EuroHPC JOINT UNDERTAKING

DECISION OF THE GOVERNING BOARD OF THE EuroHPC JOINT UNDERTAKING No 04/2021

Adopting the launch of the call H2020-JTI-EuroHPC-2020-03:

Training and Education on High Performance Computing

THE GOVERNING BOARD OF THE EuroHPC JOINT UNDERTAKING,

Having regard to Council Regulation (EU) 2018/1488 of 28 September 2018 establishing the European High Performance Computing (EuroHPC) Joint Undertaking (hereinafter "Regulation")[1],

Having regard to the Statutes the EuroHPC Joint Undertaking annexed to the Regulation (thereinafter "Statutes") and in particular to Articles 1(o), 7 (4) (b), 7 (5) (b) and 18 of thereof,

Having regard to the Governing Board Decision No 03/2021 of 05 March 2021 adopting the amended EuroHPC Joint Undertaking Work Plan for the year 2021,

WHEREAS

(1) The amended annual Work Plan of the EuroHPC Joint Undertaking for the year 2021, has been adopted by the Governing Board by its Decision No 03/2021 of 05 March 2021.

(2) The Governing Board should approve the launch of Calls for Proposals, in accordance with the annual work plan.

(3) The Executive Director of the EuroHPC Joint Undertaking should manage the calls for proposals as provided for in the annual work plan and administer the grant agreements and decisions;

[1] OJ L 252, 08.10.2018, p. 1-34

HAS ADOPTED THIS DECISION:

Article 1

The Governing Board hereby approves the launch of Calls for Proposals H2020-JTI-EuroHPC-2020-03 (CSA), in accordance with the annual Work Plan of the EuroHPC Joint Undertaking for the year 2021, as amended by Governing Board Decision No 03/2021 of 05 March 2021.

Article 2

The Executive Director of the EuroHPC Joint Undertaking is hereby instructed to launch the EuroHPC call for proposals H2020-JTI-EuroHPC-2020-03 (CSA), further to the adoption of and in accordance with the annual Work Plan of the EuroHPC Joint Undertaking for the year 2021, as amended by Governing Board Decision No 03/2021 of 05 March 2021.

The Call for Proposals shall be published at least:

- on the website of the EuroHPC Joint Undertaking;
- on the H2020 single portal for participants (Funding and Tenders Opportunity Portal).

Article 4

This Decision shall enter into force on the date of its adoption

Done at Luxembourg, on 05 March 2021.

For the Governing Board

[signed]

Herbert Zeisel

The Chair

Annex: Call text and conditions for the call ‘Training and Education on High Performance Computing’ - H2020-JTI-EuroHPC-2020-03

EuroHPC Joint Undertaking Call for Proposals

Training and Education on High Performance Computing

H2020-JTI-EuroHPC-2020-03

In accordance with the Statutes of the EuroHPC JU annexed to Council Regulation (EU) 2018/1488 and with the Financial Rules of the EuroHPC JU.

The call text will be made publicly available after its adoption by the Governing Board.

CALL H2020-JTI-EUROHPC-2020-03 - TRAINING AND EDUCATION ON HIGH PERFORMANCE COMPUTING

Specific Challenge: Central objective of this call is to develop and implement the pilot(s) of the European Master of Science (MSc) programme(s) for High Performance Computing (HPC). The graduate education programme(s) will focus HPC and HPC-usage. They will demonstrate the added value of a pan-European education programme, committed to academic excellence, that offers students an outstanding career perspective in international companies and research institutes.

HPC is a rapidly accelerating field of research and development with a strong potential for economic growth. HPC, data science, data analytics and the data-economy are becoming increasingly important for many industry and commercial sectors. While basic computer science and programming languages are included in many university curricula, existing education programmes do not meet the demands on modern education adapted to a rapidly developing HPC technology ecosystem. Increased HPC awareness and an HPC-proficient workforce are essential to develop a competitive HPC ecosystem in Europe in the next years. The availability of HPC experts to drive the European digital transformation, such as HPC administrators and architects, HPC proficient data scientists, HPC application developers and expert users, depends on the education of highly skilled and talented graduate students.

