

EuroHPC picks seven AI Factories in seven EU countries for start-ups and researchers

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Five of the selected hosting sites will deploy brand new AI-optimised supercomputers in Finland, Germany, Italy, Luxembourg and Sweden. Meanwhile, the AI Factory in Spain will result from the upgrade of the EuroHPC system, MareNostrum 5. Greece, on the other hand, will establish and operate an AI Factory associated with the DAEDALUS supercomputer, the EuroHPC supercomputer currently under deployment in Greece. The AI Factories in Spain and Finland will also include an experimental platform, which will serve as a cutting-edge infrastructure for developing and testing innovative AI models and applications, as well as promoting collaboration across Europe. These first seven AI Factories will pool together European Union (EU) and national resources. This represents a collaborative effort from across 17 European countries, with many consortia involving multiple participating countries. The EuroHPC AI Factories initiative is designed to create a robust and interconnected network of AI hubs. Acting as one-stop shops, they will offer AI startups, SMEs, and researchers comprehensive support, including access to AI-optimised high-performance computing (HPC) resources, training, and technical expertise. The selection of these seven hosting entities, who will operate the new AI Factories on behalf of the EuroHPC JU, will enable cutting-edge research and applications, provide industry access to advanced AI tools, and foster innovation in areas like healthcare, energy, and climate. More information on each factory is below:

Finland (LUMI AI Factory) The LUMI AI Factory will strengthen and support Europe's growing role as an AI innovator by providing a world-class computing environment (LUMI-AI), and access to completely new data sources, together with a service centre and talent pool to support the rapid trials and development of new AI solutions. The system will be hosted by CSC - IT Center for Science and located in Kajaani, next to the existing EuroHPC LUMI supercomputer. The consortium behind the LUMI AI Factory is led by Finland, together with 5 other countries: Czech Republic, Denmark, Estonia, Norway, and Poland. By leveraging the established LUMI ecosystem and expanding it with new AI-focused features, the LUMI AI Factory will foster a thriving AI community that transcends borders and sectors. The new system will address key challenges such as data reachability and access barriers, aligning with both national and European commitments to advance AI capabilities. Further details about the LUMI AI Factory can be found in the press release of the Finnish Ministry of Education and Culture.

Germany (HammerHAI) HammerHAI (Hybrid and Advanced Machine Learning Platform for Manufacturing, Engineering, And Research @ HLRS) will create a one-stop shop for AI users in academic research and industry, including a focus on lowering the barriers that currently prevent start-ups, SMEs, and larger corporations from using AI. Coordinated by the High-Performance Computing Center Stuttgart (HLRS) in collaboration with a strong consortium from Germany, composed by GWDG, BADW-LRZ, KIT, and SICOS, the new AI Factory will be hosted and located in Stuttgart at the HLRS premises. The project will install new, large-scale, AI-optimised infrastructure at HLRS that offers a secure, local, and trustworthy platform for machine learning, artificial intelligence, and hybrid HPC/AI applications. This architecture will leverage cloud-like technologies that are well known in the AI community, lowering the hurdles that users face in migrating and scaling existing AI applications from their local networks or other cloud services. In addition, the new AI Factory will provide access to workflow templates, pre-trained models, and shared datasets. HammerHAI will offer flexible, end-to-end support for the entire AI life cycle, from model development to inference, as well as dedicated user support and continuing professional education to help users develop new skills. The consortium will also work within the broader German and European AI ecosystem to accelerate innovation, drive economic growth, and support the development of new AI-based products and services. Further details about HammerHAI can be found in this HLRS press release and in this press release of the German Federal Ministry of Education and Research (BMBF).

Greece (Pharos) Pharos, the new Greek AI Factory, aims to exploit DAEDALUS, the EuroHPC supercomputer currently under deployment in Greece. It aims to address national and European AI needs in health, culture and language, and sustainability (energy, environment, climate) by offering end-to-end user support (from upskilling, dataset provision and AI model training to business innovation support) and engaging the national and European AI ecosystem. The

system will be managed and operated by the National Infrastructures for Research and Technology GRNET S.A, in Athens, Greece, operating under the auspices of the Greek Ministry of Digital Governance. The Greek AI Factory Pharos is coordinated by a consortium of partners including two research organisations, the National Centre for Scientific Research "Demokritos" and Athena, the National Technical University of Athens, and the National Fund of Greece. Special attention will be given to the implementation of a set of data and AI services that will enable the seamless development of AI products that are ethical, trustworthy and compliant with the EU AI Act and sector-specific regulations. HPC-demanding services will interact with DAEDALUS infrastructure in order to enable computational-heavy resources, storage resources, job scheduling, high-speed network connectivity, and ready-to-use software stacks. Further details about the Pharos AI Factory can be found in this press release from the Greek Networking Research, Education and Government office (GRNET).

Italy (IT4LIA) By building on the experience of Bologna Tecnopolo and the EuroHPC LEONARDO site, IT4LIA will provide a world class AI infrastructure and a cohesive ecosystem to bring together researchers, developers, startups and SMEs, to bridge the gap between AI providers and potential users, such as public administration, students, academia, SMEs and industries. The IT4LIA AI Factory consortium is coordinated by Italy, in collaboration with Austria and Slovenia. The new system will be hosted by CINECA Consorzio Interuniversitario and will be located in Bologna, Italy. IT4LIA AI Factory will represent the evolution of LEONARDO with a new top-class AI-optimised supercomputer, towards a one-stop-shop user-friendly and highly competitive AI infrastructure. From a technological standpoint, the AI-optimised supercomputer will harness cutting-edge technologies to provide an infrastructure that is 4 times more powerful for standard applications and 40 times more powerful for AI-specific workloads (40+ ExaFlops Linpack mixed precision). From a systemic perspective, IT4LIA will focus on increasing the adoption of AI solutions in key sectors, namely agrifood, cybersecurity, earth and manufacturing, by leveraging on valuable external and internal data repositories and a vast array of sector-specific and horizontal services, together with a number of training initiatives aimed at up-skilling the whole ecosystem. This targeted support will be crucial in ensuring that SMEs and emerging players can fully exploit the advanced AI potential.

