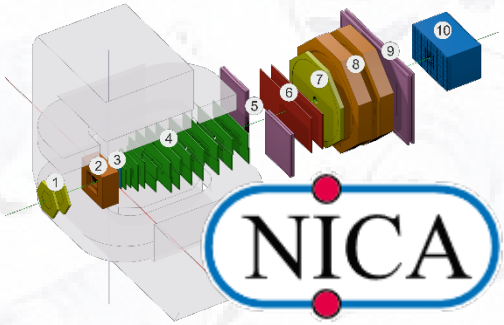
Production of the Geometry and Online Configuration Systems

E. Alexandrov[1], *I. Alexandrov*[1], *A. Chebotov*[1], *I.Filozova*[1], *K.Gertsenberger*[1], *I.Romanov*[1], *G.Shestakova*[1]

[1]JINR, Dubna

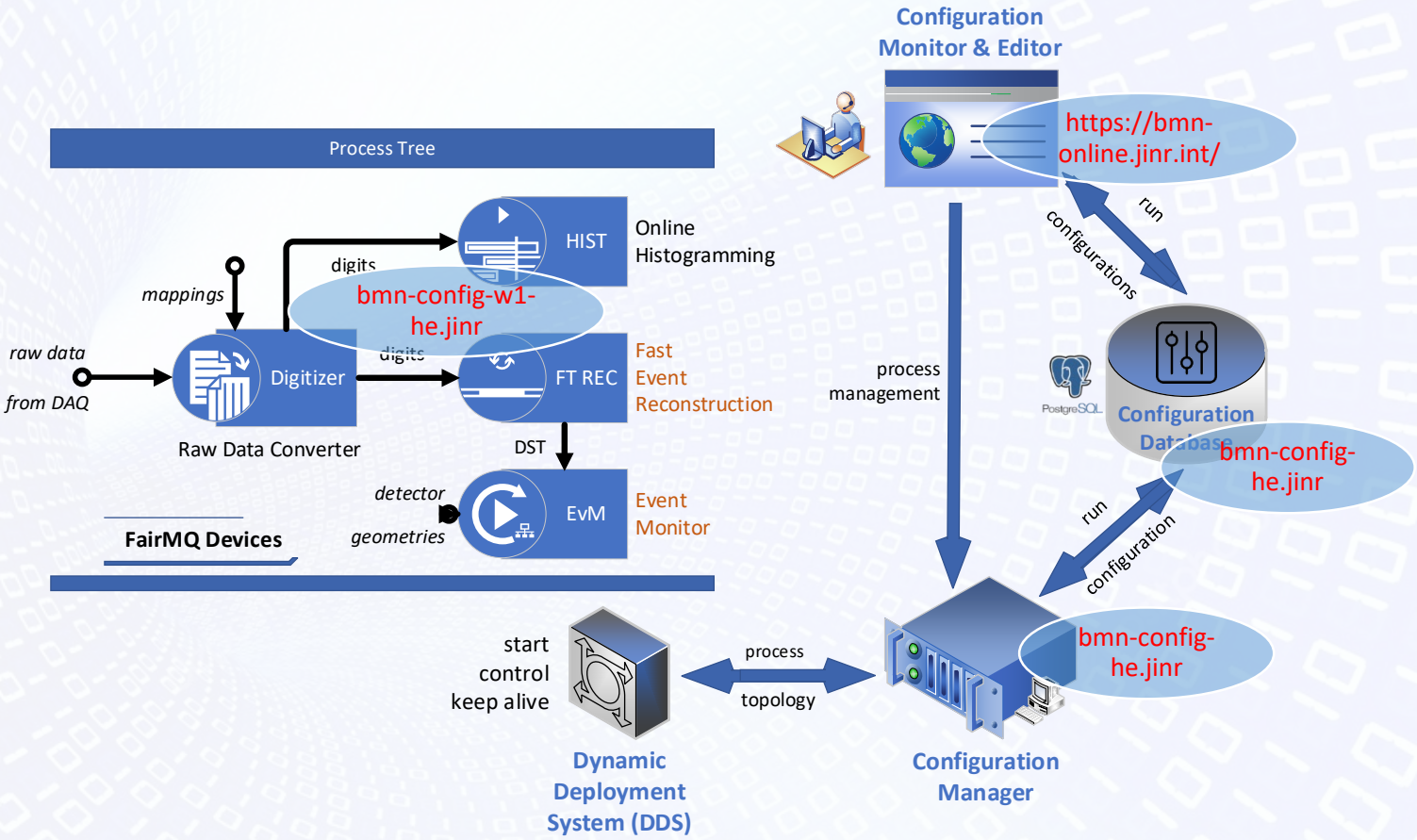


