

T2.1 Access to systems

- HLRS/BSC have applied for benchmark access to install and test tools on all systems
 - Vega, Karolina, and LUMI
 - applied for extension until end of October
- Code owners should apply for ~~benchmark~~**development** access as soon as possible through PRACERI website
<https://pracecalls.eu/>
- Next cut-off date is August 1st



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	LUMI-C	

- Tandem, OpenPDAC, LaMEM, and pTatin3D need to apply for access to LUMI **ASAP**.



T2.1 Status of audits

Only 2 codes are ready for auditing

- Xshells:

- JG installing tools. Issues with EasyBuild environment

- Elmer:

- Tools installed
 - First performance data for mpiP and extrae for testcase
 - some load-imbalance LB=83%
 - MPI comm start getting worse at 1024 ranks
 - good computational scalability



T2.1 Code Audits – next steps

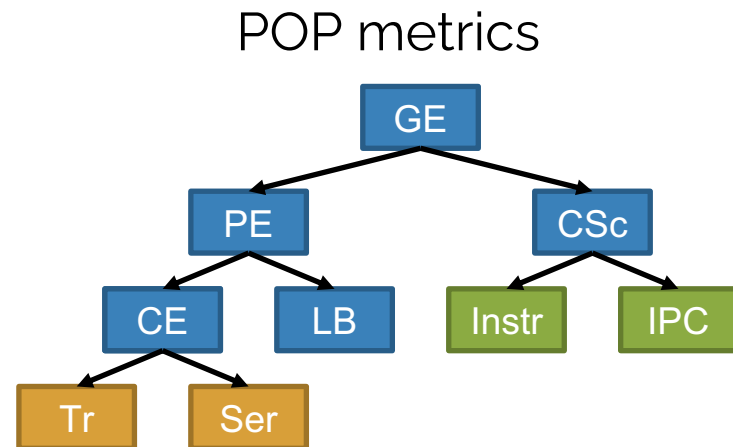
- **HLRS / BSC** install tools on EuroHPC systems
- **Code owners** request development access and build code
- **HLRS / BSC** organize small internal workshop on instrumenting codes with tools
- **Code owners** obtain profiles with light-weight tools
- **HLRS / BSC** initial POP metrics from profiles
- **Code owners** obtain full traces
- **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

