

Introduction

NEDA/DIAMANT data processing

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AGATA Data Analysis Workshop
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Université Claude Bernard

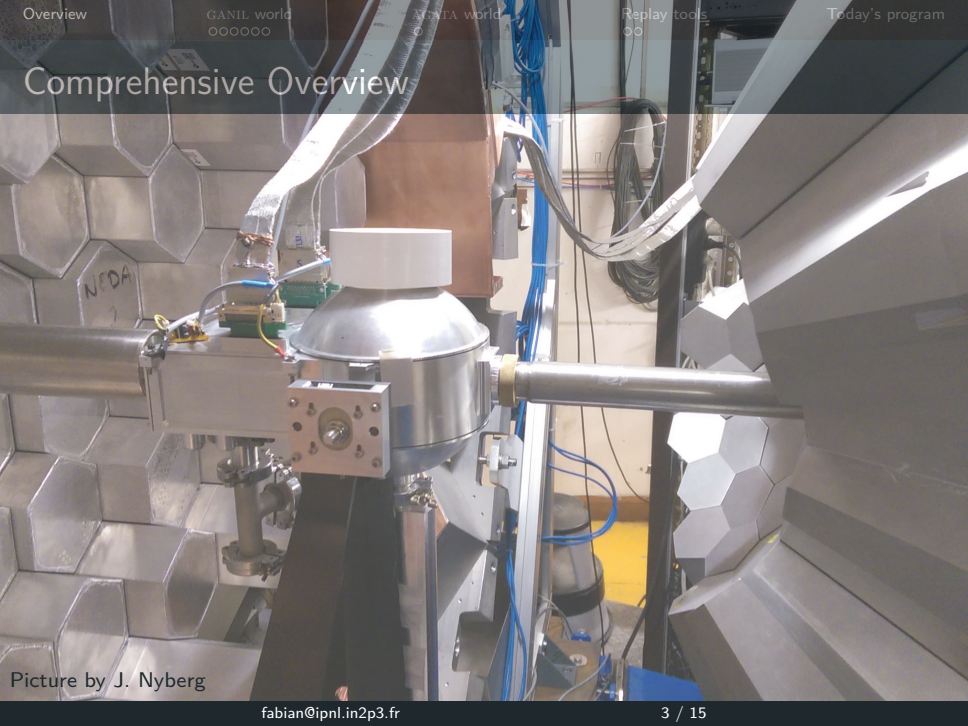


Lyon 1



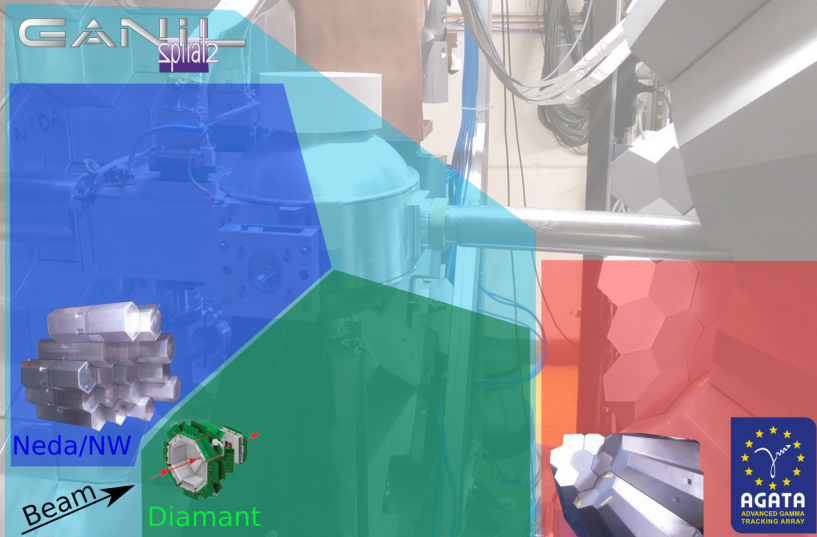
- ① Comprehensive Overview
- ② GANIL's data Flow (GANPRO)
 - Local level
 - Global level
 - Events & Final tree
- ③ Replay tools
- ④ Today's program

