DAIMLER

AdaptIVe

Automated Driving Applications and Technologies for Intelligent Vehicles

Legal issues addressed in the EU funded AdaptIVe project

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// Potentials for automated driving

Drivers are supported in demanding or repetitive tasks. Travel comfort increases.

Vehicles dynamically adapt the level of automation according to the current situation.

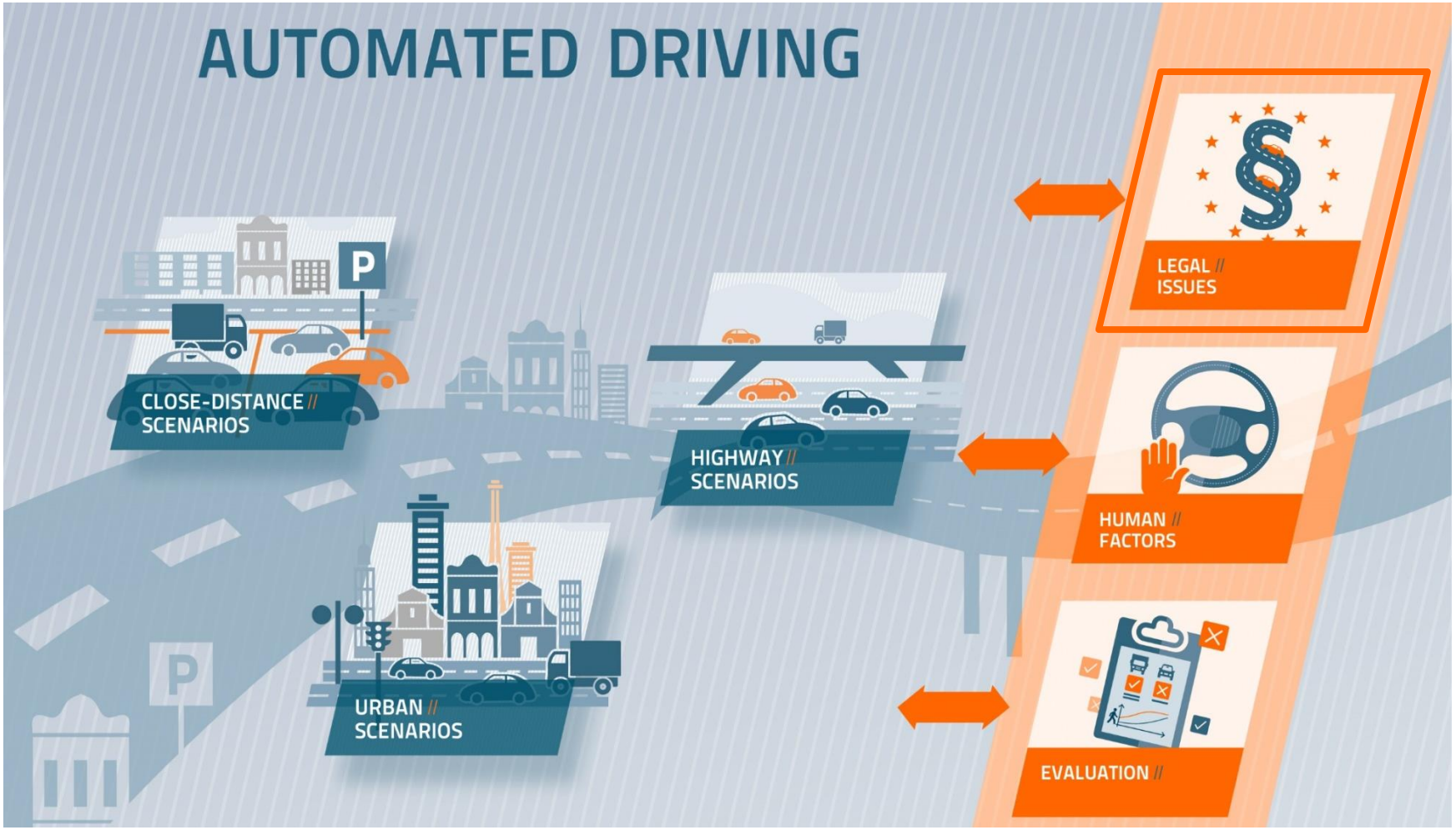
Vehicles react more effectively to external threats.

