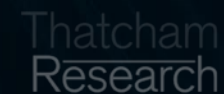
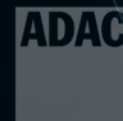
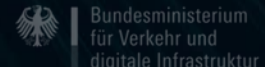
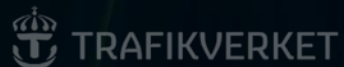
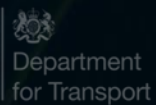


FOR SAFER CARS

EURO NCAP





Euro NCAP second release on Assisted Driving

Richard Graham

EUCAD – 8 September 2020

AD Vehicles Under Test



Audi



DS AUTOMOBILES



HYUNDAI



Mercedes-Benz



NISSAN



TESLA



TOYOTA



VOLVO

2018 Results Summary



DS AUTOMOBILES



Audi



Mercedes-Benz



NISSAN



TOYOTA



HYUNDAI



VOLVO



Euro NCAP Definitions for AD



Assisted

- Driver retains full responsibility and shares control with the Vehicle
- Vehicle & Driver share Object and Event Detection and Response (OEDR)
- Driver may not perform secondary tasks over and above those permitted during normal driving

Automated

- Vehicle has full responsibility for control in Operational Design Domain (ODD) defined by the OEM
- Vehicle performs OEDR
- Driver may perform certain other non-driving tasks
- Driver needs to be available for safe transition of control



Autonomous

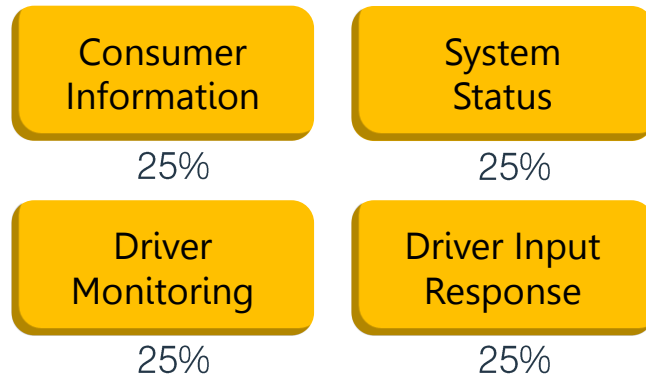
- Vehicle has full responsibility for control in Operational Design Domain (ODD) defined by the OEM
- Vehicle performs OEDR
- Driver is effectively a passenger
- Driver has no ability to control (apart from switching to another mode)

Euro NCAP AD Matrix

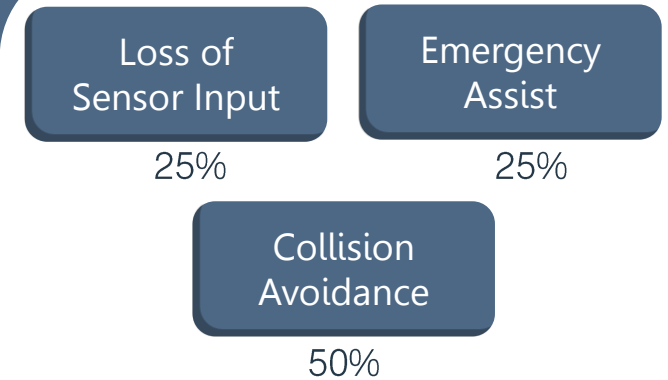
	Parking	City	Inter-Urban	Highway
Assisted				
Automated				
Autonomous				

Safe Automation – 2020 Release

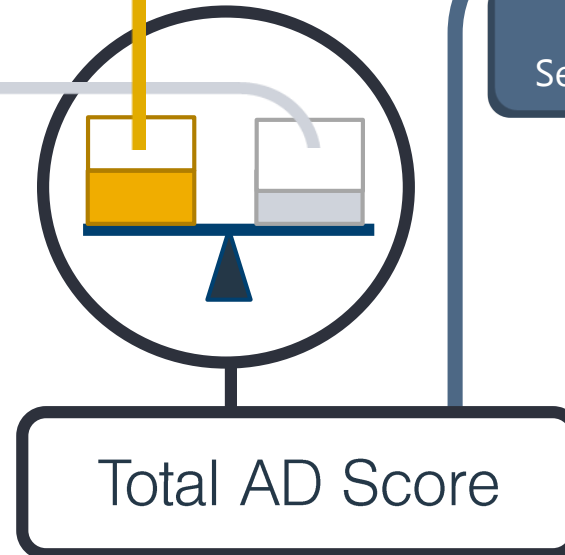
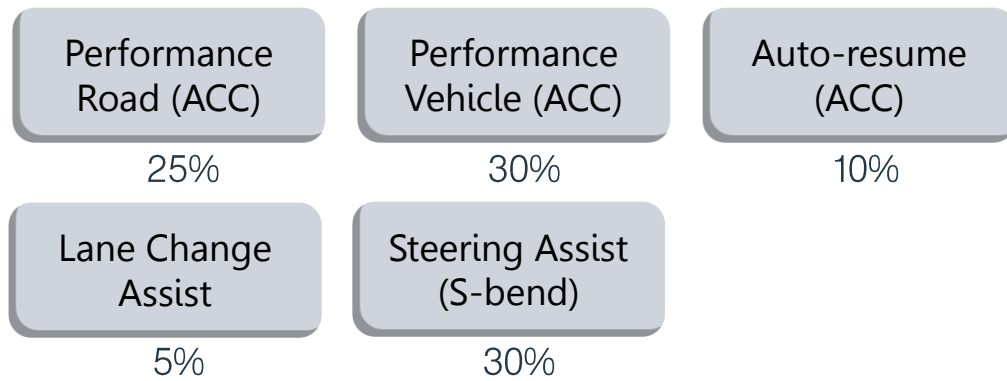
+ Driver Engagement



