



# PRACE

## Partnership for Advanced Computing in Europe



### Website

<https://prace-ri.eu/>

### Headquarters

PRACE aisbl  
98 rue du Trône, 1050 Brussels,  
Belgium

### Legal Status

Established (ERIC, AISBL, GmbH,  
Others)

### Type

distributed

### Access

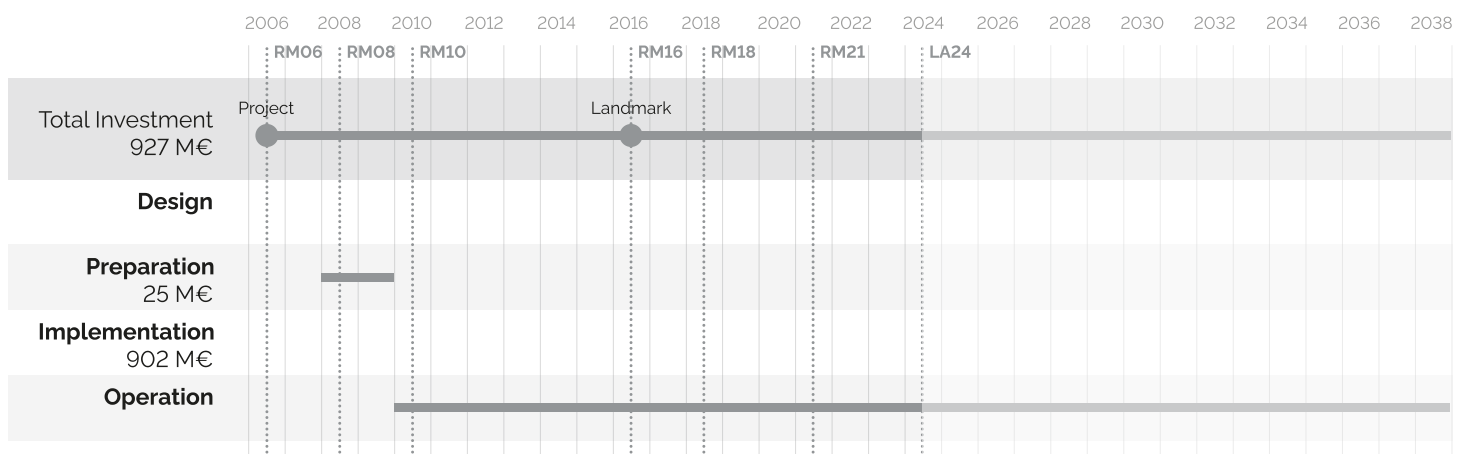
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## DESCRIPTION

The Partnership for Advanced Computing in Europe (PRACE) is a pan-European supercomputing Research Infrastructure providing access to world-class computing and data resources and services through a peer-review process, for large-scale high-impact scientific and engineering applications at the highest performance level across all disciplines. PRACE also seeks to strengthen the European users of High Performance Computing (HPC) in industry through various initiatives. PRACE has a strong interest in improving energy efficiency of computing systems and reducing their environmental impact. PRACE is established as an International not-for-profit Association under Belgian Law (AISBL) with seat in Brussels. On 31 December 2023, it counted 25 Member countries whose representative organisations create a pan-European supercomputing infrastructure. A total of 7 supercomputers and their operations accessible through PRACE were provided by 5 hosting members: France, Germany, Italy, Spain and Switzerland. With the establishment of the EuroHPC Joint Undertaking in 2018,

procurement of leadership HPC systems has become the result of a joint funding by the European Commission and Participating States. In this evolved landscape, to best serve the needs of HPC users, PRACE decided to grow as an Association of Users and HPC Centres in Europe on the basis of its unique experience and reach across the European HPC user community. As a consequence, PRACE has set itself the mission to represent the interest and identify the needs of users of HPC and related technologies (e.g. Artificial Intelligence, Quantum Computing, Cloud Computing, Data Science) in Europe and pursue actions to enable high-impact research and innovation across all disciplines and industrial applications, thereby enhancing European scientific, technological and economic competitiveness for the benefit of society. The Statutes of PRACE have been revised and approved end 2023 to reflect this updated positioning and implement its adapted governance.