Comprehensive Overview

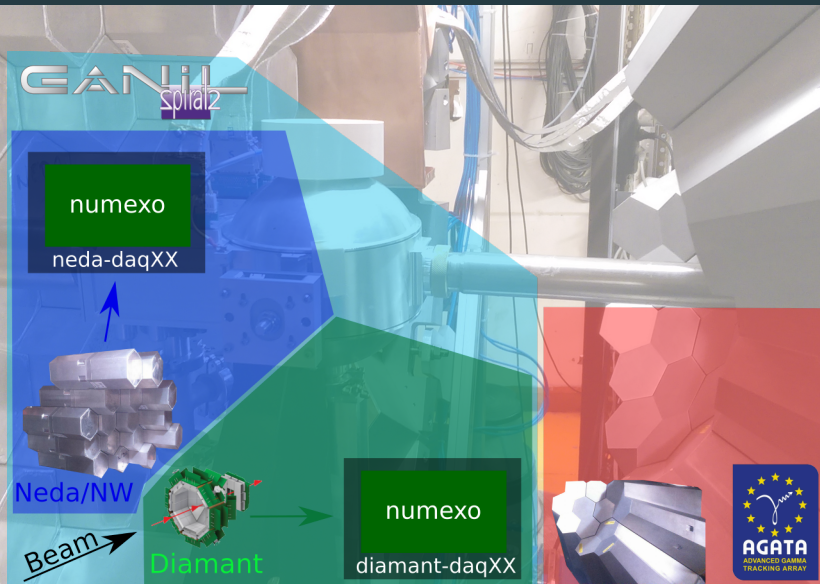


Picture by J. Nyberg

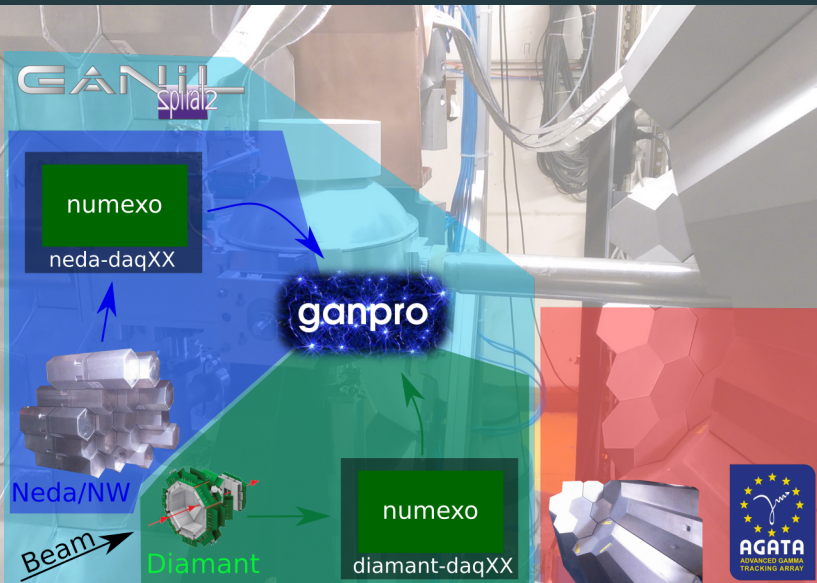
Comprehensive Overview



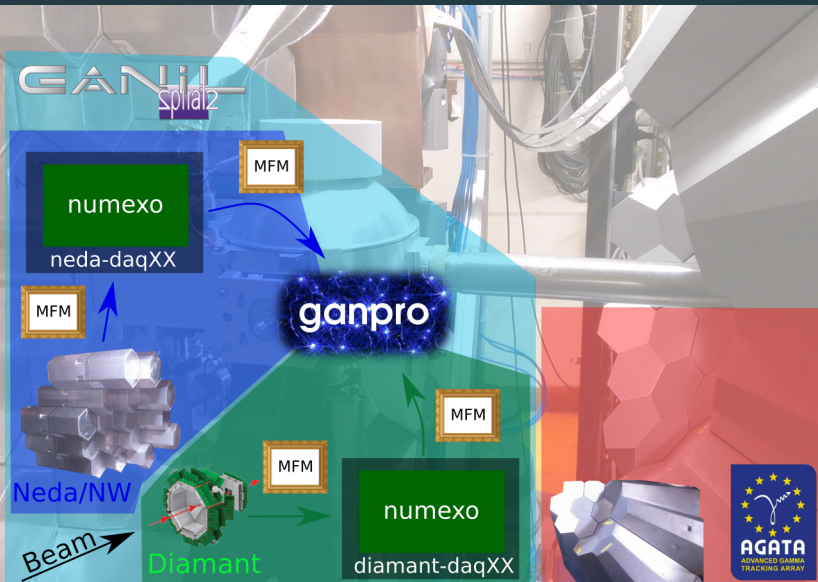
Comprehensive Overview



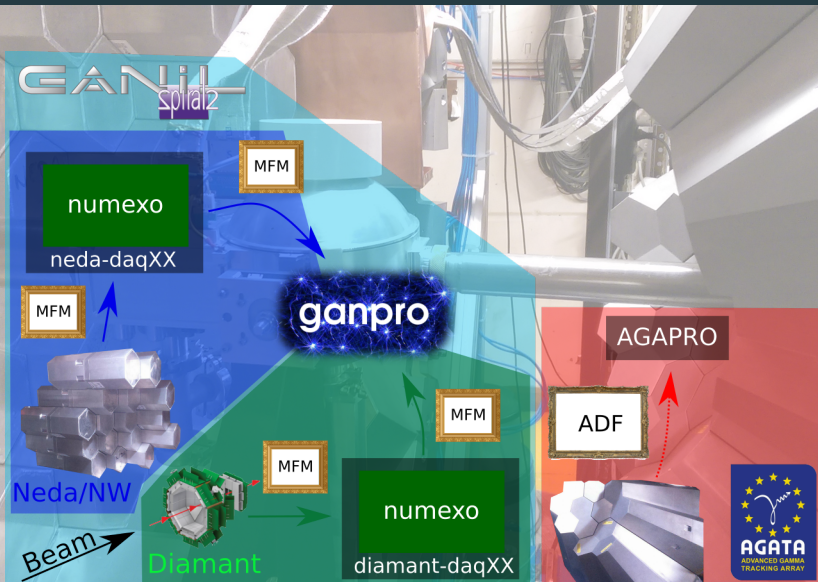
Comprehensive Overview



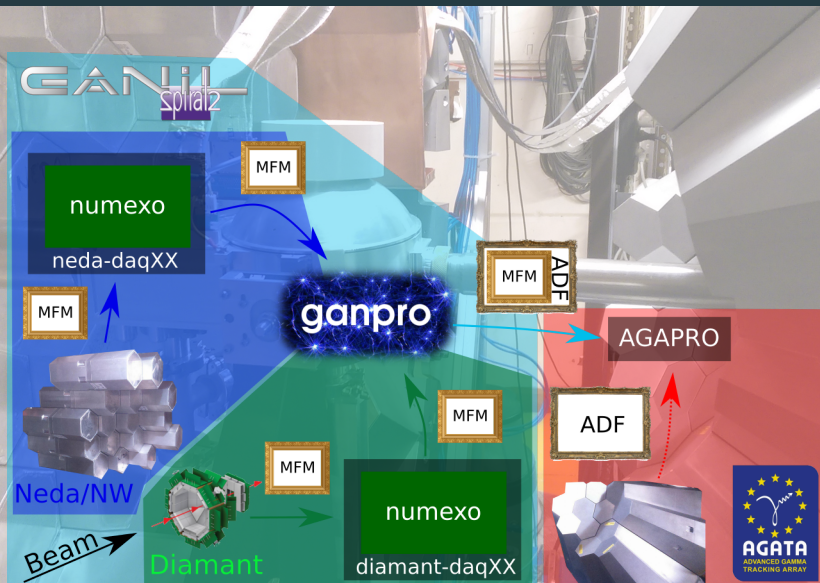
Comprehensive Overview



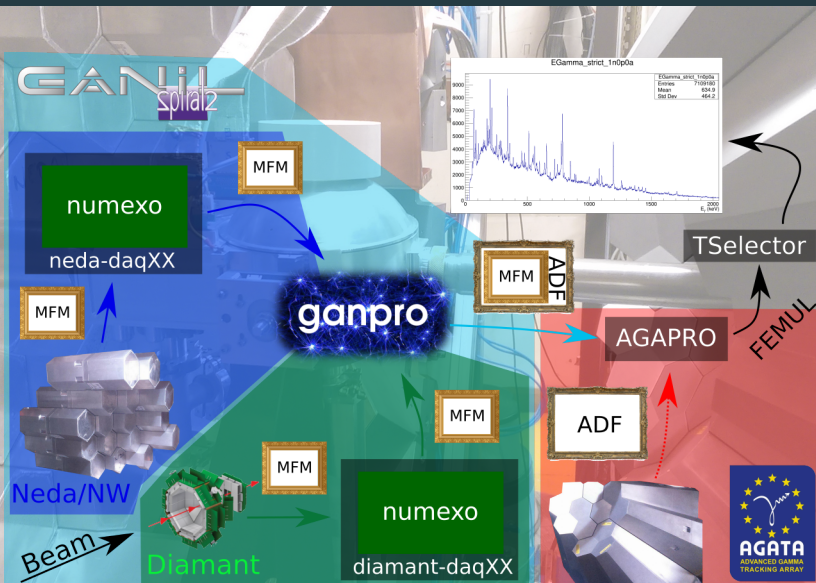
