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## AUTOMOTIVE

### NEW LEGAL RULES ON AUTOMATED DRIVING

On 21 June 2017, an amendment to Germany's Road Traffic Act (Straßenverkehrsgesetz) sets the country's first legal parameters with regard to automated driving functions. The reform creates a regulatory basis for approvals of automated driving in Germany, sketching out the framework in which highly and fully automated driving functions can be put into practice in motor vehicles. A further aim is to strengthen legal certainty, acceptance and confidence in these "innovative" driving systems.

#### Overview of the amendment's core Content

The Eighth Act Amending the Road Traffic Act (Achstes Gesetz zur Änderungen des Straßenverkehrsgesetzes) represents German legislators' first steps to regulate highly and fully automated driving functions. The specific points it regulates are the permissibility of deploying highly and fully automated driving functions in motor vehicles (section 1a Road Traffic Act), changes to drivers' rights and duties (sections 1a and 1b of the Act), and the power to issue legal ordinances (sections 6 and 63a of the Act). The current regime of vehicle holder liability in Germany is retained but the maximum amounts are doubled (section 12 of the Act), and provisions on data processing in motor vehicles with highly/fully automated driving functions are incorporated (section 63a of the Act).

#### Autonomous driving and automated driving

The amendment is limited to regulating highly and fully automated driving. There continues to be no definition of genuine autonomous driving in the Road Traffic Act. It is only covered in a few isolated passages.

Autonomous driving equates with the use of driverless vehicles. This represents the highest level of automation, as classified by the "Automated Driving" Round Table specially set up by Germany's Federal Ministry of Transport and Digital Infrastructure. The driving system assumes full control of the vehicle from start to finish. In this case, all persons travelling in the vehicle are passengers. Levels of automation generally used internationally use similar criteria, based on the SAE levels. SAE level 5 (full automation) describes this case as "the full time performance by an automated driving system of all aspects of the dynamic driving system of all aspects of the dynamic driving task under all roadway and environmental conditions that can be managed by a human driver."

#### Features of highly and fully automated driving functions

The main basis for the Road Traffic Act amendment is the definition of the basic terms used to categorize highly and fully automated driving functions. The German legislator uses the technical development levels 3 (highly automated) and 4 (fully automated) to define the degree of automated driving function. These levels were likewise defined by the Transport Ministry's Round Table.

The highly automated driving system performs both lateral and longitudinal control of the vehicle for a certain period of time in specific situations and does not need to be monitored on an ongoing basis by the vehicle's driver. Fully automated driving systems perform lateral and longitudinal control of the vehicle fully and on an ongoing basis in a defined case of application, and in doing so the system does not need to be monitored by the vehicle's driver at all.

Highly automated driving functions therefore correspond to SAE level 3 (conditional automation): "the driving

mode-specific performance by an automated driving system of all aspects of the dynamic driving task with the expectation that the human driver will respond appropriately to a request to intervene.” Fully automated driving functions equate to SAE level 4 (high automation): “the driving-mode specific performance by an automated driving system of all aspects of the dynamic driving task, even if a human driver does not respond appropriately to a request to intervene.”

### **Technical definition of driving function and the vehicle driver’s role**

The Road Traffic Act now expressly incorporates these provisions but modifies them as well. The new section 1a(1) of the Act states that it is permissible to operate a motor vehicle using highly and fully automated driving functions. But the technical definition given in section 1a(2) sentence 1 of the Act combines the two categories (highly and fully automated). Accordingly, a motor vehicle has highly/fully automated driving functions if it is technically equipped to (1) take over vehicle steering including lateral and longitudinal control, (2) comply with the traffic regulations a vehicle driver is subject to when automated vehicle steering is activated, (3) be able to be manually overridden or deactivated by the vehicle driver at any time, (4) be able to recognize that manual steering is required, (5) warn the driver of this in good time and (6) alert the driver to any use in conflict with the system description.

Not differentiating between highly and fully automated driving functions but regulating the two systems in the same way is a deliberate move on legislators’ part, and renders any technical differences between the levels of development obsolete from a legal perspective. On the merits, this is a practical approach.

The amendment also gives vehicle drivers new rights and imposes new obligations, see section 1a(4), 1b Road Traffic Act. The duties to monitor the vehicle are worth noting here. These require that the driver immediately reassumes steering of the vehicle when he or she notices – or should notice owing to obvious circumstances – that the requirements for proper use of the highly/fully automated driving functions are no longer being met.

### **Approval of highly and fully automated driving functions**

German vehicle approvals law is based on the principle that all vehicles are admitted to road traffic unless an individual type of vehicle is expressly subject to a permissions procedure. This kind of duty to obtain permission exists for motor vehicles in general and irrespective of the degree of automation. Motor vehicles may only be operated if they are explicitly admitted to road traffic. For this, they need an operating licence, an individual approval, or an EC type-approval.

The Amendment Act incorporates the existing system and modifies individual parts of it to meet the requirements of highly/fully automated driving functions. It would be possible for motor vehicles to be approved as a whole, including their highly/fully automated driving functions, based on a uniform approval decision. But approval “en bloc” by issuing an EC type-approval is not yet possible as there are international rules on vehicles with automated driving functions to the contrary.

As an alternative, the vehicle as such can be given a “basic approval”. The automated driving function can then be separately approved in an additional procedure. This approach is an option where new vehicles are already being distributed with the technical hardware to facilitate highly/fully automated driving functions in future which are not as yet usable or activated.

