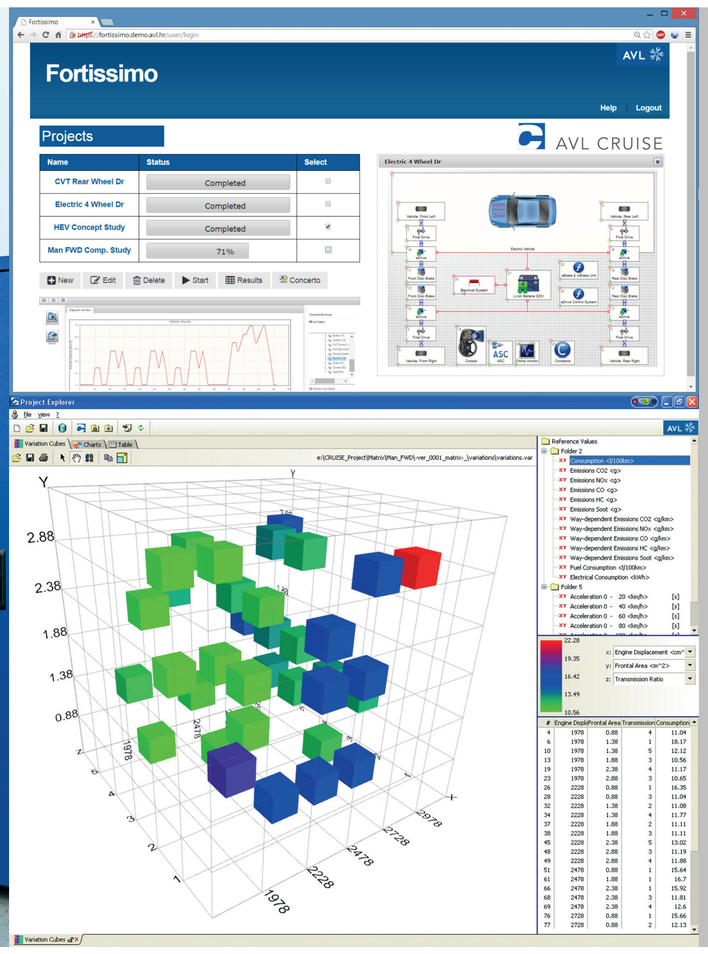
HPC-Cloud-based reduction of vehicle emissions

The Challenge

The majority of projects in the area of vehicle optimization involve **studies with large-scale variations in parameter and components** on a limited palette of base vehicle models, that require high levels of CPU cycles on-demand. This case study addresses the use of on-demand, Cloud-based HPC resources to tackle the important requirement for the reduction of CO2 emissions in the design of vehicles.



Organisations Involved

End-user and Code Owner:

AVL

HPC Centre and HPC Expert:

HLRS

The Solution

- The outcome of this case study has been to demonstrate the **viability of on-demand computing resources** in the design of powertrains with specific emphasis on the reduction of CO2 emissions.
- This solution involves the **running of AVLs simulation codes on a Cloud-based HPC system** where computer resources are made available on-demand

The Benefits

- The most clear benefit of using HPC-cloud resources is the possibility to **lease a powerful computing cluster** for single projects, the costs reduce up to 90% when compared to the total cost of ownership of a dedicated in-house system.
- This is the cost range where it becomes attractive for SMEs to participate in projects which require **high CPU power for only a short time**

FORTISSIMO

European Commission

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.

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SEVENTH FRAMEWORK PROGRAMME