

Letter of Intent to establish PROSPECT as the European Technology Platform for High Performance Computing

The members of PROSPECT e.V., a consortium for the "Promotion of Supercomputing Partnerships for European Competitiveness and Technology", intend to form a European Technology Platform for High Performance Computing. This ETP, also to be called PROSPECT, will be an industry-led forum for all High Performance Computing (HPC) stakeholders in Europe, including HPC centres, technology companies, integrators, and users. In the following PROSPECT denotes the ETP whereas the consortium is referred to as PROSPECT e.V.

Why does Europe need an ETP in HPC and what are the benefits?

HPC has enormous potential to stimulate innovation, productivity, competitiveness and sustainable jobs growth in leading sectors in Europe. In the next few years, HPC will be a *transformative* technology for business and society, because of huge advances in price-performance, and in the software and algorithms that make that performance accessible to a far wider range of potential users than in the past. The benefits of HPC will be delivered by large and small businesses in many sectors, and by researchers in many fields who will, for example, use it to design and test solutions with much greater predictability, speed and cost-effectiveness than previously possible.

The European HPC ecosystem should remain open in order to enable the development of the most appropriate solutions by the best players in the market. To this end, the ETP on HPC will promote shared development of novel hardware or software solutions by the participants of a partnership. The aim is to ensure that Europe masters the know-how on HPC technologies and could have, if need be, independent access to a strategic technology.

By broadening the use of HPC to more sectors, to a much wider range of users, and by dramatically lowering the barriers to access HPC, Europe can gain competitive advantage globally in a wide range of industries and scientific fields, and in tackling key challenges including:

- Shortening innovation cycles in new product development,
- Complex problem solving in scientific realms,
- Complex operational tasks involving high volumes of data,
- Modelling the impact of short and long-term natural phenomena with impact on European society,
- Efficient use of energy resources and novel materials,
- Developing advanced skills in computational science for scientific and business applications.

PROSPECT's Objective

PROSPECT is committed to help Europe realise the potentially huge economic, scientific and societal benefits of HPC. It will do this by setting out a vision and a research agenda for Europe's HPC sector, which can become a roadmap for all parties involved, from private and public sector alike.

In pursuing this objective, PROSPECT will seek to advance these key principles:

- Europe will be a global leader in inventions that successfully exploit HPC resources.
- HPC will provide increasingly accurate and responsive predictions on both short and long-term phenomena that impact European citizens, such as weather, climate change, and epidemics.
- The use of HPC will enable Europe to achieve world-leading levels of energy-efficiency in areas such as electricity generation and transmission, transport, food supply chain, water supply, product design etc.
- HPC technologies designed in Europe will lead in energy-efficiency.
- Europe will have the know-how and skills to master the development of HPC technology components in the areas where it excels, and to master the exploitation of HPC across a wide range of industries and disciplines.

The members of PROSPECT e.V., as listed below, hereby ask the members of the PROSPECT e.V. Board of Directors to make themselves available to provide the European Commission with the support needed to initiate all necessary steps required to establish a European Technology Platform for High Performance Computing under the name PROSPECT for reasons outlined in this document.