Falaise status
SuperNEMO Collaboration Meeting – Bratislava

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July 2, 2026

Current version : Falaise 5.1.13

- Reminder: from Falaise 5.1.10 (new geometry model 6.0/4.0 including Sam's work about the realistic iron&PE shielding, ART and coil), a few useful new vertex generators.
- 5.1.11 : Prepare service support for tracker cell *Plasma PropagationTime* (PPT) calibration data from DB (or files).

  `GG_PPT` DB table:

```
MariaDB [nemo_rundb]> describe GG_PPT;
+------------+------------------+------+-----+---------+----------------+
| Field      | Type             | Null | Key | Default | Extra          |
+------------+------------------+------+-----+---------+----------------+
| id         | int(10) unsigned | NO   | PRI | NULL    | auto_increment |
| cell_num   | int(10) unsigned | NO   |     | NULL    |                |
| start_time | datetime         | NO   |     | NULL    |                |
| stop_time  | datetime         | NO   |     | NULL    |                |
| ppt_type   | varchar(32)      | NO   |     | NULL    |                |
| ppt        | double           | NO   |     | NULL    |                |
| ppt_error  | double           | NO   |     | NULL    |                |
+------------+------------------+------+-----+---------+----------------+
7 rows in set (0.014 sec)
```

  but not usable yet.
- 5.1.12 : improvements in `flvisualize` for better debugging of tracks in the vicinity of Bi207 sources
- 5.1.13 : new version of Bi207 decay generator for simulation of the calibration process

Current developement : towards Falaise 5.1.14

- finalization of service support for the optical module energy calibration and status:
  1. preliminary work (Mathis) provides tables of calibration coefficients for each OM
  2. prepare and version the tables in a Git repository (not stored at CC SPS for safety)

     Gitlab CCIN2P3:
     https://gitlab.in2p3.fr/SuperNEMO-DBD/snomcalibrationdata
  3. fill the database tables: `OM_Status_Change_Events` and `OM_Energy_Calib`

Current developement : towards Falaise 5.1.14

`OM_Status_Change_Events` DB table:

```
MariaDB [nemo_rundb]> describe OM_Status_Change_Events;
+------------+------------------+------+-----+---------+----------------+
| Field      | Type             | Null | Key | Default | Extra          |
+------------+------------------+------+-----+---------+----------------+
| event_id   | int(10) unsigned | NO   | PRI | NULL    | auto_increment |
| om_num     | int(10) unsigned | NO   |     | NULL    |                |
| timestamp  | datetime         | NO   |     | NULL    |                |
| event_type | varchar(32)      | NO   |     | NULL    |                |
| bit        | varchar(32)      | YES  |     | NULL    |                |
+------------+------------------+------+-----+---------+----------------+
```

- minimize the size of stored informations (only *change* events)
- similar table for GG cell status: `GG_Status_Change_Events`

Current developement : towards Falaise 5.1.14

`OM_Energy_Calib` DB table:

```
MariaDB [nemo_rundb]> describe OM_Energy_Calib;
+---------------+------------------+------+-----+---------+----------------+
| Field         | Type             | Null | Key | Default | Extra          |
+---------------+------------------+------+-----+---------+----------------+
| id            | int(10) unsigned | NO   | PRI | NULL    | auto_increment |
| om_number     | int(10) unsigned | NO   |     | NULL    |                |
| start_time    | datetime         | NO   |     | NULL    |                |
| stop_time     | datetime         | NO   |     | NULL    |                |
| calib_type    | varchar(32)      | YES  |     | NULL    |                |
| calib_version | int(10) unsigned | YES  |     | NULL    |                |
| calib_params  | longtext         | YES  |     | NULL    |                |
+---------------+------------------+------+-----+---------+----------------+
```

Current developement : towards Falaise 5.1.14

Contents of the OM calibration results:

```
#@calib_run_id=2485
#om_number(ID);PeriodStart;PeriodStop;StatusBits;CalibType;CalibVersion;[pol2: A;B;Var_A;Var_B;Var_AB;Chi2_
A;Var_A;Chi2;NDOF]
0;1751123208;1751146307;000100000001000;;;;;;;;;;
1;1751123208;1751146307;000000010000000;pol1;1;0.212903;1.74524e-07;21.0827;16
2;1751123208;1751146307;000000000000000;pol2;1;0.184068;0.0486398;3.90379e-06;6.9369e-05;-1.57501e-05;17.87
3;1751123208;1751146307;000000000000000;pol2;1;0.201014;0.0388247;2.75578e-06;4.81569e-05;-1.12512e-05;12.5
4;1751123208;1751146307;000000000000000;pol2;1;0.172717;0.0307771;1.95586e-06;4.48834e-05;-9.08506e-06;20.8
```

- support various fit approaches ($E = A \times Q$, $E = A \times Q + B \ldots$)
- based on individual run calibration periods

Current developement : towards Falaise 5.1.14

- Provide a version 1 of OM energy calibration coefficients and make the official simulation path
- Provide a version 1 for OM status but we still need an automated way to build the OM change event DB table using some OM status survey program
- Provide a version 1 for tracker cell status (also need an automated way to build the cell change event DB table using some cell status survey program)

Current developement : towards Falaise 5.1.15

- finalize the PPT calibration service and DB table (fill it using a dedicated analysis program)
- modify the drift model in Falaise (drift time $\longleftrightarrow$ drift radius relation both for simulation and real daata calibration/reconstruction)
- review the way we apply energy correction for OM hits (electron vs gamma)
- make an official reconstruction path with services connected to the DB, taking into account running conditions.

SNRS 1.1 issue : bug in source foil bulk vertex generator

See Antoine's talk.

- asymmetry discovered while generating vertexes in the ITEP foils: bulk mode (for internal background and DBD processes)
- LAPP foil ok
- SNRS library: invalid formula discovered
- fix provided: SNRS 1.2.0 (checked by Antoine)

Software at CCIN2P3

- managed through the SNSWManager package: a collection of shell scripts that help to build, install and setup software packages and software stack.
- now available : Falaise 5.1.13(b) and SNRS 1.2.0
- Current recommended software stack at CC slurm:

```
bash$ snswmgr_load_stack falaise@2026-06-19
```

- possible remaining bug in `sndpu`

  still need a green light for production :

  investigation in progress

Not about Falaise: new documentation and agenda servers at LPC Caen

- end of DocDB support at Texas.
- LPC Caen proposed to host InvenioRDM and indico servers dedicated to SuperNEMO:
  - https://snemodocs.lpc-caen.in2p3.fr/
  - https://snemoXXX.lpc-caen.in2p3.fr/
- Big work to import the full contents of DodDB and translate in the Invenio framework.
  - not that easy (DocDB internals is a mess!)
  - all documents are on boards
  - this week : import users and authors, attempt to import existing topics (Keywords & subjects)
  - work in progress
  - many thanks to Guillaume Cubero (IT staff)