




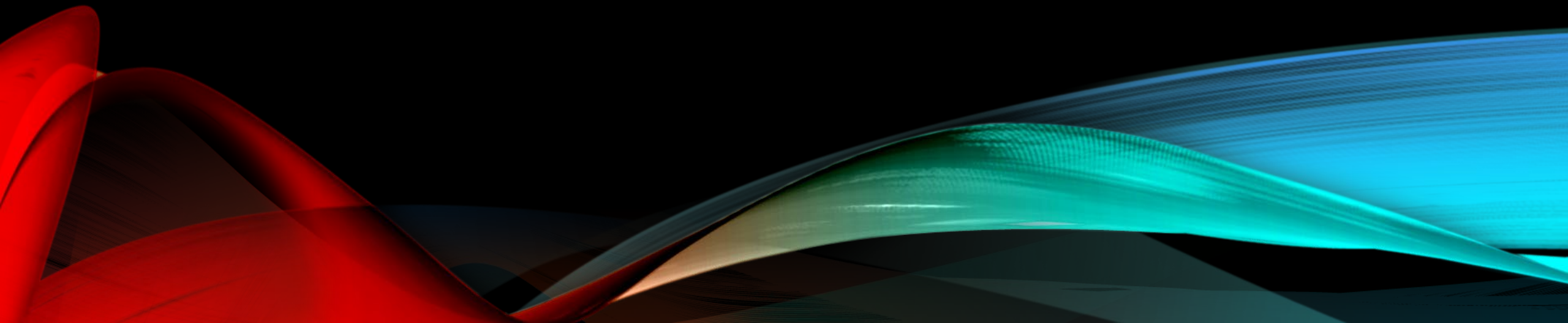
STATUS OF DCOD AND THE LATEST UPGRADE

- 
- Trigger software validation
 - News from Orsay
 - Future for AGATA DAQ design
 - Future for DCOD

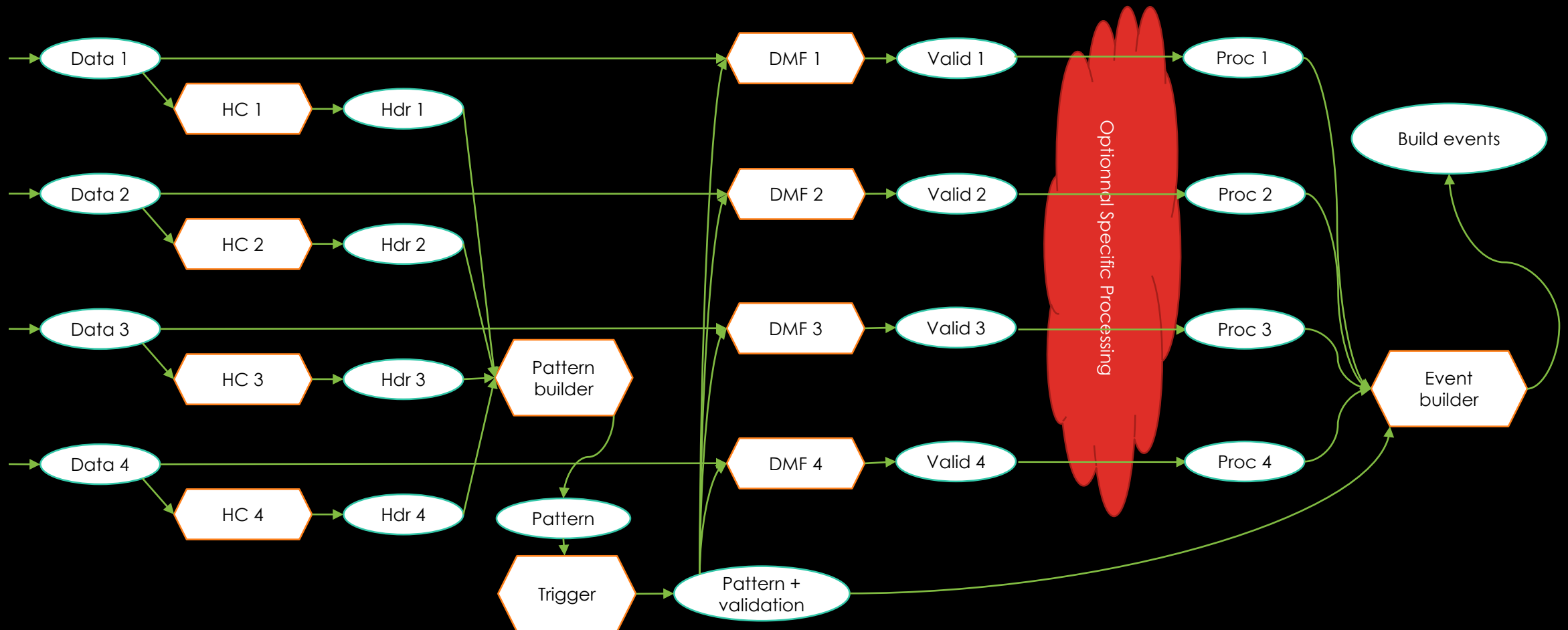
- DCOD is compound of 4 kind of objects : PMH + CTL + Narval + ENX
 - PMH (Posix Memory Handler)
 - Manage sets of memory pool
 - Memory pool can be :
 - a set of buffers – Used to work on events based dataflow
 - a static memory zone – Used to work on « image » (histogram, building bitmap,)
 - CTL (Common Transport Layer)
 - Manage set of Transport Layer (TL)
 - TL manages transmission or reception of network flow
 - Transmission TL – Takes data from local memory pool and send it through IP connection
 - Reception TL – Receives IP flow and store it into a local memory pool

