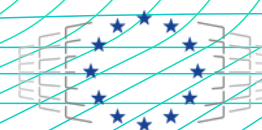




# Unlocking European-level HPC Support



Co-funded by  
the European Union



**EuroHPC**  
Joint Undertaking

This project has received funding from the European High Performance Computing Joint Undertaking under grant agreement No. 101139786. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or EuroHPC Joint Undertaking. Neither the European Union nor the granting authority can be held responsible for them.





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# Context

**HPC** has enabled technologies with a positive impact on society:

- More **precise** climate and weather modelling;
- Reduced healthcare **research costs** through simulation;
- **Planning** and yield prediction of renewable energy resources;
- Train **larger** and more **complex** Artificial Intelligence models.

The installation of supercomputers in multiple countries reflects a commitment to HPC's technological potential:

- **EuroHPC JU** has been instrumental in elevating European supercomputing.

# EuroHPC systems



**5  
Petascale**

KAROLINA

VEGA

MELUXINA

DISCOVERER

DEUCALION



**5  
Petascale**

LEONARDO

LUMI

MARE NOSTRUM 5



**2  
Future  
Exascale**

JUPITER

AICE RECOQUE





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# Mission

EPICURE draws on the **experience** and **knowledge** of the current and future EuroHPC supercomputer hosting organisations to provide better user support:

- Adequate code installation and porting to different architectures (**Level 2**);
- Intra- and inter-node optimisation, focusing on accelerators and scalability (**Level 3**).

Knowledge exchange through the organisation of hardware-specific **training sessions**, **hackathons**, **webinars**, and **workshops** in several EU countries:

- Promotes sharing of expertise among hosting organisations;
- Provides users with a wide knowledge pool.



# Main goals

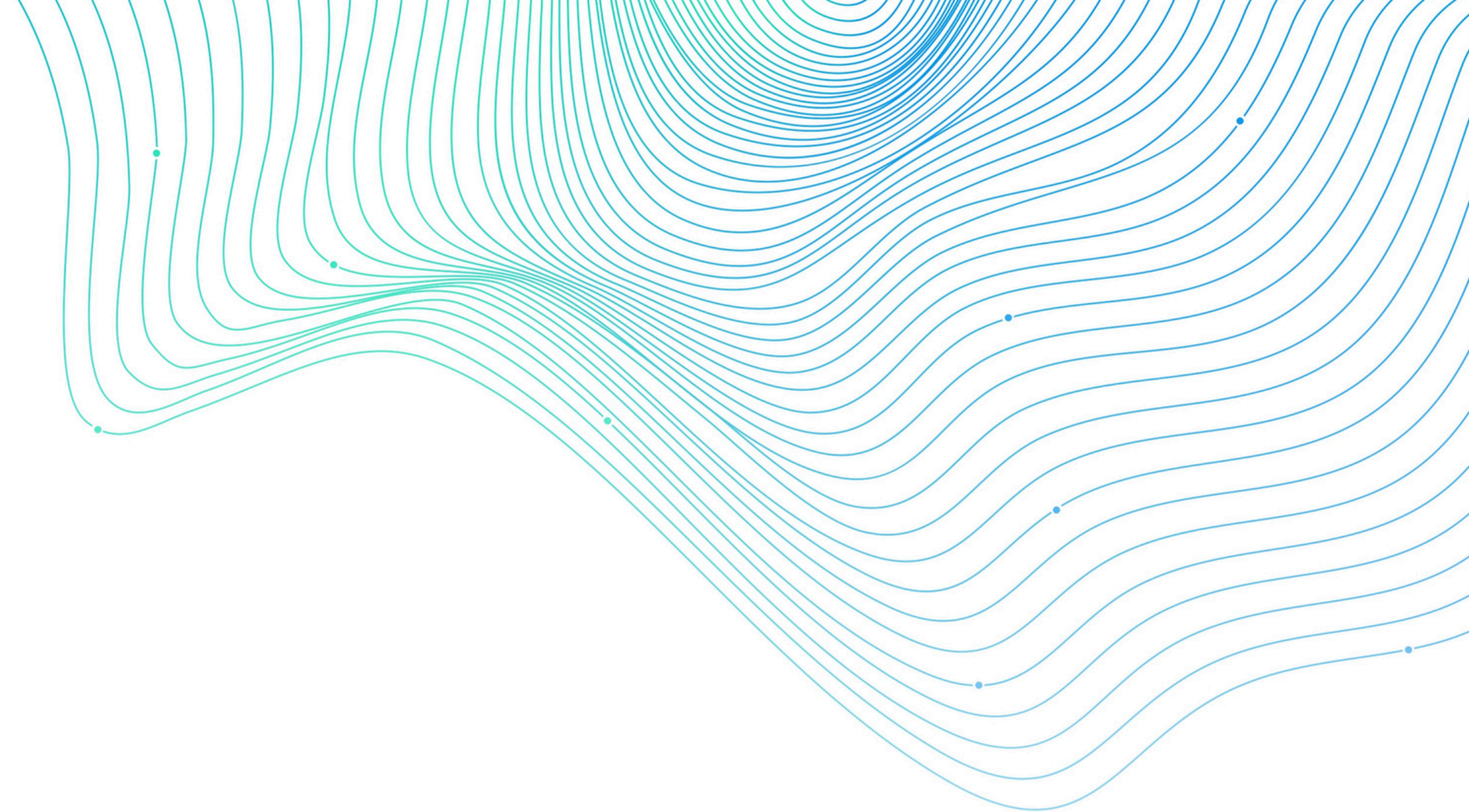
**To establish** a four-year operation of a distributed European-wide high-performance computing application support service bringing together Application Support Teams (ASTs);

