European Super-PC: supporting science, industry and SMEs
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The Commission's plan to create a supercomputing infrastructure was officially approved by the Council. Thus, the EU and the states through joint investment will create a world-class supercomputing infrastructure. This structure will give public and private users in the European states a better access to supercomputing which is essential to support competitiveness, further growth, development of science and innovation.

European citizens are already benefiting from many supercomputing applications in their everyday lives. For example, the development of new medical therapies relies heavily on supercomputing simulations to understand the nature of cancer, heart diseases, Alzheimer's and rare genetic disorders.

In cybersecurity and defence, supercomputers are used for developing efficient encryption technologies, and in combination with artificial intelligence for understanding and responding to cyber-attacks. They are also used to study climate change and for weather prediction.

For industries and businesses, supercomputers can significantly reduce product design and production cycles, accelerating the design of new materials, minimising costs and increasing resource efficiency. For example, car production cycles can be reduced from 60 months to 24 months while improving passenger safety and comfort.

New efforts are planned

Supercomputers are needed to process ever larger amounts of data. They bring benefits to society in many areas, from health care and renewable energy to car safety and cybersecurity.

The Competitiveness Council adopted a Regulation to establish the **European High Performance Computing (EuroHPC) Joint Undertaking** (see below), which is going to be a new legal and funding structure, uniting resources from 25 European countries, build supercomputing and data infrastructure, and support research and innovation in the field involving scientists, businesses and industry. This structure will give European public and private users better access to supercomputing which is essential to support competitiveness and innovation.

Council Regulation on EuroHPC (adopted in Brussels, 11.1.2018, COM, 2018, 8 final) see in:
https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52018PC0008&from=EN

The EuroHPC Joint Undertaking will be established in November 2018 and remain operational until the end of 2026. The cooperation is crucial for the EU's competitiveness and independence in the data economy; according to the Commission, industry in the EU states currently consumes over 33% of supercomputing resources worldwide, but supplies only 5% of them.
Reference: http://europa.eu/rapid/press-release_IP-18-5864_en.htm

Commission's opinion

Commission Vice-President for the Digital Single Market, **Andrus Ansip**, said that data has been only "the raw material of the digital economy". Public and private sectors need supercomputers to process volumes of data, to develop artificial intelligence and find solutions to complex questions in numerous socio-economic areas, e.g. in health and security.

Today, most of member states' researchers and companies need to go outside of Europe to find the first-class computers they need. The EU cannot afford to lag behind; hence with EuroHPC, the EU states will be able to benefit from the global innovation at home.

Commissioner for Digital Economy and Society, **Mariya Gabriel**, added that the EuroHPC will stimulate the development of a competitive supercomputing and data supply chain via public procurement. Through the EuroHPC's competence centers, it will empower European academia, industry, SMEs and public services, while providing them with access to a wide range of resources, services and tools to improve their digital skills and increase innovative competence.

Pan-European supercomputing infrastructure

The Joint Undertaking will have a budget of €1 billion, half from the EU budget and half from participating European states. Additional resources to the value of over €400 million will come from private partners. Its activities will be focused on **two areas**:

- **A pan-European supercomputing infrastructure**: to buy and deploy in the EU two supercomputers among the top 5 in the world and at least two others that would rank in the world top 25 today. These machines will be interconnected with existing national supercomputers and made available throughout Europe to public and private users, for use in more than 800 scientific and industrial application fields.

- **Research and innovation**: to support the development of a European supercomputing ecosystem, stimulating a technology supply industry, and making supercomputing resources in many application areas available to a large number of public and private users, including small and medium-sized enterprises.

Presently, the following European countries have committed to participate in the Joint Undertaking: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia and Spain.

Perspectives

The **EuroHPC**'s operations will start in October-November after representatives from the Commission, European countries and private partners will form its Governing Board, and Industrial and Scientific Advisory Board will be nominated.

In the longer term, the Commission proposed to invest €2.7 billion in the *Joint Undertaking* to strengthen supercomputing and data processing in Europe as part of the Digital Europe Programme for 2021-27 adopted in May 2018.

The additional funding will ensure the availability of world-class supercomputers and their wider use in both the public and private sectors, including small and medium-sized enterprises.
About the EU's digital program see: http://europa.eu/rapid/press-release_IP-18-4043_en.htm

More information in the following web-links: = Questions and answers; = Factsheet with examples of the use of supercomputing; = Joint statement by Vice-President Ansip and Commissioner Gabriel on the progress to build European supercomputers (25 June 2018); = The EuroHPC Joint Undertaking: looking ahead to 2019-2020 and beyond; = Video on European supercomputers; = Factsheet on the Digital Europe programme for 2021-2027.
Source: Commission press release (Brussels, 28 September 2018) in:
 http://europa.eu/rapid/press-release_IP-18-5864_en.htm .