

# EO smart connecting car 2

Highly innovative, flexible and autonomous electric vehicle of the future

## System Description

EO smart connecting car 2 is the result of consequent and ongoing research, development, and optimization of the EO smart connecting car concept. Its enormous flexibility is realized by the possibility to drive normal and diagonal, to turn on the spot, and to drive sideways. It is also possible to shrink the car by almost a meter in length and to autonomously dock at charging stations. It was created as a test platform for the development of complex autonomous functions. In addition, its modular design offers a number of different applications in several domains, such as public and private transportation, logistics and more.

One problematic aspect of electric vehicles is the charging cable. To face this issue, a versatile, foldable docking interface was constructed that fits into the body of the car and also allows for connecting extension modules, like range extenders, passenger modules, or cargo modules.



## Technical Details

- **Size:** 2.5 m x 1.57 m x 1.6 m; 2 m x 1.57 m x 2.25 m in folded state\*
- **Weight:** 750 kg
- **Power supply:** 54 V – LiFePo4 battery
- **Speed:** 65 km/h (40 mph)
- **Range:** 50 km (~31 miles) - 70 km (~43.5 miles)
- **Actuation/Engine:** 4 x 4 kW wheelhub motors; 10 x longstroke-Lineardrive with 5000 N; 2 x Folding Servo
- **Sensors:**
  - Hall-effect as well as string potentiometer sensors for angle and length measurement
  - Stereo-cameras at the front and at the back
  - 32-Line Lidar for 3D-scans of the environment
  - 6 ToF 3D cameras for near field overview
- **Communication:** CAN-Bus RS232 RS485 LAN

\*Lengths depend on the applied type of tire/tire section

**Application:** Personal Transport, Logistics, Autonomy

**Projects:**

- **DaBrEM**  
Dalian Bremen Electric Mobility  
(06/2013 - 12/2015)
- **NemoLand**  
New Mobility in Rural Areas  
(10/2011 - 06/2014)



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