**To reach** a large pool of EuroHPC users;

**To develop** a European HPC Application Support portal;

**To contribute** to the development and improvement of the European HPC Application Support Service;

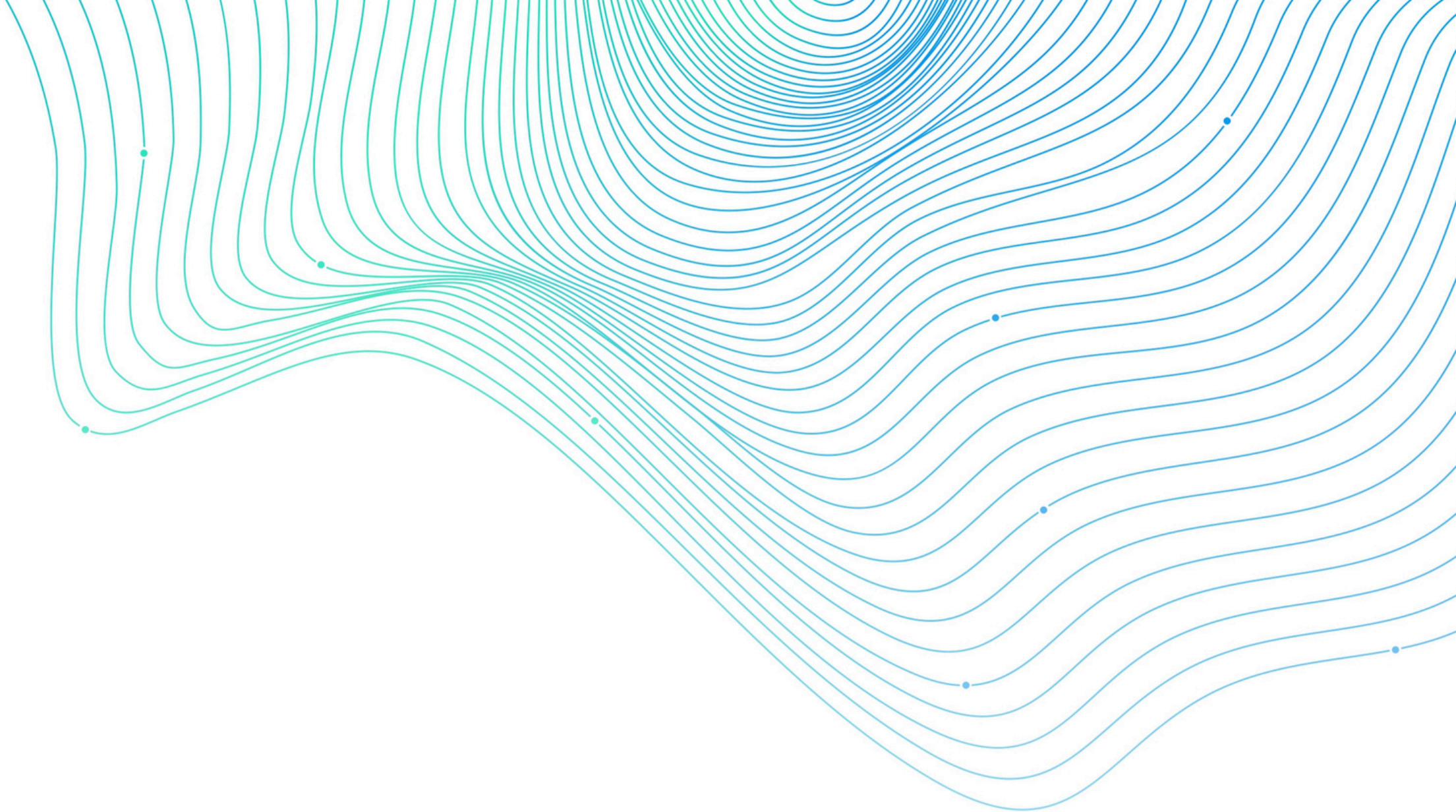
**To collaborate** with the Centers of Excellence to develop an HPC-skilled workforce.

