HPC-Cloud-based simulation of sports-car aerodynamics





The challenge facing Koenigsegg was to perform

simulations of the flow over its hypercars which were sufficiently detailed to model real physical effects accurately and to demonstrate the feasibility of using cloud-based HPC resources, the porting of a suitable simulation code to such resources and the **cost-effective outcomes** of the simulations.

The Solution

• The use of ICON simulation software on a Cloud-based-HPC system has enabled Koenigsegg to reduce or even, in some circumstances, avoid **wind tunnel testing**. • In this case study, 100% of the aerodynamic development of the Koenigsegg One:1 has conducted HPC-based using been **Computational Fluid Dynamics simulations.**





O The Benefits

- Tests have shown that the use of HPC-based simulation supported by external software and expertise led to a **return on investment** for the production of a new car configuration.
- The use of the Fortissimo HPC-Cloud enabled savings in operational costs, design costs, wind tunnel and physical testing, prototyping costs,

Organisations Involved



and shortening of the time to market.



The Fortissimo project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement No 609029. The Fortissimo 2 project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 680481.

This presentation does not represent the opinion of the EC and the EC is not responsible for any use that might be made of information appearing herein.





