

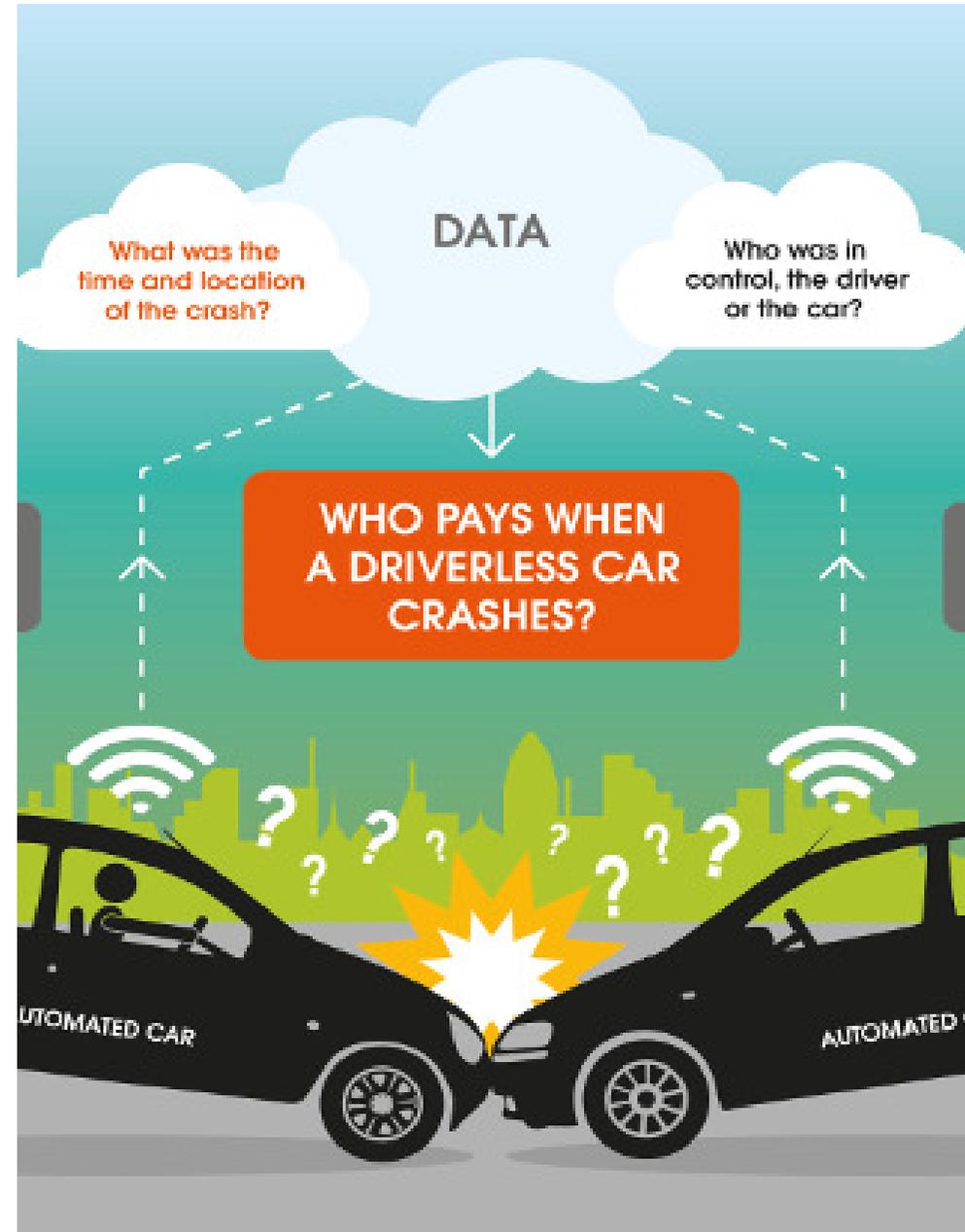
# Driverless Cars

Where will liability for accidents lie

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Thatcham Research

October 2017



# Assisted to Automated

Insurers using a clearer definition for drivers