+ Safety Backup

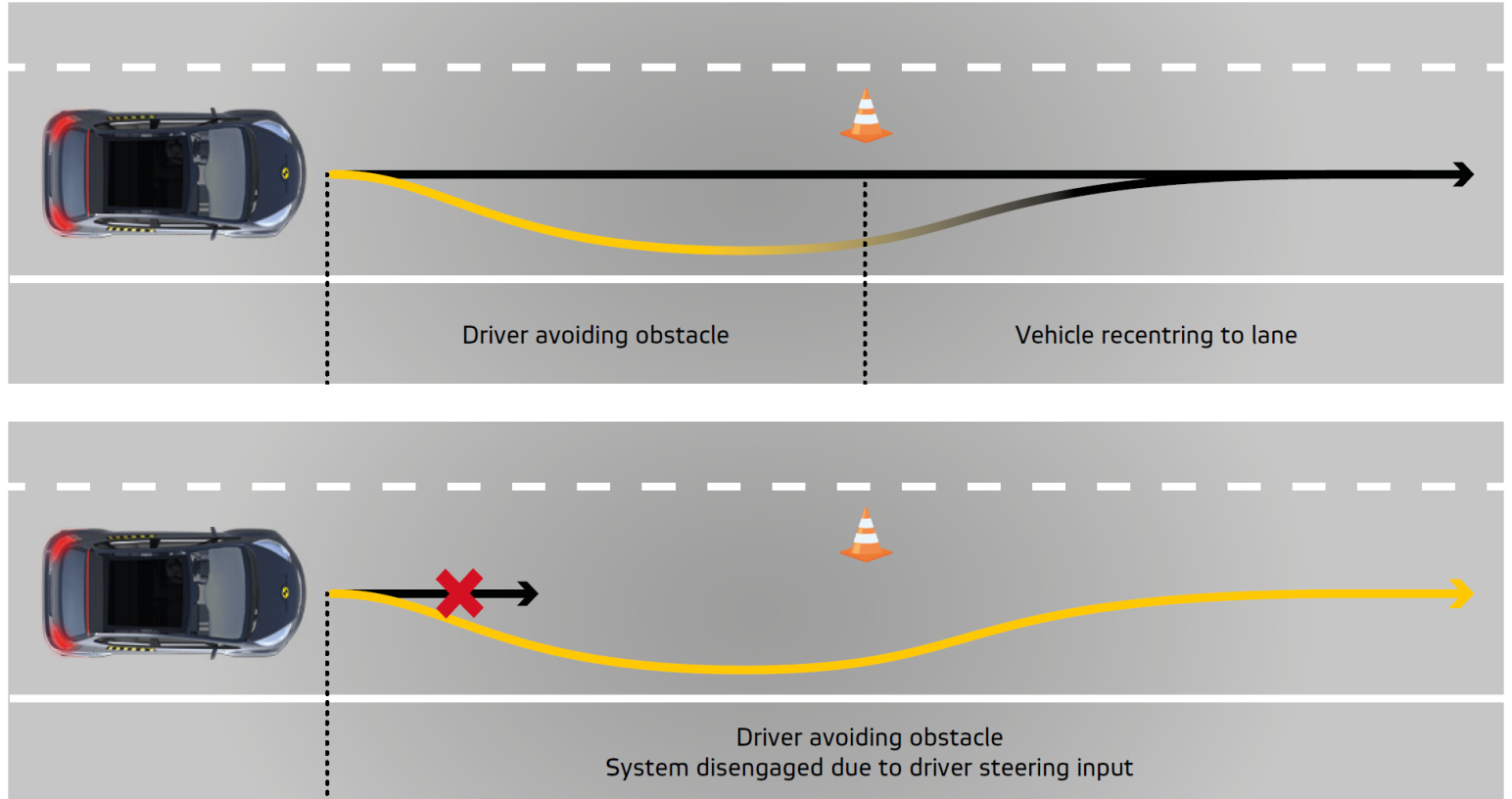


+ Vehicle Assistance