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# Expected outcomes

- **Publish** best practice guidelines on how to code applications that use EuroHPC supercomputers adequately;
- **Create** a publicly available knowledge pool with the resources of training and webinar activities;
- **Provide** the community with optimised codes of various scientific domains;
- **Foster** an educated HPC user community;
- **Provide** a wide range of support services across all EuroHPC JU centers.

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# Support services

## Meet our Support Services



### Code Enabling and Scaling

Enabling and scaling user codes on EuroHPC supercomputers.



### Performance Analysis

Analysing the performance of HPC applications.



### Benchmarking

Benchmarking and evaluating EuroHPC systems performance.



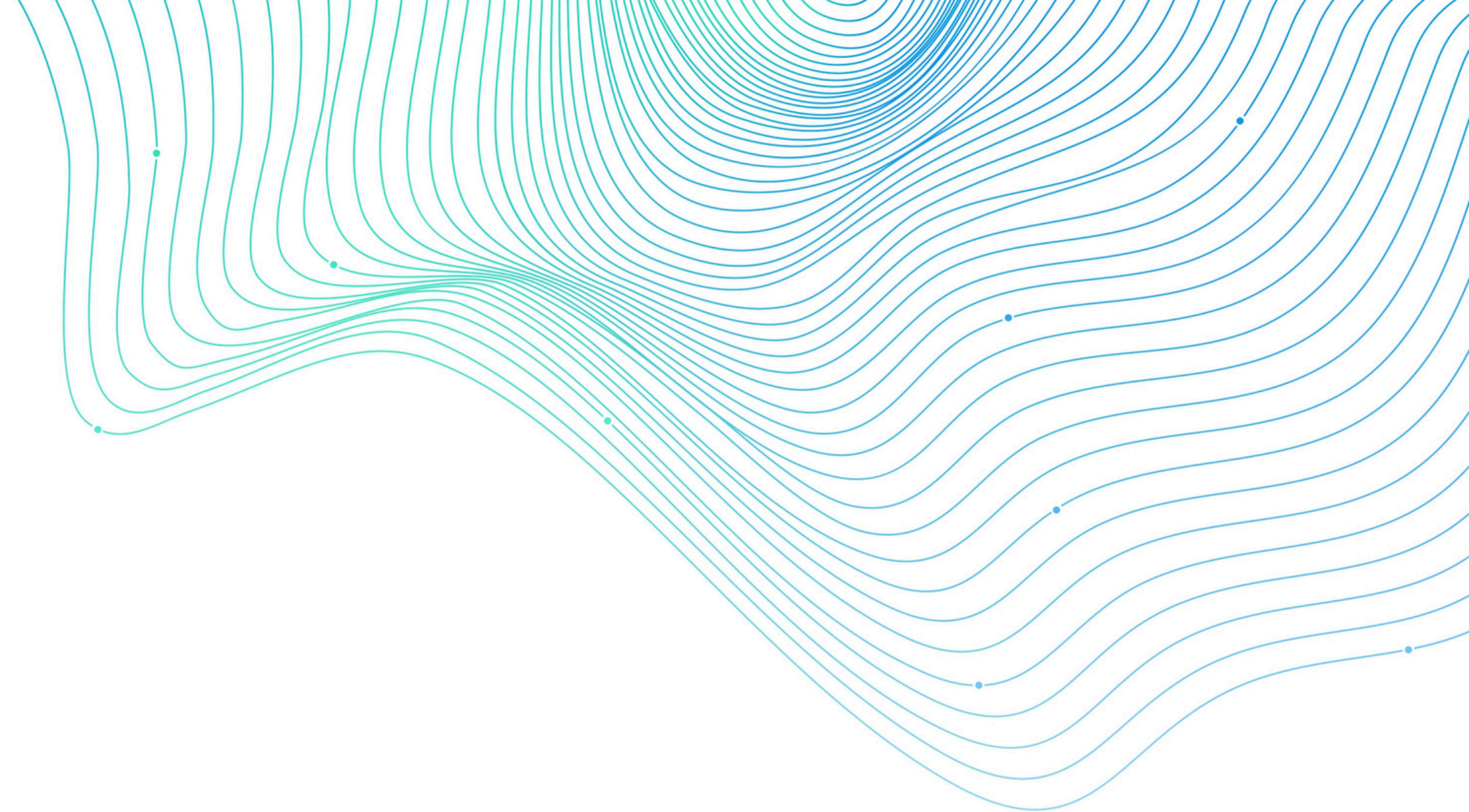
### Code Refactoring

Restructuring application code to improve maintainability.



