

Regulatory Needs for Vehicle and Road Automation

Project Adaptive

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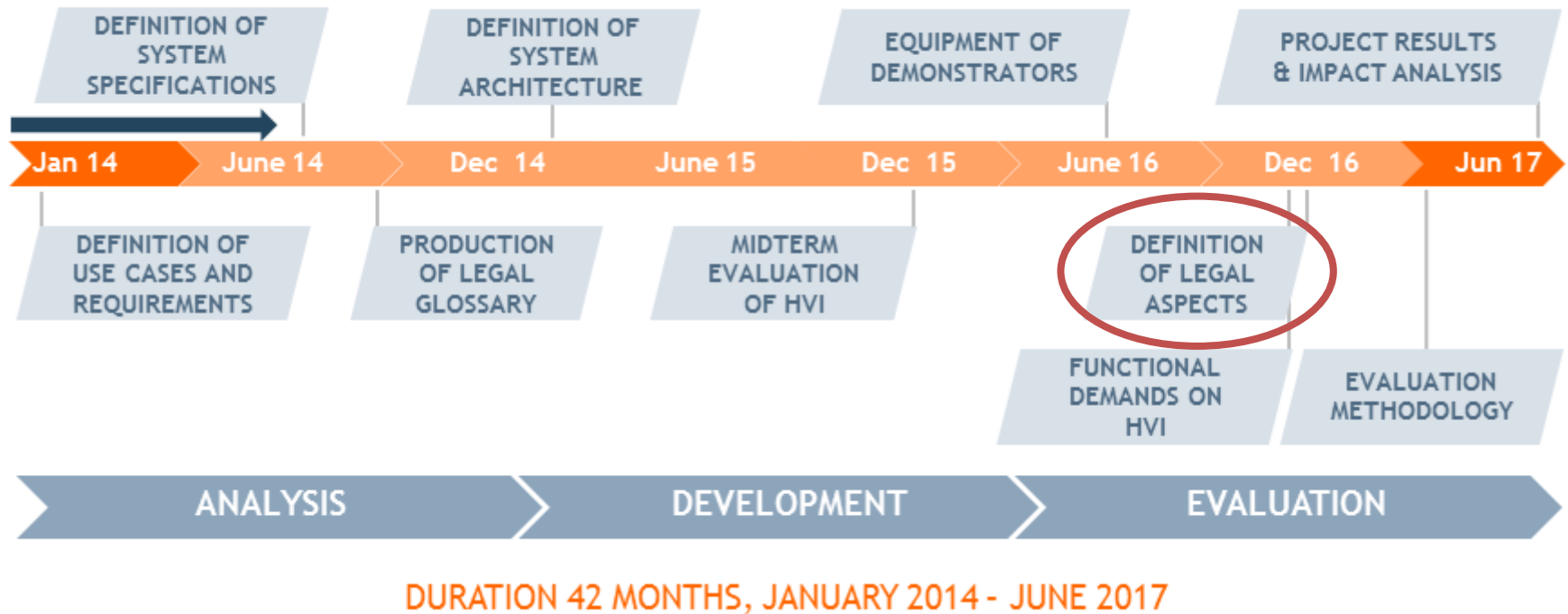
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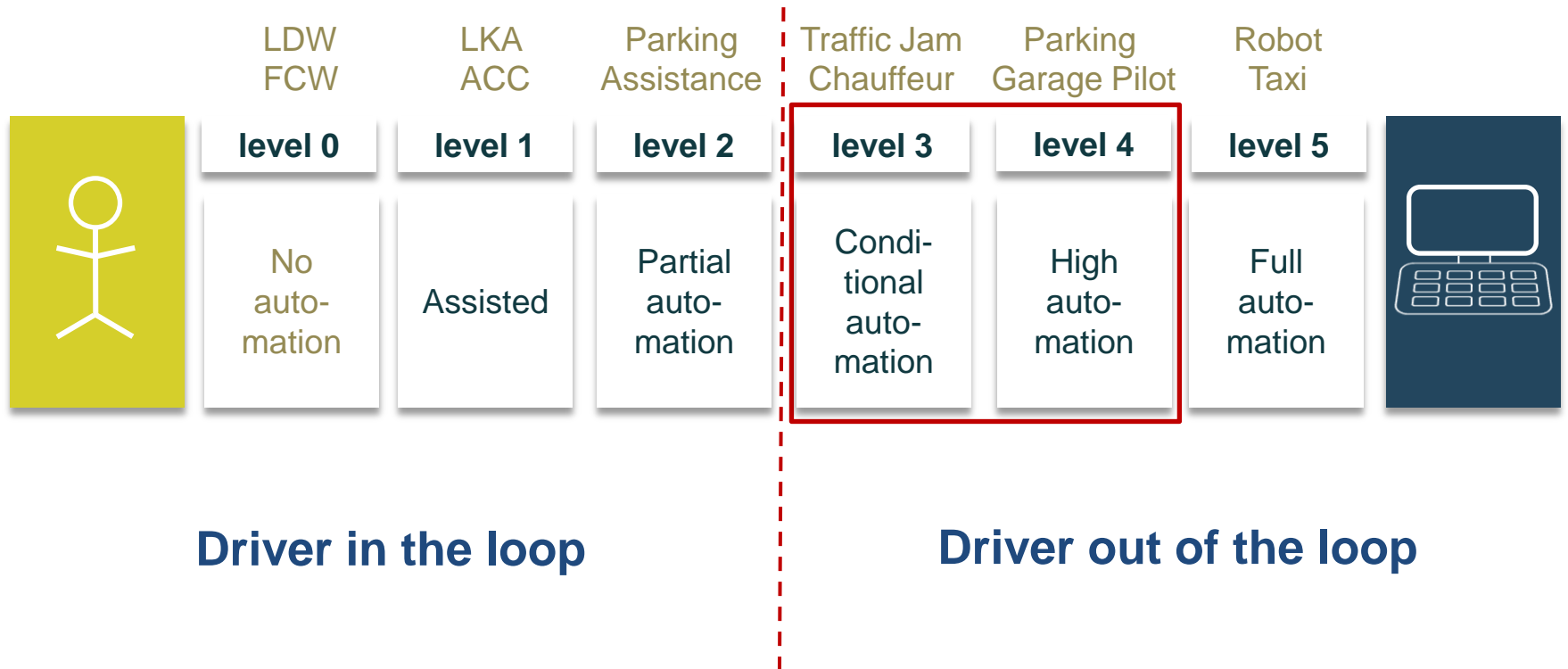
The Project

