

Cenex Expo:
Implementing the UK
AV Bill through
Secondary Legislation



Automated and Autonomous Driving

Status quo from the perspective of
a Technical Service

Milton Keynes/UTAC Millbrook, 04.09.2025

**Add value.
Inspire trust.**



Agenda



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Introduction and Overview

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Existing Regulations

- German National Level: AFGBV
- EU/UNECE: Reg. (EU) 2022/1426 and UNECE R157

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Challenges in Practice

- General Topics
- Regulations and Authorities

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Current Developments

- New Regulations / Revision of Regulations
- Further Initiatives

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Summary

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Existing Regulations

- SAE Level 2: UNECE R79 and R171
- SAE Level 3: UNECE R157
- SAE Level 4: AFGBV and Reg. (EU) 2022/1426



Terms and Definitions

Levels of Driving Automation according to SAE J3016



SAE J3016™ LEVELS OF DRIVING AUTOMATION™

Learn more here: [sae.org/standards/content/j3016_202104](https://www.sae.org/standards/content/j3016_202104)

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	SAE LEVEL 0™	SAE LEVEL 1™	SAE LEVEL 2™	SAE LEVEL 3™	SAE LEVEL 4™	SAE LEVEL 5™
What does the human in the driver's seat have to do?	You <u>are</u> driving whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			You <u>are not</u> driving when these automated driving features are engaged – even if you are seated in “the driver's seat”		
	You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	

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	These are driver support features			These are automated driving features	
What do these features do?	These features are limited to providing warnings and momentary assistance	These features provide steering OR brake/acceleration support to the driver	These features provide steering AND brake/acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met	This feature can drive the vehicle under all conditions
Example Features	<ul style="list-style-type: none"> • automatic emergency braking • blind spot warning • lane departure warning 	<ul style="list-style-type: none"> • lane centering OR • adaptive cruise control 	<ul style="list-style-type: none"> • lane centering AND • adaptive cruise control at the same time 	<ul style="list-style-type: none"> • traffic jam chauffeur • local driverless taxi • pedals/steering wheel may or may not be installed 	<ul style="list-style-type: none"> • same as level 4, but feature can drive everywhere in all conditions

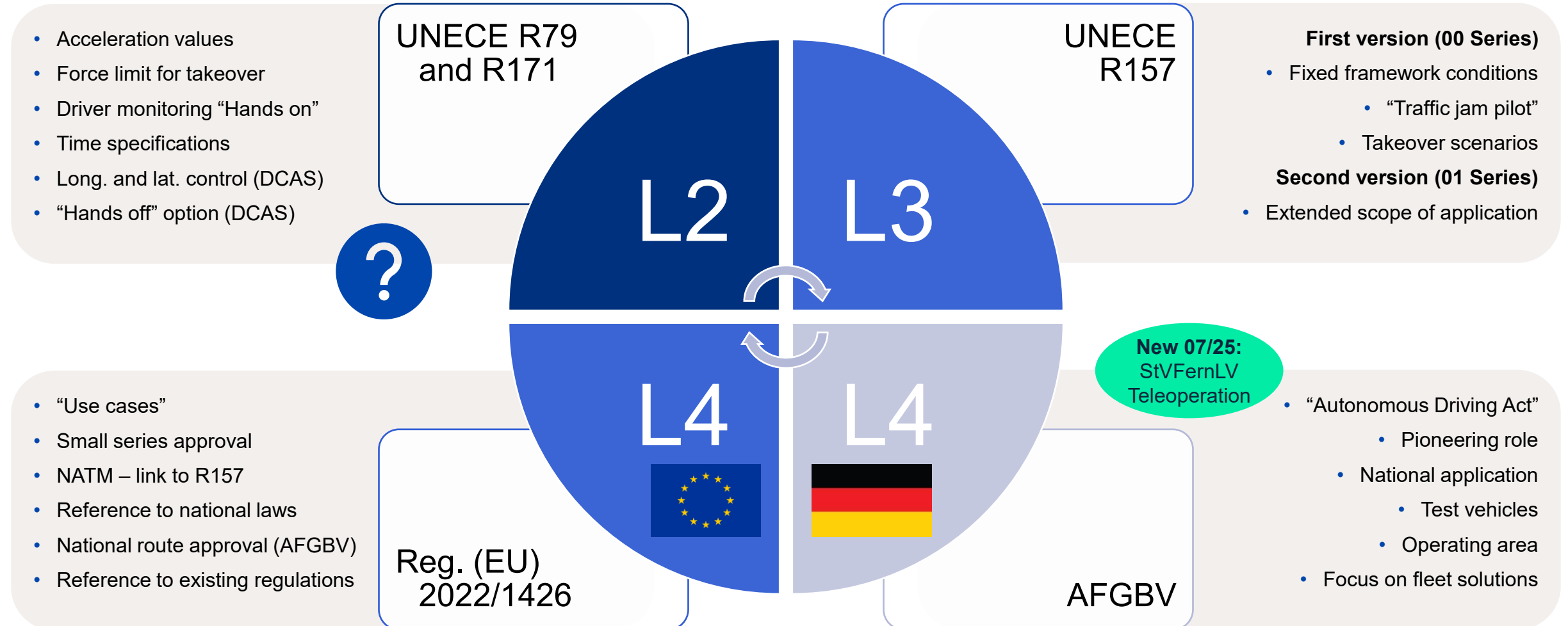
Automated and Autonomous Driving Legal Hurdles in Germany

