EU-funded success stories

HELPING EUROPEAN SMES BECOME MORE COMPETITIVE

FORTISSIMO

DigitalSingleMarket   #DSM

When manufacturers are designing, for example, a high-end sports car, they need to build a model and then test the aerodynamics in a wind tunnel, most likely repeating the whole process several times over. This is very costly and time consuming. A practical solution is to create a computer simulation of the test, but this demands enormous computing power that only High Performance Computing (HPC) systems and specialised software tools can provide. Small and medium-sized entreprises (SMEs) do not have the funds or the expertise to buy and operate such resources in-house. The Fortissimo (Factories of the Future Resources, Technology, Infrastructure and Services for Simulation and Modelling) project and its successor Fortissimo 2 have focused on resolving this problem for them.

The project created the 'Fortissimo marketplace' to provide an affordable service offering cloud-based HPC hardware, expertise, applications, visualisation and tools to manufacturing SMEs. The project partners have carried out around 90 experiments with this 'one-stop-shop'. The pay-per-use model proved to be an efficient way of increasing SMEs' competitiveness in the areas of automotive engineering, aerospace, construction, energy and renewable energy, environmental and maritime engineering, metal processing, oil and gas, pharmaceuticals and biotech, and plastics through access to cheaper testing. Access to these services enabled SMEs to considerably lower their production costs, reduce the time needed to bring products onto the market, and to improve their products and services. In some cases new business opportunities and new product lines evolved. In addition, Fortissimo 2 has concentrated in particular on helping SMEs to carry out advanced modelling and big data analytics.

Fortissimo in brief

- **Total Budget:** EUR 33 million for Fortissimo and Fortissimo 2 combined (EU contribution: EUR 26 million combined)

- **Duration:** 7/2013-12/2016 (Fortissimo), 11/2015-10/2018 (Fortissimo 2)

- **Countries involved:** 🇬🇧 United Kingdom (coordinator), 🇦🇹 Austria, 🇧🇪 Belgium, 🇨🇦 Canada, 🇨🇿 Czech Republic, 🇫🇷 France, 🇲🇰 FYROM, 🇩🇪 Germany, 🇬🇷 Greece, 🇮🇪 Ireland, 🇮🇹 Italy, 🇱🇹 Lithuania, 🇳🇱 Netherlands, 🇳🇴 Norway, 🇵🇱 Poland, 🇵🇹 Portugal, 🇸🇰 Slovakia, 🇸🇮 Slovenia, 🇪🇸 Spain, 🇸🇪 Sweden, 🇨🇭 Switzerland

KEY FIGURES IN THE EUROPEAN UNION

More than 190 partners engaged in nearly 100 experiments.

Fortissimo was powered by 1,948.5 months of work.

EU industry currently provides about 5% of HPC resources worldwide, while consuming one third of them.

HIGH PERFORMANCE COMPUTING (HPC)

HPC, also known as supercomputers, refers to computing systems able to process huge amounts of data and realise complex calculations in record time. Its potential range of uses is vast, including better treatments and personalised healthcare, the prevention and management of large-scale natural disasters, the development of complex encryption technologies, and the production of more innovative goods and services. In January 2018 the European Commission launched a major initiative on supercomputing – the EuroHPC Joint Undertaking – to create with Member States an integrated world-class supercomputing and data infrastructure and encourage European contribution to this field. It is expected to be operational before the end of 2018. The Commission's proposed new Digital Europe Programme, with an overall budget of EUR 9.2 billion, also includes EUR 2.7 billion of funding for HPC.

More info: www.fortissimo-project.eu