The call aims at creating one or more pan-European pilots for the development of a modern HPC-centred education programme to reach scientific and industrial target groups and to serve key actors in the private and public sector.

Scope:

1. European Master (MSc) programme in HPC

Proposals under this action should detail a pilot programme that aims to develop a quality-controlled educational master programme for HPC and industrial applications in HPC of pan-European reach.

The action should support the design and delivery of a master programme of pan-European reach for 50+ students per annual intake, equivalent to 120 ECTS and targeting advanced skills development to widen the scientific and industrial use of HPC applications. Two cohorts of students should complete the pilot programme.

The proposed projects must fulfil the following objectives:

- Educate students able to contribute in areas such as the design, deployment, operation, and/or the use of current and future generation HPC and HPC-related technologies in Europe.
- Educate experts skilled in driving HPC adoption and knowledge transfer in industry and academia in different strategic domains, thereby linking HPC activities in industry and academia.

The proposed master programmes should address all of the following aspects:

- Design the framework and pilot of a two-year European joint master programme and its learning outcomes, and detail how excellence in academic content, teaching and talent development will be achieved and sustained among all partners in the consortium.
- Propose a general curriculum for a master programme on the design of HPC platforms, HPC adoption in industry, expertise in HPC environments and applications using HPC.

- Ensure a modular design of the curriculum, with clear identification of scientific disciplines, industrial applications and HPC usage profiles (designer, developer, administrator, user), that facilitates full or partial adoption of the modules into new or existing MSc programmes.
- Explain how students will be immersed in research activities and educated in European technology and applications throughout the curriculum and according to their specific interests.
- Provide information on the envisaged learning environment and opportunities for personal development and the development of a collaborative and inclusive student community.
- Describe the details of the awarded MSc degree, which academic institutions at pan-European level will award it and in what form (e.g. joint or multiple degrees).
- Define a transparent, effective and competitive selection process for the admission of students, addressing the requirements of European stakeholders.
- Explain how a balanced intake of students regarding geographical origin and underrepresented groups will be achieved.
- Explain which measures will be implemented to ensure that only students who are nationals of EU or Participating States may receive financial benefits by the programme.
- Educate students and provide room for creativity in using leading and emerging European HPC systems and technology as part of the MSc programme.
- Clearly elaborate the benefits of a pan-European MSc programme for students and stakeholders. Ensure excellence to attract talents and partners from the public and private sector.
- Develop and implement an action plan using existing links to industry, entrepreneurship centres, business incubators, academic partners and other European initiatives to support students after graduation in their careers in HPC.
- Promote the programme across Europe and specifically in countries where HPC adoption is low to increase diversity, underrepresented groups participation and to support a broad geographical coverage of applicants.
- Develop substantial content, teaching materials and online courses to complement on-site courses, which should also be provided to a broader community under an open license using a coherent structure and format to support the adoption by other education programmes.
- Explain the mechanisms to share expertise and resources among the consortium.
- Address the requirements and needs of relevant European industry players (supply and user industry). Expectations and commitment of industry partners, e. g. in mentorship programmes, should be described in detail and the added value clearly identified.
- Demonstrate how the requirements of SMEs will be taken into account in the education programme.

The proposed action should deliver a set of lessons learned for the implementation of a pan-European education programme in HPC inspired by the present pilot programme. Moreover, concrete recommendations including a roadmap to achieve a sustainable and successful MSc programme on the basis of the pilot should be provided by the end of the project.

The action should also facilitate mobility and internships for students as a part of HPC master programme.

- Student mobility between European universities, research centres and industry should be designed as a part of the study programme in synergy and coordination with other mobility programmes (Summer of HPC, HPC Europe, Erasmus+ etc.)

to support awareness and collaboration across communities. Proposals should also explain how mobility will be achieved.

