



THE EUROPEAN HIGH PERFORMANCE COMPUTING JOINT UNDERTAKING

ChEESE-2P kick-off meeting – 19/01/2023

Dr. Linda Gesenhues



EuroHPC
Joint Undertaking

WHO ARE WE?

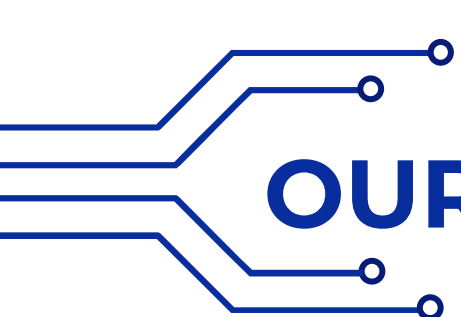
- A legal and funding entity (Art 187 of the Treaty on the Functioning of the European Union -TFEU)
- Created in 2018 and autonomous since September 2020
- Based in Luxembourg (Cloche d'Or district)
- A small team of 25 employees and still in the process of recruiting additional employees





THE EUROHPC JU POOLS THE RESOURCES OF ITS MEMBERS TO:

- » Develop, deploy, extend & maintain in Europe a **world-leading supercomputing, quantum computing, service & data infrastructure** ecosystem;
- » Support the development of **innovative supercomputing components, technologies, knowledge & applications** to underpin a **competitive European supply chain**;
- » Widen the use of **HPC & quantum infrastructures** to a large number of public & private users wherever they are located in Europe and support the development of **key HPC skills** for European science and industry.



OUR MEMBERS

- 32 participating countries
- The European Union
(represented by the European Commission)
- 3 private partners

Each of our members is represented in the EuroHPC JU's Governing Board

The Governing Board also takes advice from the EuroHPC Industrial and Scientific Advisory Board (INFRAG & RIAG)



LEVEL AND SOURCES OF EU FUNDING 2021-2027

Digital Europe Program
1.98B Eur

Infrastructure

**Federation of
supercomputing
services**

Widening usage and skills

Horizon Europe Program
900M Eur

Technology

Application

**International
Cooperation**

Connecting Europe
Facility
200M Eur

Hyperconnectivity

Data connectivity

*Member states to match this with national contributions



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INFRASTRUCTURE

Up to now, the EuroHPC JU has procured 8 supercomputers:

- **6 operational systems**, all ranking among the world's most powerful supercomputers:

- Slovenia,
- Luxembourg,
- Czechia,
- Bulgaria,
- Finland,
- & Italy.

- **2 systems underway** in

- Spain,
- & Portugal.



OUR WORLD-LEADING SUPERCOMPUTERS

- **LEONARDO** enters the ranking at **4th place**
- **LUMI** retains its **3rd place** ranking
- All operational EuroHPC supercomputers rank among the 500 most powerful in the world

The infographic features a dark blue background with white and yellow text. At the top right, the EuroHPC logo (a circle of stars) and the text "EuroHPC Joint Undertaking" are displayed. The central text reads "2 EuroHPC SUPERCOMPUTERS RANKED AMONG THE WORLD'S TOP 5 SUPERCOMPUTERS" in bold yellow and white. To the right, two circular images show supercomputers: the top one is labeled "3" and "LUMI", and the bottom one is labeled "4" and "LEONARDO". At the bottom left, the "TOP 500 The List." logo is visible.

**2 EuroHPC
SUPERCOMPUTERS
RANKED AMONG
THE WORLD'S TOP 5
SUPERCOMPUTERS**

3
LUMI

4
LEONARDO

TOP 500
The List.