- DCOD/Narval – Data Acquisition Systems
 - Deploy coherent and consistent data acquisition system
 - Compound of a set of process linked by data flow
 - Insure state system in highly distributed environment
- DCOD/ENX – Device or service controller
 - Use plugin to adapt to new electronic device / service
- Common communication API / media
 - Command line ☺
 - Embedded SOAP server
 - Embedded REST server
 - Embedded web server
- Dcod launcher : a process to control them all

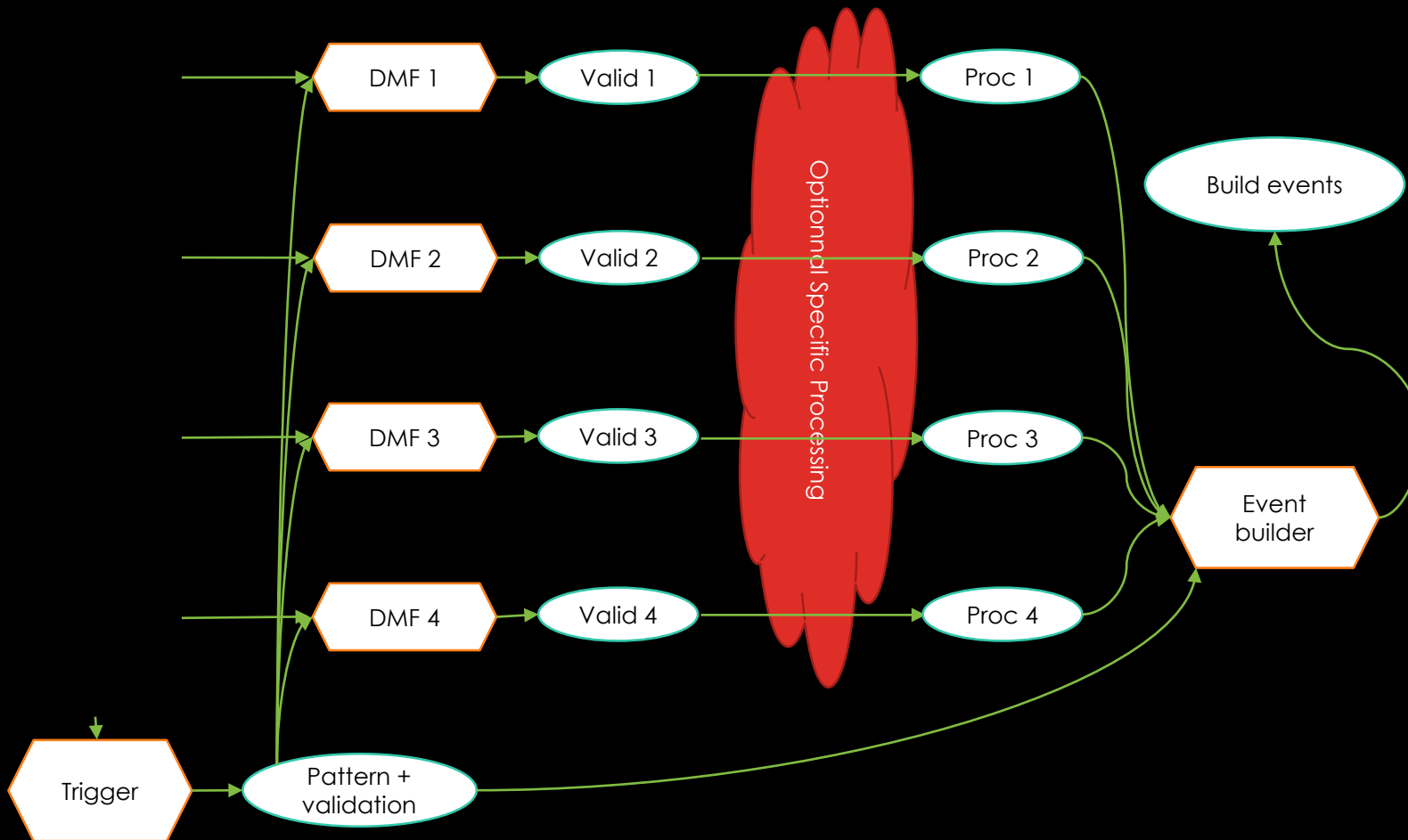
TRIGGER SOFTWARE



TRIGGER SOFT SCHEMA (4 CHANNELS)



TRIGGER SOFT ZOOM 4 AGATA



- RULES : Specific processing must not change orders of events !
- Optional specific processing, means « Post PSA » in AGATA world.
- Post PSA limited to 1 thread to respect the rule

NEWS FROM ORSAY

The background features a dark, almost black, space filled with dynamic, flowing ribbons. On the left side, there are several thick, vibrant red ribbons that curve and overlap. On the right side, there are several thick, bright cyan ribbons that also curve and overlap, creating a sense of movement and depth. The ribbons appear to be made of a smooth, slightly translucent material, with highlights and shadows that give them a three-dimensional quality.

