



Replay of AGATA event data with the NARVAL DAQ BOX

Ch. THEISEN on behalf of the DAQ WG

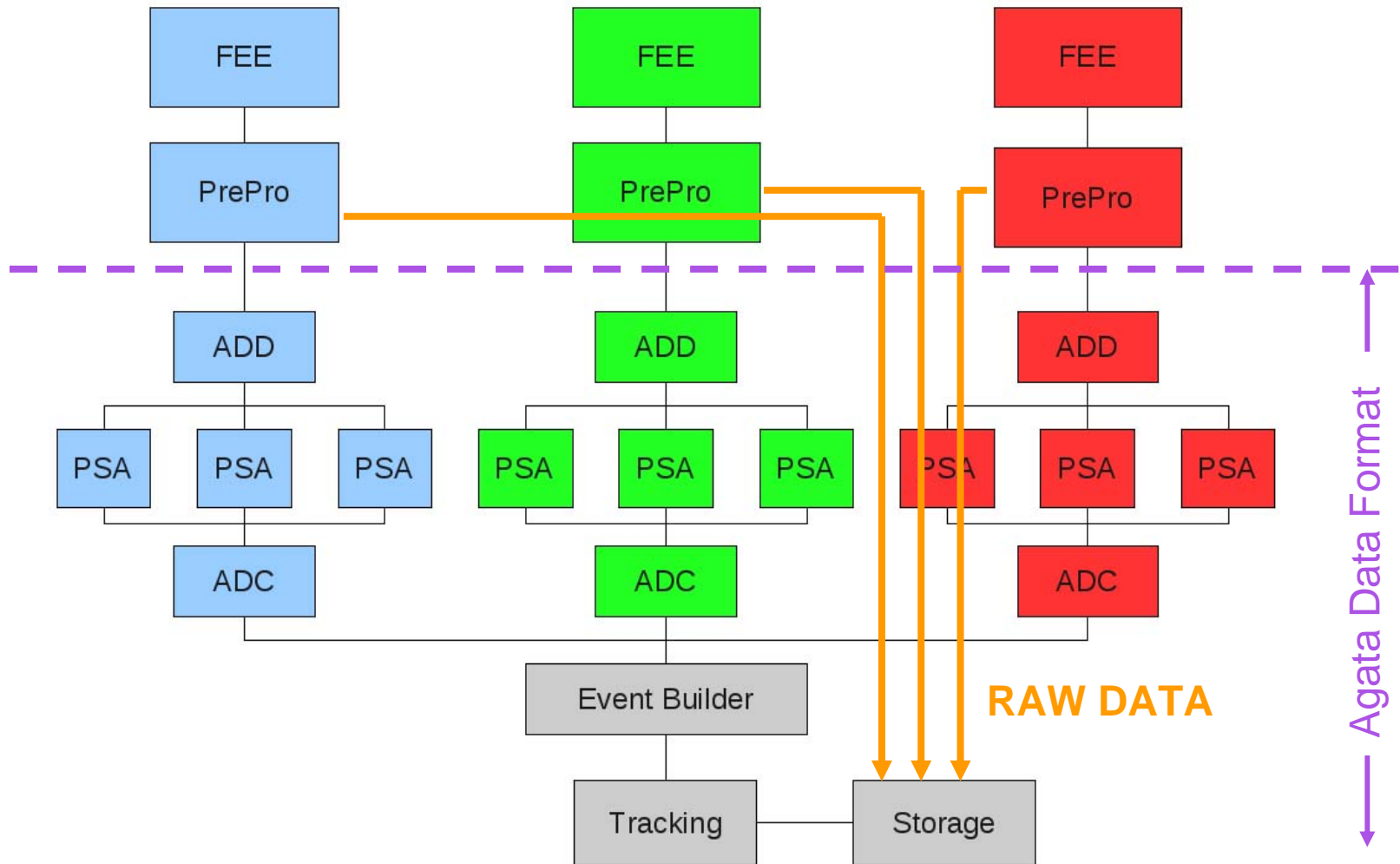
Introduction

Some general features in this presentation, not the details of replay

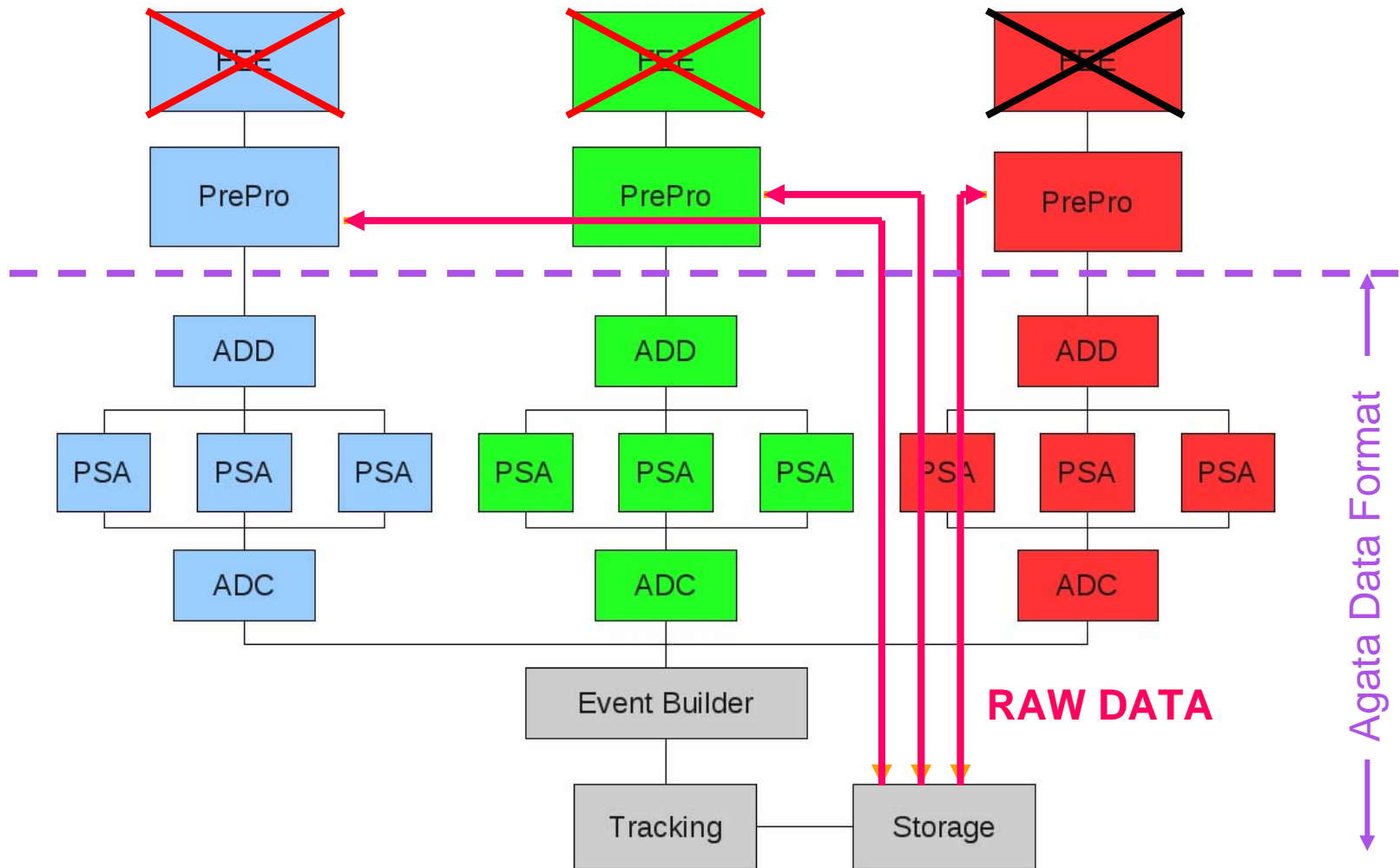
- What the DAQ offers for replaying data
- NARVAL-oriented presentation
- Please keep in mind that the solutions discussed here are (in my point of view) valid for commissioning phase only.



Week 12 Online Topology



A replay topology



On-line versus replay



- Almost no differences between on-line and replay topologies
- Only data source is changed (technically, a symbolic link)
- Same Narval nodes are used for data processing in both cases

- See notes on week 12 topologies on the DAQ wiki :
http://csngwinfo.in2p3.fr/mediawiki/index.php/Week_12

Limitations and warnings



- Please remember that we are discussing replay of raw data (traces) which represent a large amount of data (14 TB for week 12 beam test)
- We will not keep these traces on disk forever (« only » 60 TB total available so far, 120 TB expected sometime)
- We will not write traces on disk forever, only during commissioning phase (and for tests, developments)
- Replaying data is CPU and network consuming (about 1.5 kHz with 3 cores/crystal)
 - Avoid replay while taking data
 - Avoid simultaneous replay (anyway requires different Narval topologies / account)
- What is discussed here should be considered as a temporary solution and/or a facility for algo developers

The DAQ box

- The Agata Box is a **DAQ** box, not a **DA** Box (it has been designed for DAQ purposes !)
- However, the DAQ box is used extensively only during specific periods. Therefore using it for replay, when possible, makes best use of the hardware.
- So far we have 20 pizza boxes (160 cores) and an array of 64 TB (more soon)



Prerequisites



- Basic Narval knowledge
- Basic ADF knowledge
- Basic GRU / ViGRU / ROOT knowledge