Vehicles are resilient to different types of system and human failure.

// Motivation for automated driving functions

Zero emission	Reduction of fuel consumption & CO_2 emission Optimization of traffic flow	
Demographic change	Support unconfident drivers Enhance mobility for elderly people	
Vision zero	Potential for more driver support by avoiding human driving errors	

//The integrated project AdaptIVe

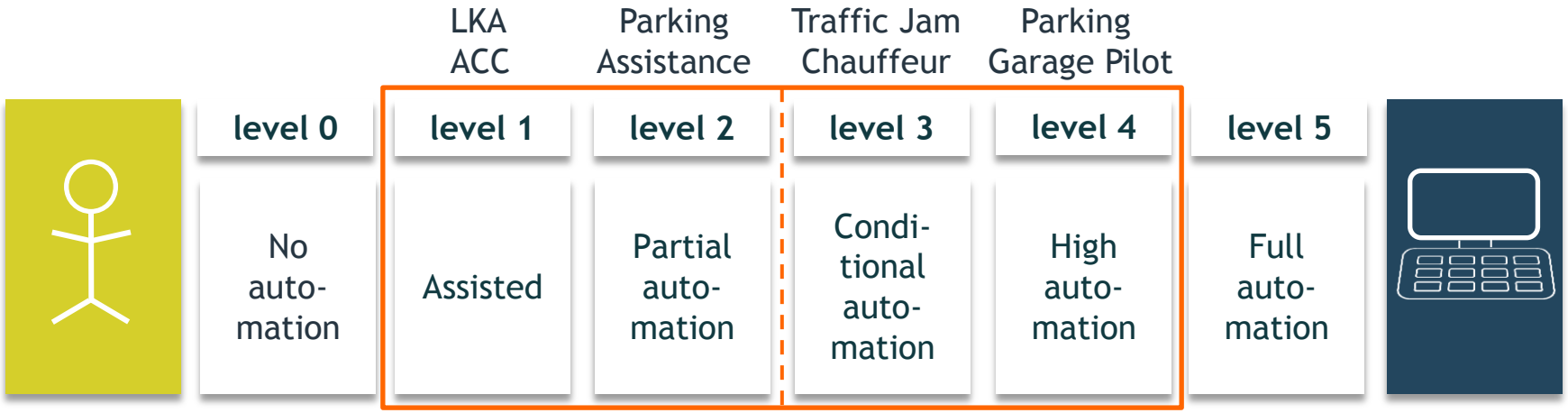


// Response 4

Legal issues - Response 4

// Response 4 partners

// Levels of driving automation



Driver in the loop

- No significant change with respect to existing driver assistance systems

Driver out of the loop

- Not in accordance with regulatory law (Vienna Convention of 1968, national road law)
- Shared responsibility for control between driver and system

  ➔ need for action

Source: SAE document J3016, "Taxonomy and Definitions for Terms Related to On-Road Automated Motor Vehicles", issued 2014-01-16, see also http://standards.sae.org/j3016_201401/

// Challenges

Discuss need for action from an industry perspective	Pave road to market introduction of automated vehicles
Current legal situation does not allow automated vehicles on public roads.	Assess law and identify needed adaption
National laws can be different with respect to automated driving	Analyze main markets - project partners will contribute for their countries
When can a vehicle be considered safe?	Interpretation of existing law. Liability risks?

// Research tasks

System classification: Group **categories** of automated driving functions

Legal difficulties for market introduction of automated driving functions:

