

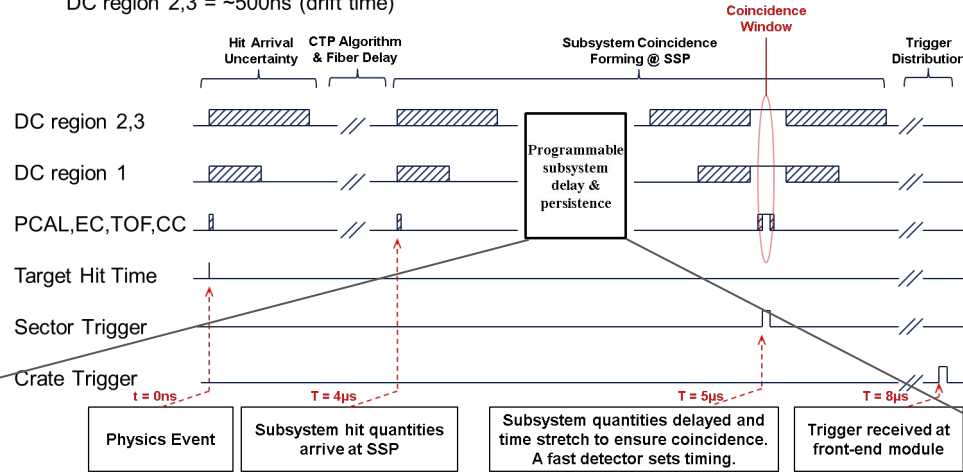
CLAS12 Stage 2 Trigger Summary

Slow Detectors Jitter:

DC region 1 = ~250ns (drift time)
DC region 2,3 = ~500ns (drift time)

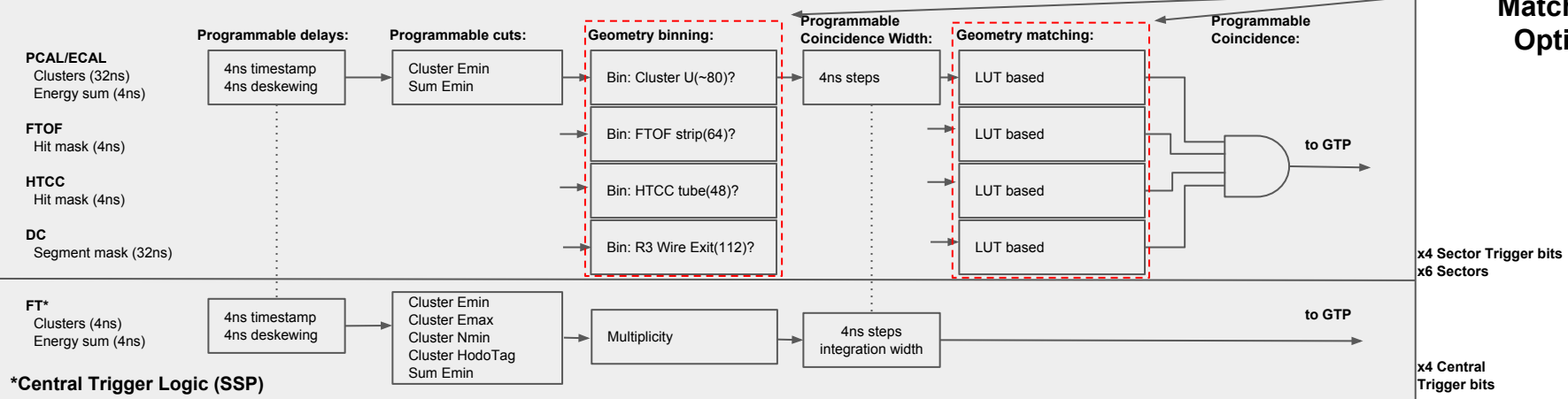
Fast Detectors Jitter:

PCAL,EC,TOF,CC = <20ns



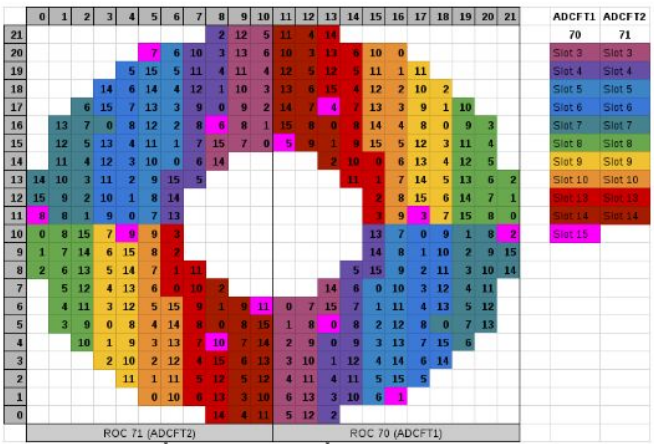
Geometry Matching Option

Sector Trigger Logic (SSP): 1 sector, 1 trigger bit shown (up to 4 sector trigger bits can run at the same time, having different delays/cuts)



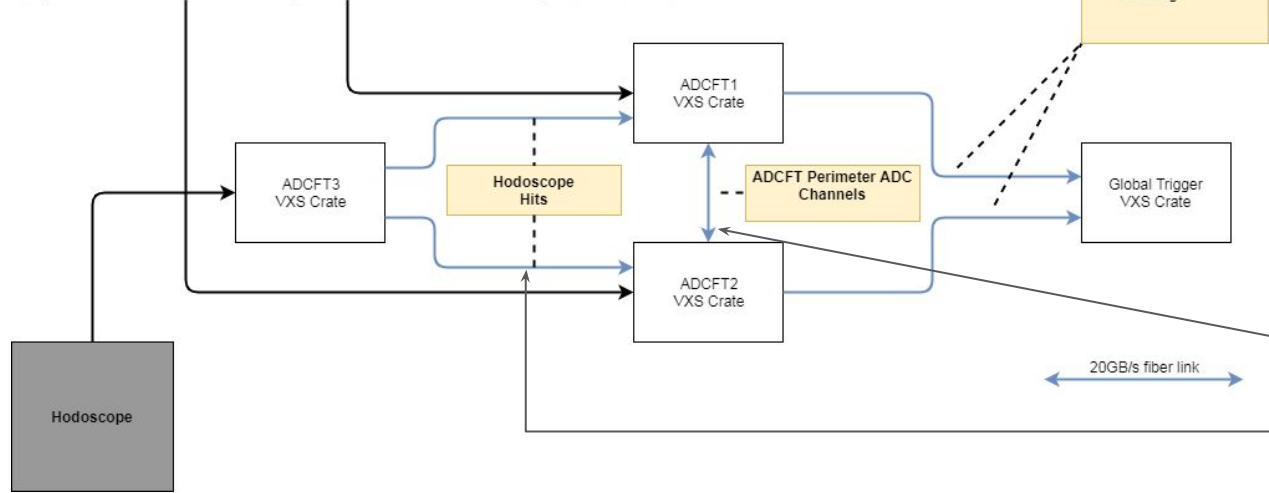
FT Geometry matching (at clustering level):

FT Trigger Layout



Notes:

- 1) Clustering must be partially formed by sharing (to retain FADC timing/energy resolution):
 20 channels from ADCFT1 to ADCFT2
 14 channels from ADCFT2 to ADCFT1
- 2) ADCFT3 will send discriminated hits to ADCFT1 and ADCFT2 for cluster tagging
- 3) ADCFT1 and ADCFT2 will send partial results to Global Trigger where they will be combined
- 4) At global trigger, following FT variables can be triggered on (all with 4ns timing resolution):
 - a) energy sum
 - b) hit multiplicity
 - c) cluster multiplicity
 - d) hodoscope tagged cluster multiplicity
- 5) Cluster stream can be used in future trigger, only planned for monitoring/debug for now



- Hit multiplicity
- Energy sum
- Cluster multiplicity
 - Total
 - Hodoscope tagged
- Cluster stream:
 - Coord: X,Y
 - NHits: 0-9
 - Energy: 0-16383
 - Hodo tag

1 VTP Fiber can transmit:

- 32 FADC channels with no discrimination, 4ns resolution
- 128 FADC channels, Discriminated, 4ns resolution