- **Vienna Convention on Road Traffic (1968)** – until 2016
 - Automated driving functions in Art. 5^{bis} (WÜStV)
 - Direct driver intervention (subject to approval)
- **Road Traffic Law – Straßenverkehrsgesetz (StVG)** – until 2017
 - Takeover of Art. 5^{bis} (WÜStV) in §§ 1a-i
 - Requirements regarding data collection in § 63a
 - Extension in 2021 (Law on autonomous driving)
- **Legal and Ethical Classification (Ethics Commission)** – until 2017
 - Establishment of comprehensive ethical guidelines
- **Technical Requirements (National, EU, UNECE)** – until 2022
- **Behavioural Law – Straßenverkehrsordnung (StVO)** – to date



Automated and Autonomous Driving

Current Regulations



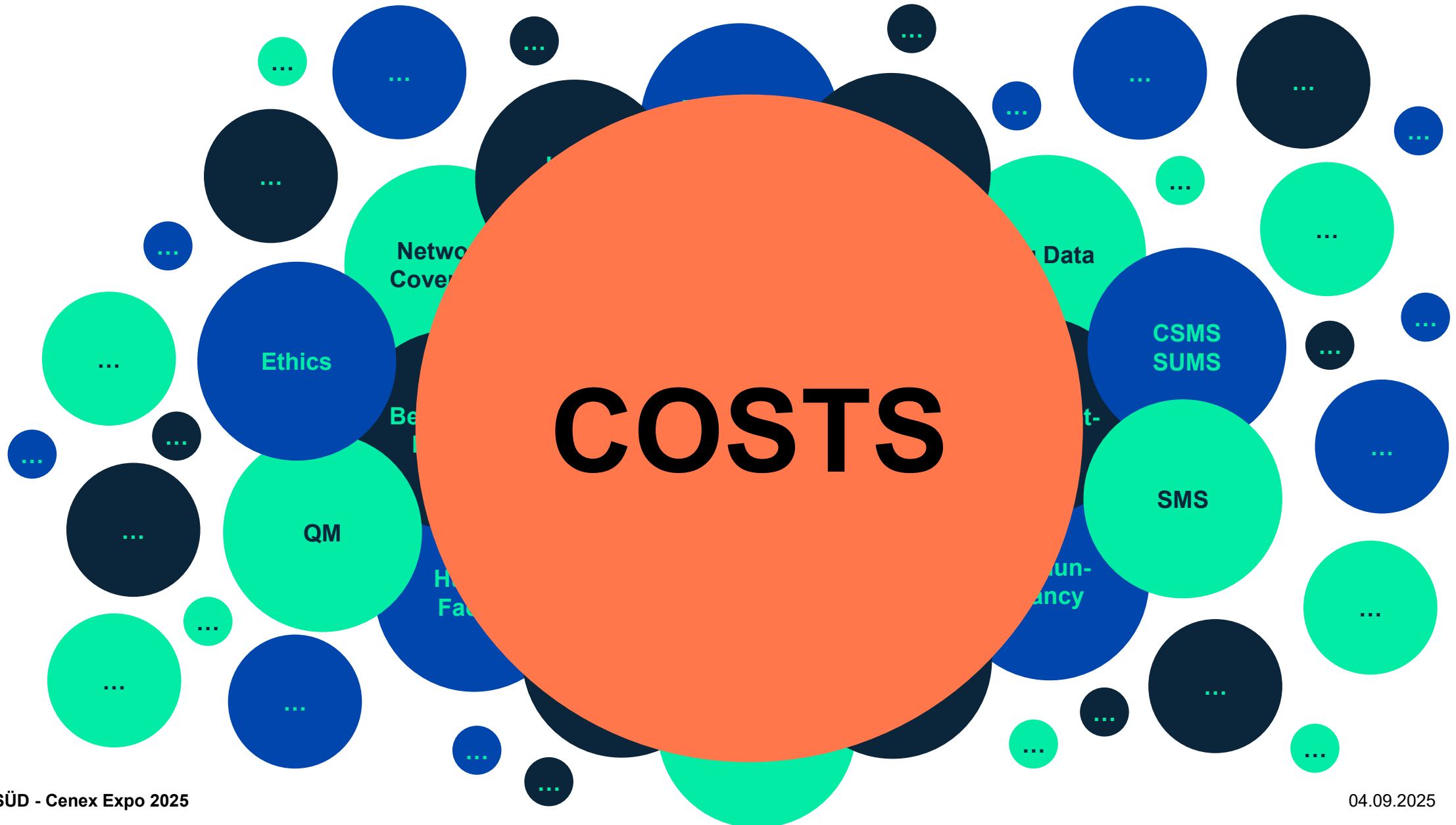
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Challenges in Practice