PURSuing MORE SUSTAINABLE HPC INFRASTRUCTURE

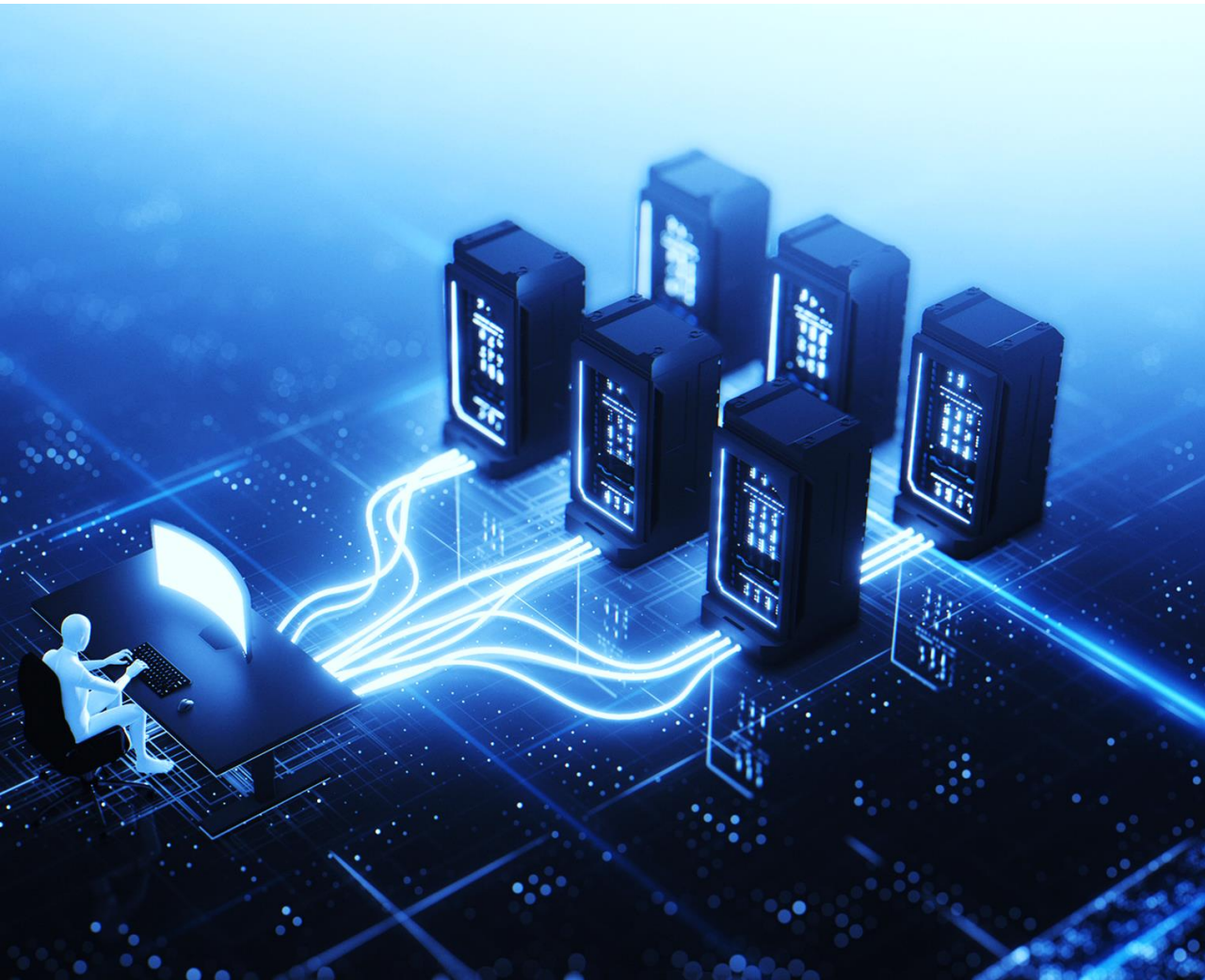


The EuroHPC JU is committed to building supercomputers which are both **powerful** and **eco-efficient** by:

- Procuring **energy efficient systems**, with low requirements for cooling. All our systems are **water cooled**, removing the requirement of high operational costs of air-cooled systems and in parallel reducing the energy footprint.
- Investing in the development of **next generation “green” microprocessors** that rely on energy efficient architectures.

Green and sustainable technologies are a priority for the JU, as part of the European Green Deal’s aim to make Europe climate neutral by 2050

WHO CAN ACCESS OUR SUPERCOMPUTERS?



- **What organisations are eligible for access to EuroHPC JU machines?**

Any organisation from a participating state is eligible for access to perform Open Science research. This includes public and private academic and research institutions, public sector organisations, industrial enterprises and SMEs.

- **What are the participation conditions?**

- Participation conditions depend on the specific access call that a research group has applied. In general users of EuroHPC systems commit to:
- acknowledge the use of the **resources** in their related publications,
- contribute to **dissemination** events,
- produce and submit a **report** after completion of a resource allocation.



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RESEARCH & INNOVATION

STRATEGIC R&I – INTERVENTION AREAS

»» Leadership in Use & Skills

Competence Centres and training programmes in HPC commensurate with the labour market.