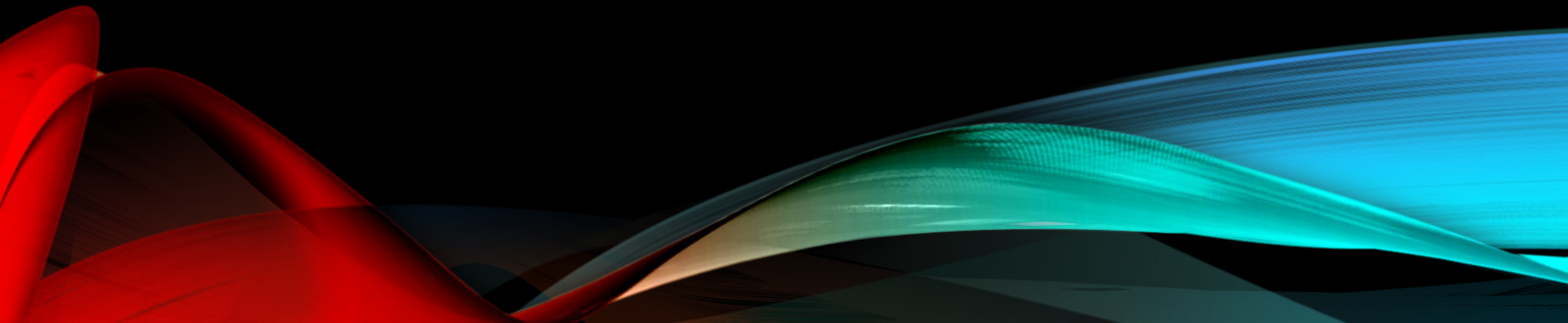
DEPARTURE OF X. GRAVE

- Xavier is now working for Thales since 01/02/2019
- Nicolas taking leadership on DCOD
