

# SSD: DA + PREPROCESSOR STATUS

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- Pedestal DA is in AliRoot since last November
- Sasha Borysov is the main developer
  - ❑ Main program ITSSSDpedDa.cxx and three support classes: AliITSSHandleSSD, AliITSSModuleSSD and AliITSSChannel
- Some problems observed last December were addressed in the new version of the code used during the last cosmic run.
- From the DAQ point of view everything was working without any problems.
  - ❑ Pedestal run type needed (was missing in December) --> **FIXED**
  - ❑ DA installed and running on all 3 of our LDCs
  - ❑ Calibration run used extensively during the last run
- Calibration files temporary saved on DAQ machine, then were sent to FXS with a fileID (was wrong! -> **FIXED**)
- Calibration data are stored as a TObjArray of AliITSNoiseSSD and AliITSPedestalSSD objects, one for each module
- SHUTTLE preprocessor processes the files and saves calibration objects in the OCDB

Amount of data:  $2.6 \text{ MChannels} \times \text{sizeof}(\text{Float}_t) = 10 \text{ MB/calibration run}$

- There was a firmware upgrade performed the week after the cosmic run
  - ❑ Online ZS
  - ❑ Online common mode subtraction
- We need a new version of the DA code which will be compliant with the new hardware.
- Sasha has all the tools to do this:
  - ❑ The new version will be ready well before the cosmic run
  - ❑ We plan to test this along with the new online QA code (AMORE) during the DAQ integration test scheduled for week 17 (starting on the 21st of April)

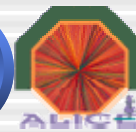
- A bad channel map will be made off-line based on the analysis of the existing data.
- This map will be uploaded to the DAQ DB from where the SOR script will load it to the LDCs.
- During a pedestal run no bad channels will be suppressed
- The "pedestal DA" will use the *static* map
  - ❑ for the *dynamic* ZS - threshold file for the FEROM
  - ❑ to produce the *updated* bad channel file for the OCDB
- This new map will consist of the AND of the initial and the updated map of bad channels derived from analysis of the pedestal run.
  - ❑ In this way we can always, by hand, block any bad channels that an algorithm may not find, while having an automatic update all the time.
- Two examples why we need two bad states:
  - ❑ *static*: ladder X shows reasonable noise and pedestal. However, we suspect a clock problem and no real data will come out: declare 'bad' by hand
  - ❑ *dynamic*: sometimes a hybrid does not switch on, while later it may recover: declare 'bad' at each pedestal run.

Amount of data:  $2.6 \text{ MChannels} \times \text{sizeof(Char\_t)} = 2.6 \text{ MB/calibration run}$

Work in progress - DA part not ready for the next run

- Not really defined at the moment
- If we define a pulser run for gain calibration we need a special "gain DA" to calculate a gain file which needs to be sent to the OCDB.
- What we need to do in order to see if such a run is needed is:
  - ❑ To analyze the data taken at previous cases (2006)
- If it is not needed then we declare equal gain on all the channels.
- Otherwise we need to think about this option:
  - ❑ Gains may be different for p and n side, for A and C side, for layer 5 and 6

# STATUS OF THE SSD PREPROCESSOR



Run types already implemented in the preprocessor:

PEDESTAL - PHYSICS - ELECTRONIC\_CALIBRATION\_RUN (will phase out)

	GRP	ACORD E	EMCAL	HM		SSD	AD	TO	TOF	TPC	TRD	VO	ZDC
					Preprocessor								
Preprocessor					DAQ DA								
DAQ DA					DAQ FXS output files								
DAQ FXS output files					DCS DP names	O							
DCS DP names					Preprocessor reads DPs	O							
Preprocessor reads DPs					DCS DA	O							
DCS DA					DCS FXS output files	O							
DCS FXS output files					HLT DA	O							
HLT DA					HLT FXS output files	O							
HLT FXS output files													



= nothing to be done but OK



= OK, but dependency missing

We don't need any dps during reconstruction - The box should be green!

- New version of the **pedestal DA** code to comply with the new firmware
- A first version of the static **bad channel map** is being prepared based on the analysis of real data (test & cosmic runs)
  - ❑ The same DA will also take care of producing a new bad channel list
  - ❑ The output will be compared with the static list and the final list will be sent to OCDB
  - ❑ Work in progress - **not ready for the next run**
- **Gain calibration** studies are in progress:
  - ❑ If we conclude that we'll need different gain factors for different parts of the detector then we'll have to develop a new DA code (among other things)
- We plan to include the output of our DA code to AMORE