Comprehensive Overview



Comprehensive Overview



Comprehensive Overview



NARVAL

NARVAL = GANIL's data flow processor

Structured as communicating *actors*

Written in ADA, provides a C interface

MFM-compatible

NARVAL

Producer

NARVAL

Filter

NARVAL

Consumer

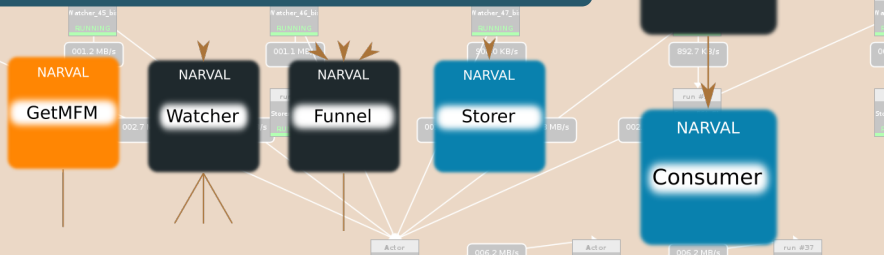
NARVAL

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MFM-compatible



GANPRO



GANil PROcessing

C/C++ NARVAL-compatible actors

Embedded replay tools

Process MFM frames

- Raw neda frames

- Compressed neda frames

- Diamant frames



GANPRO – Framework

Continuous integration



- Version control & Code distribution
- Dev. chat with Mattermost
- Automation:
 - Compilation & Execution tests
 - Code-quality check with SonarQube
 - Doxygen generation

