

Status of Tools

Ties Behnke, DESY and SLAC

- Full simulation:

- BRAHMS Geant3 based full simulation and reconstruction

- MOKKA Geant4 based full simulation

- Fast Simulation

- SIMDET “BRAHMS” parametrisation

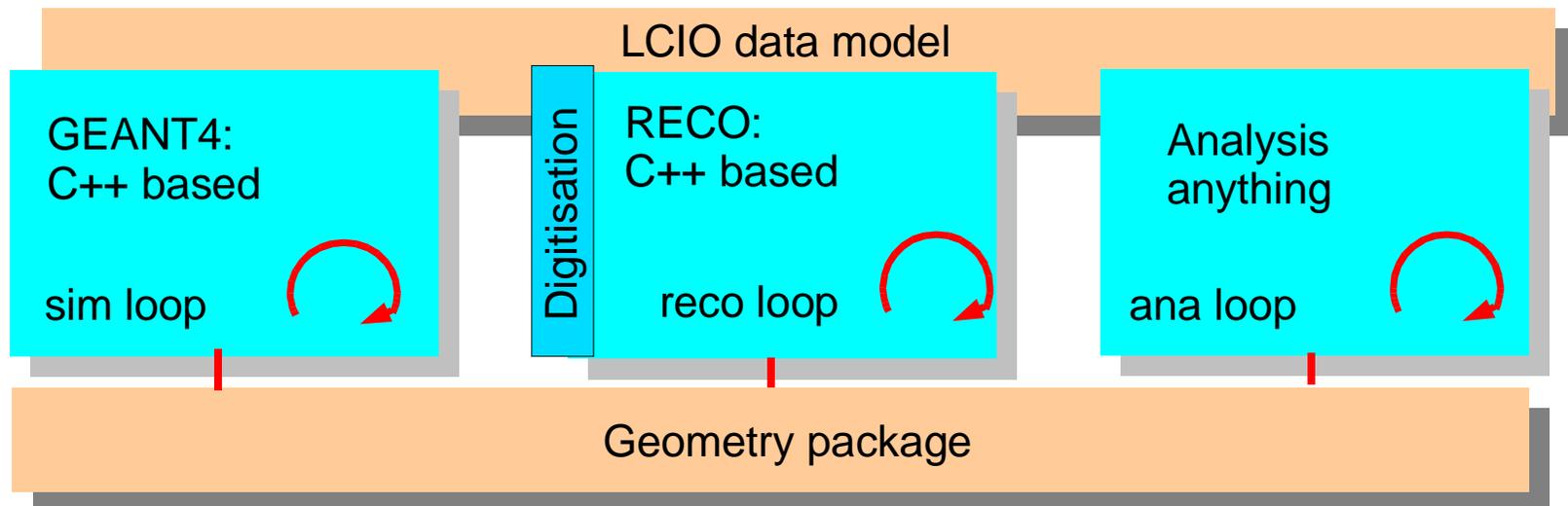
- SGV fast-full simulation

- The “holy grail”:

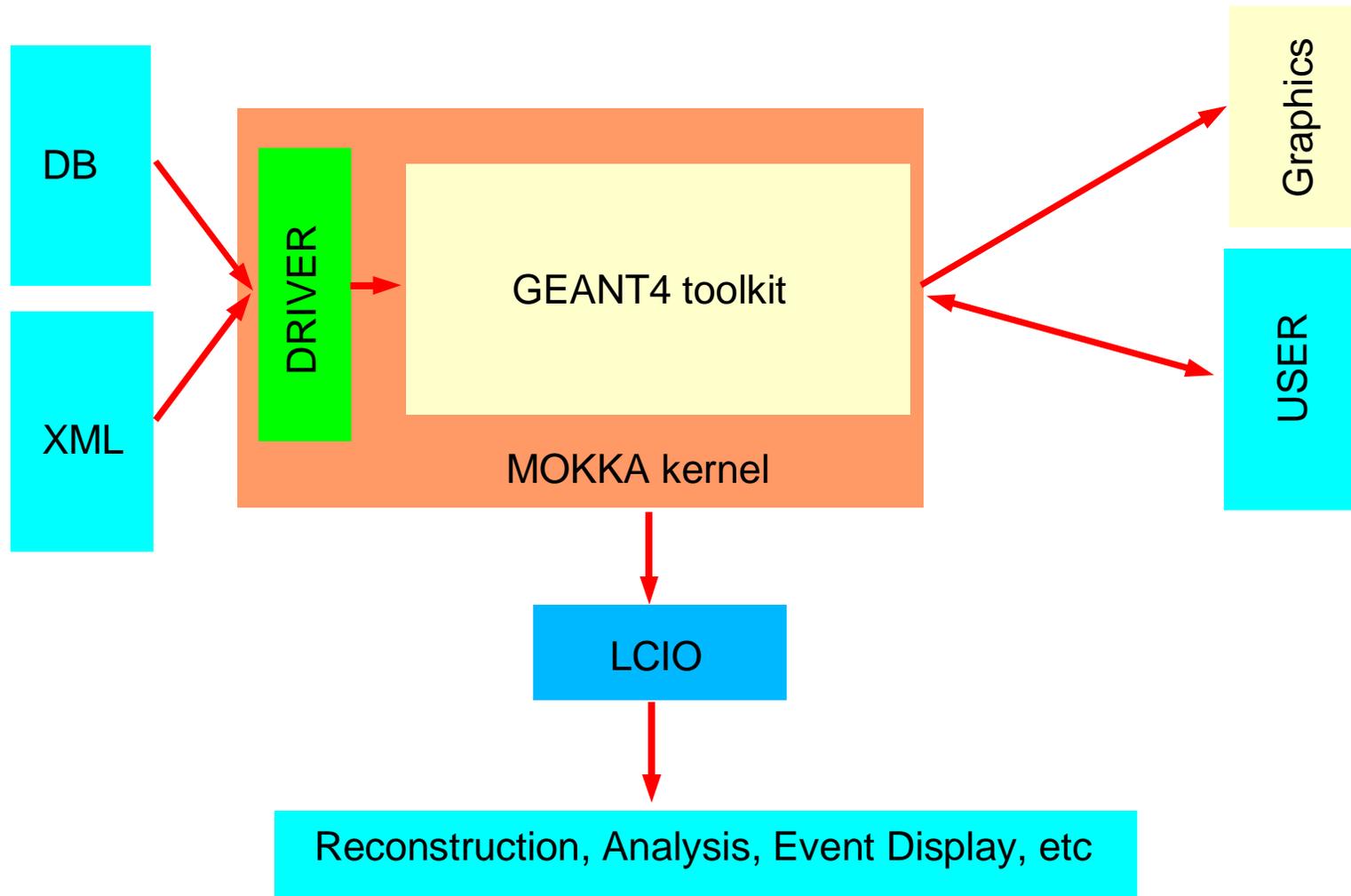
Develop a common simulation frame for all LC studies which is shared between different regions.

