Innovationsfonden

EuroHPC Joint Undertaking

EuroHPC 2019

Call deadline: XX January 2020

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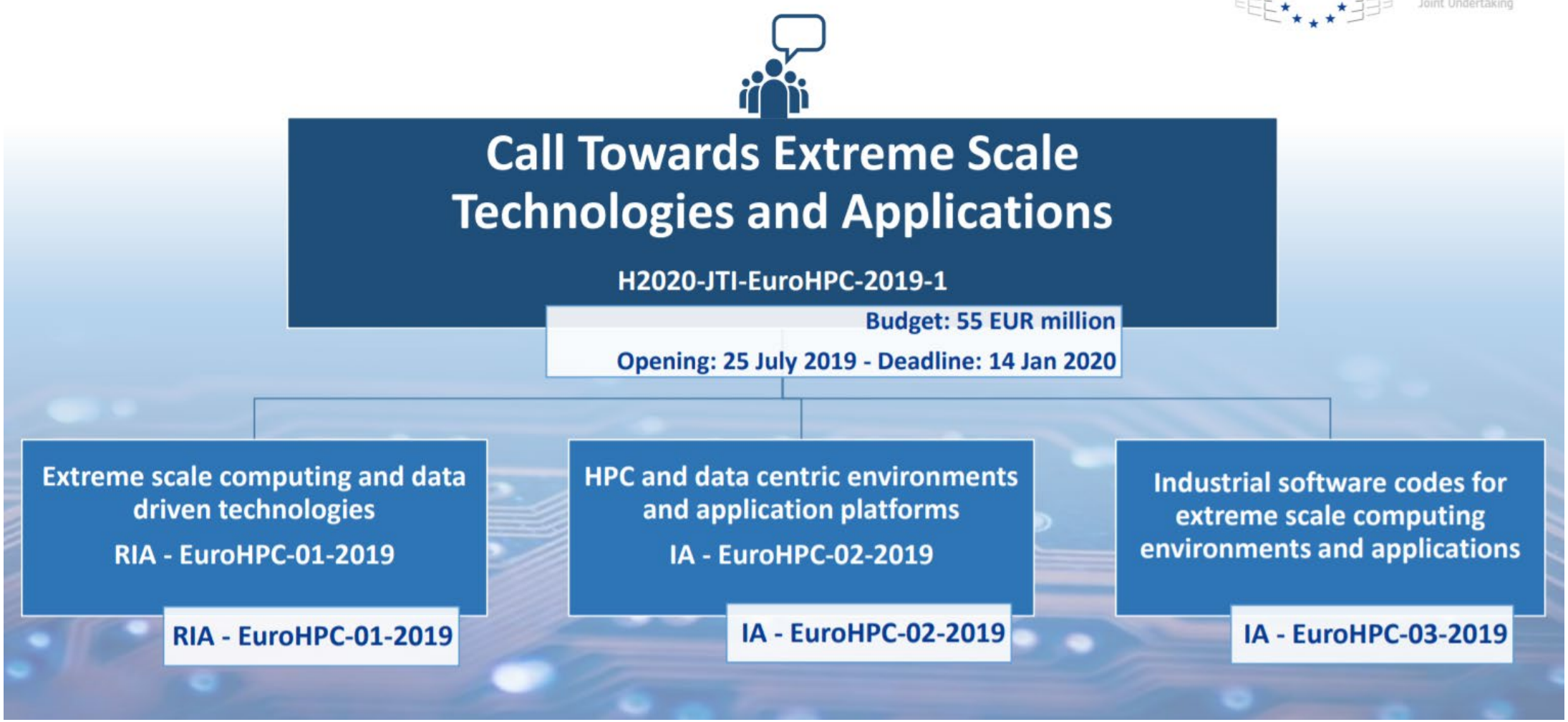
EuroHPC
Joint Undertaking



Conditions of the Call

Call	Budgets (EUR million)	Duration Projects	Opening	Deadline	Min JU contribution (EUR million)
EuroHPC-01-2019 (RIA)	55	3 years	25 July 2019	12 January 2020	20
EuroHPC-02-2019 (IA)					16
EuroHPC-03-2019 (IA)					8

- **Information on the outcome of the evaluation**: Maximum 5 months from the final date for submission
- **Indicative date for the signing of grant agreements**: Maximum 8 months from the final date for submission.
- **Eligibility and admissibility conditions**: The conditions are described in General Annexes B and C of the Horizon 2020 Work Programme 2018-2020 .
- **Evaluation criteria, scoring and threshold**: The criteria, scoring and threshold are described in General Annex H of the Horizon 2020 Work Programme 2018-2020.
- **Evaluation Procedure**: The procedure for setting a priority order for proposals with the same score is given in General Annex H of the Horizon 2020 Work Programme 2018-2020.