Guaranteed environment

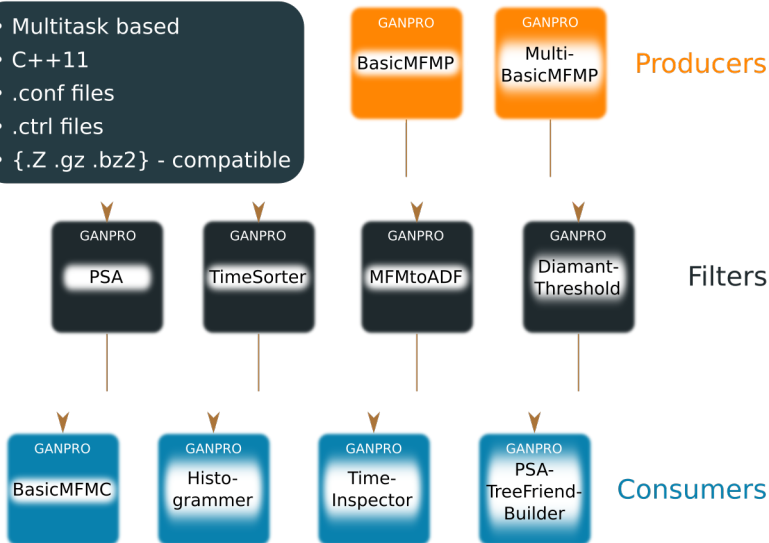


Documentation

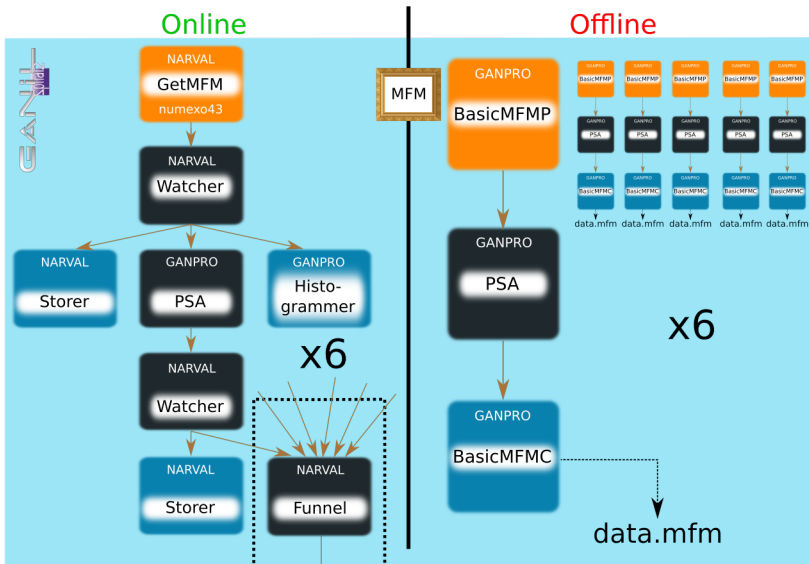
ATRIUM, GitLab's wiki, Doxygen

GANPRO – Zoo

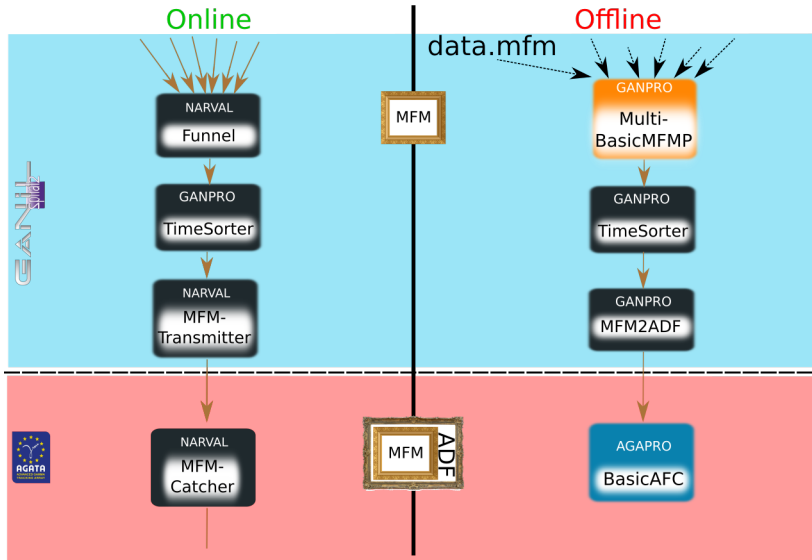
- Multitask based
- C++11
- .conf files
- .ctrl files
- {.Z .gz .bz2} - compatible