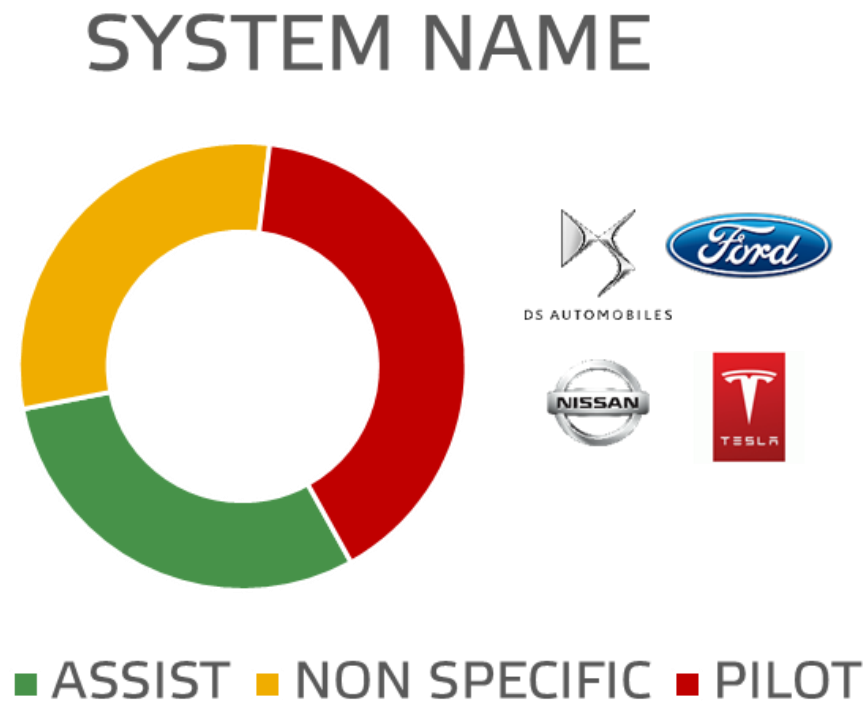
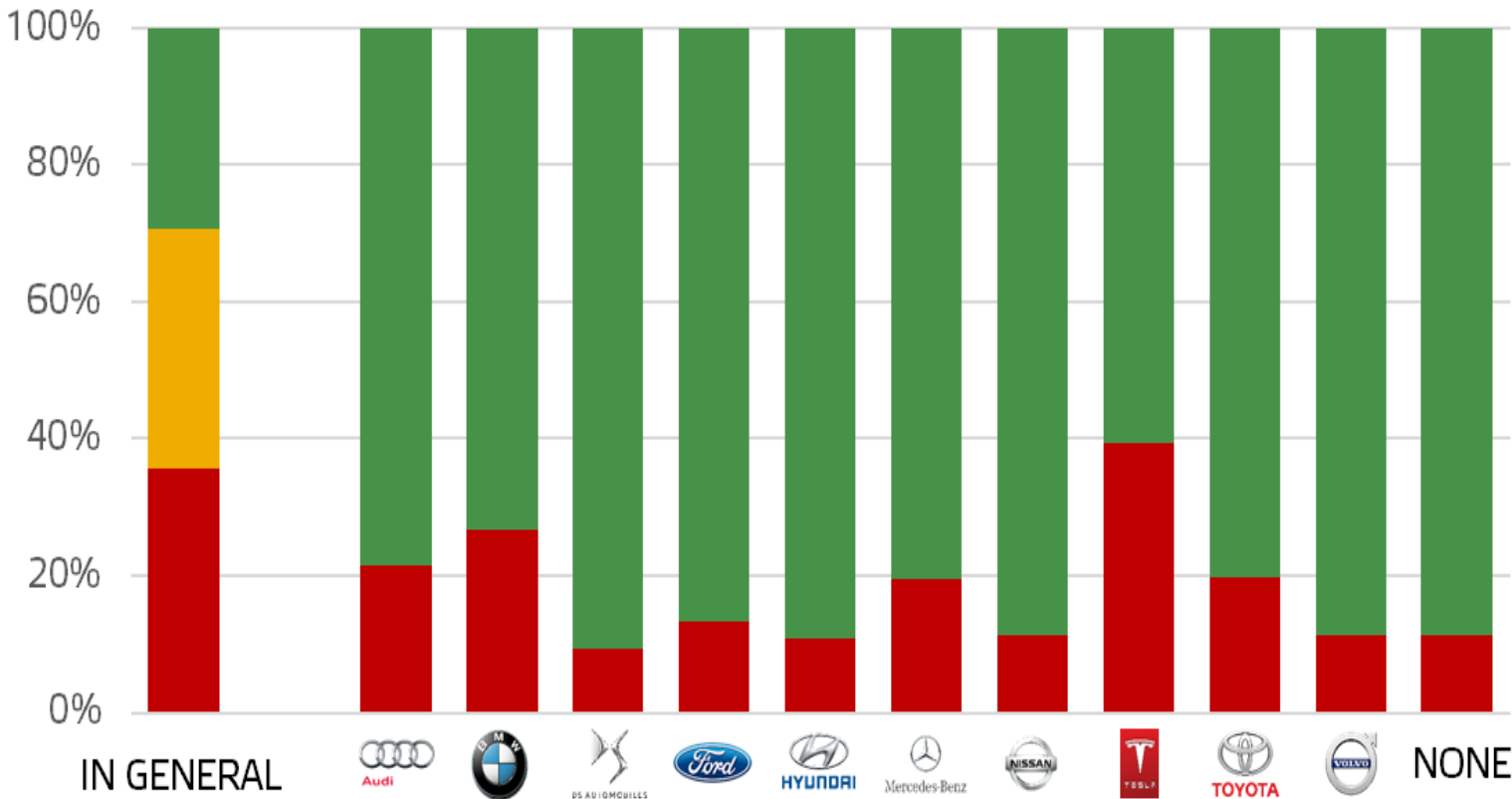


