Legal issues addressed in the EU funded AdaptIVe project
// Agenda

- **Project facts**
- Motivation
- Challenges, objectives, and concept
// Facts

Duration: 42 months (January 2014 - June 2017)

Budget: EUR 25 Million
European Commission: EUR 14,3 Million

Coordinator: Aria Etemad, Volkswagen Group Research

8 Countries: France, Germany, Greece, Italy, Spain, Sweden, The Netherlands, United Kingdom
29 partners
The integrated project AdaptIVe

AUTOMATED DRIVING

CLOSE-DISTANCE SCENARIOS

HIGHWAY SCENARIOS

URBAN SCENARIOS

LEGAL ISSUES

HUMAN FACTORS

EVALUATION

AVS 2015, Ann Arbor
// Agenda

• Project facts
• **Motivation**
• Challenges, objectives, and concept
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
Demonstrators

Actuators, key fob, ultrasonic and radar sensors, cameras, on-spot mapping

Actuators for vehicle control, laser scanner and radar sensors, cameras

Actuators, ECUs, on-board sensors, radar, map-based electronic horizon, V2X
Challenges and project objectives

Widespread application of automated driving to improve traffic safety, efficiency and comfort
Legal issues - Response 4
Levels of driving automation

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/

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
Challenges

Discuss need for action from an industry perspective

Current legal situation does not allow automated vehicles on public roads.

National laws can be different with respect to automated driving

When can a vehicle be considered safe?

Pave road to market introduction of automated vehicles

Assess law and identify needed adaption

Analyze main markets - project partners will contribute for their countries

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.

<table>
<thead>
<tr>
<th>No.</th>
<th>Parameter</th>
<th>Range of values</th>
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<tbody>
<tr>
<td>1</td>
<td>Vehicle type</td>
<td>truck, car</td>
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<tr>
<td>2</td>
<td>Maneuver duration</td>
<td>short, long</td>
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<tr>
<td>3</td>
<td>Maneuver automation</td>
<td>Level 1 - 5</td>
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<tr>
<td>4</td>
<td>Maneuver velocity</td>
<td>low, mid, high</td>
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<tr>
<td>5</td>
<td>Maneuver control force</td>
<td>low, mid, high</td>
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<tr>
<td>6</td>
<td>Maneuver time headway</td>
<td>standard, reduced, small</td>
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<td>7</td>
<td>Maneuver trigger</td>
<td>system initiated, driver approved, driver initiated</td>
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<tr>
<td>8</td>
<td>Maneuver Coordination</td>
<td>with coordination, without coordination</td>
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<td>9</td>
<td>Driver’s location</td>
<td>invehicle, outside vehicle, teleoperated</td>
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<td>10</td>
<td>Road type</td>
<td>type 1 - 17 (see Table 4.7)</td>
</tr>
</tbody>
</table>
Scenarios

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

Based on system classification.
AdaptIVe Workshop on Legal Aspects

- **September 17th, 2015**
- **Paris, France**
- Hosted at the French Car Manufacturers Association (Comité des Constructeurs Français d’Automobile)

- Discuss legal topics with external stakeholders and expert public
- Promote activities of AdaptIVe
- Get insight in current activities, approaches and status of other projects and working groups

Registration is open and agenda online at [www.adaptive-ip.eu](http://www.adaptive-ip.eu)
Thank you.

Andreas Knapp
Daimler AG
+49 7031 4389 862
andreas.knapp@daimler.com