

# Software framework for a future $\mu \rightarrow e\gamma$ experiment

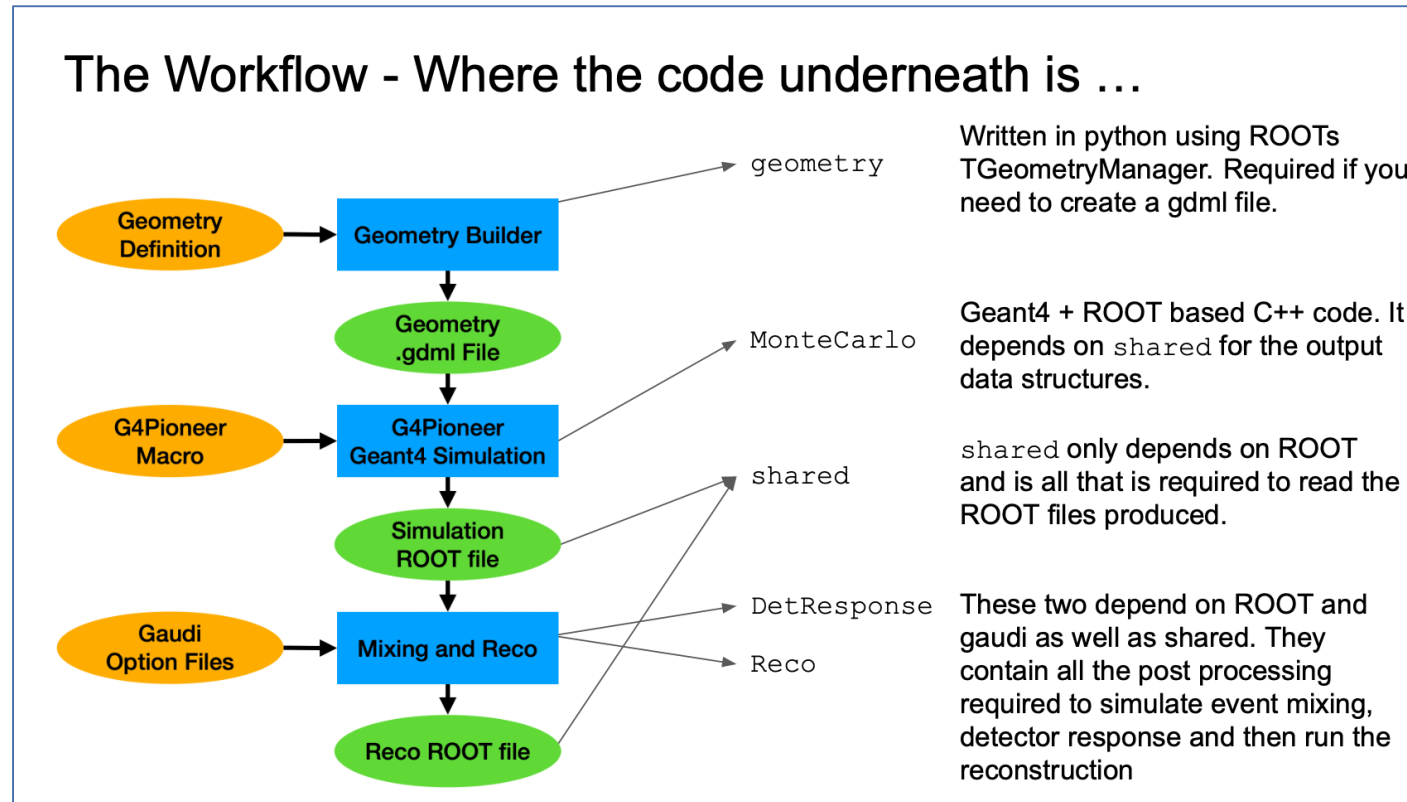
Lukas Gerritzen

2024-10-02

# The current solution in MEG II

- Dependencies on legacy code (small changes done by Yusuke)
- Use some developments in the HEP field (root, geant4) but not others
- For MEG III, strong inspiration by PIONEER