- General objective: Address the major challenges of automated driving
- Targets:
 - demonstrate feasibility of automated driving
 - provide guidelines for cooperative controls
 - new methodologies for safety evaluation
 - assess the impact on road transport
 - propose a legal framework
- Consortium: 29 partners from 8 countries

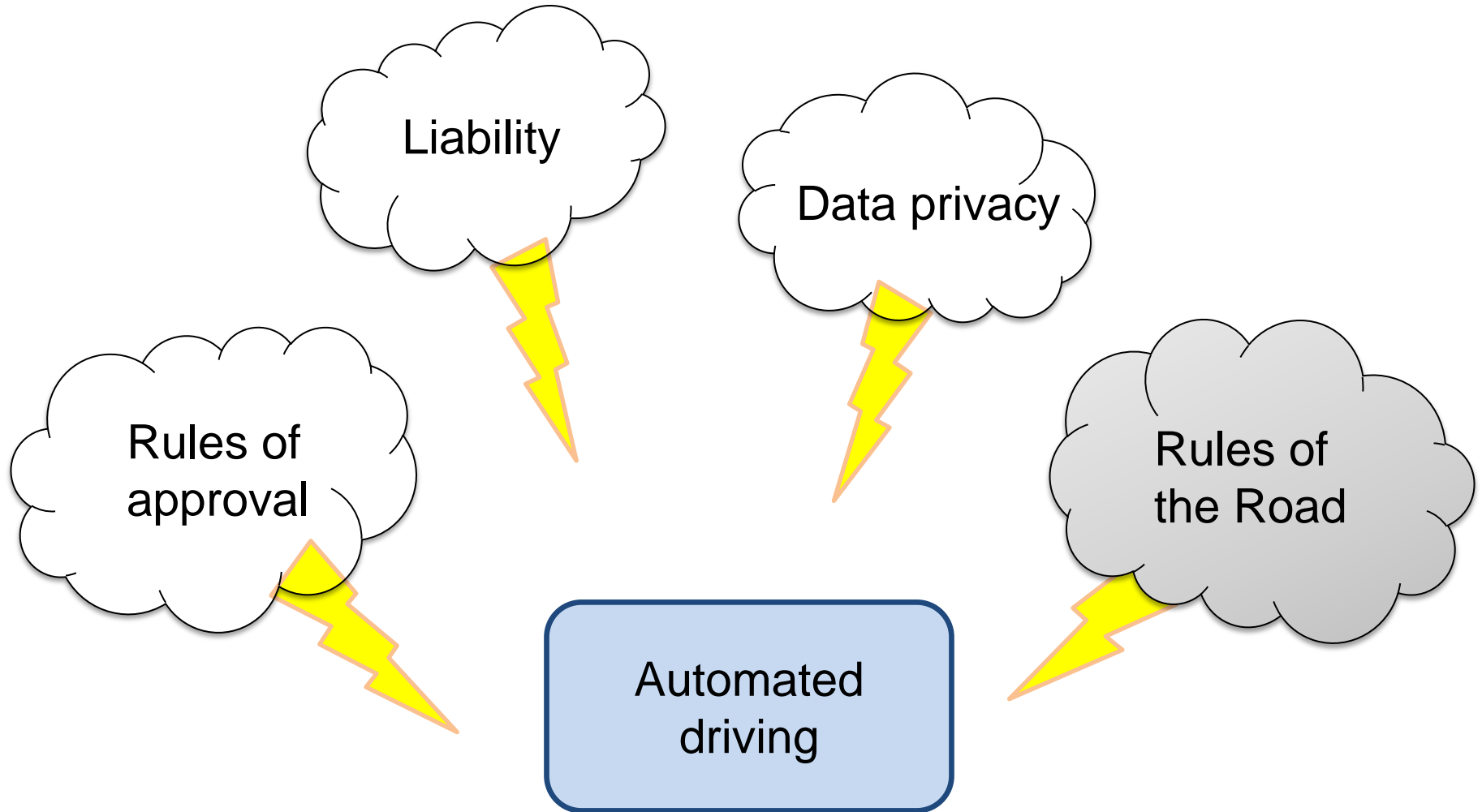
Timeline



Response 4: Levels of Driving Automation



Problematic Fields of Law



Rules of Approval: EU



➔ **In the EU technical requirements are (mainly) determined by the ECE-Rules**

ECE-Rules

- No specific rule for automated driving in existence
- ECE-Rule 13-H (Braking): No restrictions
- ECE-Rule 79 (Steering equipment): The driver must...
 1. at any time be able to override the function (para 5.1.6.) and
 2. remain in primary control at all times (para. 2.3.4.)
- Even under this conditions only approvable
 1. Automated steering function, limit 12 km/h (para. 2.3.4.1)
 2. Corrective steering function, e.g. ESP (para. 2.3.4.2)



ECE-Rule 79 needs to be amended

Rules of the Road

- Adaptive will analyze regulations in
 - EU: France, Germany, Italy, Sweden, UK
 - USA
 - (China)
- Analyze Vienna Convention on Road Traffic (1968)
 - Signed by most European countries
 - Contracting parties must ensure, that national rules of the road conform to provisions in Chapter II of 1968-Convention

Rules of the Road: Vienna Convention of 1968

Art. 8 para 1:

Every moving vehicle or combination of vehicles shall have a driver.

Art. 8 para 5:

*Every driver shall at all times be able **to control** his vehicle or to guide his animals.*

Art. 13 para 1:

*Every driver of a vehicle shall in all circumstances have his vehicle **under control** so as to be able to exercise due and proper care and to be at all times **in a position to perform all manoeuvres required of him....***

Vienna Convention and Automated Driving

- Automated system must always be overridable (majority opinion)
- Driver must always be ready to override (monitor continuously, no other activity than driving)



Automated driving not compatible with 1968-Conv.

- WP.1 has adopted amendment in 3.2014:
- Systems shall be deemed to be in conformity with 8 V, 13 I, when