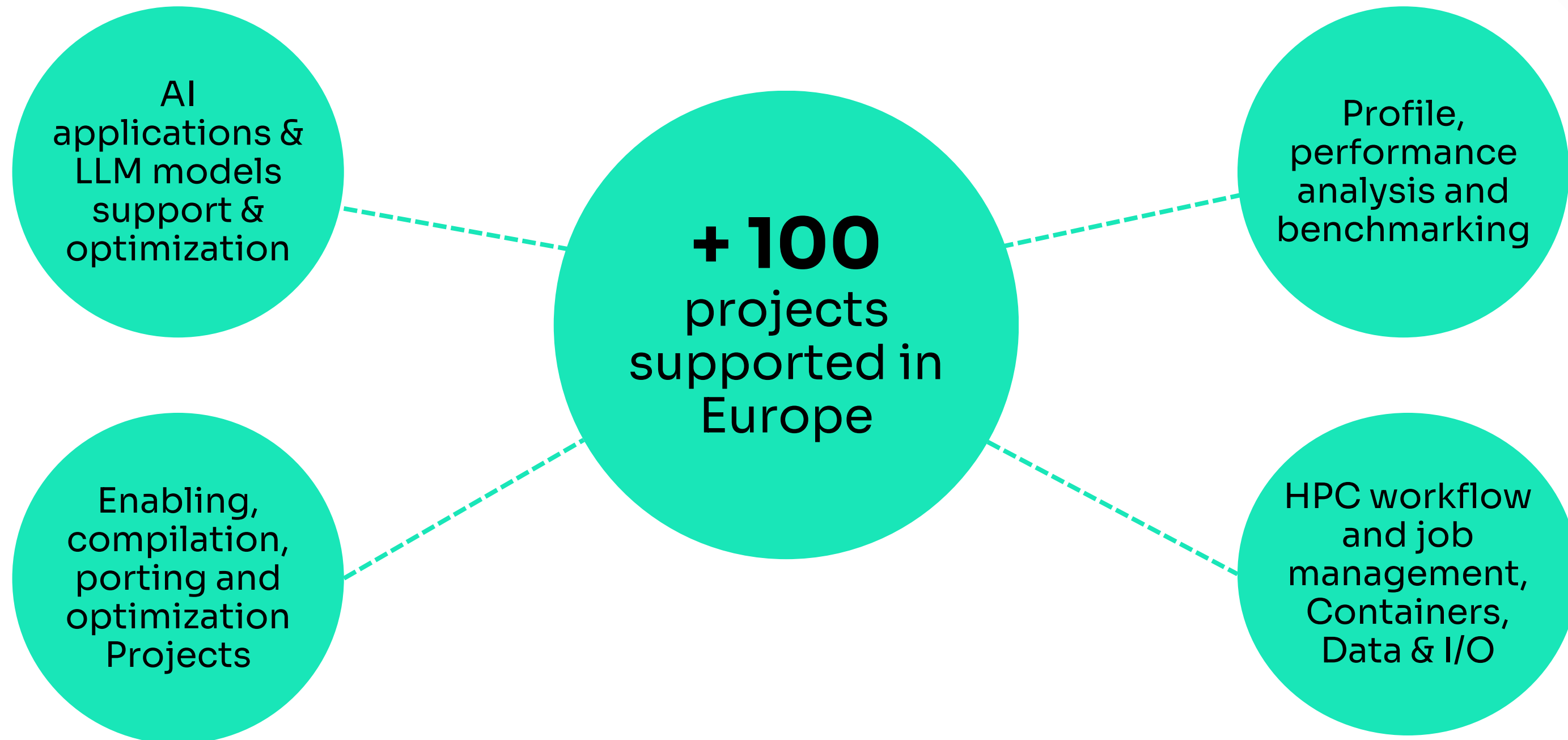
### Code optimization

Optimising software efficiency and resource usage.

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# Key achievements in support



# Main areas of the projects supported



## ENVIRONMENT & CLIMATE

**Anthropogenic Stressors  
and Future Changes of the  
North West European  
Shelf ecosystem**

(EHPC-REG-2023R02-047)

**IZUM on Vega**

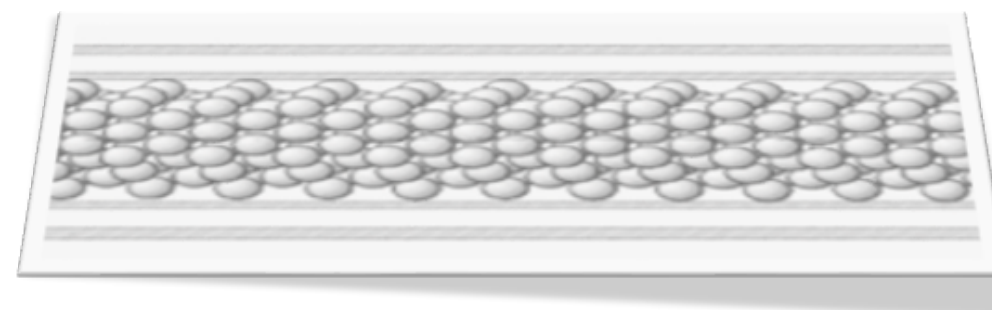


## ENERGY

**From methane and iron  
nanoparticles to  
"Turquoise" H<sub>2</sub> and carbon  
nanotubes: simulating the  
whole catalytic process  
inside a reactor**

(EHPC-EXT-2023E01-036)

**CINECA on Leonardo**



## HEALTH & MEDICINE

**Developing a Heart  
Language Foundation  
Model**

(EHPC-DEV-2025D04-139)

**LuxProvide on MeluXina**





# Testimonials

**Anthoni-Alcaraz  
Torres**  
ICN2

“This EPICURE hackathon allowed me to install and run a system on the ARM partition on Deucalion, as well as generate my first PR on the EasyBuild GitHub repo.”