Driver Engagement

- Consumer information
 - Naming
 - Marketing
- System status
 - Icons
- Driver Monitoring
 - Indirect vs direct
- Driver input response



Consumer Information



System Status



Stand-By

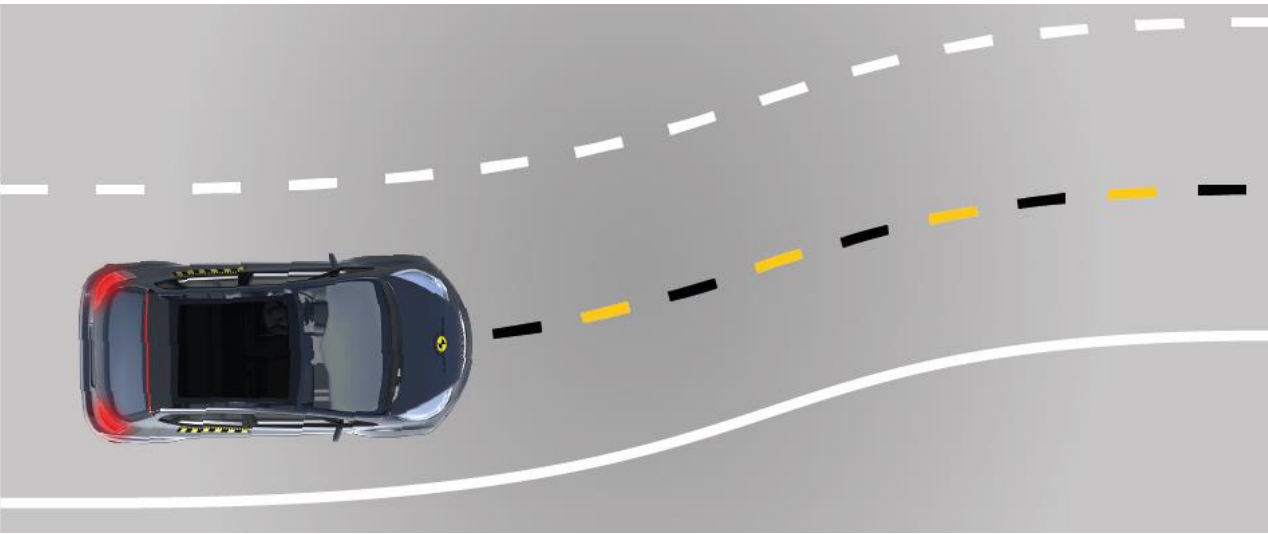
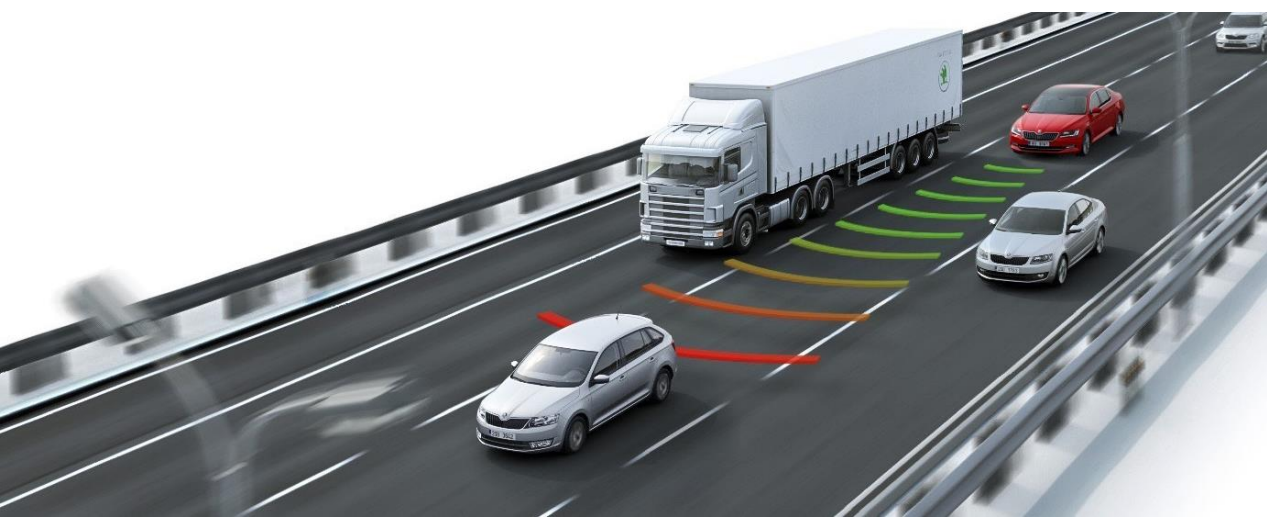


