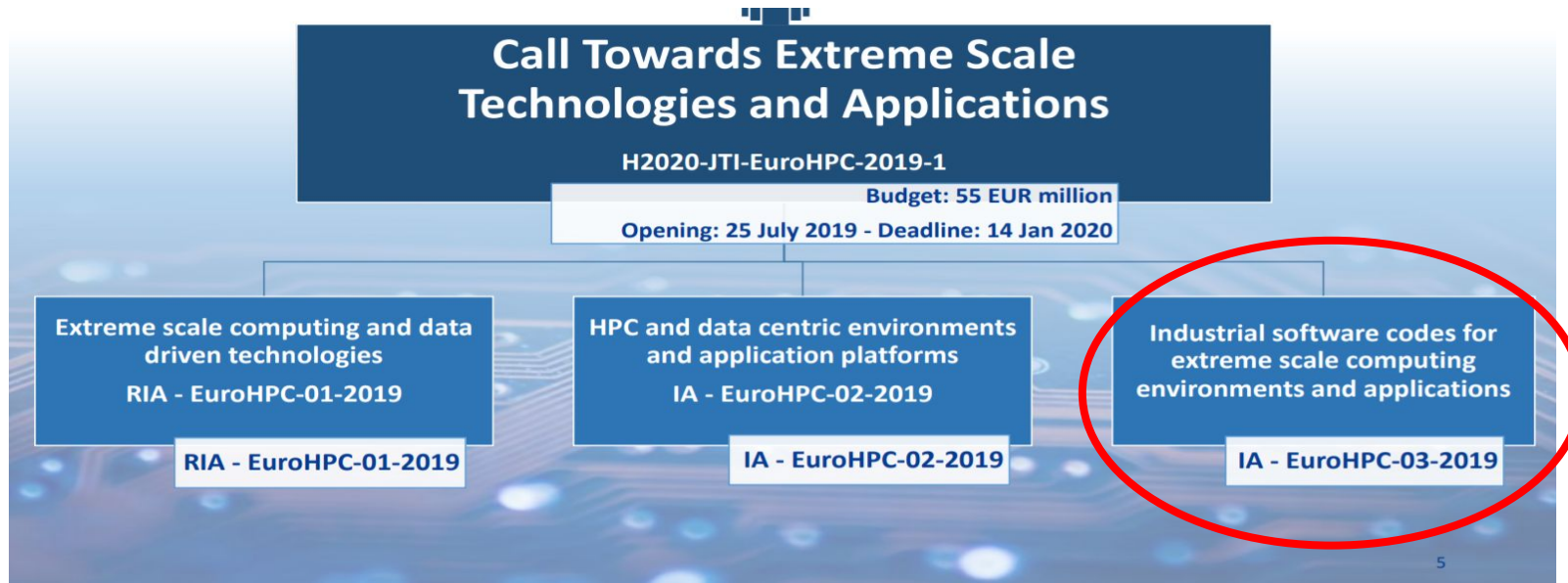


What is exaFOAM?

It is a **Consortium** consisting of a well-balanced group of experts to work on the **co-design** of **OpenFOAM** targeting (pre)-exascale HPC architectures.

Successful bid in the [EuroHPC-03-2019](#) call: Industrial software codes for extreme scale computing environments and applications



- To enable the OpenFOAM Community ***to exploit efficiently and thoroughly the current and evolving HPC hardware and middleware***
- To seek ***synergies with expert open-source centres of knowledge***, including the use of novel mathematical methods and algorithms.

Scope

- To improve ***industrial software and codes*** based on **OpenFOAM technology** for industrial users to fully exploit the new capabilities of extreme performance HPC environments
- ***Novel algorithms***, efficiency, scalability, refactoring, porting and optimisation to novel HPC hardware and software architectures of increased performance

Management and Coordination (WP1) Application for HPC Resources

Improved Algorithms/ Development Activities

Refactoring (WP3)

- Load Balancing
- Data Structure
- Vectorization
- Code restructure
- Porting to accelerators
- ...

Evolutionary (WP4)

- High parallel solvers
- Parallel I/O
- External Linear Algebra Solver
- Load Balancing
- Porting to accelerators
-

Co-Design, Profiling and Performance (WP5)

Integration (WP6)

Into open-source, industry-capable, HPC-ready CFD codes

Validation and Assessment (WP2)

- Micro benchmark cases
- Industrial Application challenges
 - Aero
 - Combustion
 - Marine
 -
- HPC grand challenges
 - HiFi Turb
 -

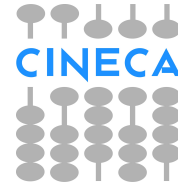
Increasing CPU Cost

Project Output/Impact (WP7)

- Release of HPC-ready CFD code (open-source)
- Test case repository
- Best Practice Guides (BPG)
- Dissemination:
 - Workshop
 - Publication
 - Social Media
 - ...



12 Partners from 7 European countries
+ Stakeholders & Supporters



1. ESI Group (France) **Principal Investigator**
2. CINECA Consorzio InterUniversitario (Italy)
3. E4 Computer Engineering SpA (Italy)
4. Politecnico di Milano (Italy)
5. University of Zagreb (Croatia)
6. Technische Universitaet Darmstadt (Germany)
7. Wikki (Germany)
8. Upstream CFD (Germany)
9. Universitaet Stuttgart, HLRS (Germany)
10. Barcelona Supercomputing Center, BSC (Spain)
11. National Technical University of Athens, NTUA (Greece)
12. University of Minho (Portugal)



TECHNISCHE
UNIVERSITÄT
DARMSTADT



Universidade do Minho



Supporters and Stakeholders

Supporter: letter of support during the proposal phase



LOGOPLASTE
INNOVATIONLAB

Stakeholder: with resources commitment and/or test case challenges provided



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SIEMENS
ENERGY



Budget and Timetable

- Estimated Budget: € 5.425.618
 - Contribution from the EuroHPC JU (Joint Undertaking) of € 2.4 million, matched by the Participating States with a similar amount
- Timetable:
 - Starting date: April 1st, 2021
 - End date: March 31st, 2024
 - Duration: 36 Months

A screenshot of the European Commission's funding page. The header includes the European Commission logo, the text "Funding & tender opportunities", and "Single Electronic Data Interchange Area (SEDIA)". There are buttons for "Register" and "Login", and a language selector for "English EN". The main content area has a blue background and displays the following information:

Jul 25, 2019

Industrial software codes for extreme scale computing environments and applications

ID: EuroHPC-03-2019

Type of action:

- EuroHPC-IA EuroHPC-IA

Deadline Model : single-stage Opening: 25 July 2019 Deadline: 14 January 2020 17:00:00 Brussels time

Open