- Non permanent position since March 2019 – Pierette Sotty

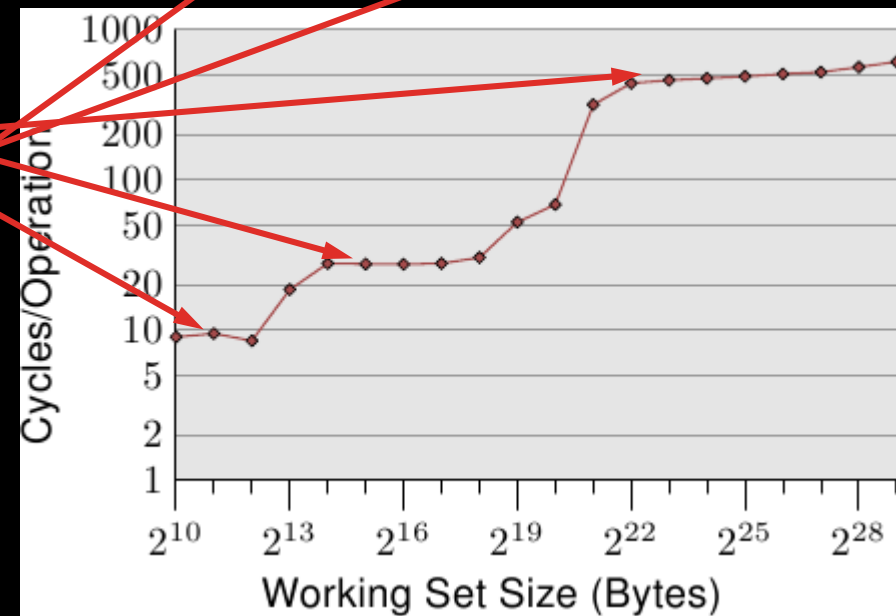
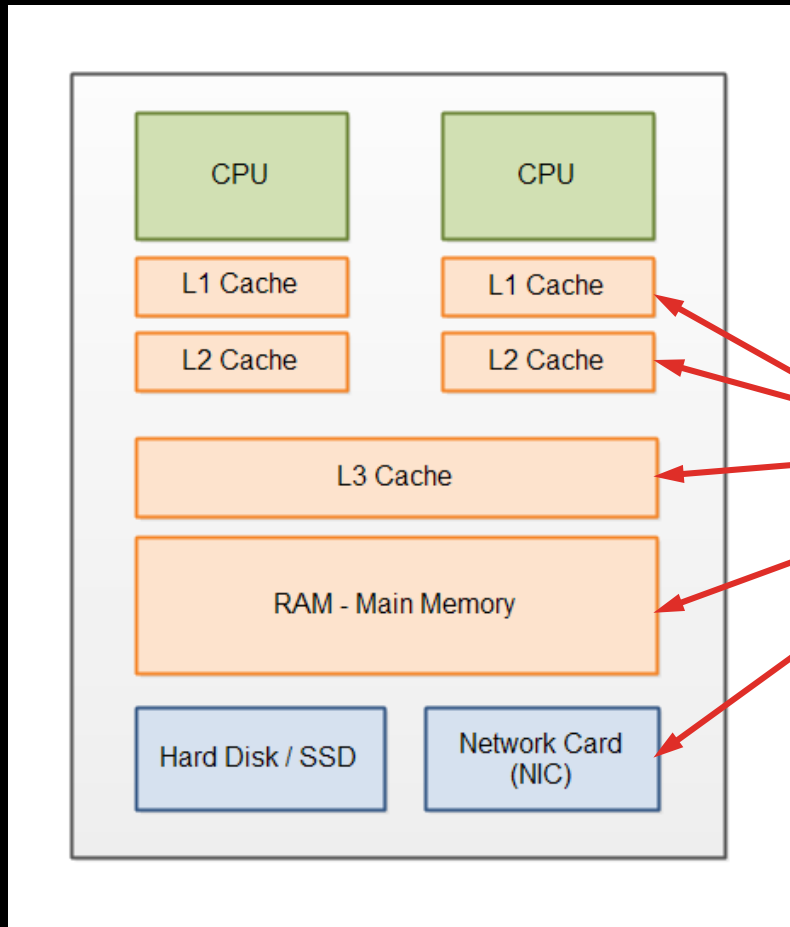
ORSAY EVOLUTIONS

