

**Electric
Vehicle
Components
for 1000 km daily trips**

EVC1000

The project has received funding from the **European Union's Horizon 2020** research and innovation programme under grant agreement N° 824250.



Background

Continuous falling prices and recent technological advantages have made electromobility an affordable and viable option for more and more people. In 2017 the European Road Transport Research Advisory Council (ERTRAC) published the European Roadmap for Electrification of Road Transport, a document which sets recommendations on the major needs in the transition to electrification. The EVC1000 project operates in this framework and addresses ERTRAC's Roadmap initiative focusing on the development of user-friendly and affordable Electric Vehicle passenger cars and infrastructures.

The EVC 1000 project brings together ten participants from industrial and academic backgrounds to provide innovative brand-independent solutions with the objective to increase electric vehicles efficiency, range and user acceptance.

At the core of EVC1000 lies the **in-wheel electric motor** technology which allows for a flexible and adaptable electric vehicle architecture, **new chassis components**, namely **Brake by Wire** and **active suspension systems**, and **integrated controllers** designed to improve efficiency and extend the electric vehicles range, while ensuring relaxed, comfortable and safer driving on long journeys.

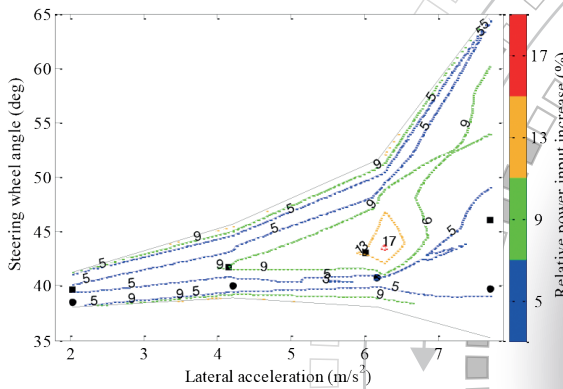


Project goals

The EVC1000 project is structured in five phases attaining the following objectives:

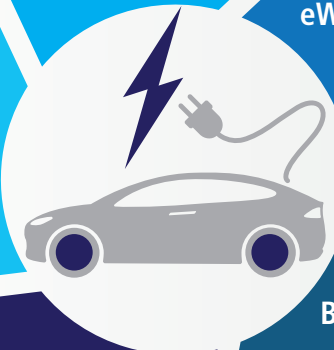
- 1** The design of energy-efficient, reliable, low-cost and scalable in-wheel electric motors
- 2** The design of centralised electric wheel drive family for electric axles with multiple motors and four-wheel-drive vehicles
- 3** The design of components and controllers for energy-efficient electrified chassis control (BbW, controllable suspension system, ECUs)
- 4** The demonstration and assessment of the EVC1000 components and controllers on electric vehicles during real-world operation

Project overview



In-wheel motor

Predictive control strategy

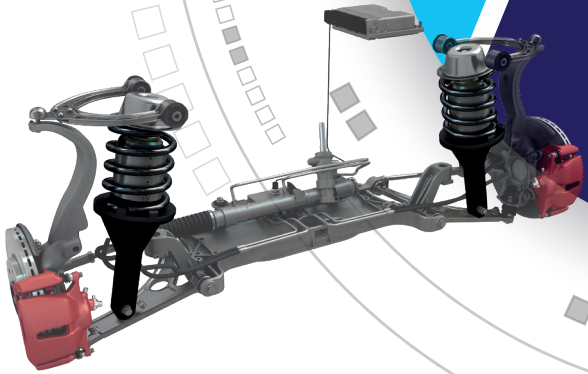


eWD² centralized electric wheel drive

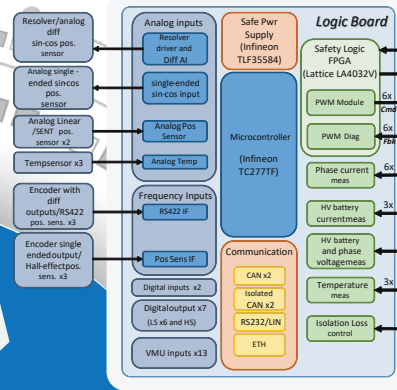
Brake-by-wire



Active suspension

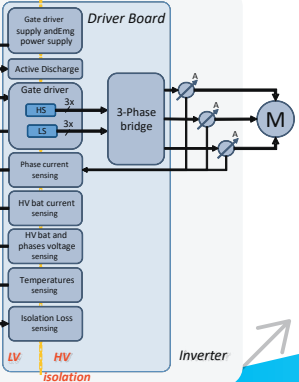


Inverter - Architecture Con



- Brand-independent components for next generation electrified vehicles

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Multi-physics simulation

Global energy manager

Vehicle attributes engineering



• Concept and integration following costs-performances and comfort targets

• Technology relevance demonstrated over different market segments

Project mission

To support the car manufacturing industry during the transitions related to electrification and connected automated driving functions by providing innovative mass-production components enabling the efficient integration of chassis and powertrain systems to finally increase Electric Vehicles range and user acceptance.

Total cost: 6.7 million €

EU contribution: 5.1 million €

Project start: 1 January 2019

Project duration: 36 months

Project coordinator: AVL List GmbH



For further information visit
www.evc1000.eu