WG 5.2.1 Meeting
Simulation - Phase-I

Nov. 3rd 2022

Marco Leite (USP)

WG 5.2.1 Simulation Phase-I

Minutes from Oct. 27th. 2022 meeting

Attendance : G. Saito, G. Giacominni, M. Moralles, M. Leite

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Introduction (M. Leite)

- Minutes from previous meeting for comments
  Described the open issues, the severity and the effort needed to work on each one

TCAD SImulation (R. Buhler , R. Giacominni)

- TCAD is running Taylor's AC-LGAD example
- Rudolf has shown results of calculated electrical field and current in the pads
- Plan is to present first results at meeting with UCSC

Geant 4 SImulation (M. Moralles)

- M, Moralles has a merge request for a version saving the data, including the Energy deposited in the device
- We need now to move to a first "stable" version

Action Items

- TCAD SImulation :
  - Will aim for presentation to UCSC group next meeting, discuss offline if needed
- Geant4 Simulation :
  Move towards a stable version in gitlab

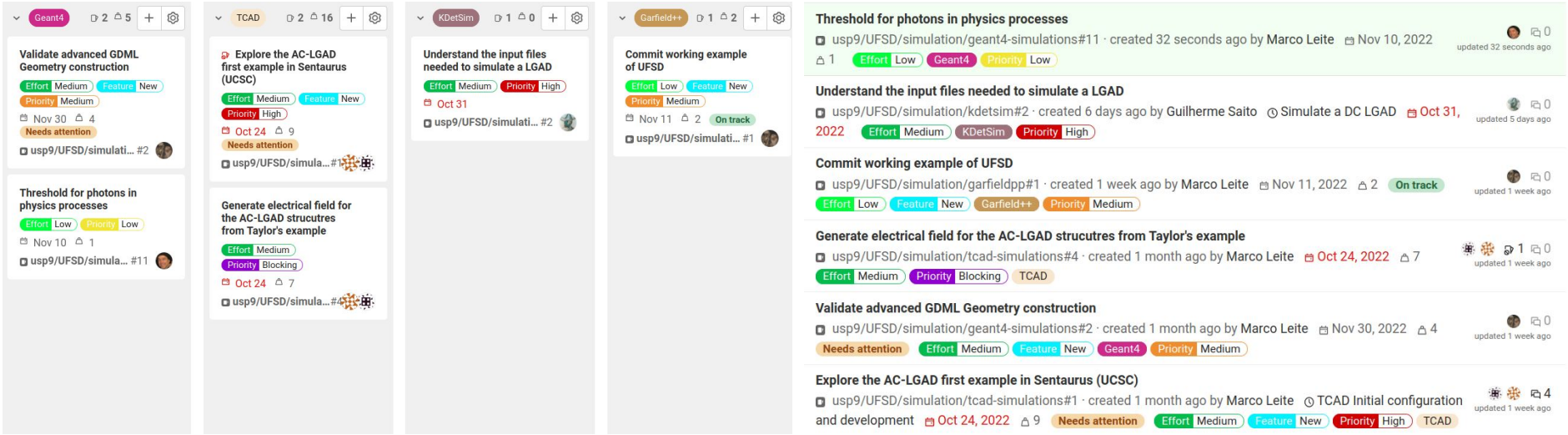
M. Leite, 27/10/2022

02/11/2022, 10:40 Marco Lisboa Leite

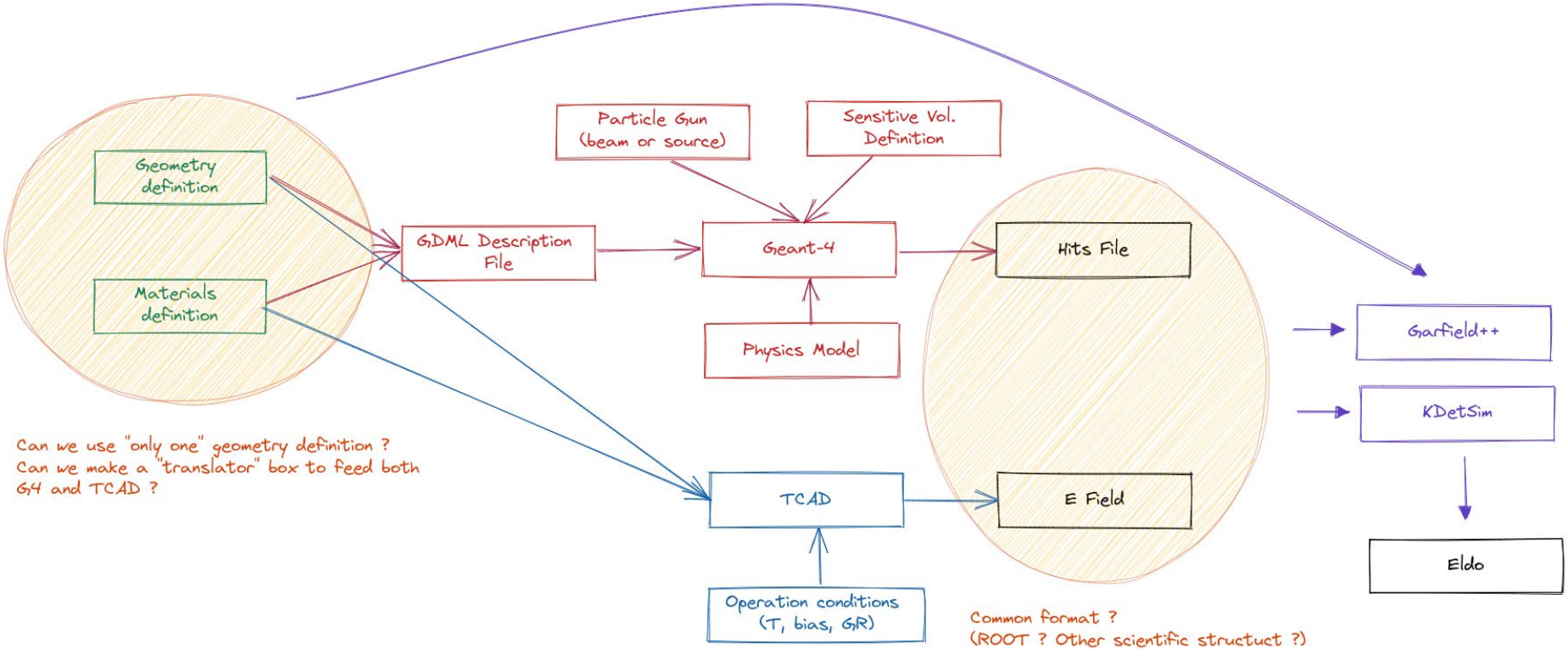
WG 5.2.1 Simulation Phase-I - Gitlab Issues

Project issues in Gitlab as of Today (03/11/2022)

OPEN



WG 5.2.1 Simulation Phase-I - Charge Transport



WG 5.2.1 Simulation Phase-I - Charge Transport

- Would be important to have the E field calculated by TCAD to import to Garfield++ and other ad-hoc simulators
- How far are we from that ??
  - Can we have a file to test ?

4.2.2. Synopsys TCAD

Electric fields calculated using the device simulation program Synopsys Sentaurus [46] can be imported with the classes `ComponentTcad2d` and `ComponentTcad3d` (derived from the base class `ComponentTcadBase`).

The function to import the field map is

```
bool Initialise(const std::string& gridfilename,
                const std::string& datafilename);
```

gridfilename name of the mesh file, the extension is typically `.grd`

datafilename name of the file containing the nodal solution; the filename typically typically ends with `_des.dat`

Both files have to be exported in DF-ISE format, files in the default TDR format cannot be read. To convert a TDR file to `_.dat` and `.grd` files, the Sentaurus tool `tdx` can be used

```
tdx -dd fieldToConvert.tdr
```