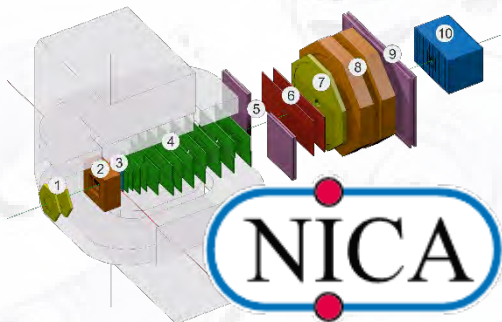


# Production of the Geometry and Online Configuration Systems

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<sup>1</sup>JINR, Dubna



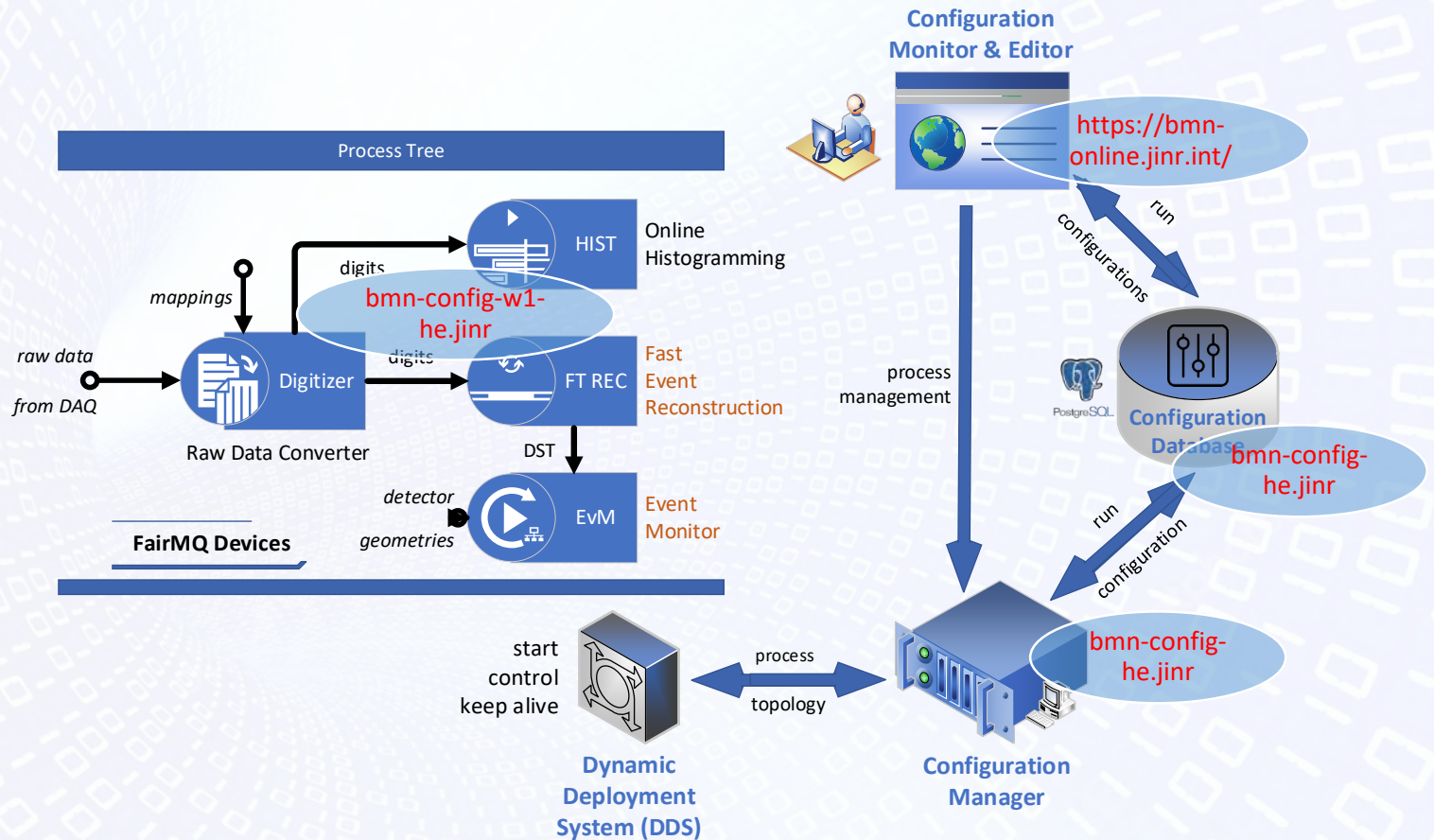
**16th Collaboration Meeting of the  
BM@N Experiment at NICA**



Joint Institute for Nuclear Research

# **The Configuration Information System**

# BM@N Configuration Information System and online processes diagram



# Configuration Manager started panel

Was Problem element

**Run Manager**

Select Setup Run: BM@N Run 9 [+] [-]