**Ana Margarida Sousa**  
UMinho / INESC TEC

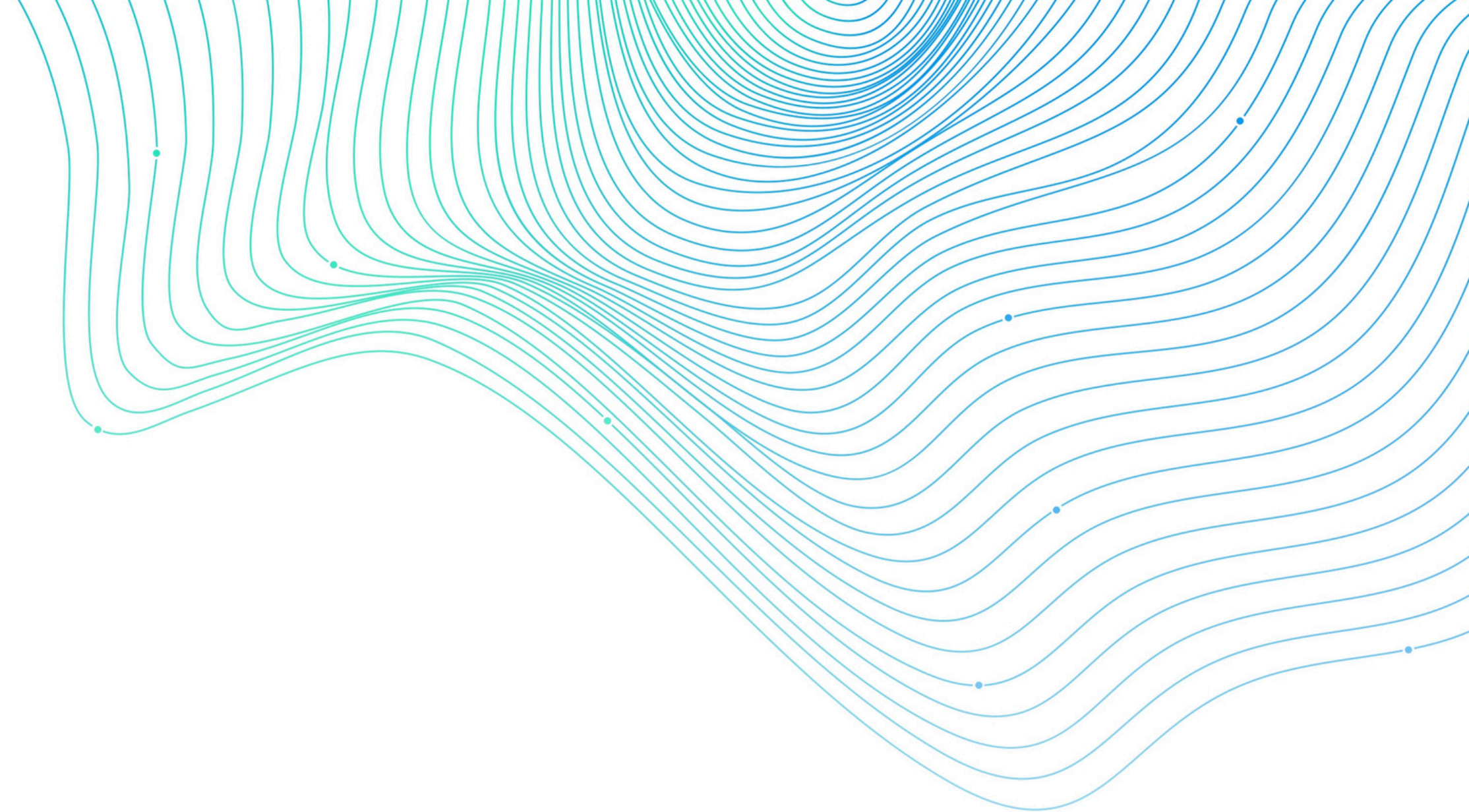
“The hackathon provided tools and knowledge that can further enhance my research, highlighting the importance of energy efficiency in AI training.”

**Bernardo Malaca**  
CNCA / Deucalion

“EPICURE events are a great opportunity for interaction between users and support teams. Users can share their needs, helping us improve the Deucalion platform.”

**Nuno Lopes**  
IPCA

“The hackathon was a great opportunity to engage with experts and receive support in preparing software for HPC systems, helping me improve my skills in application development.”

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# Support access

Need to optimise your code on EuroHPC supercomputers?

## Who's eligible?

Having a EuroHPC JU allocation project is required!

Don't have one yet? We can help you apply!



