

**VOLKSWAGEN**

AKTIENGESELLSCHAFT



## Volkswagen's view on 6G

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## The Volkswagen Group at a Glance

By **2050** the entire Volkswagen Group  
aims to become carbon neutral

Approx. **665,400** employees  
worldwide produce vehicles and work in vehicle-related  
services or other fields of business

**9.30 million** vehicles  
delivered to customers in 2020

**120+** production plants  
in 20 European countries and a further  
11 countries in the Americas, Asia and Africa  
(Status: 18-06-20)

Approx. **44,000** vehicles  
produced every working day


By **2030** the Volkswagen Group  
will have launched about 70 all-electric car models


# Use Case

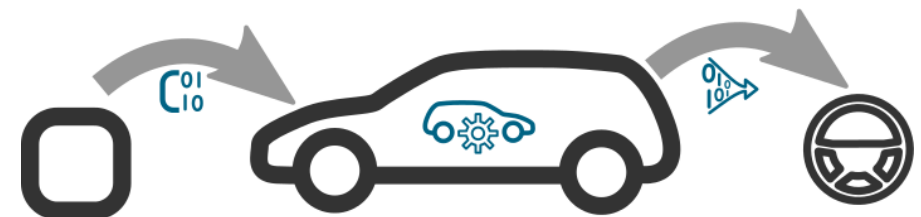
## Driving Function Off-Loading

### Current Automated Driving

 Perceiving the vehicles environment with sensors

 Calculating a trajectory

 Vehicle acts accordingly




## Use Case Driving Function Off-Loading

Vision: Offloading the whole Driving Stack

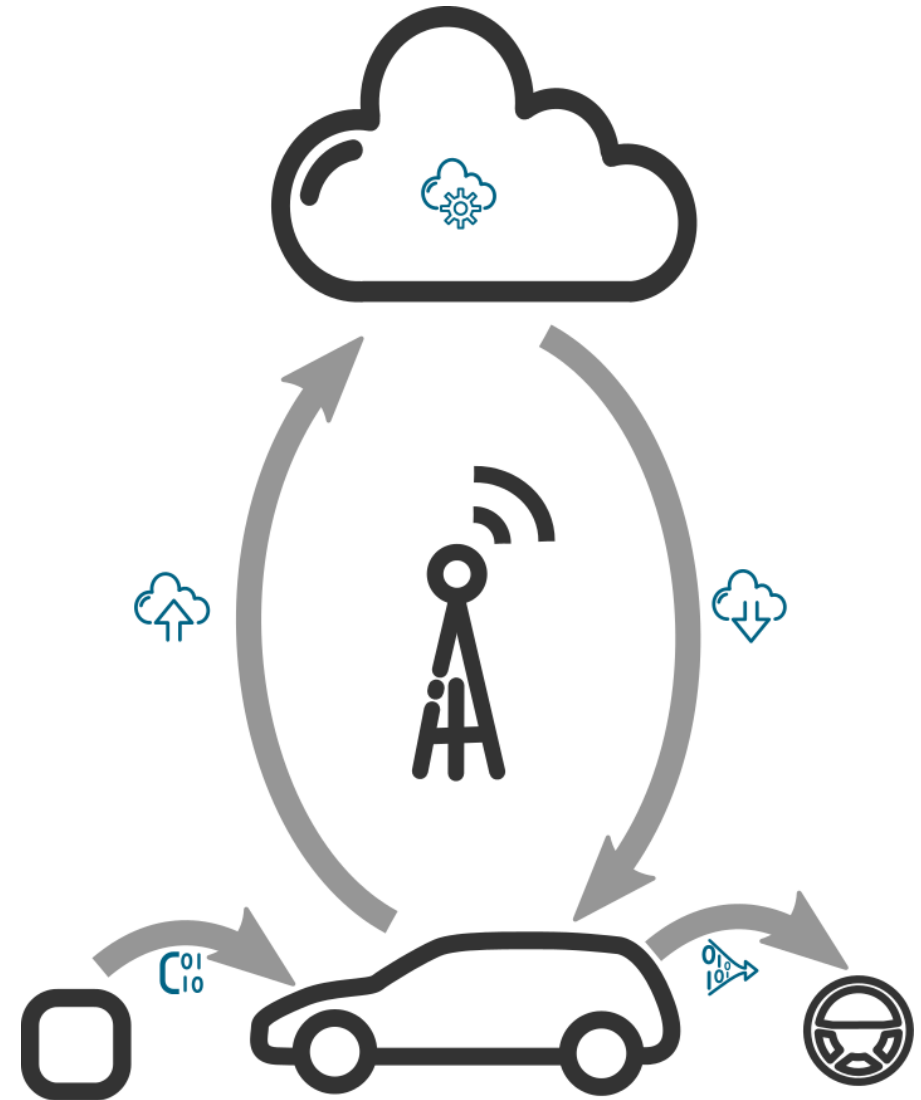
 Perceiving the vehicles environment with sensors

 Transferring sensor data to the cloud

 Calculating a trajectory

 Transferring trajectory to vehicle

 Vehicle acts accordingly



## Consequences

### Coverage

No automated driving without connectivity





### Reliability

Predictable and graceful service degradation

### Data-Throughput

Upload  > Download 

### Latency

 >  +  +   
In-Vehicle Computing Time > Upload Time + Cloud Computing Time + Download Time



## Expectations of 6G

### Coverage

- Dual SIM Dual Active (DSDA)
- Multi Technology (Cellular, Satellite, ...)

### Reliability

- Predictive Quality of Service
- Dual SIM Dual Active (DSDA)
- Continuous information about cell status

### Data-Throughput

- Dual SIM Dual Active (DSDA)
- Usage of additional Frequencies

### Latency

- Edge Computing
- Dual SIM Dual Active (DSDA)