Control panel **UPDATE** STOP

| Host                     | bmn-config-w1        |         |       |                     |          |
|--------------------------|----------------------|---------|-------|---------------------|----------|
| Task Name                | Module               | Status  | Log   | Start Time          | End Time |
| decoder                  | OnlineDataProcessing | Running | [Log] | 2026-02-25 14:31:53 |          |
| decoder_proxy            | OnlineDataProcessing | Running | [Log] | 2026-02-25 14:31:53 |          |
| reconstruction_processor | OnlineDataProcessing | Running | [Log] | 2026-02-25 14:31:53 |          |

ADD SETUP MODULE

| Module Name          | Parent Name | Actions   |
|----------------------|-------------|-----------|
| OnlineDataProcessing |             | [Log] [X] |

Manager Log

| Setup Run  | Time                | Content   | Severity |
|------------|---------------------|---|----------|
| BM@N Run 9 | 2026-02-25 14:32:15 | RestService:::parseRequest\$on !cmdObj.contains(param) case | INFO     |

## Updates:

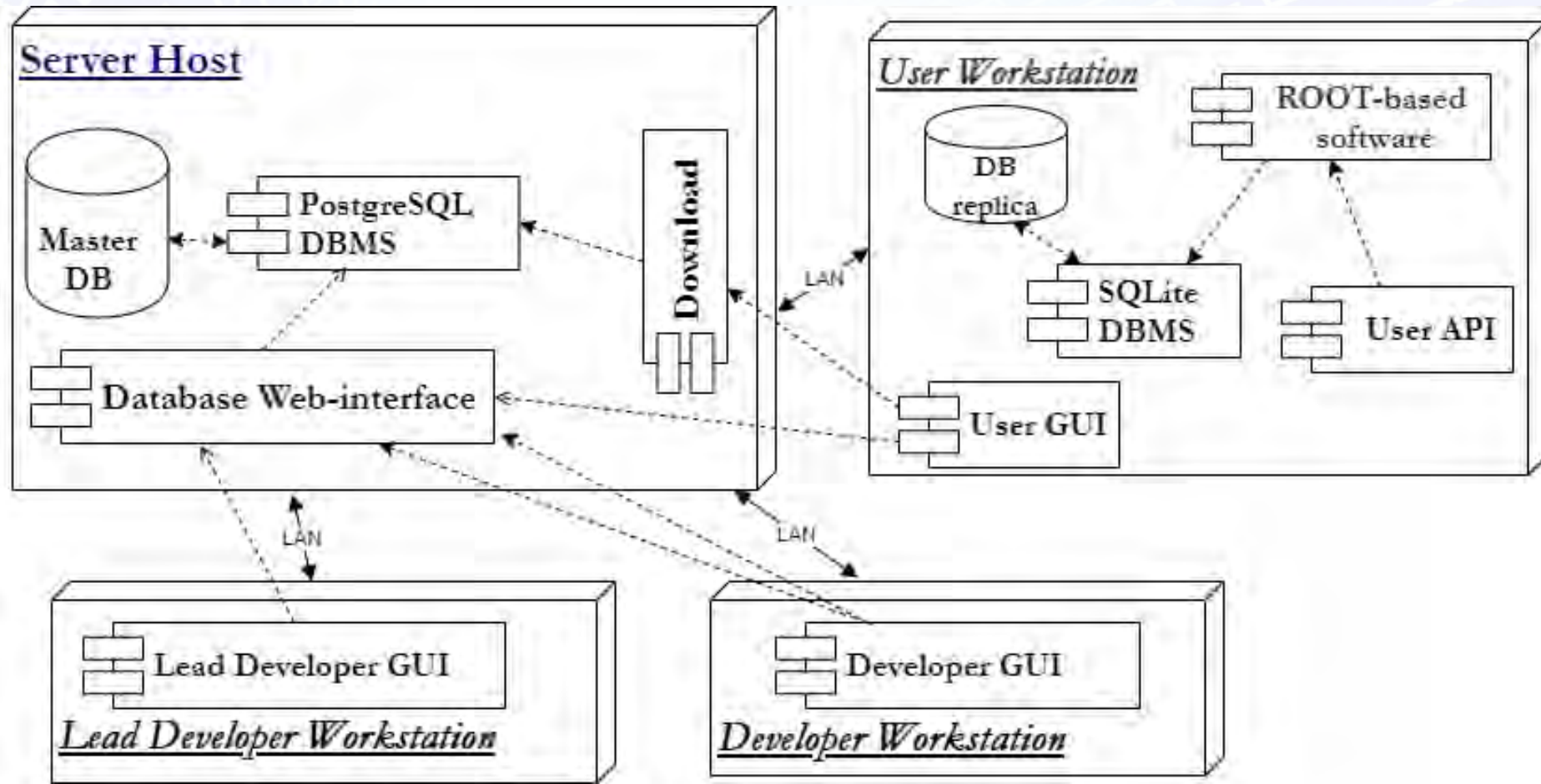
- GUI – remove synchronized requests (increase speed)
- Bugfix of server part.