## Stages of Automation

Today



2019



2021



2025+



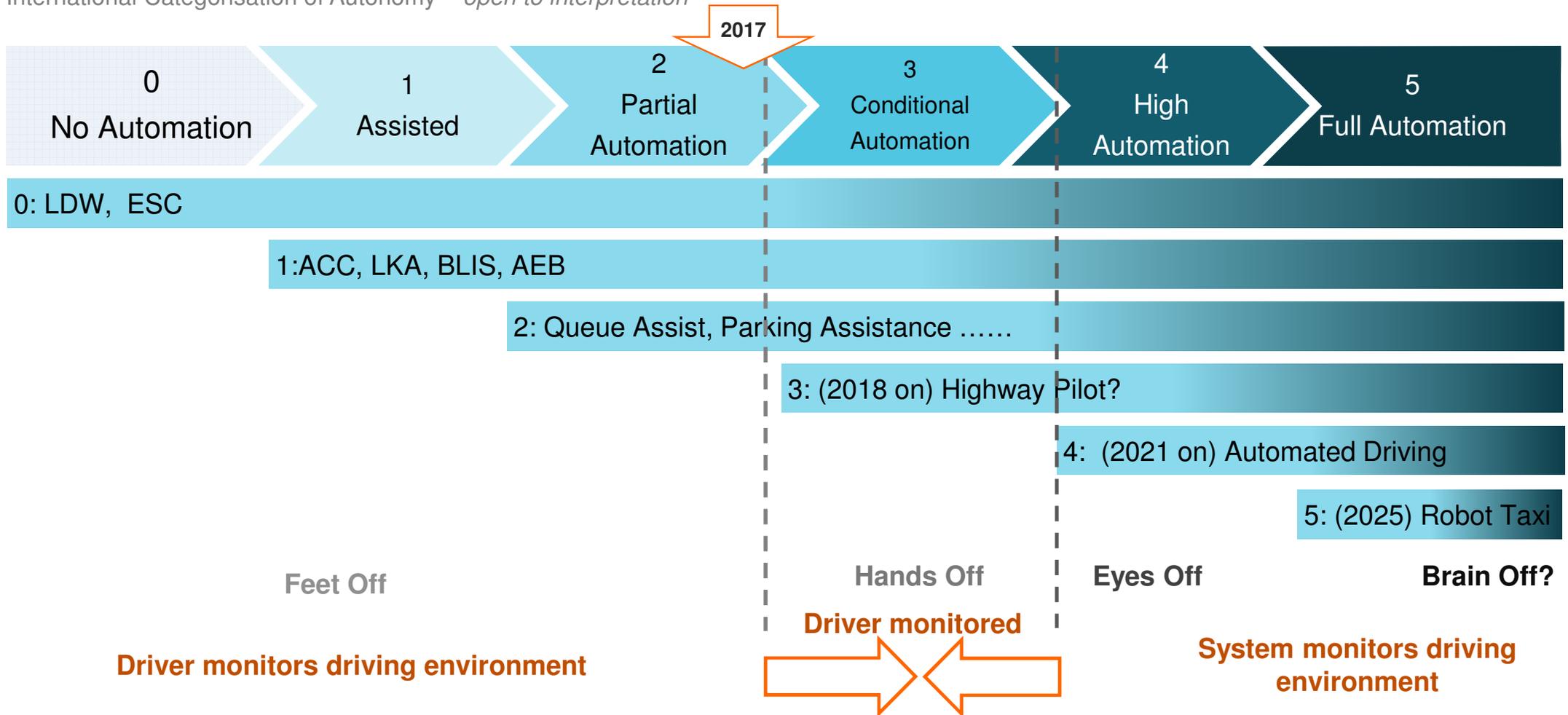
Assisted Driving

Automated Driving

# The Autonomous Car

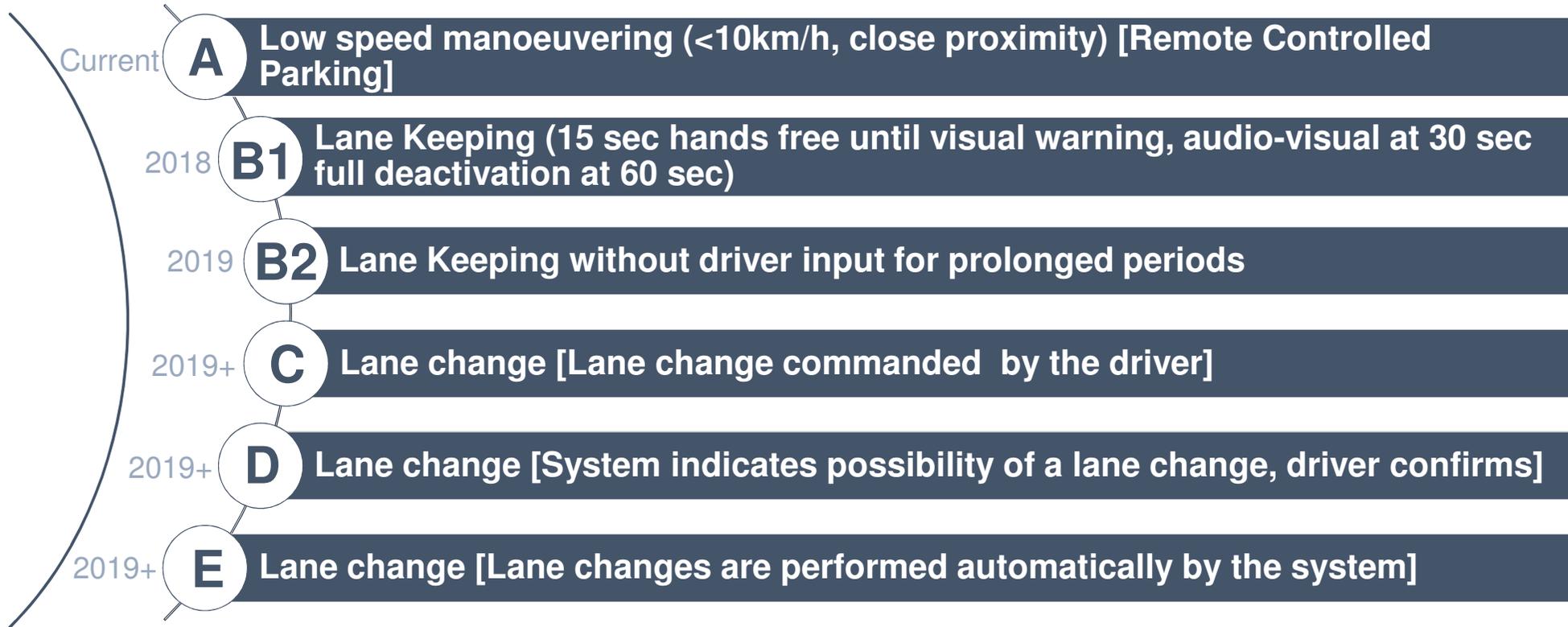
Timeline

International Categorisation of Autonomy – *open to interpretation*



# Regulatory Procedures – R79

Automatically Commanded Steering Function (ACSF) categories



SAE Levels are not appropriate for regulation. R79 specifies the automated steering functions which combine to deliver SAE automation.