What are the **new risks** for the manufacturer from product liability

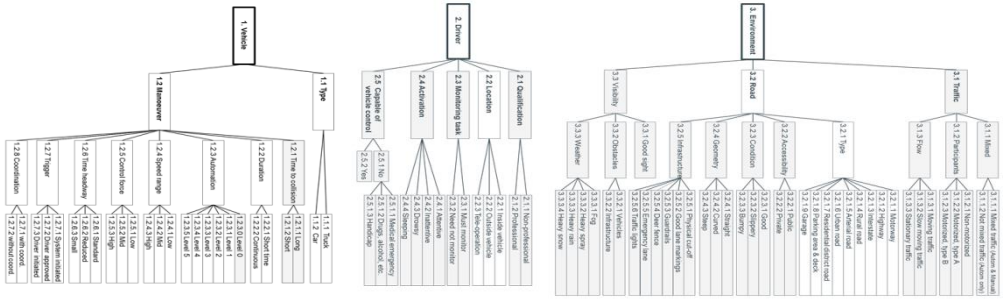
Usage and protection of data collected by automated driving functions

Protection against corruption and fraud of vehicle data and V2X data

// System classification

Systematic derivation of relevant system parameters for:

- Vehicle
- Driver
- Environment



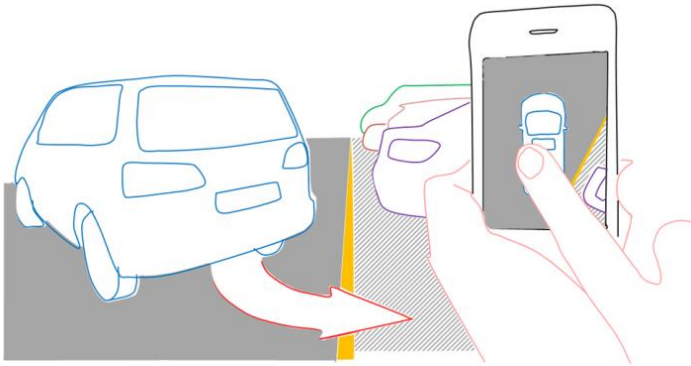
Available to public as Deliverable 2.1 on the AdaptIVe website.

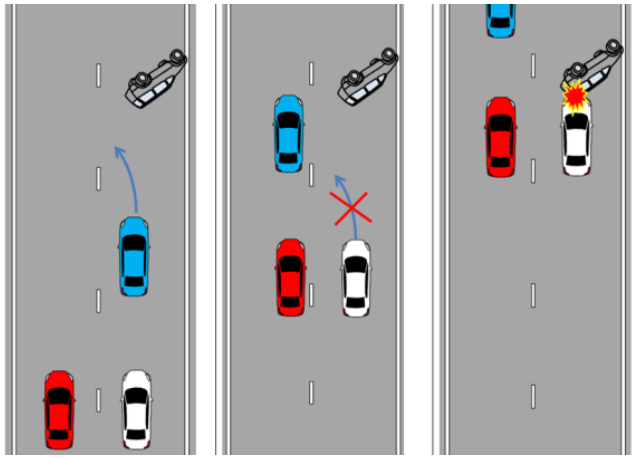
No.	Parameter	Range of values
1	Vehicle type	truck, car
2	Maneuver duration	short, long
3	Maneuver automation	Level 1 - 5
4	Maneuver velocity	low, mid, high
5	Maneuver control force	low, mid, high
6	Maneuver time headway	standard, reduced, small
7	Maneuver trigger	system initiated, driver approved, driver initiated
8	Maneuver Coordination	with coordination, without coordination
9	Driver's location	in vehicle, outside vehicle, tele-operated
10	Road type	type 1 -17 (see Table 4.7)

//Scenarios

Representative scenarios for assessment on a case by case basis, needed e.g. for product liability.

Based on system classification.