The explanatory memorandum also proceeds from the assumption that this kind of “split” approval is possible. If motor vehicles with highly/fully automated driving functions have this kind of “basic approval”, then they may be operated on public roads, even “if the highly/fully automated driving functions have not yet been regulated under international technical rules.” Per se, however, these vehicles are not subject to the new rules brought in by the Road Traffic Act’s amendment. Instead, they are currently only subject to general legal provisions on road traffic. So drivers of vehicles that only have a “basic approval” will not automatically enjoy the modified duties of care resulting from sections 1a, 1b of the Act. Rather, the automated driving functions will need to be approved under section 1a(3) of the Act.

### **Specific approval requirements under section 1a(3) Road Traffic Act and EC exemption type-approval**

Highly/fully automated driving functions in motor vehicles must meet the requirements of international regulations applicable in Germany, or have an EC type-approval under Article 20 of the Framework Directive 2007/46/EC (“EC exemption type-approval”). Currently, there are no international rules on using highly/fully automated driving functions, so obtaining an EC exemption type-approval will in any case be required for them to be permitted in

Germany.

For this, the manufacturer of the system, the component or the independent technical unit files an application to the relevant public authority, namely Germany's Federal Motor Transport Authority (Kraftfahrt-Bundesamt). The Authority assesses the documentation, gives the manufacturer preliminary approval if the documentation is passed, may request recognition by other EU Member States as the preliminary approval only applies nationally, and ultimately files a request to the European Commission for permission to issue an EC exemption type-approval. The European Commission issues permission once a corresponding implementation and review procedure has been conducted. In this case, the Federal Motor Transport Authority converts the preliminary approval to an EC exemption type-approval that is then valid across the whole of the European Union.

Once the international rules, namely UN/ECE Regulation No. 79, have been amended and the European Union has opted into the rules, there will no longer be a place for the EU exemption type-approval. Currently, the UNECE World Forum for Harmonization of Vehicle Regulations (WP.29) – which has competence for the matter – is working on modifying UN/ECE Regulation No. 79 such that more extensive automation of steering functions will be possible. Changes currently planned envisage the introduction of various categories of “automatically commanded steering functions” (ACSF) (No. 2.3.4.1. of UN/ECE Regulation No. 79-E). ACSF Category E corresponds to highly/fully automated driving functions: “ACSF Category E means, a function which is initiated/activated by the driver and which can continuously determine the possibility of a manoeuvre (e.g. lane change) and complete these manoeuvres for extended periods without driver command/confirmation.” Accordingly, automated steering is active if the function has been activated and the system requirements for this function have been met. The changes also provide that specific requirements corresponding to the respective ACSF category be incorporated. Currently, detailed rules on individual ACSF categories are being worked out within the Informal Working Group on ACSF. For ACSF Category E, proposed changes include rules whereby the automatic steering function can be overridden and deactivated at any time and maximum speed is limited to 130 km/h.

Once this new regulation has entered into effect, motor vehicles with automated driving functions as well as these driving functions in themselves will then receive “normal” EC type-approvals under Article 9f Framework Directive 2007/46/EC without further ado.

An unresolved issue is the degree to and method by which conformity of the highly/fully driving functions with the technical requirements of section 1a(2) Road Traffic Act or international rules will be verified and ensured. The Road Traffic Act amendment defines only a basic legal framework. More detailed regulations will be structured in the legal ordinances. The changes to the Road Traffic Act provide the basis for this.

### **Permissibility of using specific highly/fully automated driving functions**

Another question, ultimately, is whether the highly/fully automated driving function may be used, a question that needs to be differentiated from approval of the specific automated driving function. Pursuant to section 1a(1) Road Traffic Act, using highly/fully automated driving functions is only permissible within the framework of proper use.

It is the manufacturer's responsibility to set the scope of the highly/fully automated driving functions' use. If the highly/fully automated driving functions are only approved for use on the autobahn, then drivers are not allowed to activate them on ordinary roads, for example. During the legislative procedure the criticism was raised that the manufacturers had de facto received the right to fill in the details of the undefined legal concept of proper use. The argument was that manufacturers were in effect acting as substitute legislators. But this criticism fails to recognize that specific proper use only acquires legitimacy when the public authority has issued its decision to approve the function. This decision may adopt the concept of proper use set out in the manufacturer's application or restrict it.

### **Conclusion and outlook**

In anchoring legal requirements for automated driving functions in German approvals law, the amendment to the Road Traffic Act is a first step in the right direction. The regulations retain scope for development given their interdependency with EU and international legal rules on using highly/fully automated driving functions, as the necessary process of modification will take some time on the international level.

The authorization that the Road Traffic Act amendment provides for legal ordinances to be issued also shows that legal structuring of highly/fully automated driving functions has not been completed. The new rules reveal the need to undertake significant further development of the legal framework in order to come even close to meeting

the challenges involved in these technological developments. In large areas, initial attempts to regulate automated driving functions at best are evident, and these need to be made more specific. How and in what way the Federal Ministry of Transport and Digital Infrastructure, which has competence for the matter, will take the initiative in this will be met with keen interest.

These new forms of personal transport involve urgent liability issues, deriving in particular from the fact that the liability trio of vehicle holder, driver and manufacturer currently in force has been retained. Except for the doubling of liability caps, legislators have yet to address this. So there is still need for action here by legislators.

#### EXPERTISE

**Automotive  
Compliance & Investigations**

#### LAWYERS

**Dr. Marc Ruttloff**