16th Collaboration Meeting of the BM@N Experiment at NICA

Joint Institute for Nuclear Research

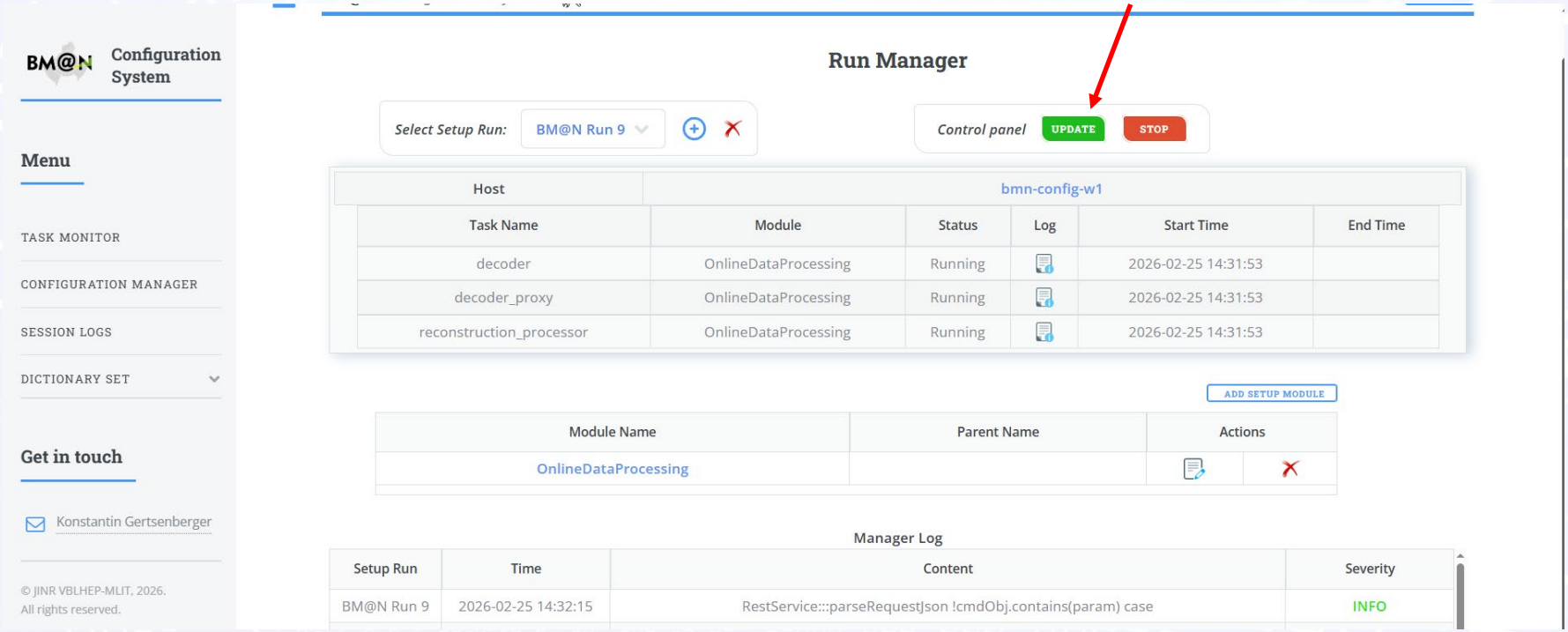
The Configuration Information System

BM@N Configuration Information System and online processes diagram



Configuration Manager started panel

Was Problem element



Updates:

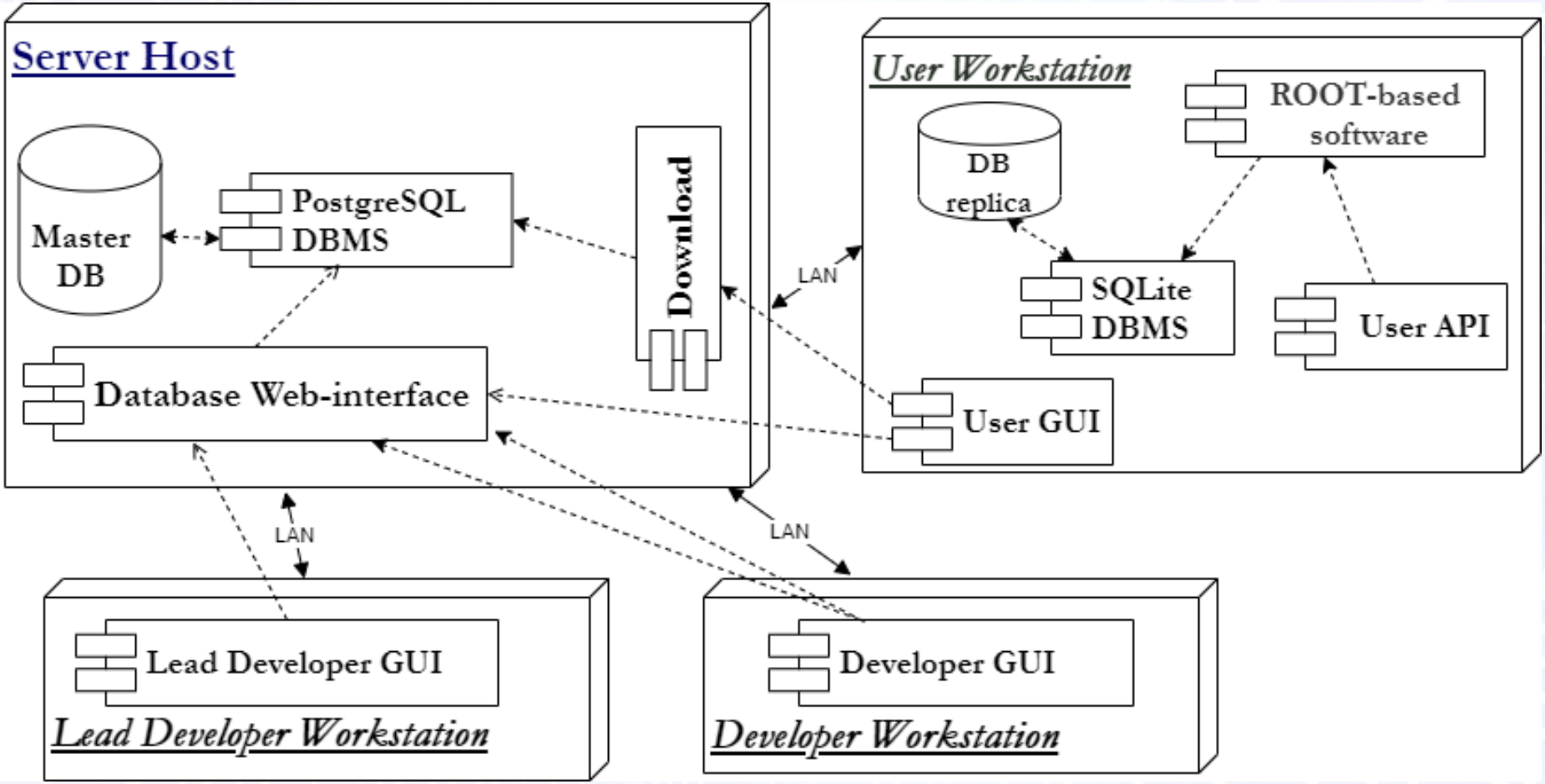
- **GUI – remove synchronized requests (increase speed)**
- **Bugfix of server part.**

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)