- General Topics
- Approval of Operational Areas
- Focus of the Regulations
- Experience of the Authorities



Challenges of Automated and Autonomous Driving



Automated and Autonomous Driving

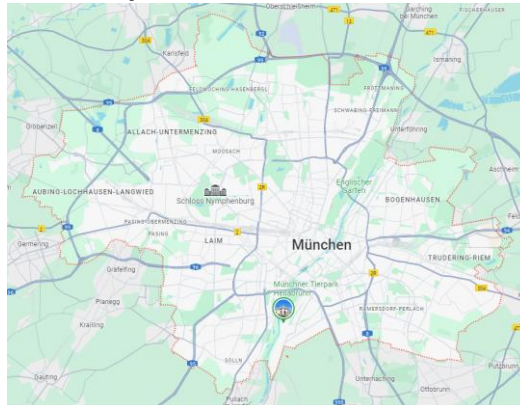
Distinction between ODD and Operational Area

Operational Design Domain (ODD)

- International definition (e.g. Reg. (EU) 2022/1426)
- “[...] means operating conditions under which a given ADS is specifically designed to function [...]”
- Example:

Urban traffic in central Europe

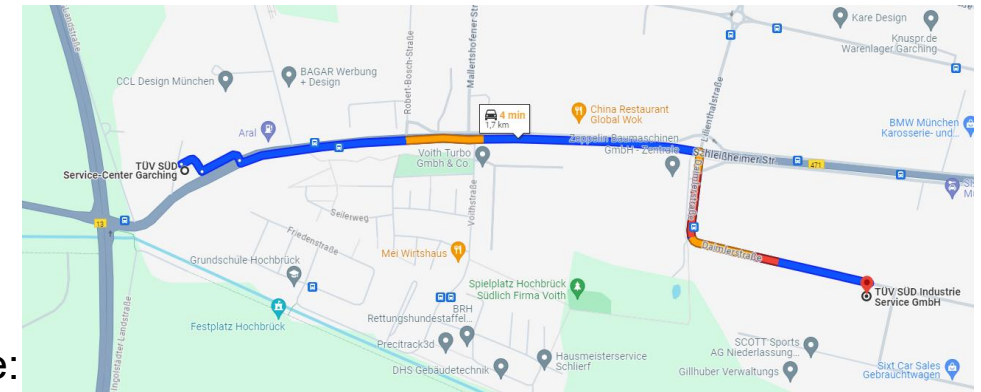
- climatic conditions
- roads
- surroundings
- ...