Longitudinal Only



Longitudinal & Lateral

Vehicle Assistance



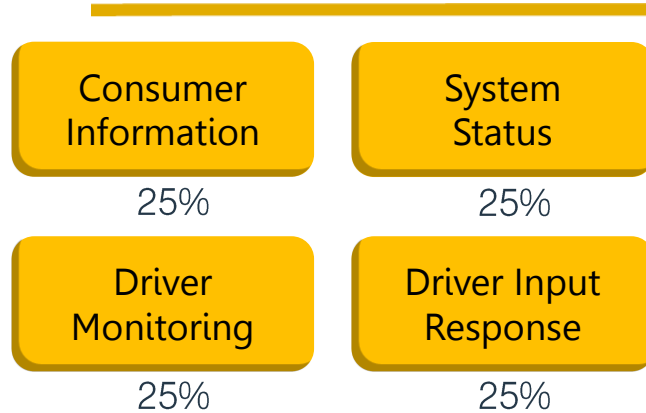
Adaptive Cruise Control

Lane Centering

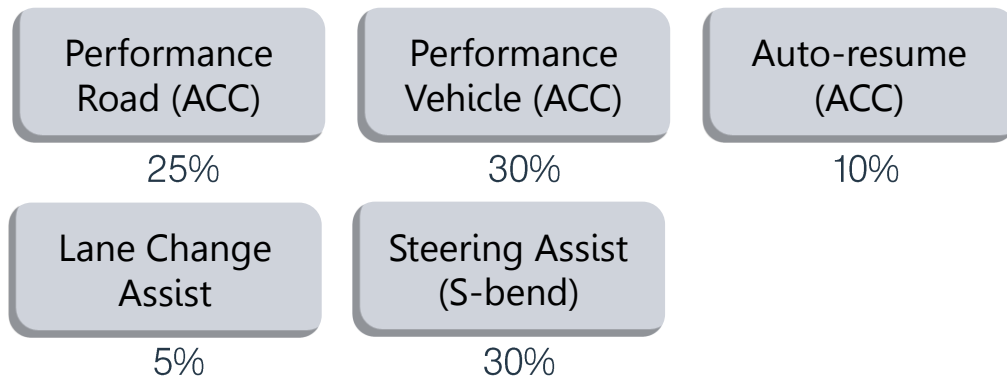


Safe Automation – Balance

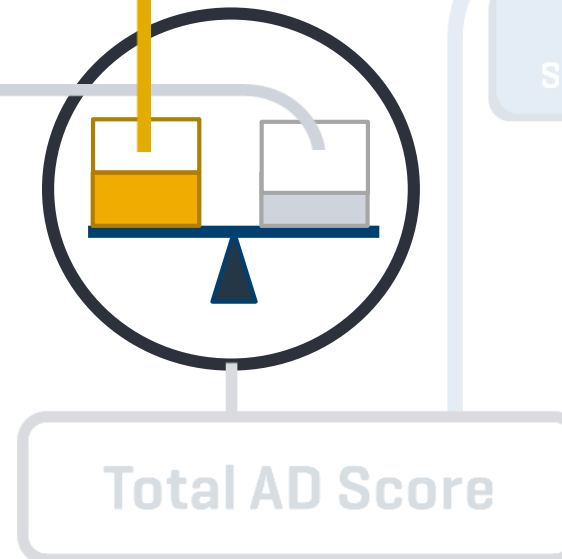
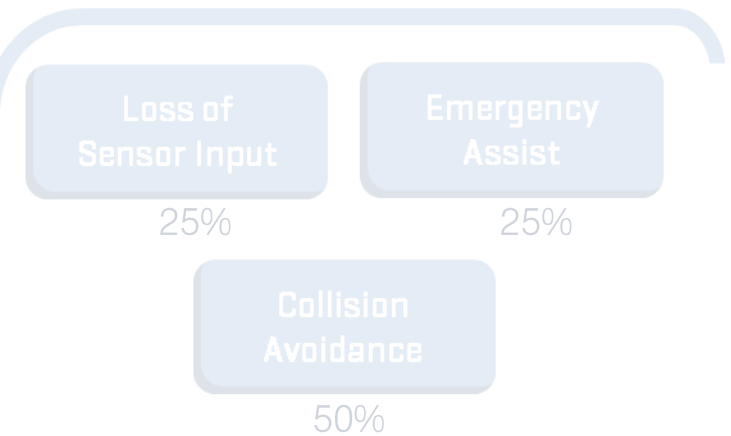
+ Driver Engagement



