

Autonomous driving: The world's first draft bill issued - Germany to take on a pioneering role in law

THE FEDERAL GOVERNMENT HAS ADOPTED THE DRAFT BILL ON AUTONOMOUS DRIVING

Executive Summary

- Autonomous driving: transition from test track into everyday life. This is to render mobility in Germany more versatile, safer, environmentally friendly and user-oriented.
- The draft bill on autonomous driving is the first to create a legal framework for operating autonomous vehicles under defined conditions on public roads.
- Despite the new legislation, it will also in the future continue to be a challenge for players to deal with the issues, in terms of liability and data protection, associated with the operation of autonomous vehicles.

Introduction

Autonomous driving tasks that already appear to be technically feasible are not governed by legislation so far. Up to now, there has been no legal framework, in terms of road traffic and registration law, governing autonomous cars at an international or national level.

This is to change. The draft bill on autonomous driving adopted by the Federal Government on 10 February 2021 for the first time creates a legal framework for the regular operation of autonomous motor vehicles (level 4) under defined circumstances on public roads. Germany will be the first country in the world which, as the Federal Ministry of Transport and Digital Infrastructure put it, will "bring driverless vehicles out of the science research remit and into everyday life". The draft bill does not govern level

5 - full autonomous driving. Instead, it only provides for vehicles performing autonomous driving tasks under specific circumstances, with human override still being required. The draft bill nonetheless lays the foundation and thus decisively paves the way for the further development and implementation of autonomous driving in Germany - and worldwide.

I. The five levels of driving automation

Experts from the Society of Automotive Engineers (SAE) have defined 5 levels of driving automation which are widely used in research and development:

Level 1: Driver assistance. The vehicle features a simple driver assistance system, such as proximity control system, to assist the driver.

Level 2: Partly automated driving. The vehicle features an advanced driver-assistance system which can perform steering and acceleration (automatic parking assist or lane departure warning system).

Level 3: Highly automated driving. In certain situations, the driver can temporarily disengage from defined driving tasks such as steering, lane change or overtaking on motorways. There must be a human driver present ready to take control.

Level 4: Fully automated driving. The vehicle is capable of autonomously performing an extended set of driving tasks under specific circumstances. It is up to the human driver to choose whether to take control and steer the vehicle himself or run the autonomous driving mode. Whenever a risk is detected, the vehicle must automatically achieve a "minimal risk condition".



Level 5: Autonomous driving. The vehicle performs all driving tasks completely autonomously, regardless of road and environmental conditions. Zero human attention or interaction is required.

II. Legislative trends to date

As early as 2017, Germany created the world's first legal parameters for autonomous driving. Section 1a of the German Road Traffic Act (StVG) for the first time stipulated rules governing conditional or high driving automation. However, under this law, the human driver always has to be readily available and able to intervene and take back control of the vehicle without delay at any time.

III. Draft bill on autonomous driving

The new draft bill is to pave the way for high driving automation (level 4) on public roads. Albeit initially on a limited scale, sections 1d to 1l StVG (new) make it possible to operate autonomous motor vehicles on public roads.

1. Envisaged autonomous driving tasks

The new law creates flexibility for using autonomous vehicles under defined circumstances. For this purpose, (a non-exhaustive list of) various applications are specified. Such as:

- Shuttle traffic;
- Automatic passenger and goods transportation; "people/ goods movers";
- Driverless connections between logistics centres (hub-to-hub);
- "Dual Mode Vehicles", such as Automated Valet Parking (AVP) - an automated parking system where the car is parked automatically after the driver has exited the vehicle.

2. Regulatory objectives

The draft bill on autonomous driving sets the following legal parameters:

- Definition of the technical requirements for operating autonomous vehicles;

- Test and process for issuance of type approval by the Federal Bureau of Motor Vehicles and Drivers (KBA);
- Obligations of keepers, manufacturers and technical supervisors,
- Data processing during the operation of vehicles featuring autonomous driving tasks.

3. Draft bill specifics

Section 1d StVG (new) defines the parameters in terms of road traffic law and this paves the way for operating driverless vehicles in the future. Accordingly, a vehicle featuring a driving-automation system is defined to be a vehicle equipped with the technical features according to section 1e para. 2 StVG (new) that is capable of performing driving tasks autonomously under defined circumstances without a human motorist.

a) Technical requirements

The technical requirements stipulated in section 1e para. 2 StVG include the availability of a human motorist capable of taking back control of the vehicle or the permanent availability of a technical supervisor of the vehicle. Also, it must be possible for the vehicle to automatically achieve a "minimal risk condition" and to be disabled at any time by the technical supervisor. The specific requirements, pursuant to section 1j StVG (new), are to be determined by statutory instruments to be issued by the Federal Ministry of Transport and Digital Infrastructure.