## TIMELINE & ESTIMATED COSTS





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## POLITICAL SUPPORT

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### Lead

DE

### Member

AT, BE, BG, CH, CY, CZ, ES, FI,  
FR, GR, HU, IE, IL, IT, LU, NL, NO,  
PL, PT, SE, SI, SK, TR, UK

### Observer

HR, LV



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## IMPACTS

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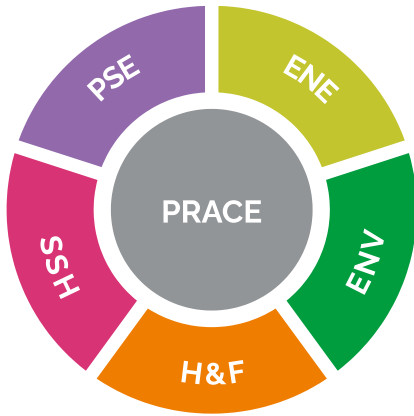
Through its rigorous and proven peer-review access model that meets or exceeds demanding international standards, PRACE supported the development of high impact research in all domains of science and engineering. European scientists and engineers need to exploit more broadly high-end HPC and connection with many ESFRI RIs is to be strengthened to maximise the impact on the ERA and on broad applications in industry and services. PRACE actively interfaces with ACCESS – the Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support (USA), RIKEN (Japan) and Compute Canada, and also with GÉANT – the pan-European data network for the research and education community, EGI – the European Grid Infrastructure, EUDAT– the European data infrastructure and HBP – the Human Brain Project.

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## SERVICES

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Throughout its initial phase and the so-called subsequent PRACE 2 Programme, the PRACE Research Infrastructure has provided access to distributed persistent pan-European world-class HPC computing and data management systems and services. Access to these systems was made available through Calls for Proposals of the four different access types: PRACE Project Access (substantial access to PRACE Tier-0 HPC systems for high-risk high-gain projects demonstrating technical readiness and scientific excellence), PRACE Preparatory Access (allowing users to optimise, scale and test codes on PRACE Tier-0 systems), SHAPE (to help SMEs benefit from the expertise and knowledge developed within the PRACE RI to test their business case using HPC), DECI (Tier-1 users access to supercomputing architectures from another European country for smaller-scale projects). On top of these access services, PRACE offered also a wide range of additional services for its users (funded by the PRACE-IP projects): Training (e.g. 14 PRACE Training Centres, International HPC Summer School with US, Canada and Japan, Summer of HPC, Seasonal Schools, on-demand events, and MOOCs); User Support (Applications Enabling Services for Preparatory Access, Applications Enabling Services for Industry, DECI Management and Applications Porting, Enhanced High Level Support Teams); HPC Infrastructure Support (Benchmarking, Best Practice Guides); Software developments (Forward looking software solutions in cooperation with Centre of Excellence in HPC). The just started PRACE 3 phase ambitions to leverage the expertise and services developed so far to complement the resources provided by EuroHPC Joint Undertaking. These will be user-centric and defined by the Users Communities that PRACE has supported augmented by new adopters of HPC. The service-oriented approach and the established network of pan-European actors is expected to serve effectively industries willing to have their business boosted by HPC technologies.



In awarding resources to projects that have scientific involvement in other Ris, PRACE has indirectly supported the many of the other Research Infrastructures, albeit not explicitly. Besides PRACE cooperate with other e-infrastructures, amongst others EUDAT for data services, GEANT for hyper connectivity. PRACE is also engaged in the recently established e-Infrastructures Assembly, which strengthens the co-operation between EGI, EUDAT, GÉANT, OpenAIRE and PRACE. PRACE signed also a collaboration agreement with SKA, CERN and GEANT for addressing the data challenge. As of 2023, PRACE has no institutional involvement in EuroHPC Joint Undertaking. Very regular contacts between the two organisations are however taking place at the executive level – PRACE Council Chair, Vice-Chair, Managing Director and Operations Director and EuroHPC Governing Board Chair, Executive Director and Departments Head – to align specific actions and identify synergies between PRACE and the Joint Undertaking in order to optimally serve the European researchers in all scientific domains supported by HPC and its related technologies. One of the most prominent achievements in this context is the handover of the peer review activities from PRACE Office to the EuroHPC JU staff in a seamless manner for the user communities: not only the EuroHPC Access Policy has been largely drafted on the basis of the proven PRACE Peer Review process but also continuity of the operations of the process has been ensured largely on PRACE's own will to support user communities. PRACE actively work to further extend collaboration with EuroHPC in particular for the implementation of the process feeding the Joint Undertaking with User Communities feedback and expression of needs. So far, the role of PRACE has been to make available, monitor and report on the usage of a wide set of European HPC resources and their associated services. The actual access to the resources has relied on the capacities of each provider, with central coordination guidelines provided by the PRACE Operations group. Further advances on this regard have been achieved by the FENIX RI of EBRAINS, led by a subset of PRACE partners, in order to provide a federation platform to access the existing services and develop new ones, following a cloud scheme where relevant. In fact, PRACE has been running 12 PRACE-FENIX collaborative calls, as a proof of concept of such integration. Furthermore, PRACE has evaluated the potential federation of services following a FENIX-like scheme. Nevertheless, the final decision for adoption of the model proposed by FENIX depends on the services providers. Future collaboration with EBRAINS on federation of resources is under discussion.