Mechatronics

Unique electric charging port flap for e-vehicle

Project description: For the Audi e-tron we developed the world’s first self-opening charging port flap. By pushing of the electric button, the flap opens with one fluid motion and provides access to the charging port. An LED-lit search field and an LED charge level indicator simplify charging for the user. Our particular achievement was the development of the locking kinematics.

The task was to take the metal prototype with 4-point kinematics provided by the customer and recreate it in plastic (2K hard/hard). The highly reinforced plastics guarantee the necessary stability of the assembly. Also, the plastic decoration screen can be finished online in the colour of the vehicle without the component becoming deformed. The 2K hard/soft technology used to form the seal prevents water penetration. This means that washing the car is not a problem since the closed charging port flap is steam jet resistant and splash-proof. All this makes the electric charging port flap a high-quality and completely unique detail for the vehicle that is fully functional even under extreme conditions.