Operational Area (Operational Domain – OD)

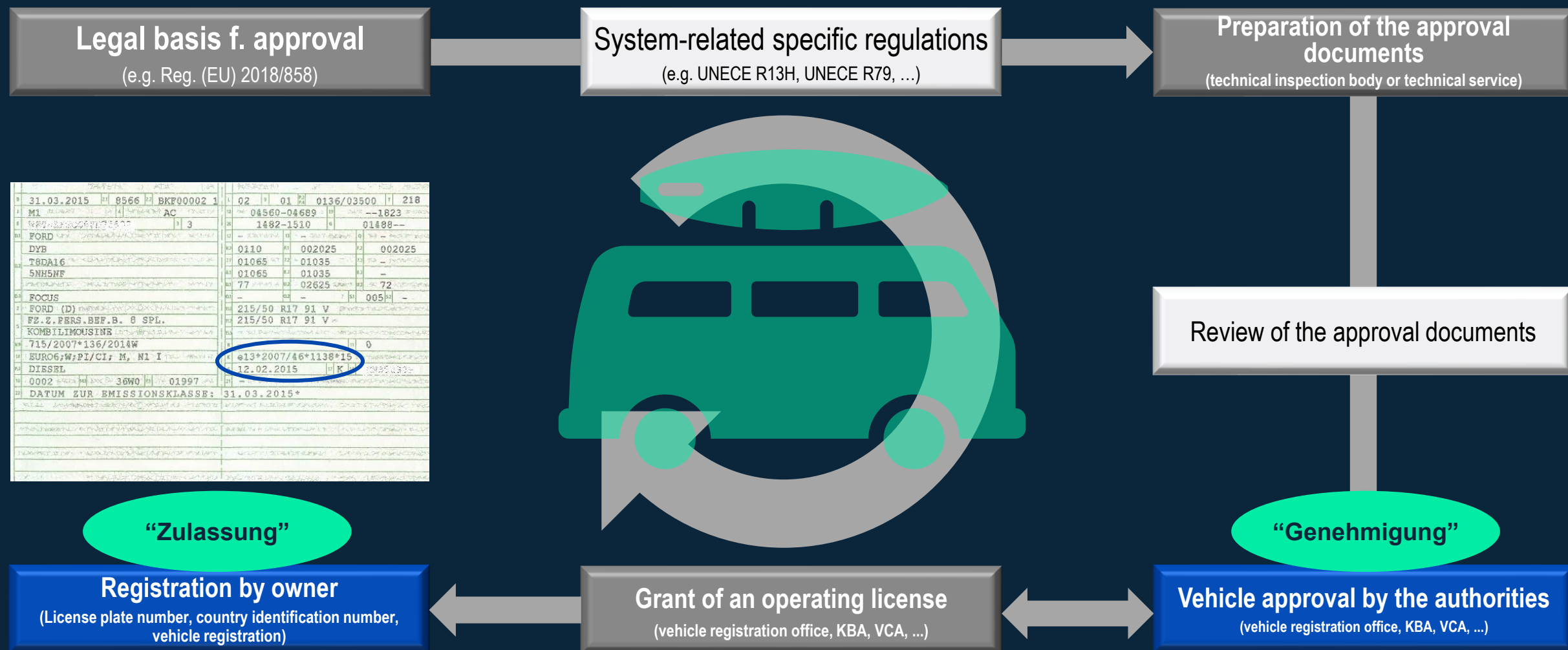
- National definition (StVG)
- “A defined operating area within the meaning of this Act refers to the locally and spatially defined public road space in which a motor vehicle with autonomous driving function may be operated if the conditions set out in § 1e(1) are met.”

- Example:



