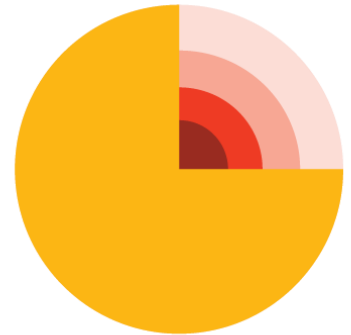


WP2 & WP3: mini-apps and short time goals

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ChEESE-2P



WP2 Overview

Task	Task name	Start	End	Lead
Task 2.1	Code audits	3 (27)	15 (36)	HLRS
Task 2.2	Increasing the performance portability of flagship codes for different accelerators	1	48	CIN
Task 2.3	Optimisation for exascale	6	48	CIN
Task 2.4	Continuous Performance Efficiency Monitoring	18	48	BSC

Role of mini-apps in WP2:

- ❑ Used in T2.2 to **verify and increase performance portability** of flagship codes.
- ❑ Starting point for **development of experimental versions targeting multiple accelerator** backends (eg. OpenACC, OpenMP Target, Kokkos, SYCL, ...).



WP3 Overview

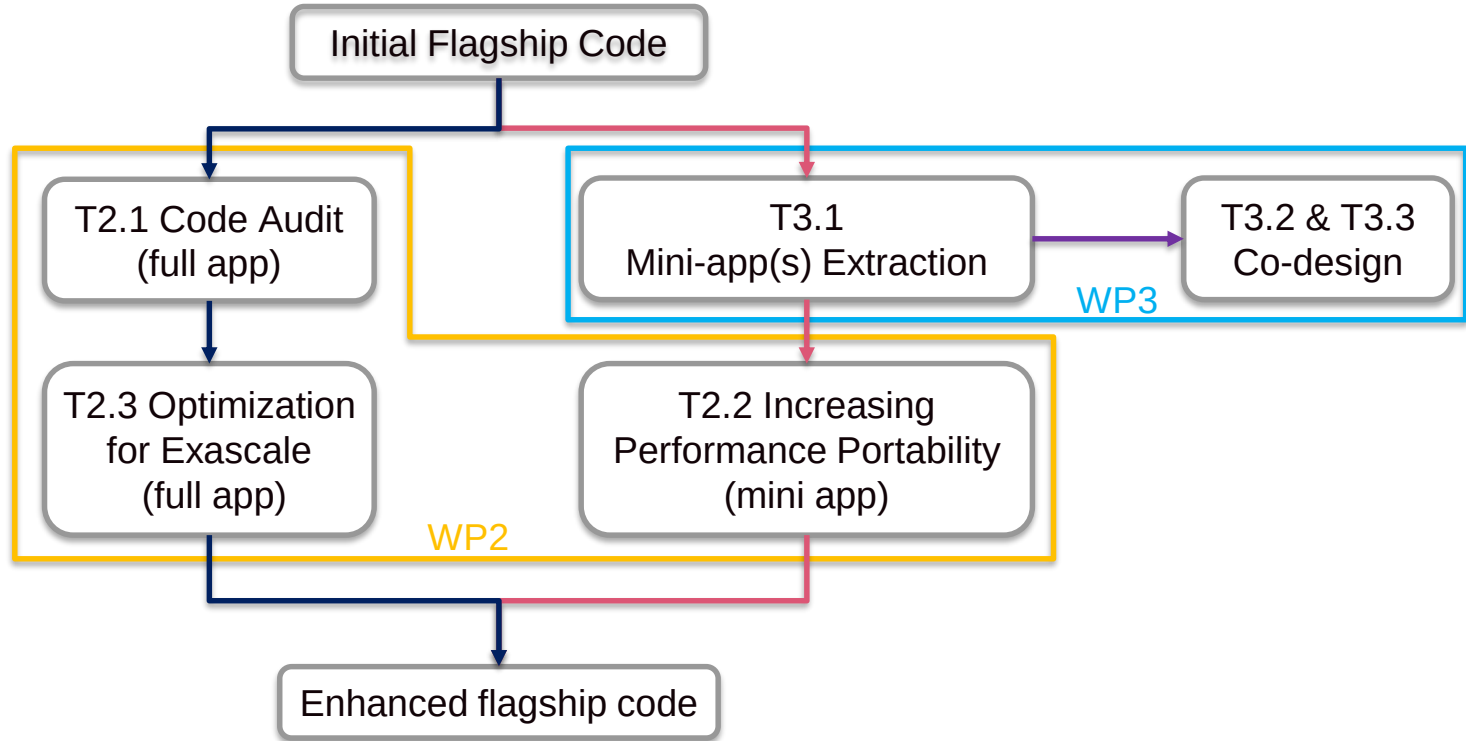
Task	Task name	Start	End	Lead
Task 3.1	Preparation of mini-apps	6	18	CIN
Task 3.2	OpenSequana prototypes (EUPEX)	12	42	BA
Task 3.3	RISC-V prototypes, the European Processor Initiative (EPI) and EUPILOT	19	42	BSC

Role on mini-apps in WP3:

- ❑ Used in T3.2 for **co-design of EUPEX** prototypes (ARM CPU + GPU tbd).
- ❑ Used in T3.3 for **co-design of EUPILOT** prototypes (CPU + RISC-V Accelerators).
- ❑ No development, but some tuning for co-design architectures may be required.



WP2-WP3 Joint Overview



Requirements for mini-apps

A few requirements to make mini-apps more useful:

- ❑ Readily available and **accessible**.
 - Ideally kept in a separate repo or dedicated branch from full code.
- ❑ Provide a few **minimal input** configurations for running.
- ❑ Provide tools to **validate results** and outputs.
 - E.g., validation tests, «verified» output files for diffing, in-code checks, etc...
- ❑ Needs to **target accelerators** (excluding CPU only codes) for T2.2.
 - Provide GPU version, or both CPU and GPU versions of the mini-app

Non-requirement:

- ❑ Audit and mini-app extraction do **not** need to be performed on same code version.
 - E.g., mini-app based on GPU version, audit uses CPU only version



Mini-apps Situation (updated 18/07)

Code	Required for	Availability	N. of Mini-apps	Notes
SeisSol	T2.2 + T3.1	ChEESE-1	-	
SPECFEM3D	T2.2 + T3.1	ChEESE-1	-	
ExaHyPe	T2.2 (?)	TBD	-	
Tandem	T2.2 + T3.1	TBD	-	
xSHELLS	T2.2 + T3.1	Available	1	SYCL
HySEA	T2.2 + T3.1	Available	2	CUDA, SYCL
FALL3D	T2.2 + T3.1	ChEESE-1	1	OpenACC
OpenPDAC	T2.2	Planned	-	
LaMEM	T2.2	TBD	-	
pTatin3D	T2.2 + T3.1	Planned	-	
ELMER/ICE	T2.2	TBD	-	

Short-term Objectives

Status of WP2 at M7 end:

- ❑ T2.1 code audit ongoing
- ❑ T2.2 ongoing assessment of mini-app status and workplans' definition

Things to be completed with higher priority:

- ❑ Finalize assessment of mini-apps status
- ❑ Complete initial workplan definition for each code
- ❑ Verify availability of hardware platforms

Things scheduled to start in M8/M9:

- ❑ WP3 Workshop on kernel extraction (relevant for T3.1 and T2.2)
- ❑ Mini-app preparation (for T3.1 and T2.2)
 - make mini-apps conformant to requirements proposed (and any other from WP3)
- ❑ «Hands-on» experimentation with mini-apps