# Timeline Leading to Event Assisted vs Level 3 vs Fully Automated

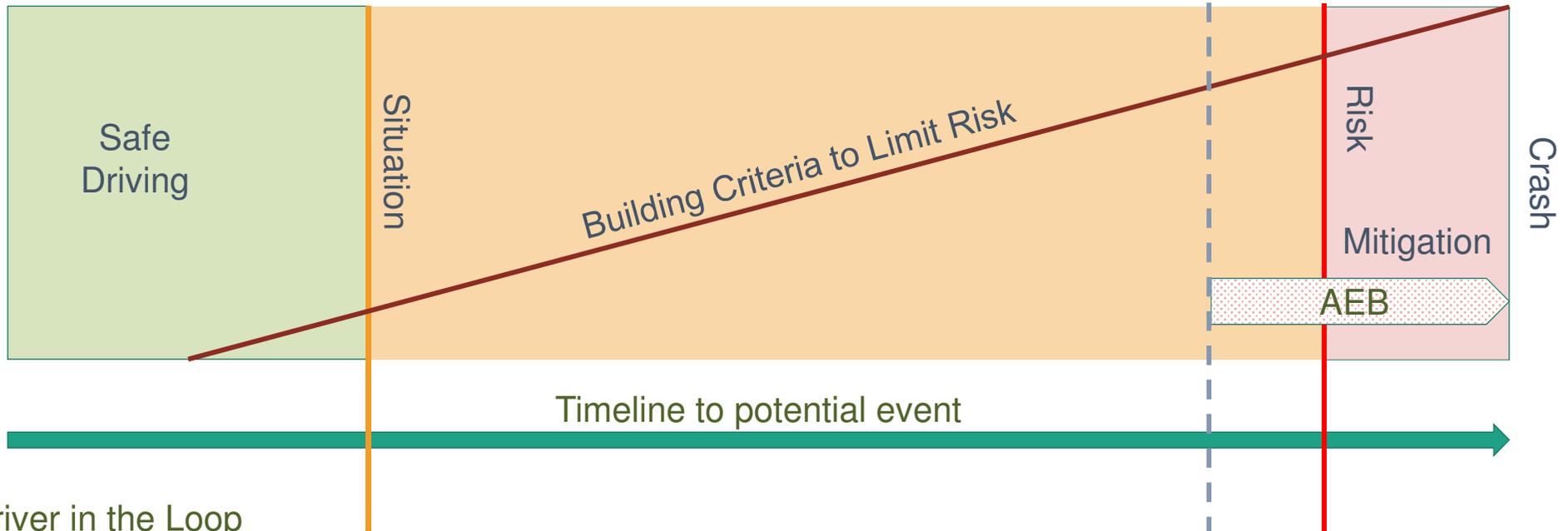
Level 0-2



Level 3



Level 4/5

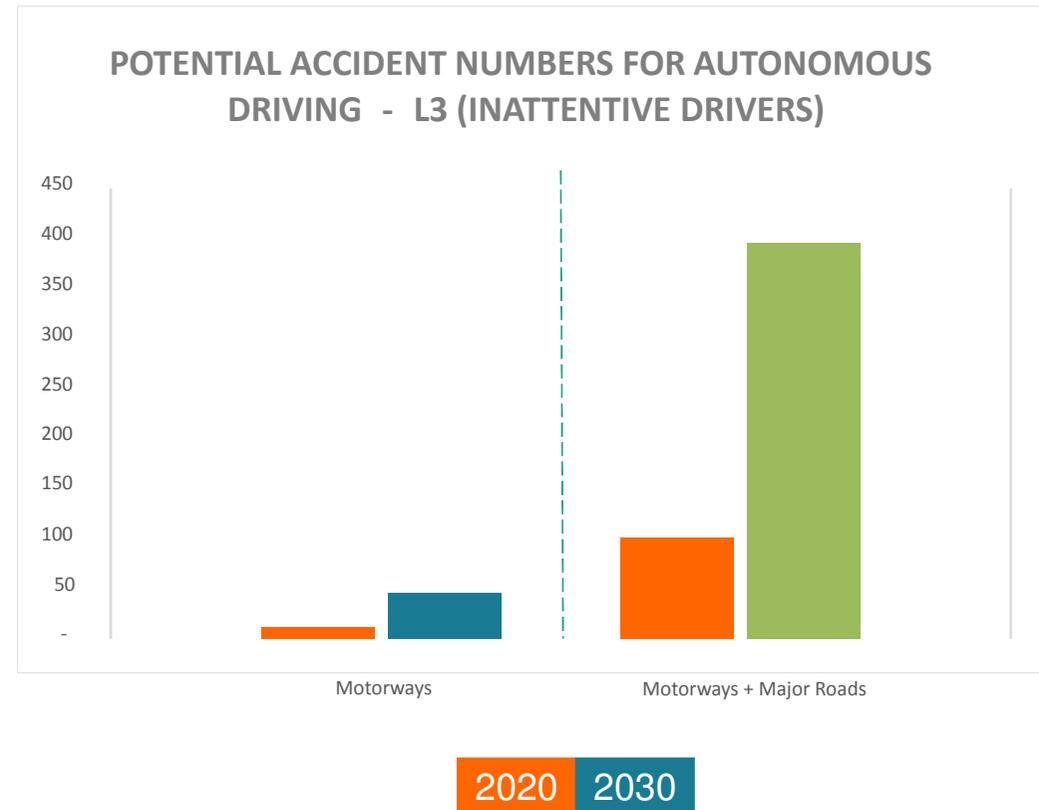


**DITL** – Driver in the Loop

**DOOL** – Driver out of Loop

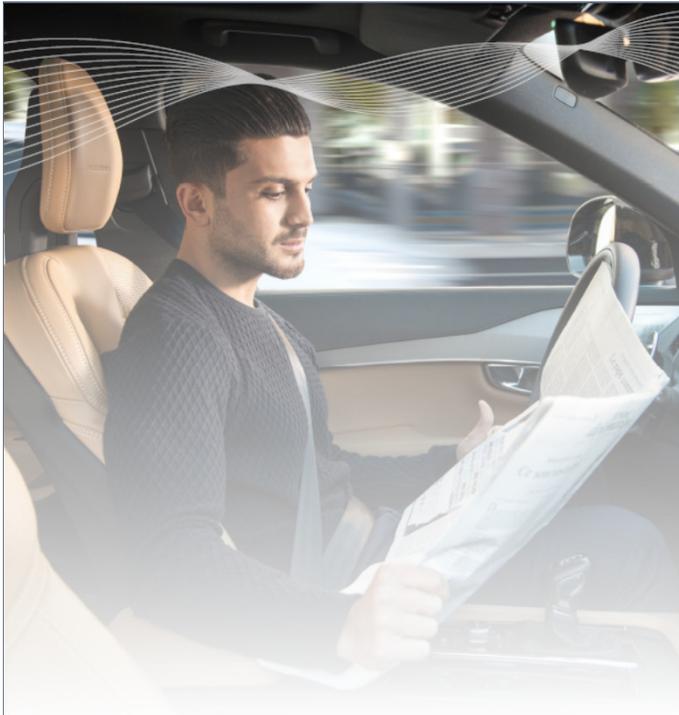
# New risks from Automation

- Automation will reduce accidents and injuries **BUT**
- Risk of inattentive drivers:
  - Misleading advertising of systems
  - Misunderstanding of system capability
  - Lazy / distracted drivers
- Assumed for level 3 only
  - Leading systems entering market now
  - Level 4 more sophisticated; will replace level 3
  - Driver is system fall-back in level 3
- Current regulation 79 developments will restrict use to motorways to limit the risk; not yet final
- Higher risk that these accidents may be catastrophic
- Geo-fencing of functions means driver understanding of limitations and restrictions will be important to limit the risks

