GRAIN
ASIC Specs and Project Timeline

GRAIN Detector INFN Group Meeting
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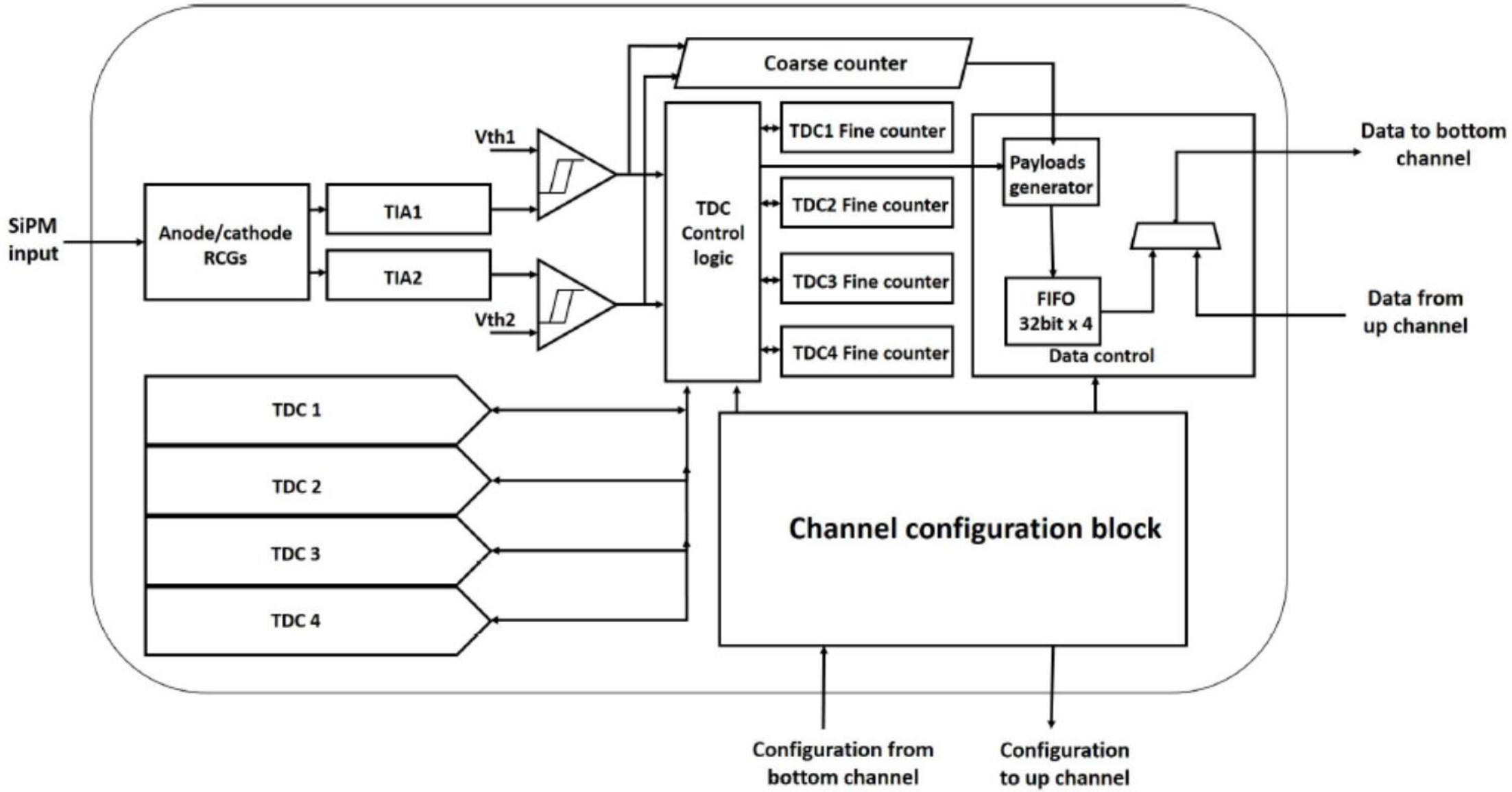
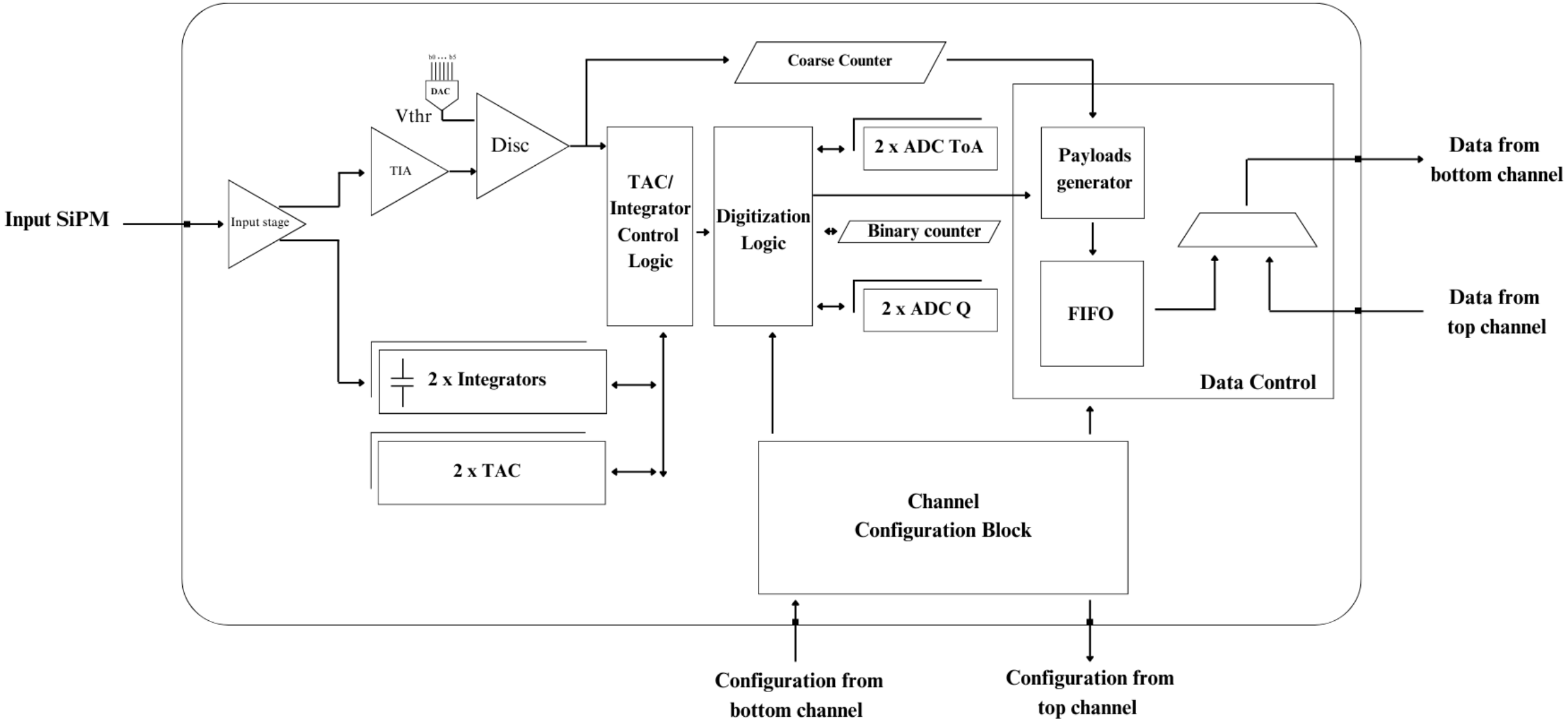
Specs Recap:

Parameter	Value
SiPM Size	**2 mm x 2 mm (140 pF)** 3 mm x 3 mm (500 pF)
# Channels/ASIC	**1024**
Operating Temperatures	**300 K – 77 K**
<Power Consumption>	**5 W / ?**
Max Chip Area	**20x30mm^2**
Duty Cycle	**1/1000: 9,6 µs detection (50 µs)** **< 0.1 s interspill**
Measurements:	**Q – ToA - ToT**
Integrator Dynamic Range	**100 PE**
RMS$_{ToA}$ (first PE)	**100 ÷ 150 ps / 1PE**
RMS$_{ToT}$	**≈ 3 ns**
Threshold **SNR**	**0.5 x 1PE** **30**

ALCOR Pixel Scheme



GRAIN ASIC Pixel Scheme



Demonstrator Submission: Dec 2025