- For students pursuing an industry-focussed track of the MSc programme, student internships at industry or at research institutions will be a mandatory part of the study programme curricula. Expected duration of the internships is from 3 to 6 months during the second year of the study. The consortium should implement appropriate measures to ensure a high quality and comprehensive supervision of the students during the internship (clear work plan, personal supervisor, monitoring and on-site visits by coordinator, feedback loop etc.). Costs incurred by entities hosting students during internships are not eligible.

2. Requirements on consortium

The consortium should demonstrate a good mix of excellence in education, research and in HPC technologies and applications, with solid links to the HPC supply and user industry in Europe. Moreover, the participating institutions should demonstrate complementary and well-justified roles in the programme with an outstanding track record in their respective field. The consortium should support inclusivity in Europe and help in creating a level-playing field across Europe, and in particular for those countries currently developing their HPC infrastructure and ecosystem.

As consortium partners following types of institutions are eligible:

- Higher education institutions (HEI) that are able to deliver a curriculum equivalent to 120 ECTS credits and award a master degree diploma (coordinator and main partners)
- Supercomputing centers
- Research institutions focused on HPC
- Other entities eligible for participation in H2020, including private and for-profit companies, are eligible to participate in the action in exceptional and well-justified cases.

Each HEI in the consortium should provide a letter of commitment from the respective legal representative.

The consortium as a whole should provide a clear plan how the availability of state-of-the-art computing resources and emerging technology will be ensured for the activities within the project.

An advisory board consisting of industry and academic representatives must be constituted for the project. Letters of commitment from potential members of the advisory board should be provided as a part of the project proposal.

The EuroHPC JU considers that proposals requesting a contribution from the JU for a duration of up to 4 years would allow this specific challenge to be addressed appropriately. Nevertheless this does not preclude submission and selection of proposals with another duration.

Expected Impact: Proposals should describe how the proposed work will contribute to the impacts listed below:

1. Contribution to the realisation of the EuroHPC JU's overall and specific objectives
2. Establishment of a high quality, internationally competitive MSc programme in HPC across the Union with measurable key performance indicators and addressing requirements and needs of the European industry
3. Improved coordination and increased availability of educational activities on HPC

4. MSc students and graduates connected to industry and more broadly preparing a skilled young future workforce in HPC ready to be employed by the European industry
5. A large number of new specialists, in particular from underrepresented groups, trained in the use of current and future generation HPC and HPC-related technologies and applications in Europe.

Type of Action: Coordination and Support Action

Conditions for the Call - H2020-JTI-EuroHPC-2020-03

Opening date(s), deadline(s), indicative budget(s):

Topics (Type of Action)	Budgets (EUR million)	Deadlines
	2020	
Opening: 17 March 2021		
EuroHPC-2020-03 (Specific Grant Agreement CSA)	7.00	1 July 2021
Overall indicative budget	7.00	

Indicative timetable for evaluation and grant agreement signature:

For single stage procedure:

- Information on the outcome of the evaluation: Maximum 5 months from the final date for submission; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission.

Eligibility and admissibility conditions:

EuroHPC-2020-03	The conditions are described in General Annexes A, B and C of the Horizon 2020 Work Programme 2018-2020.

Evaluation criteria, scoring and threshold:

EuroHPC-2020-03	The criteria, scoring and threshold are described in General Annex H of the Horizon 2020 Work Programme 2018-2020.

Evaluation Procedure:

EuroHPC-2020-03	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.

Grant Conditions:

EuroHPC-2020-03	The funding rate for eligible costs in grants awarded by the JU for this topic will be 100% of the eligible costs.
EuroHPC-2020-03	Grants awarded under this topic will be complementary. The respective options of Article 2, Article 31.6 and Article 41.4 of the EuroHPC JU Model Grant Agreement will be applied.

Consortium agreement:

EuroHPC-2020-03	Members of consortium are required to conclude a consortium agreement, in principle prior to the signature of the grant agreement.