- We have a director : A. Stocchi
- No more needs to pronounce CSNSM 😊, but no idea of the new names ...
- Priorities of the new laboratories ?
- Structure of the new laboratories ?
- **Proposition** for the structure of IT department
 - Infrastructure Service
 - Computing Service
 - Online Service

FUTURE FOR AGATA DAQ DESIGN



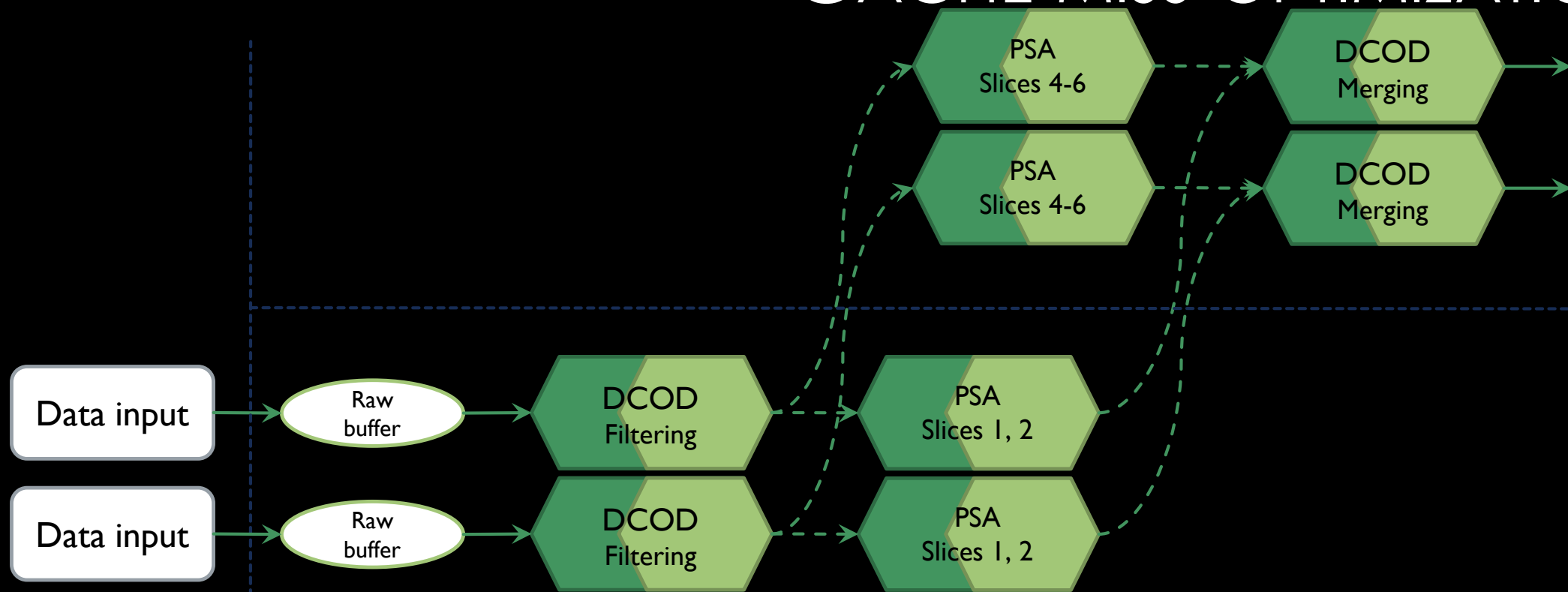
ABOUT « CACHE MISS »