# PIONEER's Framework



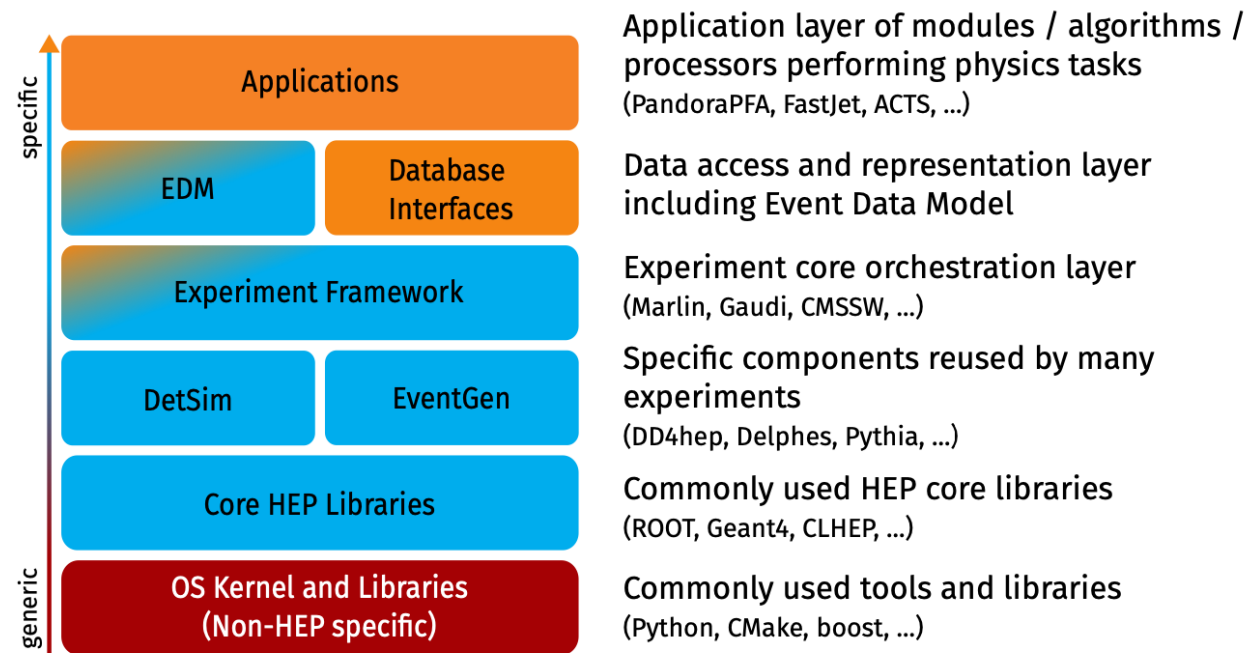
P. Schwendimann

More information: <https://indico.psi.ch/event/15146/overview>

# Key4hep

- Gaudi is actually part of Key4hep, “turnkey software for future accelerators”