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Innovation Fund Denmarks presentation of EuroHPC

Generel rules for EuroHPC

- **General Mission:** *To establish integrated world-class cupercomputing & data infrastructure and support a highly competitive and innovative HPC and Big Data ecosystem.*

- **EuroHPC 01 (RIA):** Extreme Scale Technologies and Applications
- **EuroHPC 02 (IA):** HPC and data driven software environment and application oriented platforms
- **EuroHPC 03 (IA):** Industrial software codes for extreme scale computing environments and applications

- NB: Participants are encouraged to include a security self-assessment identifying any security issues and detailing how those issues will be addressed in order to comply with the relevant national and Union laws.

Key info for all three calls:

- EU Co-finance for all three calls €55 mio.
- Expected duration of each projects 3 years
- Evaluation max. 5 months
- Signing of grant agreement max. 8. months

Deadline for application: 14. January 2020

Read more here:
https://eurohpc-ju.europa.eu/documents.html

EuroHPC 01 (RIA): Extreme Scale Technologies and Applications

- **Budget**
- Minimum EU cofunding to the call: €20 mio.
- Expected total cost per project €5
- EU cofunding rate: 50% of eligible costs

- **Specific challenge:** *To develop world-class extreme scale, and energy-efficient high Performance Computing and data driven technologies.*

- *A co-design approach should be followed covering from application to the hardware, from reseach to industry.*

Subtopics

One or more of 5 subtopics must be addressed:

a. Technologies to increse sustained applications performance at node and system level, improve energy efficiency and open new usage domains.

b. Technologies to manage data volumes generated and consumed

c. Networking capabilities allowing low lateney and high bandwidth communication

d. Programming models, associated run-time systems, system software and compilers

e. New mathematical methods and algorithms

Impact must among others strengthening European scientific leadership, competitiveness and the innovation potential for European industry

EuroHPC 02 (IA): HPC and data driven software environment and application oriented platforms

- **Budget**
- Minimum EU cofunding to the call: €16 mio.
- Expected total cost per project €8
- EU cofunding rate: 35% for industry and 50% for research organisations of the eligible costs

- **Specific challenge:** *to support the development of HPC and data driven HPC software environment and application oriented platforms to generate innovation and value creation i sectors of societal and industrial relevance for Europe.*

- *The use of HPC solutions to generate innovation and value creation should be clearly demonstrated and aimed at providing secure and simple access for relevant stakeholders*

Expected Impact:

- The project must demonstrate relevance of the main target sector for European industry or society and ensore european autonomy within the Digital Single Market
- It must further demonstrate innovation and productivity in the main target sector
- Widening the use of and facilitating the access to advanced HPC, big data and cloud infrastructure.

EuroHPC 03 (IA): Industrial software codes for extreme scale computiong environments and applications

- **Budget**
- Minimum EU cofunding to the call: €8 mio.
- Expected total public funding per project EU €2 mio. + Memberstates €2 mio.
- EU cofunding rate: 35% for industry and 50% for research organisations of the eligible costs

