

T2.1 Access requested or available?

SeisSol	SPEC FEM3D	ExaHyPE	Tandem	xSHELLS	HySEA
Leo-Boost	Leo-Boost	Leo-Boost	LUMI-G	VEGA-G	Leo-Boost
Fall3D	Open PDAC	LaMEM	pTatin3D	ELMER/ ICE	
Leo-Boost	LUMI-C	LUMI-C	LUMI-C/G	LUMI-C	

- If not done so yet, get access to LUMI or Leo **ASAP**.



T2.1 Status of audits

So far 3 codes have started auditing

- Xshells:
 - JG installing tools. Issues with EasyBuild environment
- Elmer:
 - Traces recorded. OK(ish)
 - JG analysing data
- LaMEM:
 - installing tools and instrumenting code



T2.1 Status of audits

For the remaining codes owners:

- “Kick-off” video-conf with JG (30-60 min).

Register at:

<https://terminplaner6.dfn.de/de/p/coa9087466d20dae04a296c72a529cc3-403733>

- Instructions on installing tools & instrumenting codes

<https://saco.csic.es/index.php/s/5paFC4EyEfeKy7w?path=%2FWP2%2FWP2.1>

- (Lumi is there, Leonardo will be done ASAP)



T2.1 Data for deliverable

- ◎ Short description of code and use-case
- ◎ Unique identifier for code version of audit
- ◎ Unique identifier for use-case
- ◎ Strong or weak scaling?
- ◎ System + partition (e.g. LUMI-C, Leo-Boost)
- ◎ Scaling curve for use-case (execution time or application specific performance metric)
- ◎ JG: POP metrics



T2.1 Code Audits – next steps

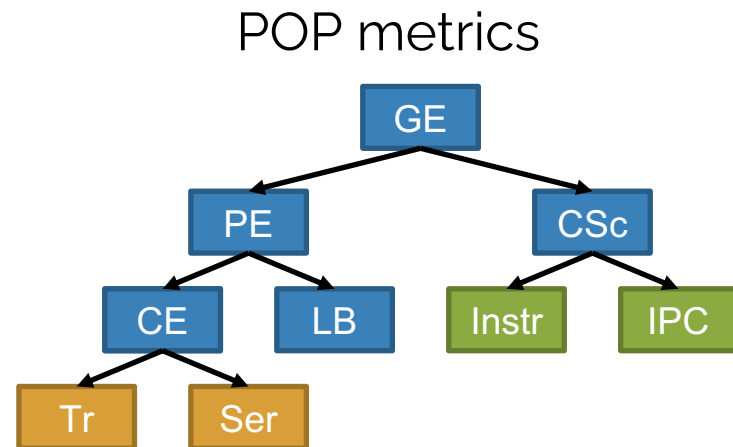
- **Code owners** request development access and build code
- **HLRS / BSC** instructions for installing tools and instrumenting codes
- **Code owners** “book” kick-off videoconf with JG
- **Code owners** obtain profiles with mpiP
- **HLRS / BSC** initial POP metrics from profiles
- **Code owners** obtain full traces with Extrae
- **HLRS / BSC** do initial audit; first-come first-served





T2.1 Light-weight profiling vs full tracing

- Light-weight profiling can give MPI-time and computation scalability
- Blaming MPI-time to actual MPI transfers vs MPI comm patterns (serialization) requires full tracing
- Blaming computation scalability to in instructions or IPC/cache requires hardware counters



T2.1 Light-weight profiling vs full traces

Light-weight tools:

- mpiP: MPI+OpenMP
- Talp: MPI; OpenMP soon
- perf: hardware counters
- None will give computation on GPUs

Tracing tools:

- Extrae + Paraver
- Score-P + Scalasca

Support:

- MPI, CUDA, OpenMP/ACC, OpenCL
- hardware counters