 - they are in conformity with the ECE-Rules or
 - such systems can be overridden or switched off by the driver
- Impact?

Vienna Convention: Impact of the Amendment

- Amendment only effects art. 8 V and art. 13 I
- Art. 8 para. 6: driver must avoid other activity than driving
- If Amendment is accepted and ECE-Rules allow automated cars, may driver be out of the loop according to 68-Convention?
- Personal view: yes!
 - Amendment inserts two alternatives
 - Conformity with ECE-Rules or overridable
 - First alternative must cover systems that aren't overridable
 - If systems isn't overridable, monitoring is useless

Civil Liability

- European product liability law
 - Legal framework
 - Burden of proof
- Tort law
- Liability under road traffic law (if applicable)
- National law will be analyzed in
 - EU: France, Germany, Italy, Sweden, UK
 - USA
 - (China)

Data Collection

- Data to be collected and stored
- Data privacy
- Legal aspects of data security
- (Responsibility of internet providers)

Regulatory Needs (personal view, not Adaptive)

- If control is shared between driver and car, an accident can be caused by either of them, civil liability might be unclear
 - EDRs should be mandatory throughout the EU
- Similar problems arise concerning traffic offenses (e.g. speeding). Was offense caused by driver or by the (automated) car?
 - Activity of automated driving mode (on/off) should be recorded
- Cross-border automated traffic might be impeded by differences in national traffic laws in different MS
 - Further harmonization within the EU (beyond Conventions on Road Traffic and Road Sign & Signals) should be considered
- The market introduction of automated cars might cause diverging application of harmonized product liability in MS

On a Personal Note: New Publication

Hilgendorf / Hötitzsch / Lutz

Rechtliche Aspekte automatisierter Fahrzeuge

Beiträge zur 2. Würzburger Tagung zum
Technikrecht im Oktober 2014

2015, ISBN 9783848721009

www.nomos-shop.de/24331





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AdaptIVE

*Automated Driving Applications and
Technologies for Intelligent Vehicles*

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