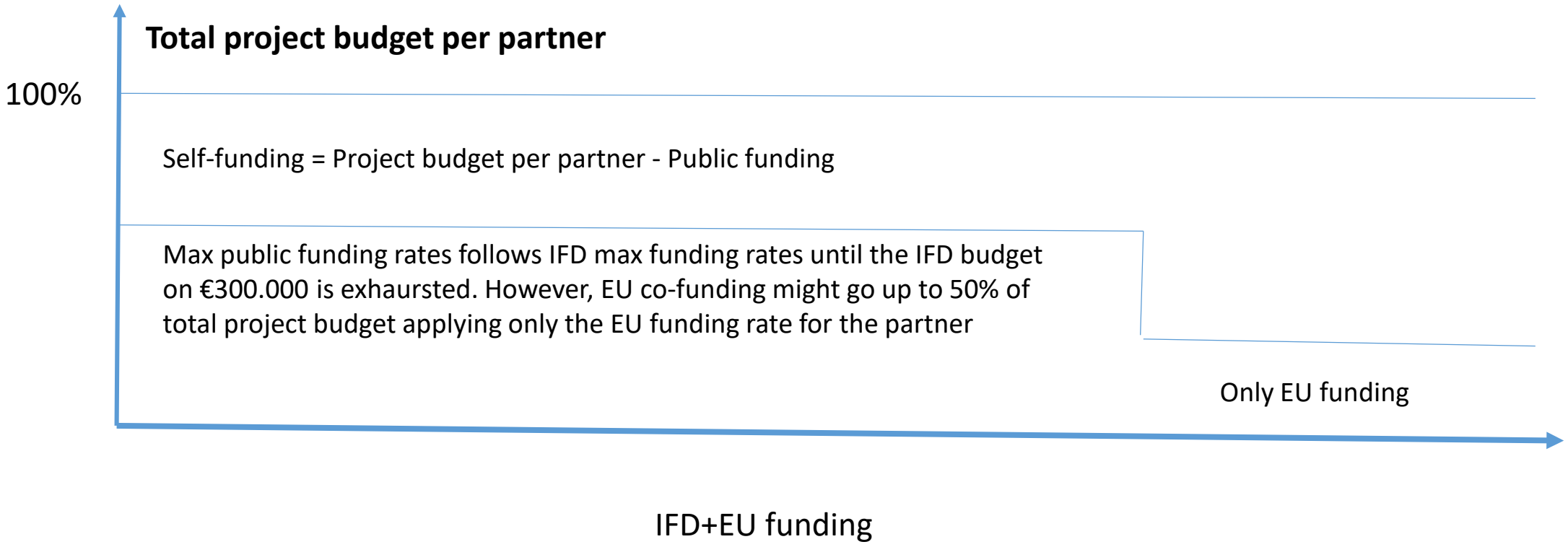
- **Specific challenge:** *To eficiently enable the industrial applications fully expoit the envolving HPC hardware and software landscape and seek synergies with ope-source components including the use of novel mathematical methods and algorithms.*

- **Scope:** *Proposals should clearly identify the target software and codes to be improved. These software and codes should be used in areas of significant demonstrable market impact, where Europe is leader or should achieve leadership and create value in Europe.*

Expected Impact:

- Achieving European leadership in the areas of target software and codes – and create value in Europe
- Enabling more competitive and innovative European industry including SMEs.
- Significantly improvements in the target software and codes, in terms of e.g. efficiency, scalability, refactoring, adaptation to new software engineering and progamming environments and tools.
- Greatly accelerate the time to market for produts and services

Total funding for Danish partners
IFD Max budget €300.000 + EU max 50% of project cost



EU and IFD co-funding to Danish participants

	Large industry	Medium enterprises (50-249 FTE)	Small enterprises (1-49 FTE)	Research organisations (GTS)	Universities	Accepted Other costs (overhead)
Max EU rates for EuroHPC projects						
EuroHPC 01 RIA	50%	50%	50%	50%	50%	All: 25%
EuroHPC 02 & 03 IA	35%	35%	35%	50%	50%	All: 25%
IFD rates for international projects incl. EuroHPC funding, Max funding per partner €300.000						
Experimental development (IA)*	35% (0%+35%)	35% (0%+35%)	35% (0%+35%)	60% (10%+50%)	90% (40%+50%)	EU (all): 25% IFD+EU (uni): 44%
Industrial Research (RIA)	65% (15%+50%)	75% (25%+50%)	75% (25%+50%)	60% (10%+50%)	90% (40%+50%)	EU (all): 25% IFD+EU (uni): 44%

*IFD funding might be synchronised with the national Grand Solutions funding rates for enterprises

IFD funding rates and rules for Danish participants

1) Budget and funding rules

- IFD budget €1 mio.
- Max funding per DK partner €300.000
- Max funding to all DK partners if more than two DK partners in the project: €500.000
- Funding rates from both EU and IFD follows the max funding rates as determined in IFDs General rules and Guidelines for International Projects.
- At least one of the DK partners must be and industrial partner The project must have a clear value adding for Denmark in terms of growth and new workplaces..
- Each Danish participant in an application to the call must no later than 2 weeks after the official call deadline register in e-grant and uploade the application form including project budget.