## HEP Software Stack



## turnkey

*adjective* [ before noun ] US

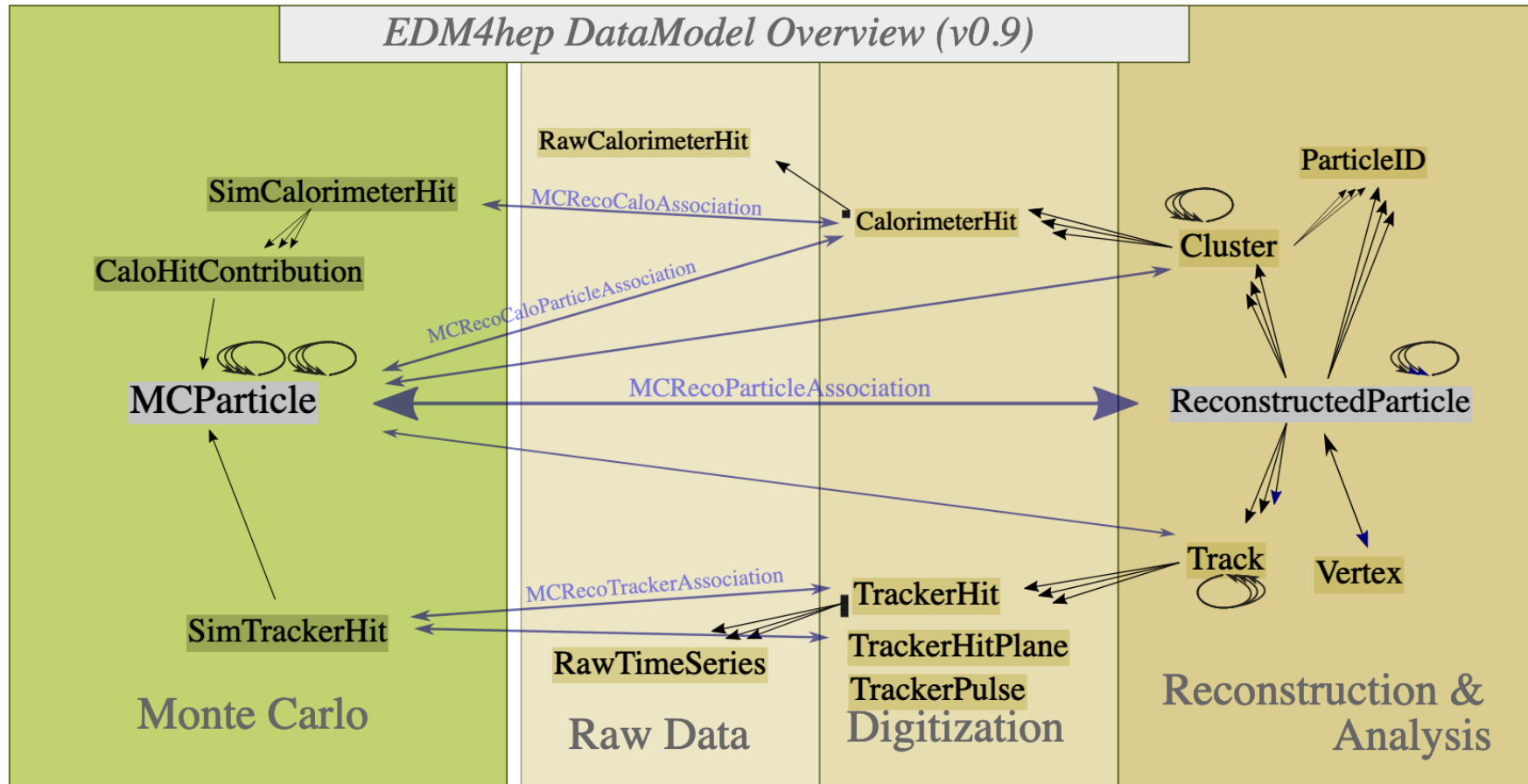
UK  /ˈtɜːn.kiː/ US  /ˈtɜːn.kiː/

Add to word list 

(of a property or a piece of equipment) ready to be used immediately by the person who is buying or renting it, or relating to this arrangement:

- Some people hire a contractor to build turnkey houses - ready to move into with no renovations or repairs required.
- We have developed turnkey solutions designed specifically for small business owners.

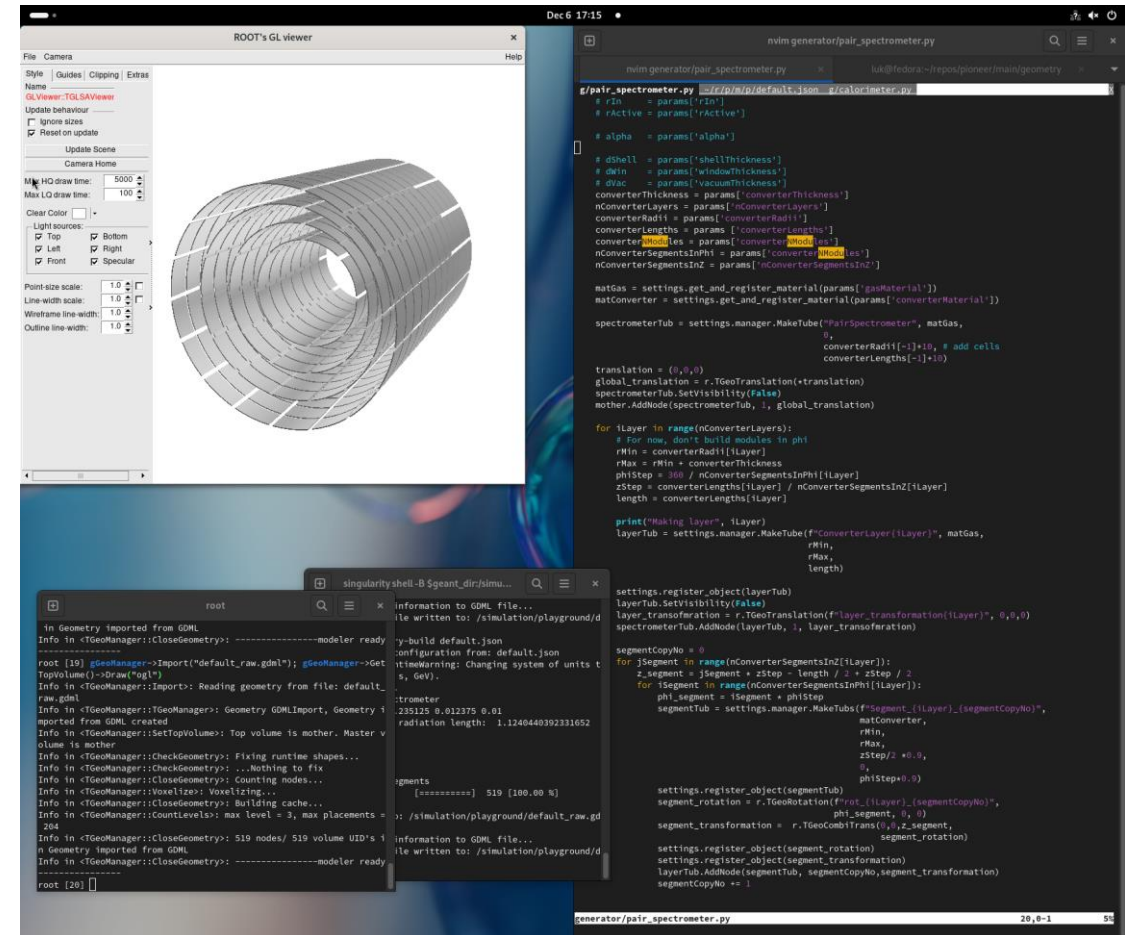
# EDM4HEP (Event Data Model)



Is it useful for us?

# Our Experience

- Implemented converter geometry
- Tracking + simple studies possible
  - Conversion efficiency
  - Energy loss
  - Scattering
- Currently reproducing results from former student
- Long way to go



# Summary

- Work on a modern framework has started
- Development and support by the HEP community
- Contributions are appreciated (e.g. merge Francesco's tracker code)