Specific route

Excursion: Registration and Approval

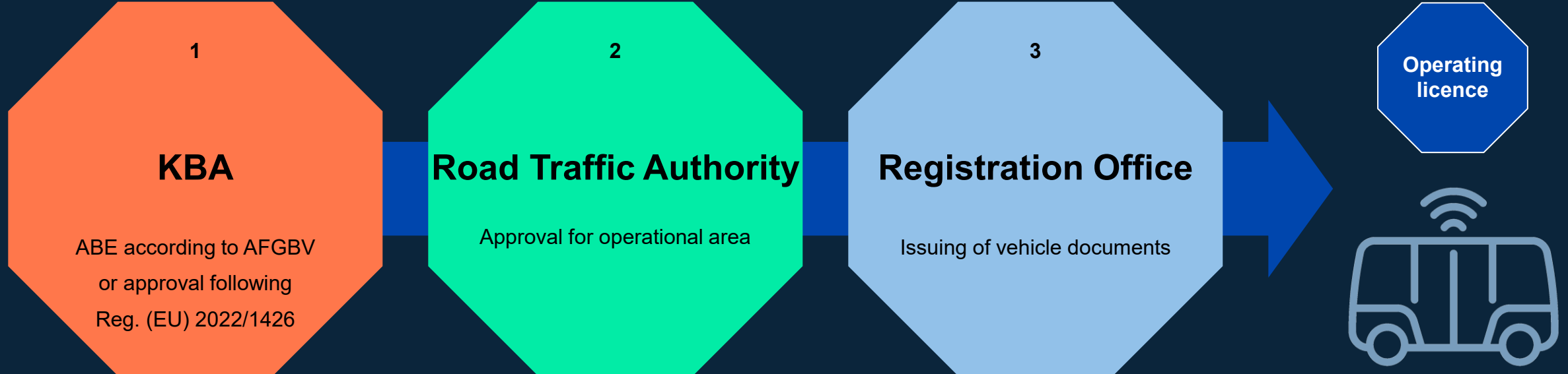


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Automated and Autonomous Driving Approval Process in Germany

Three different levels of government are involved in the process:

- 1. **Federal Authority** → Focus on vehicle/system approval
- 2. **State Authority** → Focus on operational area
- 3. **Regional Authority** → Focus on Registration



Automated and Autonomous Driving

Further Challenges



Focus of the Regulations

- Strong focus on public transport and logistics solutions (MaaS/TaaS)
- Requirements are in some cases hardly feasible for use in the private customer sector.
- Overlap between national and international law (testing of driving skills)
- Implementation of some requirements or test steps has not been finally clarified (e.g. operating area approval).
- Exclusion of interface technologies (teleoperated driving)

Experience of the Authorities

- Differences in responsibilities
- “Referral to nowhere” in some cases (delivery robots)
- Need to build up a knowledge base
- Partial exclusion of technical inspection agencies and Technical Services in certain processes (e.g. no assessment for application according to § 16 AFGVB)

- New Regulations / Revision of Regulations
 - National
 - EU / UNECE
- Further Initiatives



Current Developments Examples

National Regulations

- Evaluation of legal situation under § 11 of the Road Traffic Act (StVG) – future adjustments if necessary
- Federal Government Strategy for Autonomous Driving (12/24)
- BASt Final Report on Teleoperation (06/24)
- Regulation on teleoperated driving – StVFernLV (07/25)

EU Regulations

- Subgroup ACF: Interpretation document for Reg. (EU) 2022/1426
- DG MOVE: Initiative for cross border traffic
- MVWG-ACV: Mutual acceptance of approvals
- Action plan of the EU commission for the automotive industry (05.03.25): „For example, we have agreed that we need a big push in software and hardware for autonomous driving.“

UNECE Regulations

- Publication of DCAS (UNECE R171) for ‘L2+’ systems – in future also with ‘hands off’
- TF on FADS: Analysis of existing regulations for adaptation requirements in accordance with Regulation (EU) 2022/1426
- IWG ADS: Development of a UNECE regulation + GTR for automated and autonomous driving

Further Initiatives

- KBA working group on operating area approval: Simulation of an approval process in accordance with AFGBV
- VDI initiative: Expert recommendation on § 16 AFGBV (test vehicles) – developed in cooperation with the TÜV Association
- KBA working group on scenario based testing of ADS

Summary



We have the power, knowledge and equipment to build a world beyond our wonder. Only loss of nerve can defeat us.

James Dillet Freeman (1912 - 2003)

There is a solid legal basis ...

The regulations are continuously updated ...

Various technologies are available ...

The (shared) level of knowledge is growing ...

... with known weaknesses.

... even if it sometimes takes a little longer.

... their suitability must be demonstrated in practice.

... even if it is slower than expected/desired.