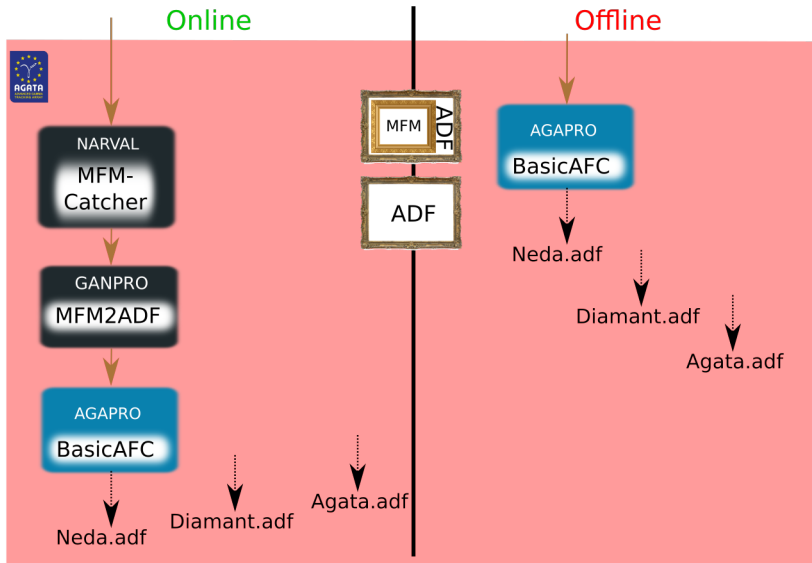
GANPRO – Local Level



GANPRO – Global Level

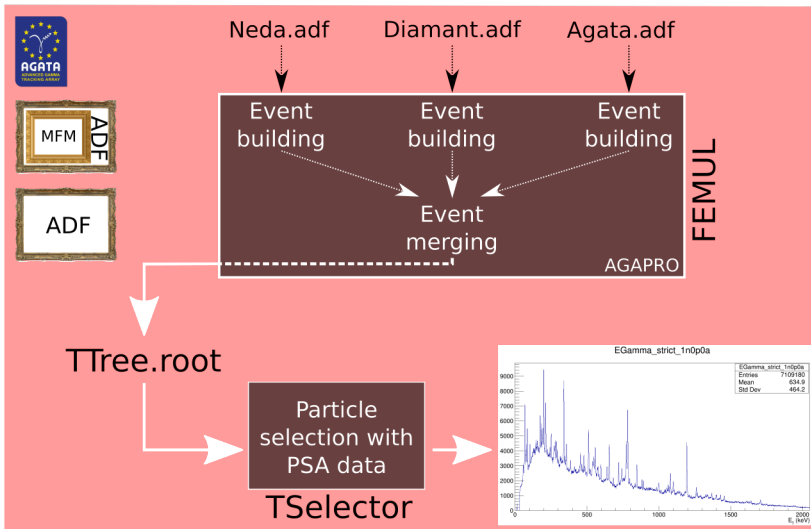


AGAPRO – Usual Topology



AGAPRO – Events & Final tree

Online → Offline



Replay tools

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ganpro

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IPNL_GAMMA > ganpro > Wiki > replay facilities

replay facilities

Last edited by Stezowski Olivier 6 months ago

There are several executables available within GANPRO to Replay Data. Using such exe you should be able to check the whole system from raw mfm frames up to built events that can be merged together with AGATA Data.

- ReplayLLP.exe**: the main purpose is to apply the PSA, for the NEDA part, or the Threshold Filter for the DIAMANT part. However it allows to replay also some part of the chain as given in the following picture:

Files on disk

NUMEXO2 NUMEXO2 .. X n .. NUMEXO2

MultiBasicMFMP : read n input

level 0 level 1

Consumer OR Filter

Consumer

raw, ti, neda, nedac, diam ec, ms, diam

raw, ti, nedac, diam

ReplayLLP.exe

GANIL

with TACSO
without TACSO

Replay tools

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ganpro

- Project
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- Issues 0
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- CI / CD
- Operations
- Registry
- Wiki**
- Settings

IPNL_GAMMA > ganpro > Wiki > replay facilities

replay facilities

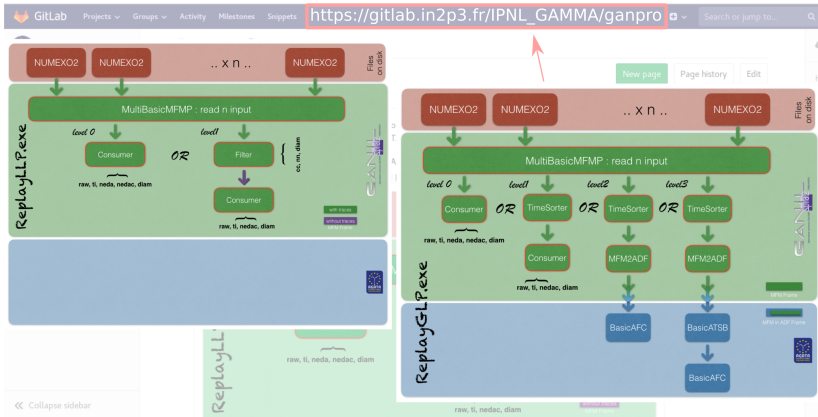
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There are several executables available within GANPRO to Replay Data. Using such exe you should be able to check the whole system from raw mfm frames up to built events that can be merged together with AGATA Data.