2) Type or nature of participants (project partners)

- Danish companies: Commercial enterprises registered in Denmark (CVR).
- Research organisations, recognized as such by the Ministry for Higher Education and Research, Higher education institutions, GTS institutes public research institutes, and other public sector organisations.

3) Legal, administrative and financial conditions

- General eligibility criteria and conditions for receiving project funding from IFD will apply (i.e. the beneficiary must be a registered legal entity, have credible capacity to execute the project activities, demonstrate financial viability, and provide transparency as to funding requested or received from other sources).
- Companies must be established with a considerable business activity in Denmark within the scope of the project.
- All project partners must possess relevant capabilities.

4) Other conditions

- Companies (business partners in the project) should provide information on the possible industrial and commercial impact of the project and justify that they have the necessary means to exploit the project results.
- Research organisations should specify national impact in terms of exploitation opportunities for Danish organisations.

Version 14/10/2019

We are expecting an update of budgets and national rules in late September 2019

Financial Commitments of the EuroHPC Participating States for the Work Plan 2019 Research and Innovation Actions

Summary table (Indicative)[2]

	Call topic	
EuroHPC Participating State	EuroHPC-01-2019 (RIA) EuroHPC-02-2019 (IA) EuroHPC-03-2019 (IA)	EuroHPC-04-2019 (RIA)
Austria	1 500 000 €	
Belgium		
Bulgaria		500 000 €
Croatia[3]	0 €	400 000 €
Cyprus		1 000 000 €
Czech Republic	3 000 000 €	1 000 000 €
Denmark	1 000 000 €	1 000 000 €
Estonia[4]	0 €	1 000 000 €
Finland	0 €	1 000 000 €
France	11 000 000 €	
Germany	13 000 000 €	1 000 000 €
Greece	2 500 000 €	900 000 €
Hungary	0 €	750 000 €
Ireland		500 000 €
Italy	23 000 000 €	1 000 000 €
Latvia[5]		500 000 €
Lithuania	0 €	0 €
Luxembourg		
Norway	500 000 €	500 000 €
Poland	2 000 000 €	1 000 000 €
Portugal	900 000 €	1 000 000 €
Romania		
Slovakia		
Slovenia	200 000 €	100 000 €
Spain		
Sweden	1 350 000 €	1 000 000 €
Switzerland	500 000 €	0 €
The Netherlands	0 €	0 €
Turkey	750 000 €	1 000 000 €

EuroHPC’s presentation of the Programme

EuroHPC.01-2019 Challenge

Extreme scale computing and data driven technologies

- Develop world-class extreme scale, and energy-efficient HPC and Data driven technologies, that use software engineering techniques, programming tools and libraries that cna be adapted and retargeted to repidly evolving HPC architectures, In view of maximising application performance and efficiency in next generation supercomputers.
- Actions should allow leveraging the efforts on the European low power processing technologies as well as the Centres of Excellence and build a sustainable exascale NPC ecosystem in europe

EuroHPC.01.2019 SCOPE

Extreme scale computing and data driven technologies

What are we looking for?

- Development of energy-efficient HPC solutions supporting the adoption of applications with industrial and societal relevance for Europe on evolving HPC hardware and system software/programming environments.
- Use of HPC solutions to generate innovation and value creation should be clearly demonstrated and aimed at providing secure and simple access and service provisioning to relevant stakeholders based on such HPC solutions.
- Developments driven by complex application workflows (HPDA, AI & Simulation, Cloud integration) and offer solutions to key application areas including industrial use cases.
- Developments may promote efficient use of platforms and architectures best suited for the targeted use cases and applications (e.g. accelerated platforms).
- The required and available data assets should be clearly described.

