Status of the SSD

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SSD pedestal

- Signal refers to a baseline (pedestal)
- For each strip, pedestal is obtained as the mean value of the noise (gaussian) distribution in a calibration run
- Calibration run is supposed to acquire signals from all the strips
- Pedestals uploaded to the electronics though DLL and subtracted (at electronics level) in normal runs.
- Pedestals will be recalculated on a daily basis. They are also saved on OCDB for offline checks

SSD noise

- Noise is the standard deviation of the noise distribution from calibration runs

- Uploaded to the electronics to set the threshold for zero suppression

- Must be saved also in the OCDB to be used by the cluster finder

Requirements (1/2)

Parameter	Data format/size per channel	Data size (Bytes) in OCDB	Update freq	Source
Thresholds	1 float	2,60E+06	week?	DCDB?
Pedestals	1 float	2,60E+06	day	DAQ
Noise levels	1 float	2,60E+06	day	DAQ
Gains	1 float	2,60E+06	week?	DCDB?
Maps of dead/bad strips	1 int	<7% x 2,60E+06	week?	DCDB

Requirements (2/2)

Parameter	Confirmed	Run type / Trigger type	# of required events	Results	Accessible by offline	Code in AliRoot
Thresholds	After alice week	no		FEE/OCDB	Yes	No
Pedestals	idem	special run	Thousend events	FEE/OCDB	Yes?	No
Noise levels	idem	special run	idem	FEE/OCDB	Yes	Yes
Gains	idem	special run?	idem	OCDB	Yes	Yes
Maps of dead/bad strips	idem	no?		OCDB	Yes	No

Common mode

- Strips are read out by the HAL25 chip which controls 128 strips (i.e. 12 chips per module)

- Common mode is a noise common to all the 128 strips in the chip. It can be calculated and corrected for (mean value of not-fired strips in the chip)

- BUT it varies event by event. Therefore, it can not be calculated once for all in a calibration run!

- Beam tests have shown a not negligible contribution from common mode.

- Attempt to use FPGAs to calculate and subtract common mode (after pedestal subtraction and before zero suppresion) at electronics level (must be tested)

Software code required

- Tools for the analysis of calibration runs (pedestals, common mode, noise) both in AliRoot and MOOD format

- Tools have been tested during beam tests (both in 2004 and in the last-month ladder tests with cosmics)

- SHUTTLE interface will be commit by the end of october