Online monitoring system for the BM@N experiment

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2019

overview
Implementation
System overview
Current status

NICA Complex
BM@N

NICA Complex

General characteristics:

Beams - p, d ... $^{197}Au^{79+}$
Collision energy:
$\sqrt{s_{NN}} = 4$ - 11 GeV $\qquad E_{lab} = 1$ - 6 AGeV
Luminosity: 10^{27} $cm^{-2}s^{-1}$ (Au), 10^{32} (p)

Experiments:
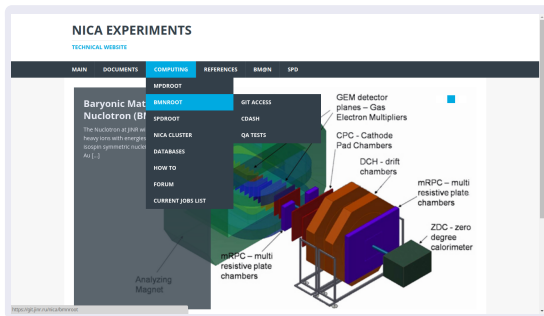- 2 interaction points - MPD and SPD
- Fixed target experiment - BM@N

- 2017: extracted beams of heavy ions are available within the BM@N experiment
- 2019: a first configuration of the MPD setup available.
- 2023: commissioning of the fully designed NICA-complex is foreseen.
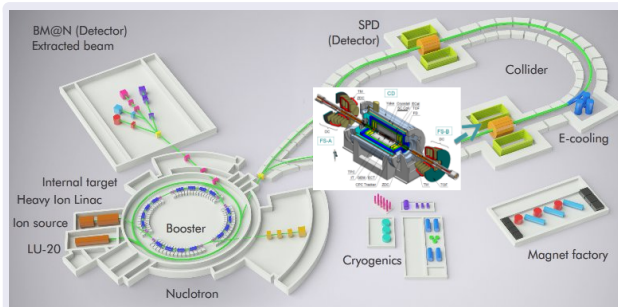
The general contractor is STRABAG (Bodostal-3 & PCJ are the sub-contactors)

overview
Implementation
System overview
Current status

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The BM@N Experiment

http://nica.jinr.ru/ru/projects/bman.php

overview
Implementation
System overview
Current status

Codebase
Monitoring workflow
Flexibility
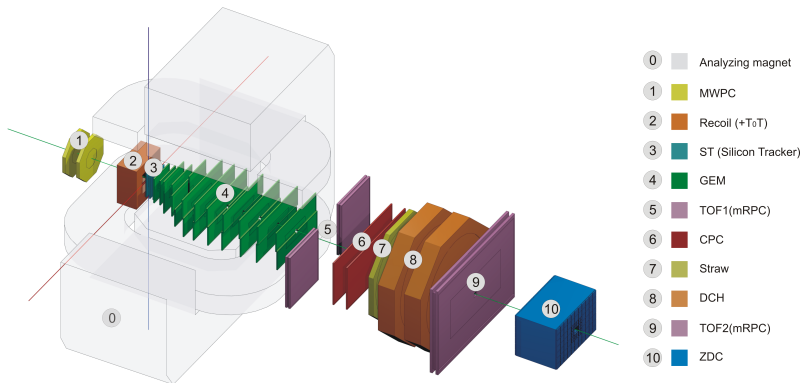
BM@N Framework BMNROOT

NICA experiments home web-page:

http://mpd.jinr.ru

- News
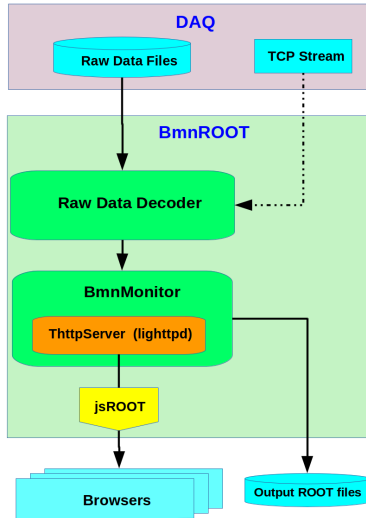- Software repositories
- Software tests
- Forums
- Database for physics run
- E.t.c.

Benefits:

- Inherits basic properties from FairRoot (https://fairroot.gsi.de/), C++ classes
- Extended set of event generators for heavy-ion collisions
- Detector composition and geometry; particle propagation by GEANT3/4
- Advanced detector response functions, realistic tracking and PID included
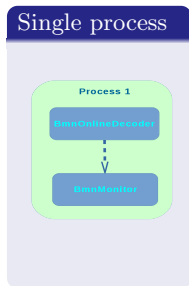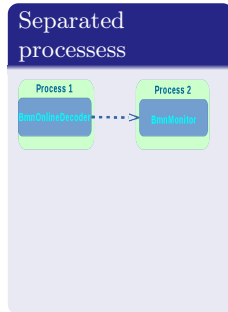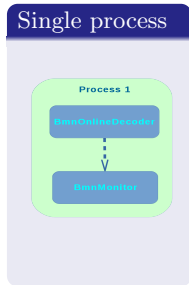- Event display for Monte-Carlo and experimental data