EuroHPC.01.2019 SUB-TOPICS

Extreme scale computing and data driven technologies

Sub-Topic	Description	Max JU Contribution
a	Technologies to increase sustained application performance at node and system level, improve energy efficiency and open new usage domains	EUR 4 million
b	Technologies to manage data volumes generated and consumed, to minimize data movement and to increase flexibility to store, manipulate and access extremely large data sets	EUR 4 million
c	Networking capabilities allowing low latency and high bandwidth communication between large numbers of extreme computing and data components	EUR 4 million
d	Programming models, associated run-time systems, system software and compilers	EUR 7.5 million
e	New mathematical methods and algorithms to ensure efficient usability and improve energy efficiency, featuring high robustness and enhanced scalability.	EUR 1.5 million

EuroHPC-01-2019 IMPACT-RIA

Extreme scale computing and data driven technologi

Research and Innovation Actions (RIA)

- Contribution to the realisation of the EuroHPC overall and specific objectives
- Strengthening scientific leadership, competitiveness and innovation potential of European industry, contributing to a sustainable exascale HPC supply ecosystem in Europe and ensuring European technological autonomy in this field
- Leveraging the efforts on the European low power processing technologies (in particular the European Processor Initiative) and contributing to the realisation of future exascale system architectures based on such technologies
- Creation and promotion of European IP
- Maturity of solutions and potential for commercial exploitation in future European exascale HPC systems

EuroHPC-02-2019 Challenge

HPC and data centric environments and application platforms

- Support the development of HPC and data driven HPC software environments and application oriented platforms to…
- …generate innovation and value creation in sectors of societal and industrial relevance for Europe.

EuroHPC-02-2019 Scope

HPC and data centric environments and application platforms

- Development of energy-efficient HPC solutions supporting the adoption of applications with industrial and societal relevance for Europe on evolving HPC hardware and system software/programming environments.
- Use of HPC solutions to generate innovation and value creation should be clearly demonstrated and aimed at providing secure and simple access and service provisioning to relevant stakeholders based on such HPC solutions.
- Developments driven by complex application workflows (HPDA, AI & Simulation, Cloud integration) and offer solutions to key application areas including industrial use cases.
- Developments may promote efficient use of platforms and architectures best suited for the targeted use cases and applications (e.g. accelerated platforms).
- The required and available data assets should be clearly described.

EuroHPC-02-2019 Impact

HPC and data centric environments and application platforms

Innovation Actions – (IA)

- Contribution to the realisation of the EuroHPC overall and specific objectives
- Demonstrated relevance of the main target sector for European industry or society and in ensuring European technological autonomy in this field and in the Digital Single Market
- Demonstrated innovation and productivity enhancement in the main target sector
- Effective integration of HPC technologies in the main target sector with measurable end-user metrics such as accessibility, scalability, performance, energy efficiency, reliability, and cost
- Widening the use of and facilitating the access to advanced HPC, big data and cloud infrastructuresstimulating the emergence of the data economy in Europe

EuroHPC-03-2019 Challenge

Industrial software codes for extreme scale computing environments and applications

- To efficiently enable the industrial applications fully exploit the evolving HPC hardware and software landscape
- Seek synergies with open-source components, including the use of novel mathematical methods and algorithms.

EuroHPC-03-2019 Scope

Industrial software codes for extreme scale computing environments and applications

What are we looking for?

- To improve industrial software and codes 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
- Proposals should clearly identify the target software and codes to be improved. These software and codes should be used in areas of significant demonstrable market impact, where Europe is leader or should achieve leadership.
- Contribution from the JU of up to EUR 2 million, matched by the Participating States with a similar amount.

EuroHPC-03-2019 IMPACT

Industrial software codes for extreme scale computing environments and applications

Innovation Action

- Contribution to the realisationof the EuroHPC overall and specific objectives
- Achieving European leadership in the areas of application of the target software and codes and creating value in Europe
- Enabling a demonstrably more competitive and innovative European industry, including SMEs, and maximising market impact of the project's results
- Significant improvements in the target software and codes, e.g. efficiency, scalability, refactoring, adaptation to new software engineering and programming environments and tools, and optimisation for novel HPC hardware and system software
- Accelerate the time to market products & services based on HPC codes & software
- Support a sustainable industrial HPC software capability in Europe