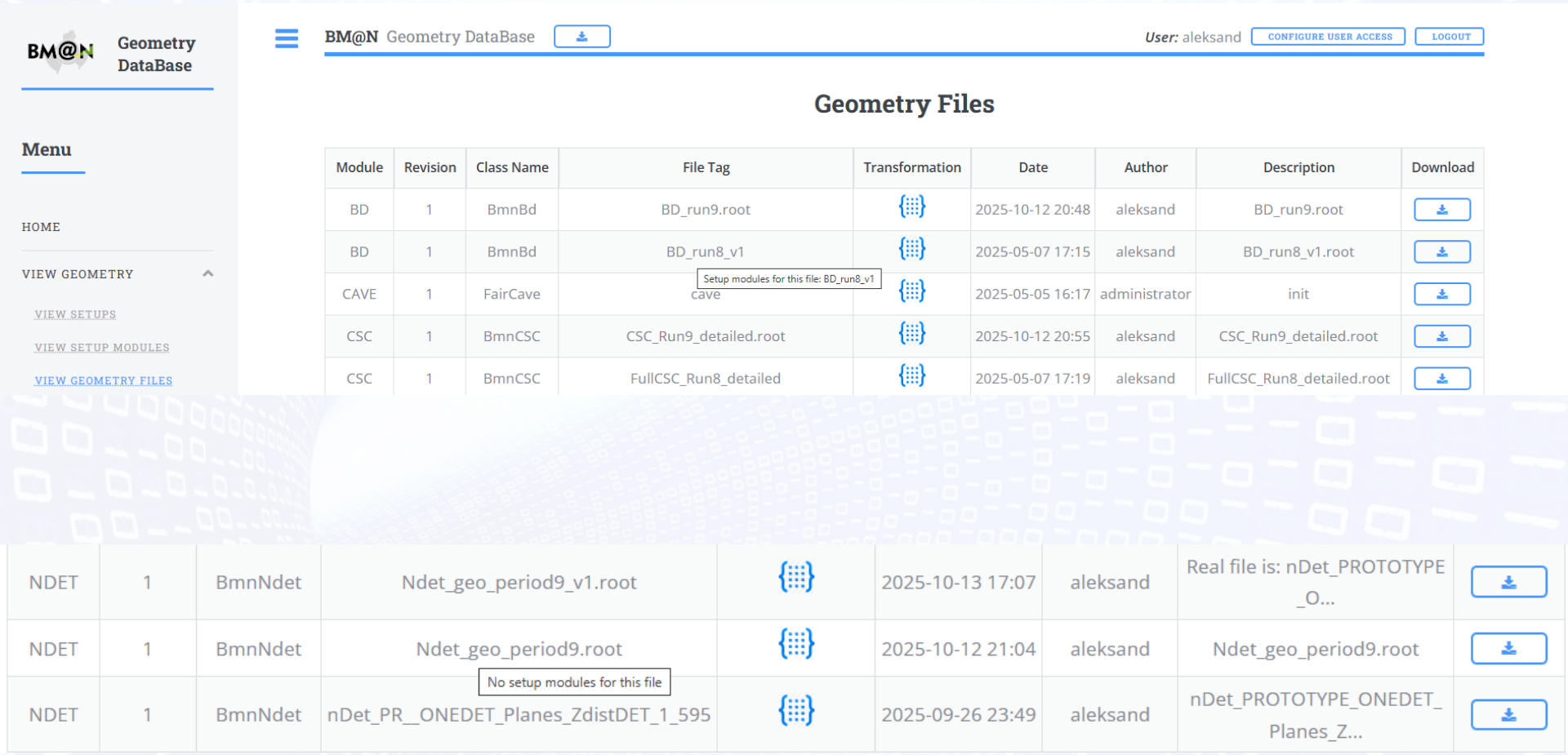
2. Send mail to Konstantin Gertsenberger
3. Wait answer
4. Next login to DB will with developer role for selected detector



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



Status of the Geometry Information System

Geometry server is available and last versions are uploaded: https://bmn-geometry.jinr.ru/

run9_dev_26.04.07	2026-04-07 12:52	Run9 revision derived from run9_26.02.0 with ndet prototype with vacuum envelope	nkarpush	Approved	2026-04-09 11:57:00+03				
run9_dev_25.10.12	2025-10-13 17:22	Run9 develop setup from git 12.10.2025	aleksand	Approved	2025-10-14 08:44:00+03				
run9_26.02.0	2026-02-27 10:07	Run9 revision 26.02.0. It has problem with overlap.	aleksand	Approved	2026-02-27 10:08:00+03				
run8_dev_26.02.22	2026-02-27 12:02	run8 for branch dev from 20/02/2026. Silicon updated to Silicon_Run8_detailed.root. After update overlap problem exists.	aleksand	Created	2026-02-27 12:58:00+03	✓	✎		

Production versions

Run8_24.12.0

Run8_25.04.0

Run8_25.09.0

Run9_26.02.0

Developer version

Run8_dev_25.12.05

Run8_dev_25.11.01*

Run8_dev_25.02.20**

Run9_dev_25.12.10

Run9_dev_26.04.07***

*Geometry of Hodo detector shifted by 6 mm along the x-axis

**Silicon_Run8_detailed.root

*** Uploaded by nkarpush

Problem with overlap (hope soon will fixed)

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