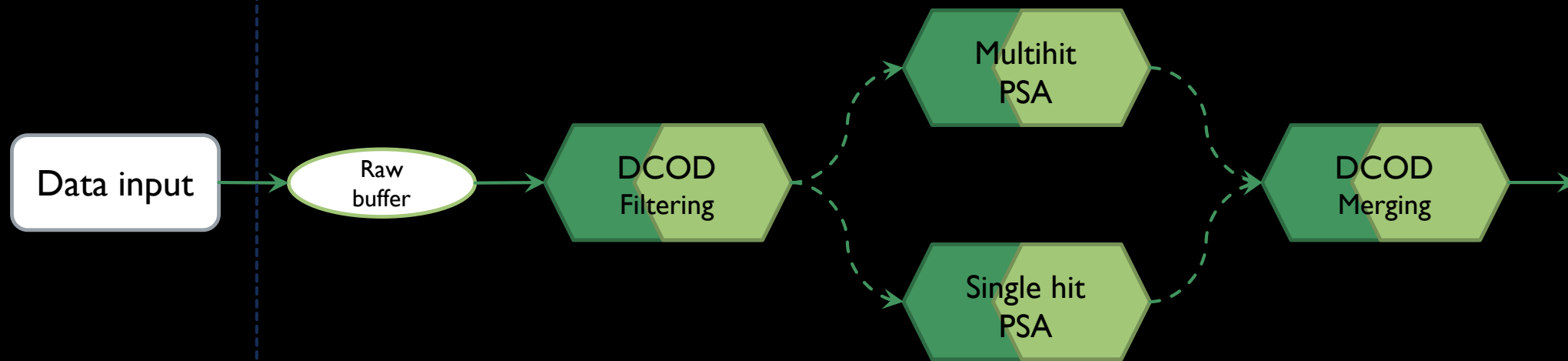
WE HAVE TO INVESTIGATE ...