How to get on the road? – Support by TÜV SÜD



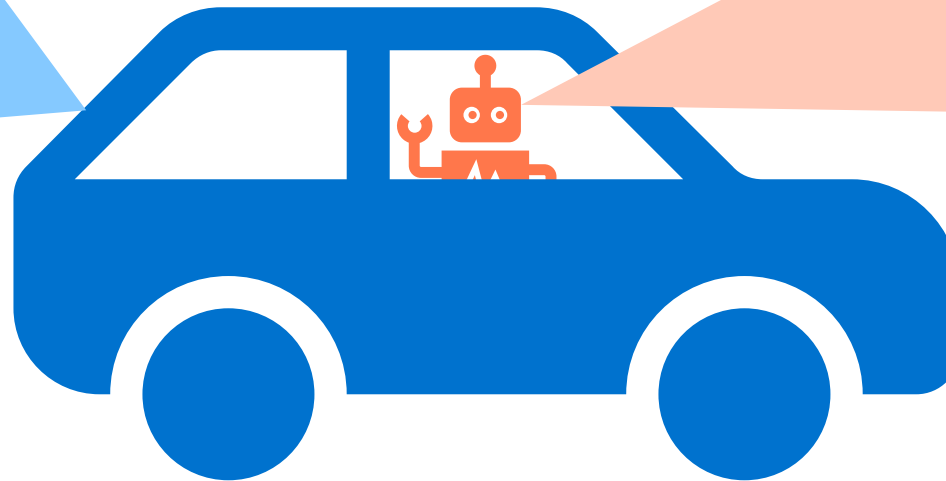
Base Vehicle



- Single vehicle approval
- Series and small series approval
- Experimental approval (StVZO)
- Preparation of test/approval reports
- Laboratory inspections
- Homologation services
- Regulatory research
- Testing support
- ...

As a technical service, only activities that do not conflict with our official activities can be taken on. This means that we cannot offer consultancy and can only provide support on the basis of the existing legal framework.

Decision on type of approval



General Topics



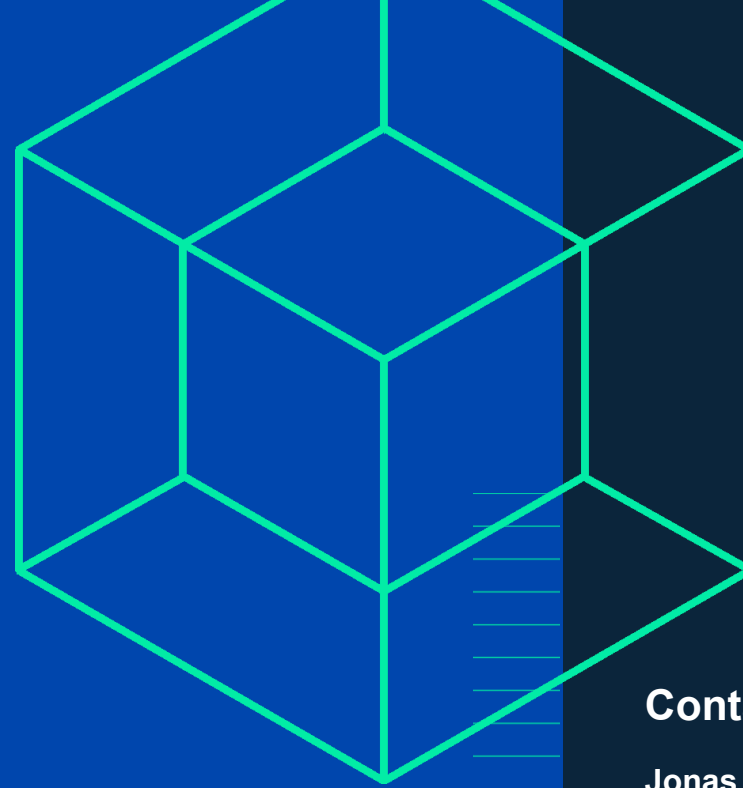
- Support in legal/technical topics, communication with authorities
- Registration services for vehicles
- ...

ADS Addon



- Individual approval
- Series approval (single- or multi-stage)
- Experimental approval (AFGBV)
- System inspections according to existing regulations
- Preparation of test/approval reports
- Laboratory inspections
- Homologation services
- Regulatory research
- Testing support
- ...

The ADS can be considered as part of an overall approval or separately as a multi-stage approval.



Thank you for your Attention!

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