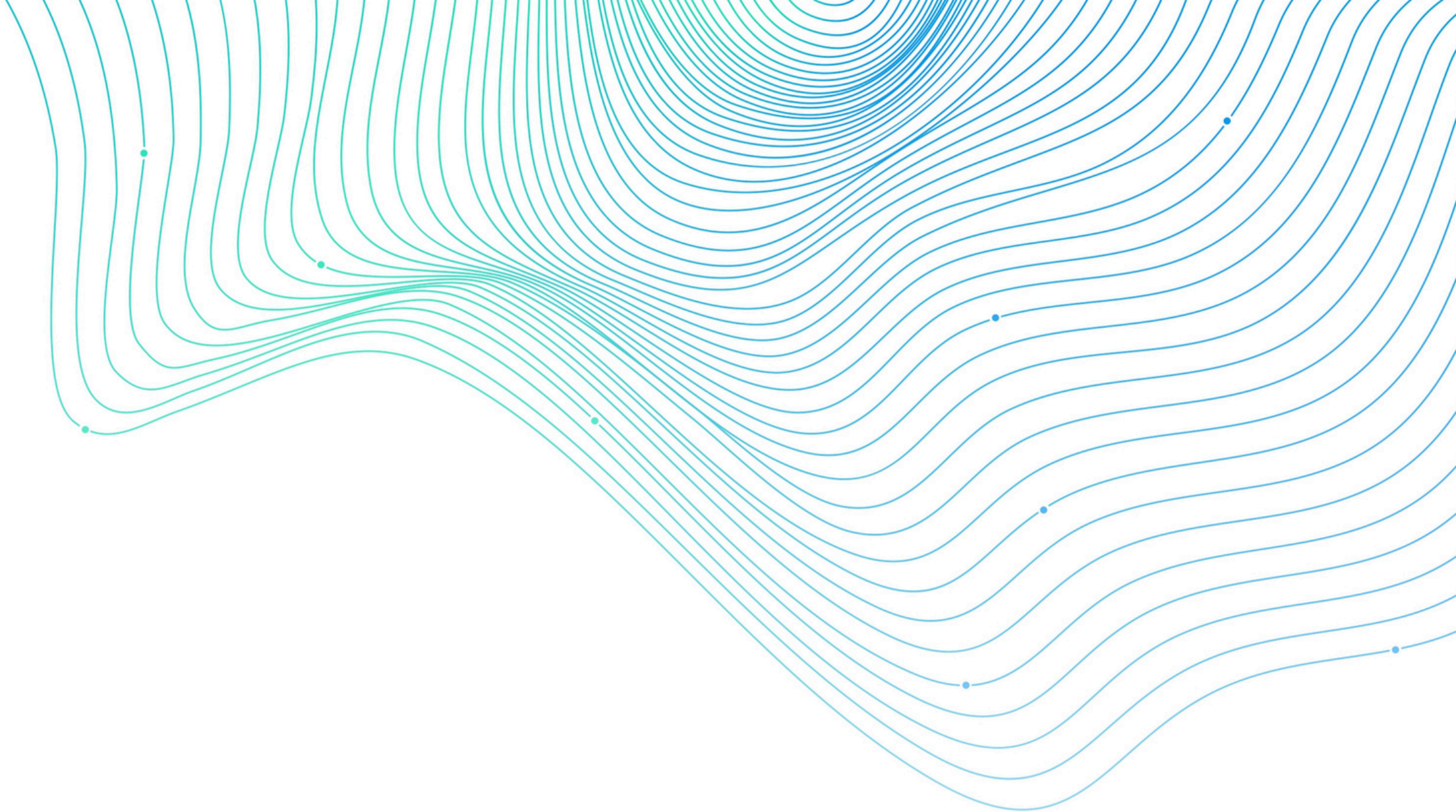
## Ready to optimise?

You can request EPICURE support.



Do you need a EuroHPC allocation? Check the EuroAccess Calls!