- Grid search is a good candidate to reach 100% of cache miss for L1, and L2

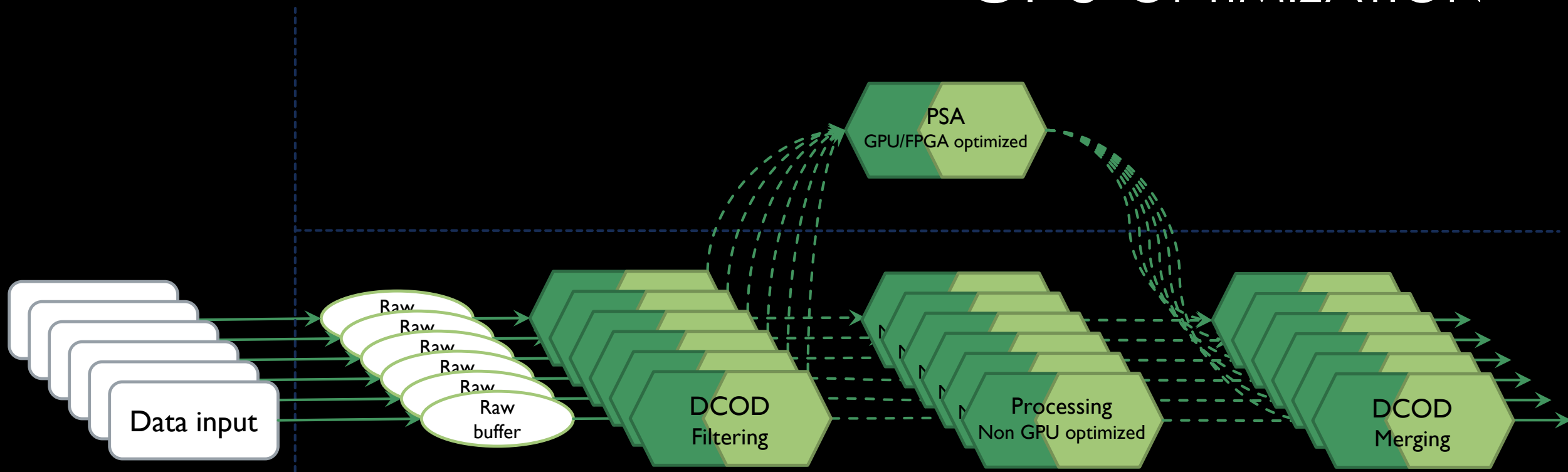
CACHE MISS OPTIMIZATION



EVENT DISPATCHING



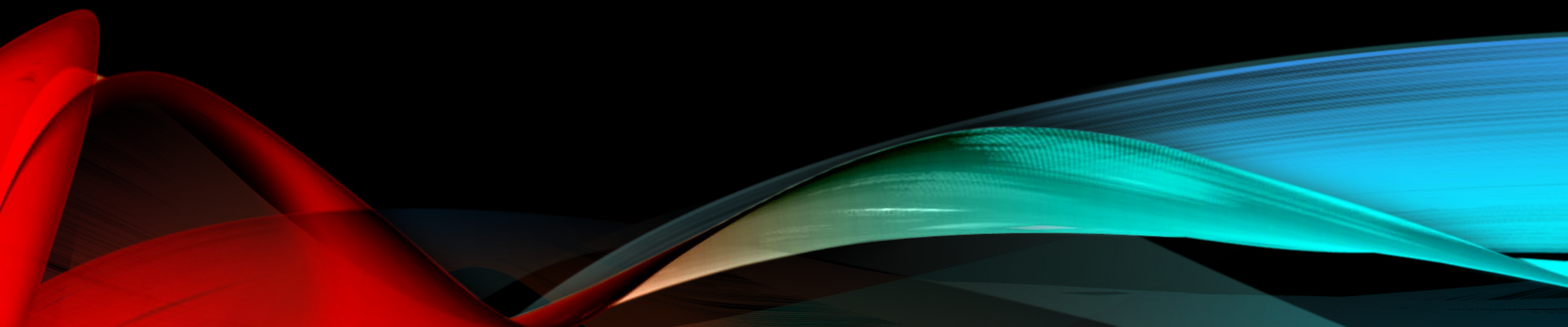
GPU OPTIMIZATION



STILL ONE YEAR ...

- Only one year to explore these possibilities.
- Before buying hardware, we have to know the design of the DAQ system
 - Some optimization to avoid cache miss ?
 - Different algorithms depending of physic cases ?
 - Use of GPU / computing accelerator / ... ?

FUTURE FOR DCOD



NO TIMELINE !!!

- Need a way to monitor easily DCOD framework – DCOD monitor
- Need some volunteer to use DCOD on cloud – Alain ?
- Have to provide advanced C++ interface to provide N-M buffer actors
- DCOD could be a perfect framework for distributed computing, but ...
- Have to improve event building facilities