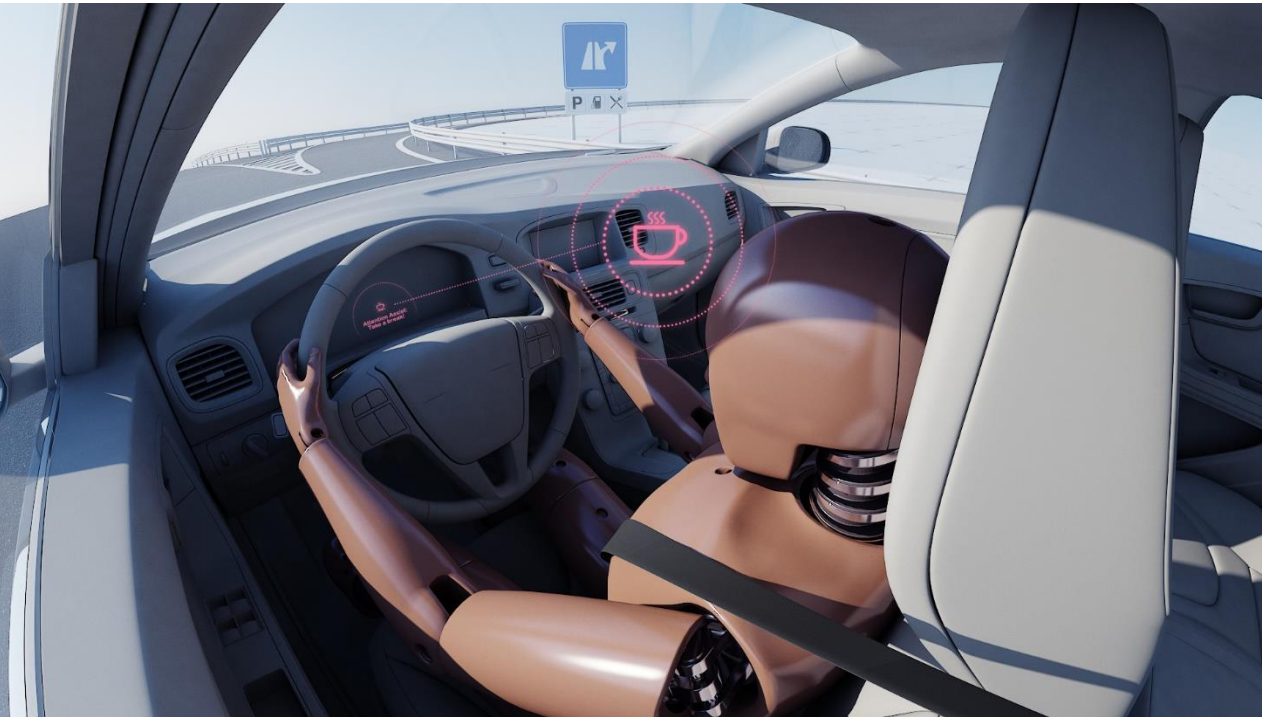
+ Vehicle Assistance



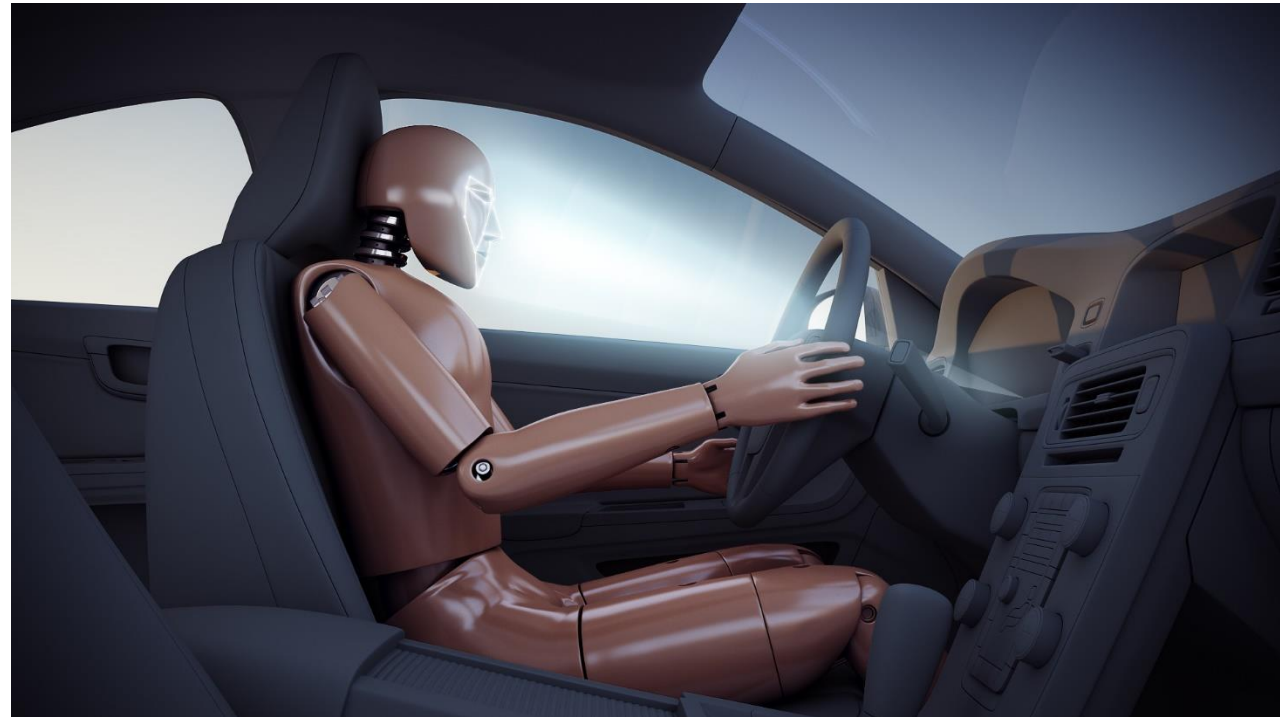
+ Safety Backup



Driver Monitoring



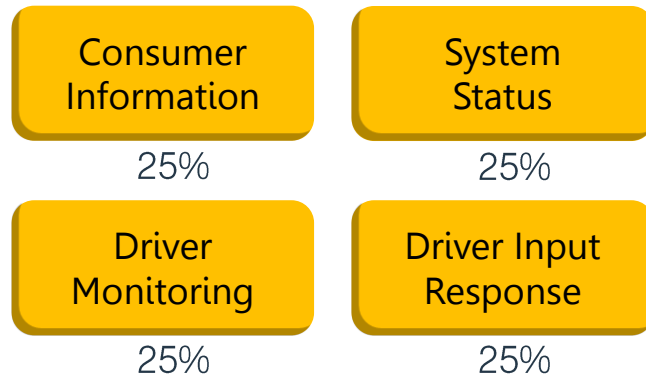
Attention Assist



