

AGATA DAQ 1 π and beyond

Xavier Grave

On behalf of the AGATA Dev Team

6th April 2018

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 - ▶ Producers - handle data incoming in NARVAL

Producers

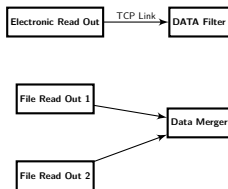
Electronic Read Out

File Read Out 1

File Read Out 2

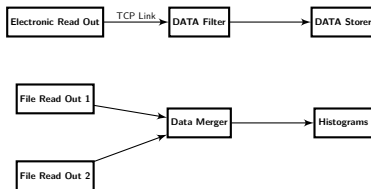
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 - ▶ Producers - handle data incoming in NARVAL
 - ▶ Intermediaries (Filters, mergers, ...)

Producers Intermediaries

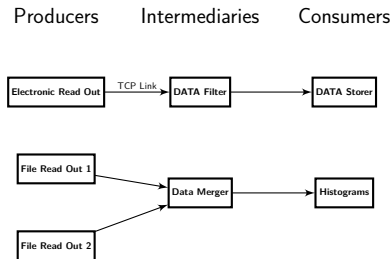


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 - ▶ Consumers (Store data to file, histograms, ...)

Producers Intermediaries Consumers

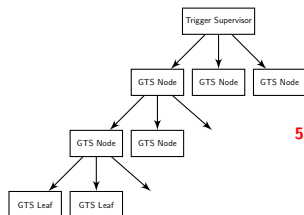


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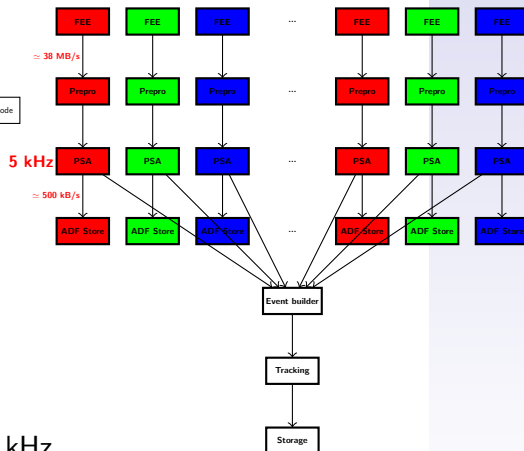


- ▶ Highly modular
- ▶ For safety : based on Ada 2012 a strongly typed language

HARDWARE Trigger



DATA Flow



- ▶ Running Narval 1.14
- ▶ PSA performances 5 kHz
- ▶ Event building available but not used

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 - ▶ 1 CEPH cluster - 168 TB available $\Rightarrow \simeq 700$ MB/s
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- ▶ Associated networks
 - ▶ One dedicated for Data
 - ▶ One dedicated for Services
 - ▶ One dedicated for CEPH (full 10 Gb)
 - ▶ many small LAN for electronic configuration
 - ▶ One entry point to DAQ Box : lxagata0.ganil.fr
 - ▶ One server for bridging AGATA DAQ with GANIL one's

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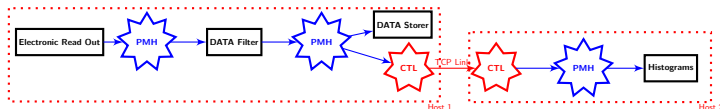
DATA Filter

DATA Storer

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 - ▶ PMH system : Posix Memory Handler
 - ▶ CTL system : Common Transport Layer

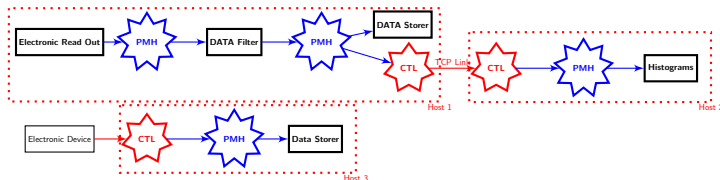


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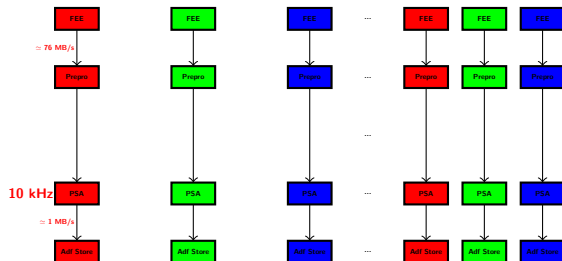


- ▶ Easier to optimise separated codes
 - ▶ PMH, CTL, NARVAL, ...

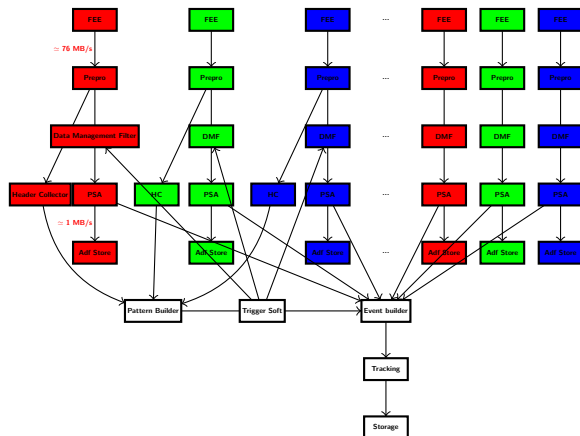
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- ▶ Easier to optimise separated codes
 - ▶ PMH, CTL, NARVAL, ...
- ▶ Easier to include new protocols
 - ▶ New TL plugins : FASTER electronic boards from LPC Caen

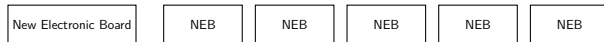


- ▶ Running Narval 2.0 under DCOD 1.0
- ▶ PSA performances 10 kHz

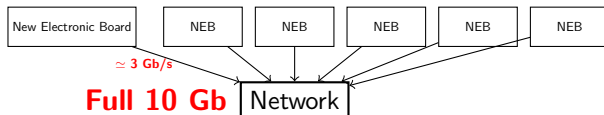


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- ▶ Trigger SOFT : under test

- ▶ No more point to point Electronic Boards



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 - ▶ New electronic development - Ethernet based



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 - ▶ New electronic development - Ethernet based
- ▶ CPU Load can be distributed in an High Performance Computing Farm
 - ▶ Still using DCOD (PMH - CTL - NARVAL)
 - ▶ Easy to upgrade from 1 π up to 4 π

