



# Introduction - Discussion

---

Evangelos – Leonidas Gkougkousis

CERN



Geneva – December 2<sup>nd</sup>, 2020

# • TCAD Discussion

## Versions and location

Current Available versions:

- Q-2019.12 (current version) → locally installed in group machine (l1l1hcbpr6)
- L-2016.03-SP2 → /afs/cern.ch/project/mic/intern/cad/soft14/EP/syn
- I-2013.12 (CLIC version) → /afs/cern.ch/eng/clic/software/Sentaurus (Removed??)
- G-2012.06 (personal version) → Not available at afs, should be transferred ?

Why different versions necessary?

- Failure deprecation: sprocess (process simulations) → **ligament flow** (graphical process tool) removed
- Multi scenario processing using parameters with **Sentaurus Workbench** → **ligament layout** (process simulation from gds) removed
- Different Calibration libraries by each version → Optimizer tool deprecated
- Compatibility and crosschecks → Differences in obtained profiles
- Problems visualizing 3D geometries through ssh in latest version → Xlib: extension "MIT-SHM" missing on display "localhost:11.0".

Software fails to recognize correctly remote access and enables direct memory access for graphical visualization

**Create a centralized afs repository with several versions installed?**

# • TCAD Discussion

## Resources and installation

Create a specific Twiki (CERN Users access only)

- Initial installation and running instructions
- Resources (Tutorials, manuals and exercises)
- Accessible to [eda-europractice-synopsys-users](#) mail-group ?

→ <https://lbtwiki.cern.ch/bin/view/VELO/TCAD>

→ Synopsys yearly TCAD Workshop, Paris 2016 Workshop....

Jakob & Heinrich

**Keep and expand existing LhCb Twiki? Merge with others is available?**

Dedicated pool of simulation machines

- Each group uses dedicated purpose built machines
- No centralized support
- No scalability



*Get IT on board and create a pool of dedicated machines:*

- Provide installation & maintenance
- High memory machine, melded for 3D simulations
- Low core count but high individual core speed
- Sever type processors (no multimedia instructions)
- Guaranteed upgradability

**Do we push forward for centralized infrastructure? How will this work budget-wise?**

Dedicated TCAD workspace

- 3D simulations with reasonable mesh extend at several GB (50MB per file for FE-i4 3D structure process per file)
- NDA consideration with some processes (CMOS, process simulations)

**Create dedicated afs worksgroup space with shared quote and access only to CERN TCAD members?**