This means that it will still not be allowed for a completely autonomous system to be operated on public roads. The option of manual human override continues to be crucial.

b) Technical supervisor

The technical supervisor requirement is based, among other things, on the requirements of international law (including, but not limited to, laws on the European level). This means that a "human motorist" must be available for disabling the autonomous vehicle in order to comply with the requirement of controllability. This requirement as such is incompatible with the concept of full autonomous driving. This means that the requirement of availability of a "technical supervisor", which is included in the draft bill,



constitutes an acceptable intermediate step towards full autonomous driving.



Section 1d para. 3 StVG (new) defines the technical supervisor as the person who is capable of disabling the motor vehicle during operation and of engaging in driving tasks to this end. Preliminary drafts of the act had stipulated the requirement of an “operator”. After critical assessment of the concept, it was decided to give it up as an “operator”’s tasks could not be defined specifically and it i.a. remained unclear to what extent it could be permissible at all for such a person to turn his attention away from traffic. It remains to be seen whether the obligations of the technical supervisor have been specified in adequate detail in section 1f para. 2 StVG (new). According to the explanatory memorandum to the act, the technical supervisor may also be in charge for operating several vehicles for as long as it can be safeguarded that he is capable of performing his obligations on a case-by-case basis. Should it be allowed for a single technical supervisor to be in charge of several vehicles, there could be situations where permanent supervision of each individual vehicle probably cannot be safeguarded any more.

c) Specified operating range

According to the draft bill, autonomous driving is only to be permitted in a specified operating range which still is an abstract concept in the law. The only requirement stipulated in the law is that it must be possible to specify the range of operation on public roads.

The planned process is, as a first step, for the manufacturer of autonomous vehicles to obtain from the Federal

Bureau of Motor Vehicles and Drivers (KBA) an abstract and general permit limited to a certain range of operations and, as a second step, for the keeper of the vehicle to apply for a specific permit to be issued by the state authority in charge. The applicable requirements for permits limited to certain ranges of operations are again to be based on local requirements and the permits is to be issued by the state authorities.

This means that there will be no nationwide permit available for the operation of autonomous vehicles, i.e. experience will show how these permit requirements will be handled by manufacturers and authorities in practice.

d) Liability and data protection

The major challenge we still face before bringing autonomous cars “on the road” is finding an appropriate and balanced way of how to deal with the issues of liability and data protection.

The duties and responsibilities of the individual parties involved are specified in section 1f StVG (new). There will no longer be a driver as such in an autonomous vehicle. However, due to the operational risks involved, the keeper of the vehicle will continue to be liable if, for example, a person is injured by the vehicle. Where the accident is due to a technical fault, the keeper can hold the manufacturer liable. It might also be possible to hold the technical supervisor liable if loss or damage was caused by him making a mistake.

There will be a recorder (data memory) which will permanently record any and all relevant data as evidence for who is to be held liable for a mistake.

The draft bill, in section 1g StVG (new), contains an extremely far-reaching list of data storage requirements. In addition to numerous technical parameters, the speed, vehicle position and route are to be constantly recorded when the car is in autonomous driving mode. At request, such data stored is to be transmitted to the Federal Bureau of Motor Vehicles and Drivers (KBA) or any other “competent authorities” (such as the German Office for the Protection of the Constitution or the Federal Office of Criminal Investigation). A lot of criticism has been voiced, from a data protection perspective, against such far-



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reaching "data transmission requirements" which make it easy to collect and evaluate the movement profiles of vehicle passengers; this is still a matter of debate, also within the Federal Government itself. For sure, the final words on this subject have not been spoken yet. Open issues regarding data protection are to be settled in parliamentary procedures.

As a matter of fact, however, vehicle-related data processing and sharing is at the heart of autonomous driving, above all with a view to safeguarding effective supervision of the roadworthiness and road safety of vehicles, both before and whilst running the autonomous driving mode. Accordingly, the challenge we still face is that somehow we need to find a balance between compliance with strict data protection requirements, on the one hand, and paving the way for the implementation of new types of technologies, on the other hand.

IV. Outlook

Germany is well on the way to managing the transition from autonomous vehicles driving on the test track to integration of autonomous vehicles into everyday life. The declared goal of the Federal Government is to integrate vehicles featuring autonomous driving functions into regular life by 2022.

The adoption of the draft bill on autonomous driving is a first step along the way. This not only means that Germany's position as a centre of innovation and development for digital mobility will be strengthened. Adoption of the law is also to create legal certainty which, in turn, could be one of the decisive stepping stones for the society to accept autonomous driving.

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