

Innovations drive emotions...

...and interdisciplinary

## CONTROLS

Innovative HMI with side stick steering with two units (specification per unit)

Max. torque: 30 Nm  
Max. power: 150 W  
Max. control angle:  $\pm 30^\circ$

Units utilise force as driver input, feed back the control angle and are linked electronically

## CHASSIS

Innovative suspension system with up to 90° steering angle and wheel individual actuation (specification per unit)

Max. torque: 450 Nm  
Max. power: 2.3 kW  
Max. steering speed: 48 rpm  
Transmission ratio: 100

## ENERGY STORAGE

Multi voltage boardnet architecture

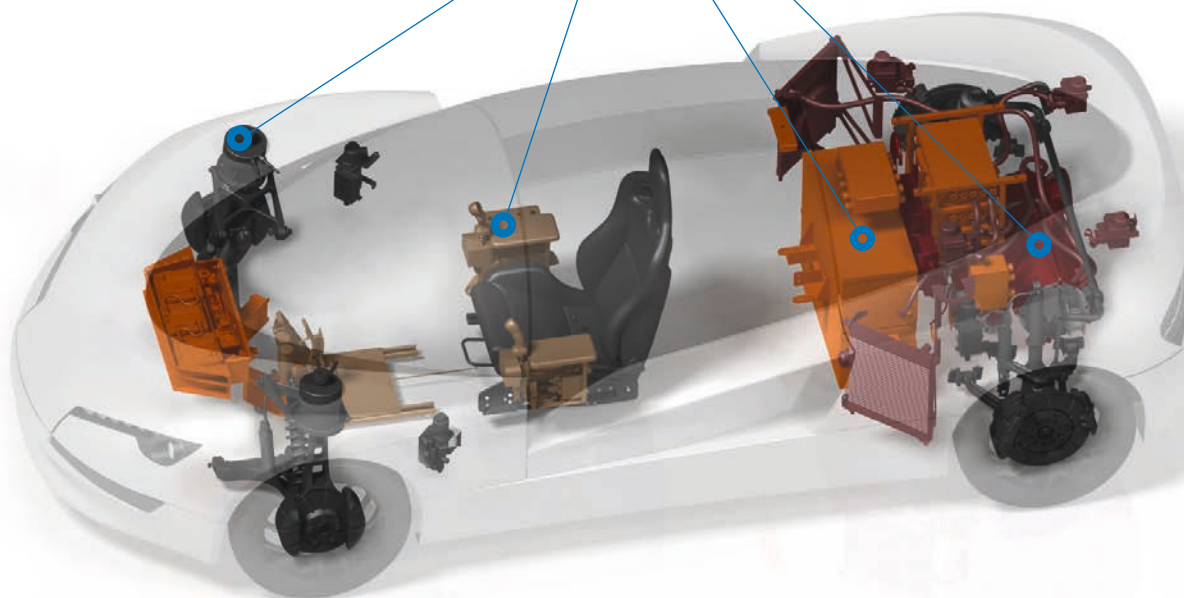
Traction battery  
Energy capacity: 16 kWh  
Max. discharge power: 160 kW (at 400 A)  
Nom. voltage: 400 V

48 V Boardnet  
Energy capacity: 1.2 kWh

## DRIVETRAIN

Two electric machines driving rear wheels (specification per unit)

Max. power: 100 kW  
Max. torque: 220 Nm  
Max. motor speed: 12000 rpm (270 km/h)  
Transmission ratio: 5.5



turning E-mobility into E-motion



Open Research & Innovation Platform



## Research & Innovation Platform

Electric drivetrains offer a high potential to improve efficiency, agility and driving performance. The SpeedE vehicle concept focuses on the innovation potential of electrically powered vehicles, which clearly enhances the driving experience beyond today's state of the art. Hence, the goal of the vehicle is to create a distinct added value to the electric vehicle and to transform E-mobility into E-motion.

On the industry side, numerous opportunities arise – for established OEMs and suppliers as well as for new players coming from other industries. Innovation means to bring an idea from research to market, which requires a vehicle platform to develop, implement, test and promote innovative components, systems and functionalities. You are thus welcome joining and using the SpeedE research and innovation platform.



## Update 2017

After presenting the research platform in 2016, we are pleased to show you our continuing progress in developing our vision SpeedE. The vehicle demonstrates an innovative steering concept, using two active sidesticks and a wheel individual steer-by-wire system with steering angles up to 90°. Besides the central seating position of the driver is another element, which supports the unique driving experience. In the past year the existing functionalities of the vehicle have been further refined. Focus was refinement regarding the sidestick hardware, sidestick electronics and the control algorithms. For 2018 the vehicle shall be equipped with necessary sensors and control algorithms to drive autonomously. In addition to the driving prototype, a mock-up version of SpeedE research platform has been constructed and is being used in the new highly fidelity driving simulator of ika.

The SpeedE initiative remains open to additional partners.

The SpeedE research platform facilitates collaboration and offers various advantages to its partners:

- building an interdisciplinary network from academia and industry
- benefiting from the innovation potential of leading research institutions
- jointly developing and evaluating technical solutions in public or bilateral projects
- demonstrating new technologies in an advanced and neutral vehicle concept
- intensifying contacts to young talents and scientists
- gaining insight and participating in relevant research of leading university institutes

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