BmnROOT repository

https://git.jinr.ru/nica/bmnroot

overview
Implementation
System overview
Current status

Codebase
Monitoring workflow
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Monitoring workflow

overview
Implementation
System overview
Current status

Codebase
Monitoring workflow
Flexibility

Choose the system architecture

overview
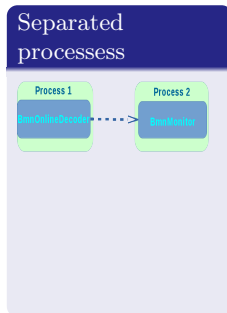**Implementation**
System overview
Current status

Codebase
Monitoring workflow
Flexibility

Choose the system architecture

http://zeromq.org/

overview
Implementation
System overview
Current status

Codebase
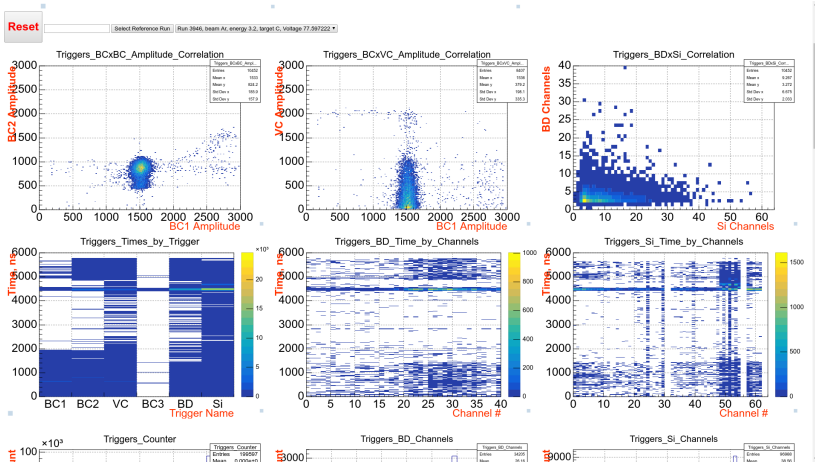Monitoring workflow
Flexibility

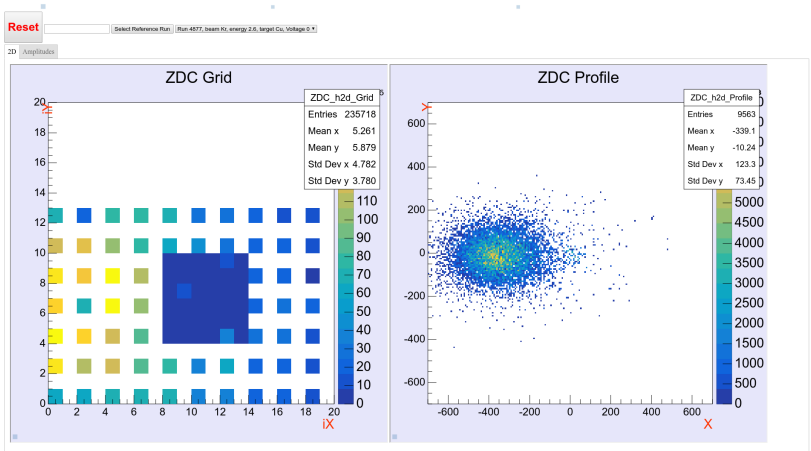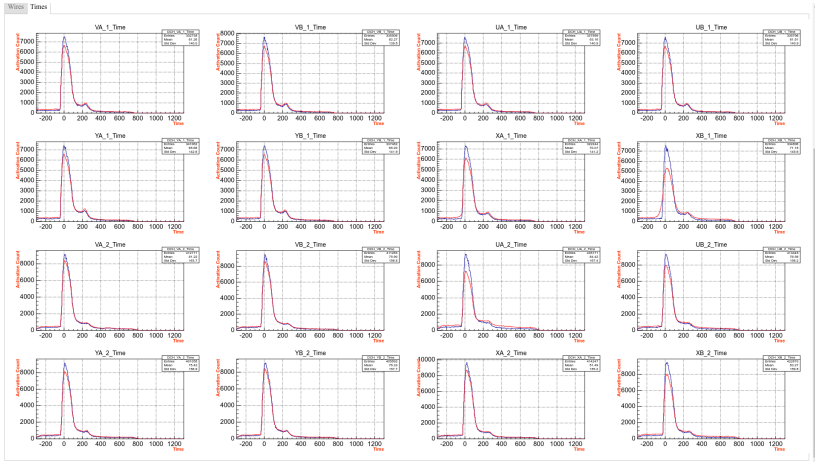# Choose the system architecture
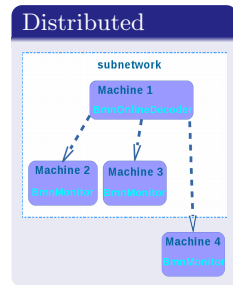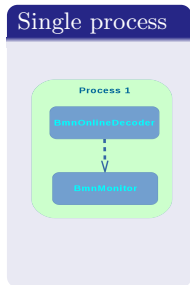
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Work in progress

- Further parallelize data decoding
- Refference run based QA automation
- Embed full reconstruction chain including EventMonitor into online.

Thanks for your attention!