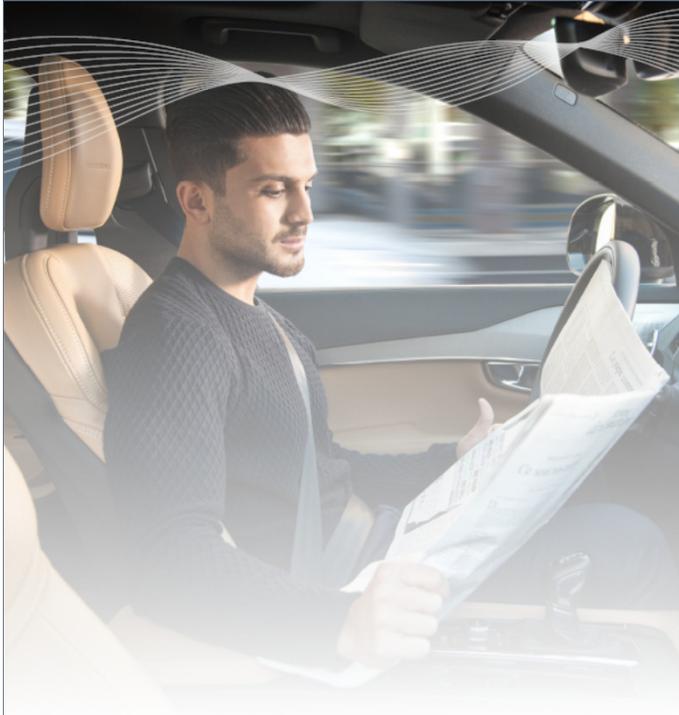


# Regulating Automated Driving

The UK Insurer View



- Clear distinction between Assisted and Automated driving
- Vehicle manufacturers to use appropriate terminology – avoid overclaim in naming different levels of automation
- Data from accidents available to all parties – determine liability
- Automated driving defined as:
  - Driver can safely disengage – car capable of dealing with virtually all situations
  - Safe stop in case of inability to handle a situation
  - Ability to avoid all conceivable crash types and can continue to function adequately in the event of partial system failure
  - Instant access to data for both vehicle manufactures and insurers to determine liability without ambiguity
- Otherwise Assisted driving



# Summary

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- Assisted Driving – Driver is liable
- Automated Driving – Liability depends on who is in control
- Lobbying regulators to make liability easier to establish
  - Fast, independent access to incident data for both manufacturers and insurers
- Level 3 raises most concerns – Driver is the system failsafe
- New technology will mean less accidents and injuries overall
- New types of accident may emerge due to driver distraction

# Appendix : Data Capture

## R79 Insurer proposals

Proposals are in place for the provision of mandatory DSSA (Data Storage System for Automated driving), there are limitations that will not allow an efficient and fair insurance claims process.

International insurers want to augment those already proposed to include:

1. The identification, classification, fit and functionality of the system
2. Identification as to the status of the automation system(s) (automated mode, transition of control, manual driver mode).
3. Is capable of recording and storing data at all times, including when stationary, in any geographic location and in all automation modes and collects and stores data when appropriately triggered.
4. GPS location of the event – (to ensure appropriate system use).
5. Applies to all systems capable of continuously controlling the steering for a time, including remote parking or distance control systems and whether or not in combination with any automated lane change or speed control functions (ACSF-A and ACSF-B2 up to E) as defined in proposed amendments to UNECE Regulation 79.
6. Records and stores data 30 seconds before and 15 secs after an incident and stores it for at least six months.
7. Records and stores data in all incidents, including minor crashes, insufficient to trigger the Supplementary Restraint System (SRS) e.g. Seat Belt Pre-tensioners and Airbags.
8. Allows insurers neutral, unbiased access to decoded data either by direct access or via over the air telematics links through a neutral third party data handler.
9. Resists attempts to manipulate or delete recorded and stored data.

### Data Capture Requirements

1. GPS-event time stamp
2. GPS-event location
3. Automated Status – on or off
4. Automated Mode - Parking or Driving
5. Automated Transition time stamp
6. Record of Driver Intervention of steering or braking, throttle or indicator
7. Time since last driver interaction
8. Driver Seat Occupancy
9. Driver Belt Latch

### This means

- The presence of systems capable of Automated Driving is openly identifiable.
- System status is known at the time of the incident.
- It is possible for the driver as well as the owner of the vehicle to exonerate themselves and be able to prove potential manufacturer liability; and vice versa protection of vehicle manufacturers and suppliers against unjustified claims.
- Motor insurers have a level playing field with vehicle manufacturers in terms of the information needed to establish liability when a vehicle capable of Automated Driving is involved in an incident.
- The continuous improvement of Assisted and Automated Driving systems and the optimisation of road safety.