- ReplayLLP.exe**: the main purpose is to apply the PSA, for the NEDA part, or the Threshold Filter for the DIAMANT part. However it allows to replay also some part of the chain as given in the following picture:

The diagram illustrates the data flow for the ReplayLLP.exe tool. It starts with 'Files on disk' (NUMEXO2) which are processed by 'MultiBasicMFMP : read n input'. This step feeds into two parallel paths: 'level 0' (Consumer) and 'level 1' (Filter). The Filter path includes a 'Filter' step followed by a 'Consumer' step. The output of both paths is 'raw, ti, nedac, diam'. A note indicates 'with TRACE' and 'without TRACE'.

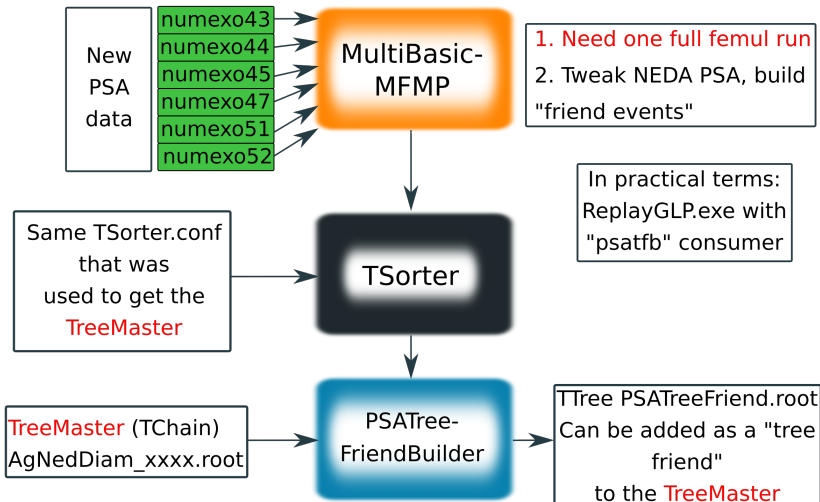
Replay tools



(NEDA) PSA TreeFriend Builder

CompressedNedaFrames.mfm

Obtained from the exact same dataset as the **TreeMaster**



Program of the day

Presentations

NEDA

- Signal manipulation
- Neutron-Gamma discrimination

DIAMANT

- Signal
- Charged particle identification

Hands on

- Local level replay (PSA)
- Global level replay (Time sorting)
- Event building & merging (AGATA/NEDA/DIAMANT)

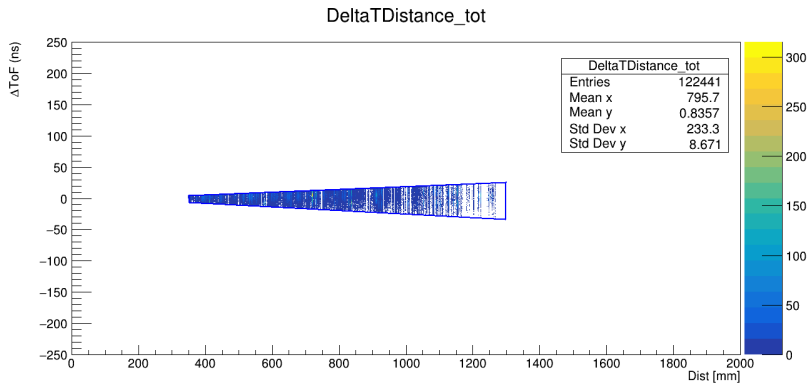
GANPRO contributors

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CSNSM J. Dudouet, J. Ljungvall

INFN A. Goasduff, V. Modamio

Neutron Crosstalk



Work of Jérémie Dudouet