Luxembourg (L-AI Factory) Luxembourg's AI Factory is intended to confirm the country's position as European leader in artificial intelligence. Designed to address critical challenges faced by AI users in strategic sectors such as finance, space, cybersecurity, and the green economy, the AI Factory aims to offer rapid onboarding and personalised support for all enterprises, especially startups and SMEs. At its core is MeluXina-AI, an AI-optimised supercomputer that would deliver unparalleled computing, data, and connectivity capabilities. Bringing together expertise from Luxinnovation, the Luxembourg National Data Service (LNDS), the University of Luxembourg (Uni.lu), the Luxembourg Institute of Science and Technology (LIST) under the coordination of LuxProvide and supported by key national partners, the AI Factory is meant to amplify Luxembourg's commitment to innovation. MeluXina-AI will be hosted and operated by LuxProvide, and will be located in Bissen, next to the existing EuroHPC MeluXina supercomputer. Through this initiative, Luxembourg wants to further pursue the European agenda on digital transformation, supporting competitiveness, innovation, resilience, and sovereignty.

Spain (BSC AI Factory) The BSC AI Factory is a joint initiative of Spain, Portugal, Turkey and Romania, respectively represented by the Barcelona Supercomputing Center (BSC-CNS), the Fundação para Ciência e Tecnologia (FCT), the Scientific and Technological Research Council of Türkiye (TÜBİTAK), and the National Institute for Research and Development in Informatics (ICI București). The new system will develop and operate a new AI Factory and AI-enabled computing infrastructure at the service of the EU AI innovation ecosystem to enable the adoption of AI by industry, start-ups, SMEs and public administrations. Focused on services for public administration, health, pharma and biotech, finance and legal, agriculture and climate, public sector, energy, and communication and media, the BSC AI Factory will be built on three core pillars, namely: the development and operation of a comprehensive set of high-value AI-oriented services with specialised support, supported by the upgrade of the EuroHPC JU MareNostrum 5 supercomputer to include advanced AI computing capabilities with a dedicated and specialised AI software and extensive data repository, and complemented by the establishment of a unique advanced experimental AI-optimised platform for testing new computing technologies as they come to market. The BSC AI Factory, which will upgrade the existing EuroHPC MareNostrum 5 system, will continue being hosted and operated by the Barcelona Supercomputing Center (BSC-CNS), and located in Barcelona, Spain. Further details about the BSC AI Factory can be found in this press release from the Ministry of Science, Innovation and Universities of Spain and in this BSC press release.

Sweden (MIMER) The Swedish AI Factory - MIMER – will be hosted by the National Academic Infrastructure of Supercomputing (NAISS) in Sweden at the Linköping University, in collaboration with the Research Institutes of Sweden (RISE). MIMER will provide a mid-range AI-dedicated supercomputer that prioritises cloud-style access mechanisms and large-scale storage for sensitive data. The Swedish AI Factory will particularly build AI support and training expertise in Life Sciences and Health Care, Material Sciences, Autonomous Systems and the Gaming Industry, all of which are areas of

strength in Europe in general and Sweden in particular. As part of the key applications, the project will focus on generative models in structural biology and drug design, large-scale training in personalised medicine, and working with international partners to develop next-generation foundation models that will then be fine-tuned for specific industrial and academic applications. Further details about MIMER can be found in the press release of the Linköping University and in the NAISS press release . More details In September 2024, the EuroHPC Joint Undertaking launched two calls for expressions of interest aiming at selecting hosting entities to host and operate AI-optimised supercomputers, experimental platforms, and AI Factories across Europe. The proposals received were in total seven, comprising one submission under EUROHPC-2024-CEI-AI-01 and six others under EUROHPC-2024-CEI-AI-02 . The next cut-off deadline for additional proposals is 1st February, 2025. Moving forward, the agreements with the selected Hosting Entities will be signed in early 2025, leading to the launch of the procurement process for the relevant systems, which is scheduled to take place in the first half of 2025. Further details can be found in the European Commission's press release .

Background The EuroHPC JU is a legal and funding entity, created in 2018 and reviewed in 2021 by Council Regulation (EU) 2021/1173 to enable the European Union and participating countries to coordinate efforts and pool resources with the objective of making Europe a world leader in supercomputing. In order to equip Europe with a world-leading supercomputing infrastructure, the EuroHPC JU has already procured nine supercomputers , located across Europe. Regardless of their location in Europe, European scientists and users from the public sector and industry can benefit from these EuroHPC supercomputers via the EuroHPC Access Calls . This access enables them to advance science and support the development of a wide range of applications with industrial, scientific, and societal relevance for Europe. Recently reviewed by means of Council Regulation (EU) 2024/1732 , the EuroHPC JU received a new mandate to develop and operate AI factories. These comprehensive open AI ecosystems centered around EuroHPC supercomputing facilities will support the growth of a highly competitive and innovative AI ecosystem in Europe.

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