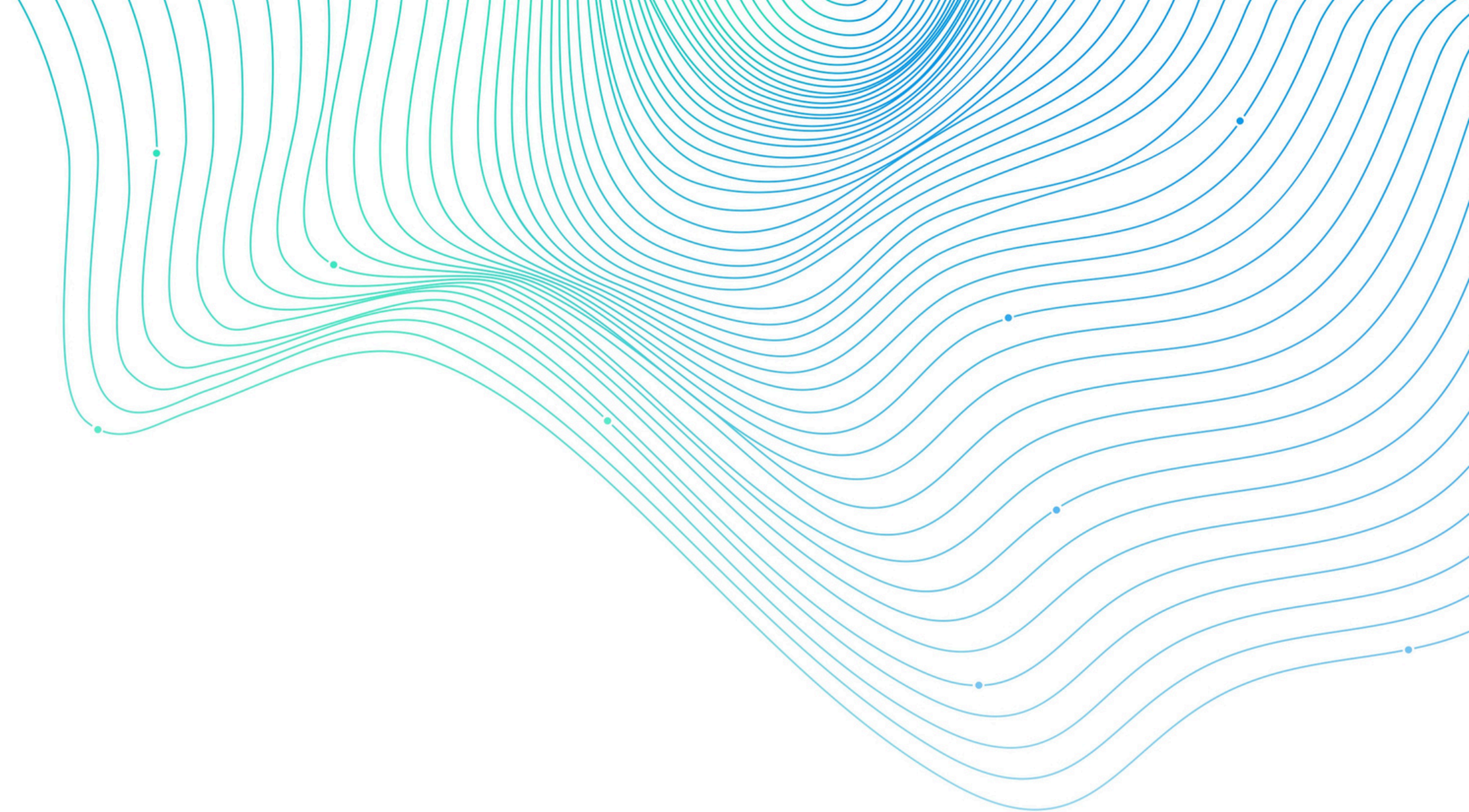
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# European HPC Application Support Portal

A strategic platform designed to support European researchers and facilitate access to EPICURE services and EuroHPC resources.

- Guidance for **accessing EuroHPC JU systems** and navigating application procedures;
- Simplified form to **request EPICURE's technical support** via the portal;
- **Training for HPC users**, including hands-on workshops, webinars, hackathons and wide range of supporting materials;
- **Technical knowledge base** with best practice guidelines and how-to guides to improve EuroHPC application performance;
- **Git repository** with code examples, tools, and projects related to EuroHPC systems.

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# Consortium



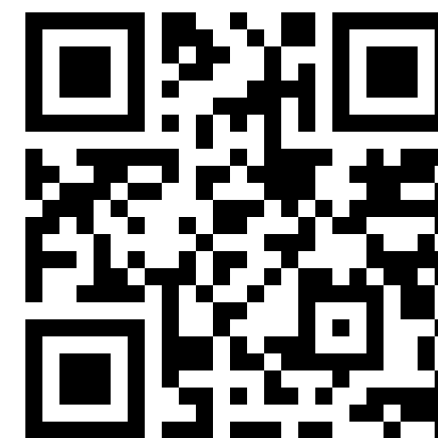


# Thank you!

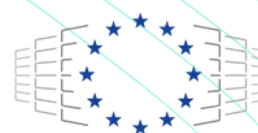


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