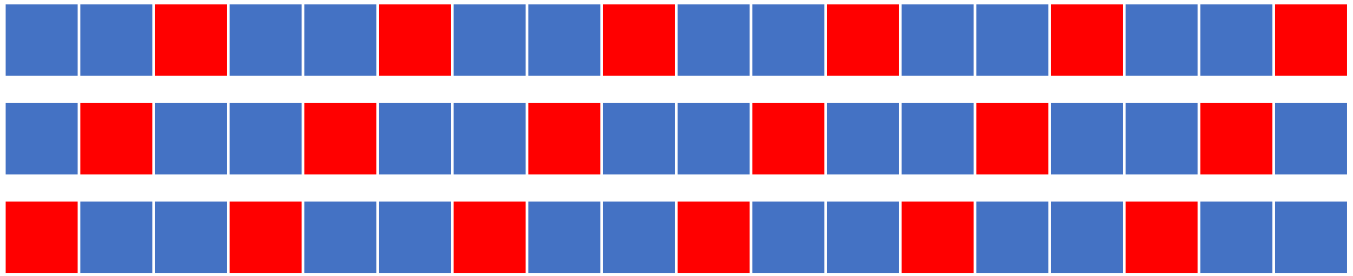

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1.c distributing in more lines

Giving some of the bad DOMs to ORCA and get in exchange some TSFP ones.

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The Calibration team is working to set a benchmark. In the meantime, we are getting prepared to "the best we can do in the meantime" (i.e. solution 1.b)

Prioritizing A-type DOM production

With the residual SFP availability, we can build up to 2 more A-type sets of 18 DOMs

- ATHENS: next production run – full set of 18. All components delivered

- CATANIA: 7 DOMs on bench + 2 already integrated
  - 1 of these has already sent to Genova to replace ORCA-DU1-DOM1 (flooded with water)
  - the 7 DOMs are all at a reversible stage

DECISION: the ECAP team will take over the effort

- The 7 SFPs will be dismounted from the DOMs on bench and sent to Germany
- ECAP will integrate the missing 17 DOMs
  - one of them will be a TSFP variant

The first available set will unlock the first DU, the second one will unlock 2 DUs more

We need to get prepared with some extra-logistics.
2 sets will already be at ECAP. Converging everything in Erlangen can be a solution?
Otherwise let's start getting transportation boxes

HAMA-R14374-02 v4 PMT "bad coating" issue

- Updates:
  - 90 v4 PMTs sent from Nikhef to the coating company for coating refurbishment
  - too bad status, impossible to apply an additional coating layer: needed to clean everything, re-label, apply the coating
  - too much time-consuming: done on only 35 PMTs.
  - Already packed to be sent back to the Netherlands. Pick-up scheduled **TOMORROW** with Ulisse (5-6 days delivery)

In the meantime

- Hamamatsu is testing a new coating procedure (to be validated)
- The procurement team is starting to explore a possible solution to keep DOM Integration alive
  - with the v6 PMTs sent to the Netherlands, DOMINT can be sustained until end-of-January
  - by that date, we should have an adequate and continued availability of well-coated PMTs from Hamamatsu
  - quite unlikely: a compensation from IDMAR is the safe way

A dedicated NRB is currently ongoing. All details (including a very nice presentation done by Valentin) can be found in the NRB folder

The "missing PMT<->base association" issue

Some PMTs with missing "PMT<->base" association on the DB have been found (HAMA-R14374-02 v6, CPPM purchase). This means that for the spotted cases it is not possible to retieve the PromisID and hence perform the DOM Functional test.

Following-up the alert, an investigation has already been started asking the PMT team to provide more information and a solution, too.

NEWS: apparently, the affected PMTs are the batch-sample ones:

3.4.2.3/HAMA-R14374/6.29762	3.4.2.3/HAMA-R14374/6.29792	3.4.2.3/HAMA-R14374/6.29852
3.4.2.3/HAMA-R14374/6.29912	3.4.2.3/HAMA-R14374/6.29942	3.4.2.3/HAMA-R14374/6.30002
3.4.2.3/HAMA-R14374/6.30062	3.4.2.3/HAMA-R14374/6.30092	3.4.2.3/HAMA-R14374/6.30122
3.4.2.3/HAMA-R14374/6.30182	3.4.2.3/HAMA-R14374/6.30212	3.4.2.3/HAMA-R14374/6.30242
3.4.2.3/HAMA-R14374/6.30332	3.4.2.3/HAMA-R14374/6.30362	3.4.2.3/HAMA-R14374/6.30452

GREEN: Strasbourg – already fixed **RED: Strasbourg – to be fixed** **BLUE: Nantes – to be fixed**

UPDATE: the PMT team has a file associating the base UPI and the corresponding PromisID.

In order to avoid any kind of showstopper, the agreed solution is the following:

- once at the functional test stage, DOM testers read the PromisID of the "bad" PMTs through the JavaGUI
- the PromisID and the corresponding PMT UPI are sent to the PMT group (me in copy)
- the PMT group performs the association and sends an alert to me
- Giuseppe and I update the synchronized inventory and inform the DOM ISR
- the integration can be resumed

Already done with 4 PMTs in Strasbourg. All job done in few hours

(obvious) hint: if you find the PMTs, better to concentrate as many of them as you can in one DOM only…

DOM Testing environment upgrade: CentOS 7 and JPPv13

Action points:

- ask the relevant WP coordinators to provide updated references (DV)
  - **ongoing**: some feedback still pending
- install everything from scratch and collect all the requirements + useful hints (LM)
  - **done!** A preliminary version of the installtion guide is also available
  - thanks a lot to Lilian for the excellent work and to Valentin and Kay fo the support
- produce an updated document with all instructions (DV)
  - **in the pipeline**: setting-up a dedicated test station to serve as a "shared laboratory"
  - the guide produced by Lilian is already a good starting point
- start installing the new OS on local machines (MR, CB, LM)
  - any update?
- very soon, also the other ISRs will be invited to do the same!

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Backup slides