



MultiXscale CoE will bring together European experts in High-Performance Computing during its General Assembly, after the HiPEAC event in Barcelona

Ljubljana, January 21st 2025 - [MultiXscale CoE](#) will gather top European experts in High-Performance Computing (HPC) from academic and industrial sectors across Europe during its General Assembly (GA), to be carried out from 23rd to 24th January 2025 after the [HiPEAC event in Barcelona](#) (Spain), where the completed activities and future work in the 3rd year of the project will be discussed in this two-days meeting.

Previously to their GA, MultiXscale experts will be involved in several sessions during the HiPEAC conference in Barcelona, the premier European forum for experts in computer architecture, programming models, compilers and operating systems for general-purpose, embedded and cyber-physical systems.

These sessions are:

- The workshop "[EESSI: European Environment for Scientific Software Installations](#)", organized by Alan O'Cais and Lara Peeters on Wednesday, 22 January, from 14h to 17h30. This tutorial covers installing and configuring CernVM-FS, the usage of EESSI, installing software into and on top of EESSI, and advanced topics like GPU support and performance tuning.
- Two workshops organized together with other EuroHPC Joint Undertaking (EuroHPC JU) Centres of Excellence to delve into the world of HPC while appraising the contributions of women experts in the field. These two events represent a remarkable opportunity to exchange best practices and innovative ideas and foster knowledge sharing among CoEs and the HPC community.
 - "[From petascale to exascale and beyond: the Centres of Excellence challenge](#)", on 20 January, from 10h to 17h30 (Room Extra 3)
 - "[Tackling software exascale challenges: the Centres of Excellence in High Performance Computing perspective](#)", on 22 January 2025, from 10h to 17h30 (Room 9)

Funded for a period of four years, and coordinated by the [National Institute of Chemistry](#) based in Ljubljana, Slovenia, MultiXscale is a collaborative project between

members of the CECAM network and EESSI that will allow domain scientists to take advantage of the computational resources offered by EuroHPC JU. It gathers the following 13 partners joining from the academic and industrial sectors across Europe: National Institute of Chemistry, Forschungszentrum Jülich GmbH, University of Stuttgart, University of Barcelona, SURF BV, University of Groningen, Ghent University, University of Bergen, Barcelona Supercomputing Center, Sorbonne University, HPCNow!, Leonardo and the Italian Institute of Technology.

The MultiXscale Centre of Excellence will increase performance, productivity and portability (“the Three P’s”) across the entire spectrum of scientists active in the domain of multiscale simulation. It couples the scientific expertise of the CECAM network, represented by leading experts in multiscale simulations from different European institutions, with the technical expertise of the EESSI collaboration, and targets the computational laboratories of EuroHPC and beyond. It will shoulder much of the technical burden of developing and distributing domain-relevant applications for (pre-)exascale through application co-design for exascale technologies, and the provisioning of exascale-oriented libraries and services that nudge the community to adopt battle-tested, future-oriented, scalable workflows and portable technologies. Together, these will allow application developers to pursue domain-relevant scientific innovation without being over-burdened by technical detail, and empower industrial and academic application users to painlessly adopt bleeding-edge technologies from the domain on whatever computational resource they may have access to.

To drive the development of the libraries and services, and to showcase the scientific and industrial potential of truly multiscale approaches, MultiXscale will pursue three pilot use cases of societal and industrial significance:

- helicopter design and certification for civil transport,
- battery applications to support the sustainable energy transition,
- ultrasound for non-invasive diagnostics and biomedical applications.

MultiXscale will extend the applications, user-base and domains actively engaged in the current CoE and EuroHPC ecosystem by addressing specific and critical needs, and advancing the transition towards use of exascale resources by scientific and industrial users in the community of multiscale modelling.