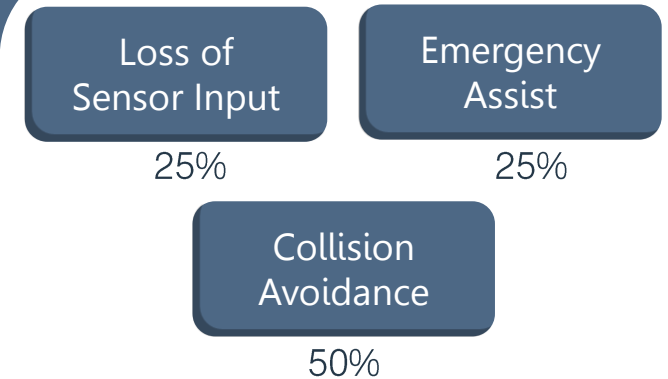
Direct Driver Monitoring

Safe Automation – Balance

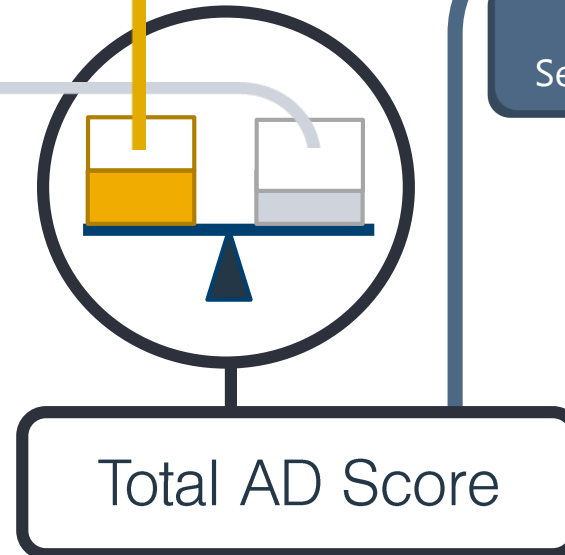
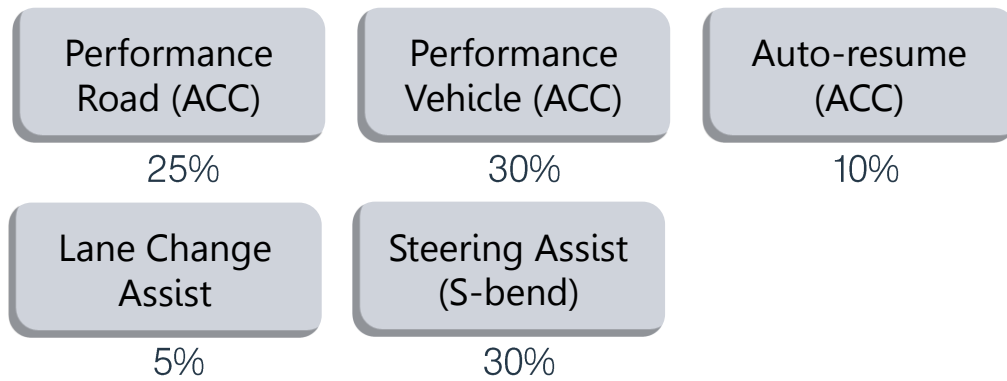
+ Driver Engagement