The overall scheme of things

- Goal: provide a light-weight environment for reconstruction and analysis
 - simple
 - not tightly integrated with any particular package like root, JAS, etc
 - flexible
- Proposal: “plain C++” frame
 - knows about LCIO and LCIO datamodel
 - talks to reconstruction packages like tracking, energy flow etc
 - provides a simple user interface
 - allows the interaction with more fancy environment like root, JAS etc



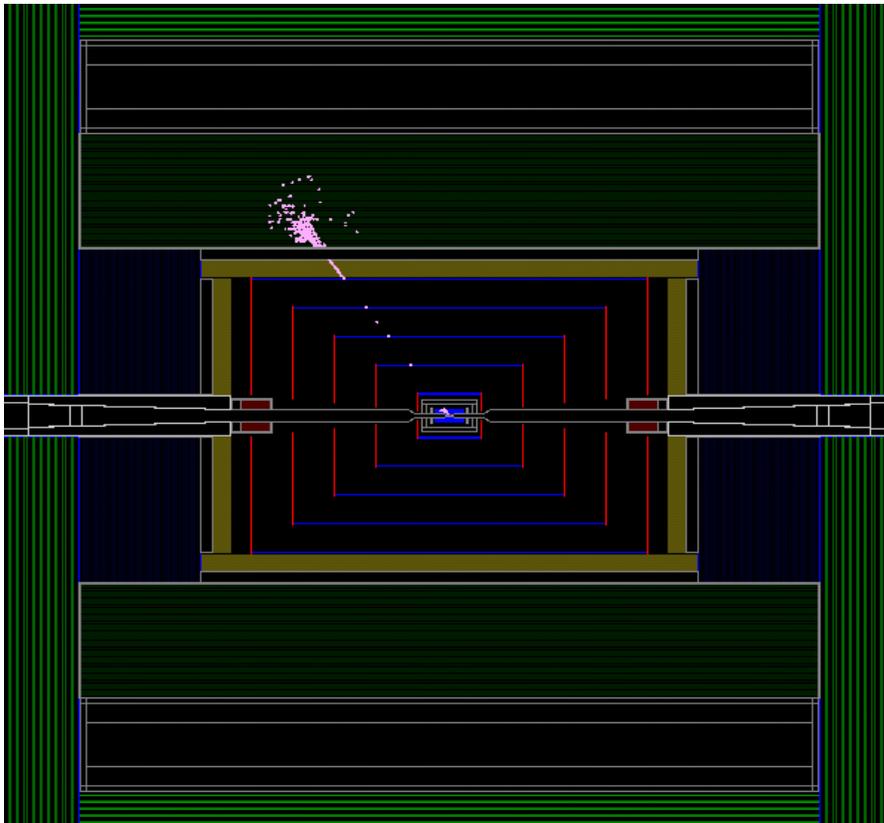
Ingredients



Active and constant development of the system.

Marriage of both

- Implement the US XML system as an additional driver in MOKKA:
 - capability to construct the XML based US detectors as MOKKA detectors
 - everything else is common for both: hits, hit formats, etc
 - additional advantage that it allows mixing: extends the capabilities of the XML based system, but retains backwards compatibility



sideview of the US SD detector in the MOKKA frame.

Should become available rather soon

Fast Simulations

- SIMDET: stable package available

Implementation of LCIO upcoming
Maintained, but not further developed

- SGV: stable package, currently no interface to LCIO etal

Contiuous development
transition to OO planned

- US simulations:

LC fastsim exists (JAVA based)
SGV like simulation under development

Summary and Conclusion

- We are rapidly moving towards a common GEANT4 frame between US and EU
- MOKKA as a basis becomes more and more complete
- Several fast sim packages are available

- Next big project is reconstruction frame
- Will develop a prototype in close collaboration with our US colleagues
- Expect some first results before the end of June this year

My personal summary and recommendation for people who actually want to do “analysis:

- at the moment use BRAHMS: its faster and more complete
- during the course of this years the tools to go to OO and C++ based packages should become available and usable