»» Applications and Algorithms

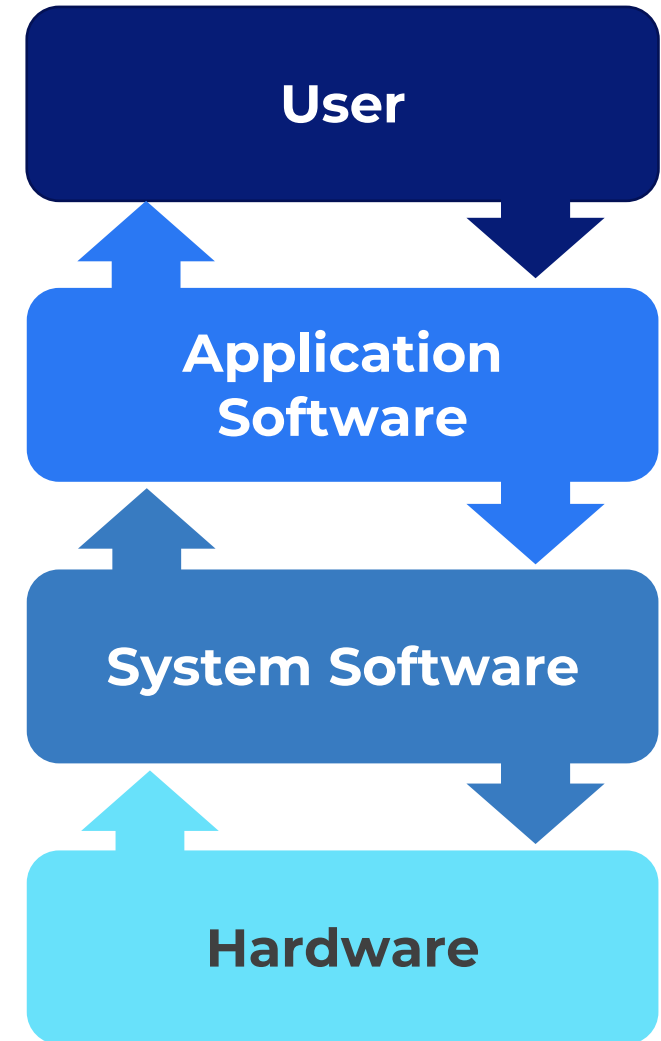
Centres of Excellence for HPC Applications and new algorithms for European exascale technology.

»» European Software Stack

Software and algorithms, programming models and tools for exascale and post exascale systems.

»» European Open Hardware

Ecosystem for the low power high-end general purpose processor and accelerator.



CENTRES OF EXCELLENCE

“Advancing the transition towards exascale capabilities by developing or scaling up existing parallel codes, resulting into effective applications to solve scientific, industrial or societal challenges and addressing the needs of the user communities.”

“Enhancing HPC applications and ensembles of coupled applications towards highly scalable, optimised codes.”

- Software development project
- Research aspect: Support research by porting codes and supporting the use of HPC applications to enable researchers outside the project to excel in HPC-based research and innovation

“Collaboration with EuroHPC JU systems and infrastructure federation initiatives to implement a robust and reliable automated deployment process for applications, in order to make novel developments timely available to the EuroHPC JU user communities.”

Save the date!

Virtual info session on
8th of February 10:30-12:30

PROJECT MONITORING

- Projects are monitored to assess the work carried out over a given period and experts give their recommendations to the EuroHPC JU.
- Monitoring may cover scientific, technological and other aspects of how the project has progressed with regard to:
 - the initial work plan,
 - deliverables,
 - planned and used resources,
 - relevance of the objectives,
 - scientific and industrial quality,
 - management procedures and methods,
 - beneficiaries' contributions,
 - and the expected potential impact in scientific, technological, economic, competitive and social terms, and the plans for the use and dissemination of results.

PROJECT MONITORING

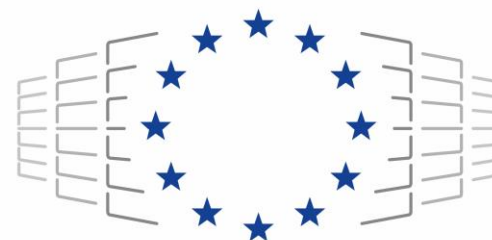
- From the HE Programme Guide: **deliverable** is a “report [...] providing information to ensure effective monitoring of the project”
 - Technical report with specification
 - Included references to publications must be directly relevant to the deliverable
 - The deliverable must be self-contained
- CoEs are not funding domain specific scientific research, but support software development to support research
- Scientific domain specific publications in peer-reviewed journals are not per se within the remit of the CoEs, but serve as a measure for the impact of the CoEs’ work on the wider HPC communities beyond the projects.

Reporting Periods		
RP No	Month from	Month to
1	1	12
2	13	30
3	31	48

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THANK YOU



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<https://eurohpc-ju.europa.eu>



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