+ Safety Backup



+ Vehicle Assistance

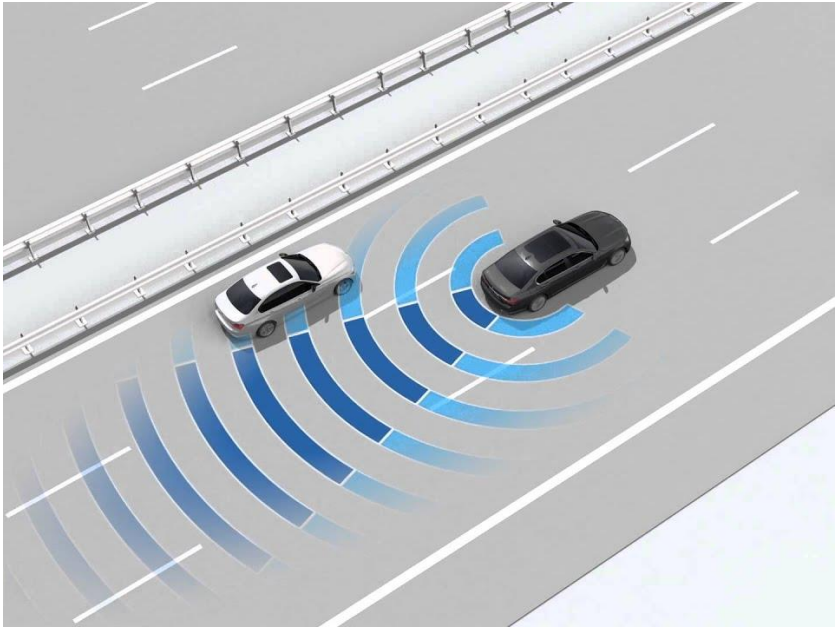
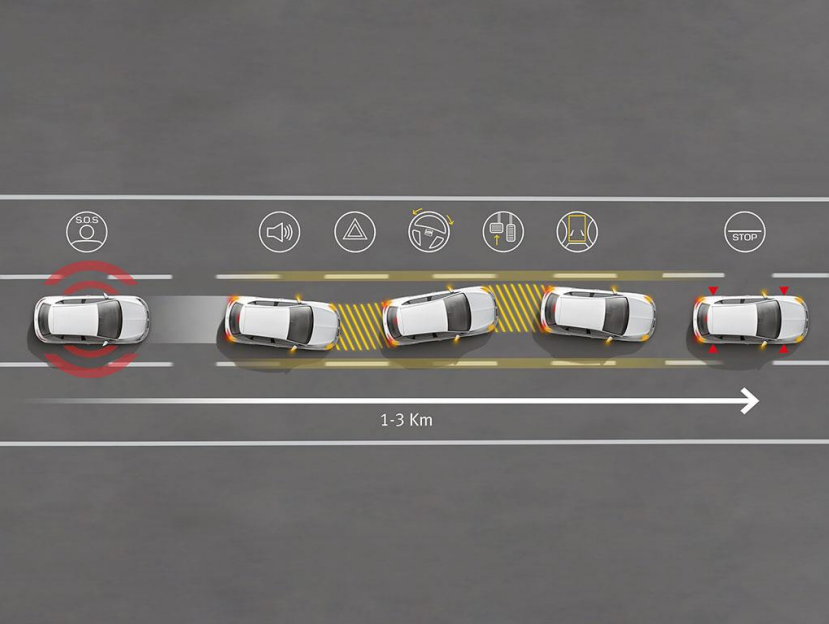


Safety Backup



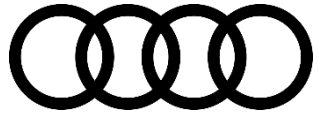
Loss of Sensor

Emergency Assist



Collision Avoidance

2nd Publication on AD



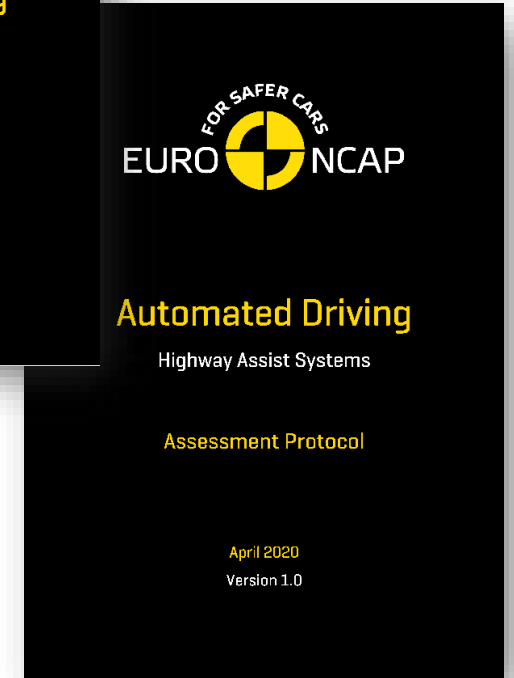
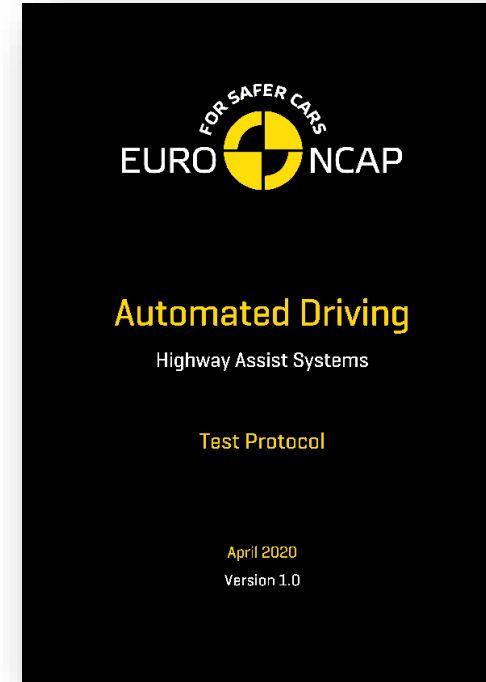
Mercedes-Benz



PEUGEOT



RENAULT



FOR SAFER CARS

EURO NCAP