# Configuration System: Roadmap

- **Core System ready for production**
- **Wait for feedback**
- **Replace ROOT Postgres requests to c++ native Postgres requests**
- **Integration with DQMF**
- **Add Grafana monitoring of both Configuration manager itself and WEB components?**

# The Geometry Information System

# General architecture of the Geometry Information System



# Role Developer

1. Register user on geometry DB (login to geometry DB)

Geometry DataBase

BM@N Geometry DataBase

GENERAL INFORMATION

JINR Single Sign-On

Reminder: you have agreed to comply with the JINR computing rules

Sign in with a JINR account

User name: aleksand

Password: .....

Sign In

[Recovery password](#)

2. Send mail to [Konstantin Gertsenberger](#)

3. Wait answer

4. Next login to DB will with developer role for selected detector

Menu

HOME

VIEW GEOMETRY

EDIT GEOMETRY

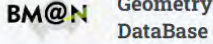
Edit available

BM@N, 16th Collab Meeting, 12-14 May, 2026

# Steps for update setup for developer

- Update revision
  - Requires only if changed c++ class name
- Upload new Geometry file
- Update setup module
- Create/Update setup
- Test setup
  - Load not approved setup by setup name
- Upload full geometry
- Ask Lead Developer for approve setup

# GUI: view setup module for file











BM@N Geometry DataBase
⌵

User: aleksand
[CONFIGURE USER ACCESS](#)
[LOGOUT](#)

---

## Geometry Files

| Module | Revision | Class Name | File Tag               | Transformation  | Date             | Author        | Description                | Download          |
|--------|----------|------------|------------------------|---|------------------|---------------|----------------------------|-------------------|
| BD     | 1        | BmnBd      | BD_run9.root           |  | 2025-10-12 20:48 | aleksand      | BD_run9.root               | <a href="#">⌵</a> |
| BD     | 1        | BmnBd      | BD_run8_v1             |  | 2025-05-07 17:15 | aleksand      | BD_run8_v1.root            | <a href="#">⌵</a> |
| CAVE   | 1        | FairCave   | BD_run8_v1<br>cave     |  | 2025-05-05 16:17 | administrator | init                       | <a href="#">⌵</a> |
| CSC    | 1        | BmnCSC     | CSC_Run9_detailed.root |  | 2025-10-12 20:55 | aleksand      | CSC_Run9_detailed.root     | <a href="#">⌵</a> |
| CSC    | 1        | BmnCSC     | FullCSC_Run8_detailed  |  | 2025-05-07 17:19 | aleksand      | FullCSC_Run8_detailed.root | <a href="#">⌵</a> |

|      |   |         |                                      |   |                  |          |                                   |                   |
|------|---|---------|--------------------------------------|---|------------------|----------|-----------------------------------|-------------------|
| NDET | 1 | BmnNdet | Ndet_geo_period9_v1.root             |    | 2025-10-13 17:07 | aleksand | Real file is: nDet_PROTOTYPE_O... | <a href="#">⌵</a> |
| NDET | 1 | BmnNdet | Ndet_geo_period9.root                |   | 2025-10-12 21:04 | aleksand | Ndet_geo_period9.root             | <a href="#">⌵</a> |
| NDET | 1 | BmnNdet | nDet_PR_ONEDET_Planes_ZdistDET_1_595 |  | 2025-09-26 23:49 | aleksand | nDet_PROTOTYPE_ONEDET_Planes_Z... | <a href="#">⌵</a> |



# Local xml file with setting

```
int LoadSetupToFairRunSim(string_view setup_tag, const char* local_set ); // 0 -  
loaded, not 0 – error code  
//Example  
int errStatus =  
gSetup.LoadSetupToFairRunSim(gSetup.GetLastApprovedSetupTag("run8"),"geo.xml  
");
```

```
<setup>  
  <editSetupModule tag="FD_run8" enable="false"  
file_path="$HOME/git_geo_06.04.2026/bmnroot/build/FD_new_run8.root"/>  
  <editSetupModule tag="target_Csl" enable="false"/>  
  <addModule class_name="BmnFD" active="true" args="FD"  
file_path="$HOME/git_geo_06.04.2026/bmnroot/build/FD_new_run8.root"/>  
</setup>
```

**Description of local settings can be found in:** [“database/geo\\_db/examples/README.md”](#)

# Roadmap: Remove old root files in BMNRoot

- Update algorithm for download all setups (load only used geometry files).
- Create file for all these root
- Delete from DB unused files (select as unused)
- Delete these files from BMNRoot

# Geometry System: Roadmap

- **Wait for feedback**
- **Replace ROOT Postgres requests to c++ native Postgres requests**
- **Create empty setups (for tests)**
- **Add possibility for compare (check that it is not exists) geometry file**
- **Moving to use REST API in all public communications**