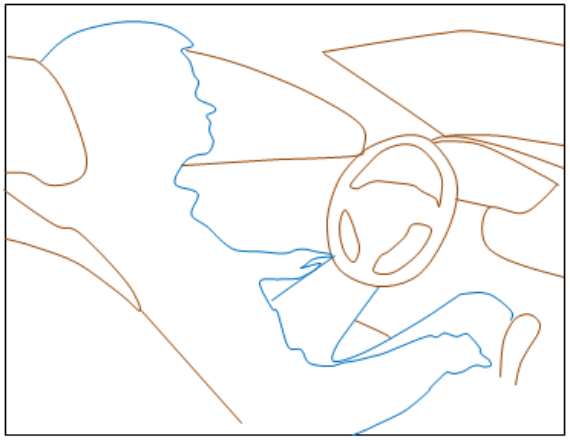


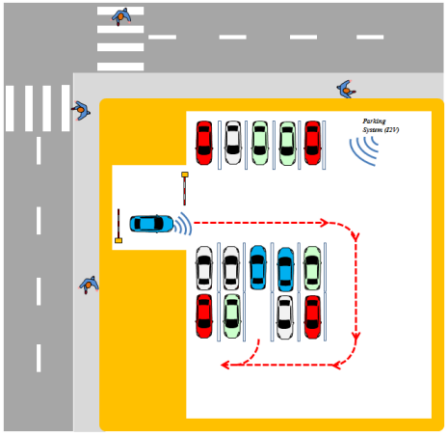


// Legal evaluation – road traffic law

Vienna Convention on Road traffic (1968)

- What means “to control” a vehicle from a legal perspective?
- Different adoptions of the Vienna Convention into national law





UNECE- Rules

- Area of conflict: Automated steering system (R 79: steering equipment)
- Driver have to remain at all times in primary control
- Automated commanded steering function only applicable in low speed or maneuvering operation

Changes in Road Traffic Law and Technical Admission Law are necessary

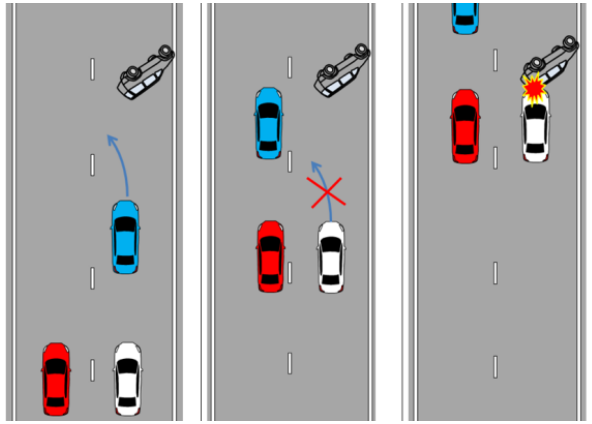
// Legal evaluation - liability

- Liability:

  The condition of being liable or answerable by law or equity
  - Distinction between the areas of law

    Civil liability | Criminal liability
  - Distinction between the liable parties:

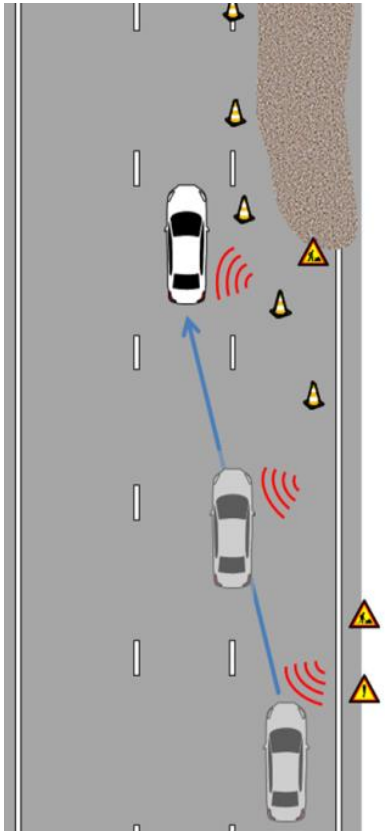
    Driver | Owner/registered keeper | Manufacturer



- Challenges in context
  - Burden of proof
  - Insurance law

→ Legal uncertainties

// Legal evaluation – privacy and security



Motivation	Source of data	Classification of Data
Technical function	Internal sensor	Recorded/used
Other purpose	External source	Sensitive/ non-sensitive

Analysis of legal framework	
European level	National level
Data privacy	Data privacy
Data security	Data security

//Summary

Hurdles to overcome:

- Changes necessary in Regulatory and Technical approval law
- Uncertainties in liability law
- Open legal issues in data privacy law and data protection law

Response 4

Will point out key legal issues that are currently preventing market introduction of automated driving systems.

// Outlook

Co-funded by
the European Union

Adapt/:/Ve

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Technologies for Intelligent Vehicles

Thank you.

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