WG 5.2.1 Meeting
Simulation - Phase-I

October 27th 2022

Marco Leite (USP)

WG 5.2.1 Simulation Phase-I

Minutes from Oct. 20th. 2022 meeting

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

Hide

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 example
- Plan is to presetn first results at meeting with UCSC
- Check the option to save the E field to export to the signal simulation

Geant 4 SImulation (M. Moralles)

- M, Moralles will work on the version to save the data as root file
- We will need position and momentum of the electrons in the medium

Action Items :

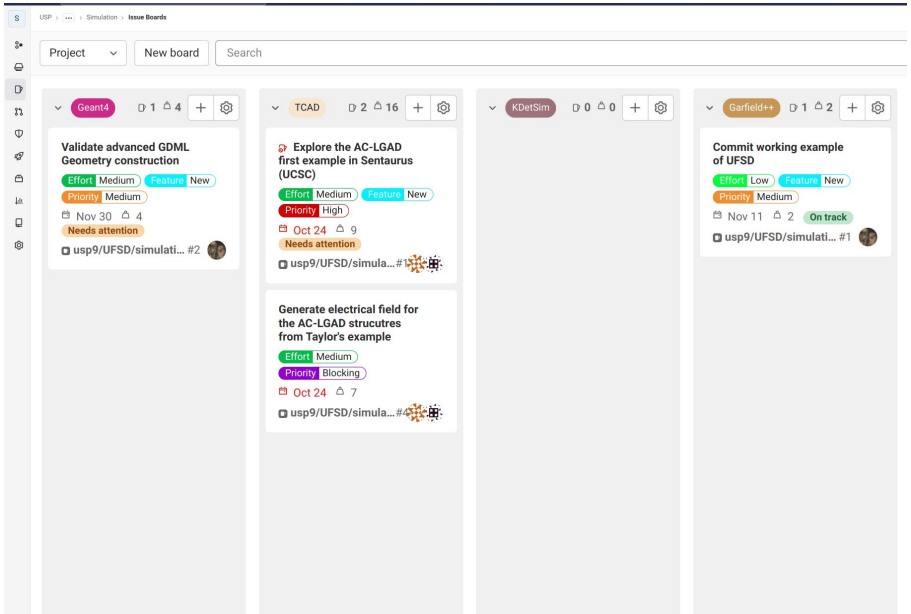
- TCAD SImulation :
  - Priority is to get some results
  - Will aim for next meeting, discuss offline if needed
- Geant4 Simulation :
  - Data persistence as ROOT file
  - Upload code to Gitlab

M. Leite, 20/10/2022

25/10/2022, 16:54 Marco Lisboa Leite

WG 5.2.1 Simulation Phase-I - Gitlab Issues

Project issues in Gitlab as of Today (27/10/2022)



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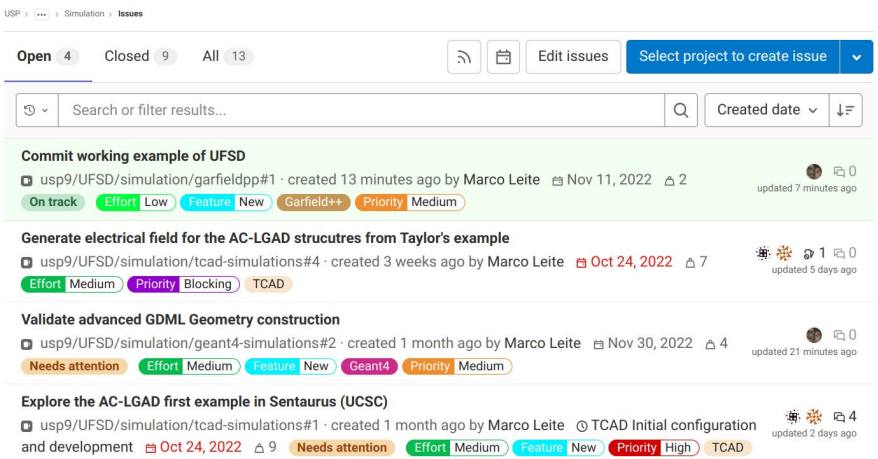
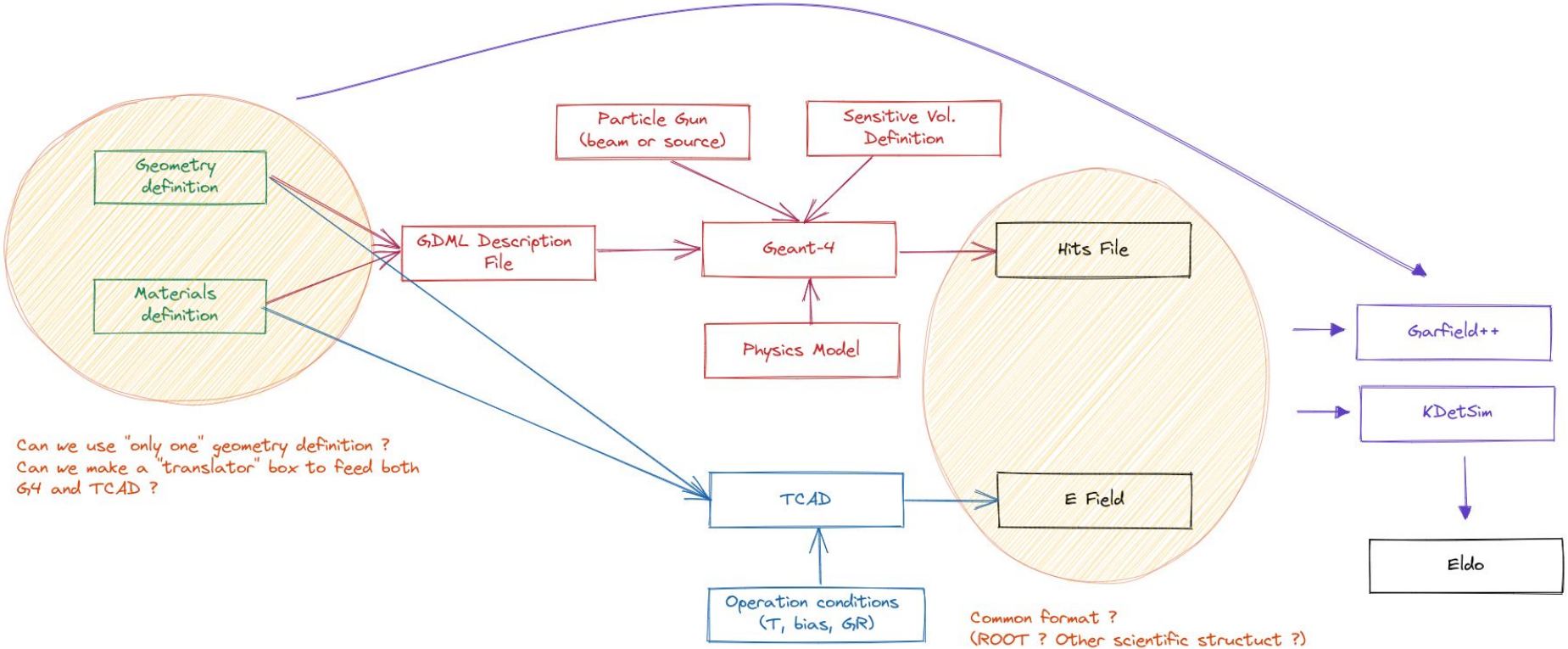


WG 5.2.1 Simulation Phase-I - Charge Transport



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
```