- User account on the DAQ box : access using ssh; VPN makes life easier (DAQ box access is secured... administrators are spying ...)

Advices / suggestions



- Only few « skilled » persons should use the DAQ box for replay
- Avoid simultaneous replays
 - Performances
 - Conflicts
- Do not put a mess on the Agata disk !
- Need good coordination otherwise it will be a mess ! (and source of conflicts)
- Need to agree on a policy : [who, when and on which nodes](#)

Other possibilities for replay



- Narval is not mandatory (but recommended !).
- **Transfer data at home.**
An ftp server has been setup on the SRM machine (machine used to transfer data on the Bologna Tier 1). Please contact DAQ administrators for using it. Note that this is a temporary solution. Grid is the ultimate one (? See next talk ...).
- Do not need necessarily to analyse the full data set at home.
- **Install Narval at home** is possible and not that difficult (I did it !).
- Processing speed depends obviously on the CPU / network performances.

Hints/Ideas for the future



- We have bought 2 pizza boxes for on-line, quasi on-line DA.
- Use gammaware and work with Olivier's team !!!
- We (the collaboration) should provide basic DA templates for on-line, quasi-on line, watcher (spy).
- Remember that algos can provide histograms using the GRU server, useful for on-line diagnostic. Also tools for monitoring (eg rates) and diagnostic being developed or to be developed.
- Faster PSA algorithms would help the DAQ a lot !

Concluding remarks



- DAQ box is a temporary solution for replay
- DAQ box is a tool for algo. developers
- Need to agree on the policy
- The DAQ WG can provide (or at least study) solutions on user's request
- Feedback needed to improve / help the users
- Need help from physicists to setup monitoring tools.
- Please do not hesitate to contact us !
- Demo on Wednesday (session 8)

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