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6 On Automated Driving, Type-approval, Road Authorities and Liability: a Dutch Example

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Abstract: When discussing liability for damage caused by automated vehicles, the focus is often on the producer of the vehicle, its owner or the user of the vehicle. The legal positions of these actors will change with the development of automated vehicles, but so does the legal position of the road authorities. In this contribution, the liability of road authorities for damage caused by automated vehicles will be explored. An example from Dutch tort law will illustrate the changing liability risks for road authorities and the influence of the type-approval on the legal position of the road authorities.

6.1 Introduction

Although automated vehicles are expected to be significantly safer than human drivers, accidents with automated vehicles will happen. This raises the question of who can be held liable for the damage caused by an automated vehicle, and thus who has to pay damages. This could be the manufacturer of the vehicle, its owner or the user of the automated vehicle, all depending on specific circumstances. This chapter, however, will explore the legal position of the road authority. An example from Dutch tort law will illustrate that, depending on the specific circumstances, the road authority can be held liable for damage caused by an automated vehicle. The type-approval of the automated vehicle plays a significant role in the legal position of the road authority. This influence of the type-approval of the automated vehicle has consequences for the road authority that greatly exceed the influence of the type-approval of a conventional vehicle on the liability risks of the road authorities. The aim of this chapter is to highlight the liability risks for road authorities and the influence of the type-approval of the automated vehicle therein.

6.2 Type-approval

Vehicles, conventional and automated, need to be approved before they are allowed to be driven down public roads within the European Union.¹ Vehicles have to meet a multitude of (technical) requirements. A particular vehicle can be granted individual approval, or a type of vehicle can be granted type-approval by an approval authority. In the future, the approval of automated vehicles could come with certain conditions. For example, the approval is only granted for use on specific roads (e.g. highways). Especially when these sort of conditions regarding use are tied to the approval, it should be recognized that the approval has been granted against the background of certain expectations of the infrastructure. This raises the question of what influence the type-approval has on the liability of the road authority when the approved automated vehicle causes damage.

6.3 The Liability of the Road Authority: a Dutch Example

6.3.1 An Example

An example: an automated vehicle has been certified by an approval authority and type-approval has been granted only for its use on highways. The automated vehicle in question needs good visible lane markings, which is known to the approval authority. Someone uses the approved automated vehicle on a highway, in

¹ Directive 2007/46/EC.

conformity with the conditions of the approval. The lane markings, however, are somewhat worn down on a part of the highway. The approved automated vehicle, that is not designed to deal with worn down lane markings, gets disoriented because of the worn down lane markings. The vehicle starts to swerve and collides with an oncoming vehicle. The user of the automated vehicle gets injured. Can the user hold the road authority liable for his damage?

6.3.2 The Liability of a Road Authority Under Dutch Tort Law

Many jurisdictions are familiar with the concept of liability of the road authority.² Given the length of this chapter, only Dutch tort law will be discussed here. Under art. 174 para 2 of book 6 of the Dutch Civil Code (Burgerlijk Wetboek, or BW), a road authority has to ensure that the public road is in good condition, or is liable for damage caused if the road does not meet the standards which in the given circumstances could be set for such roads. If a road does not offer the safety one is entitled to expect, the road is defective and the road authority will be liable for the damage caused by that road.³ This is a strict liability, and as such it does not require a fault of (or knowledge of the defect by) the road authority. Which standards could be set for roads used by automated vehicles?

6.3.3 The Influence of the Type-approval

This is where the (type-)approval comes into play. The approval is granted to a vehicle that has been tried and tested. The approval authority is the authority of a Member State (Directive 2007/46/EC).⁴ This gives rise to the expectation by the user of the approved vehicle that this automated vehicle can be used safely within the boundaries set by the (type-)approval. This is a justified expectation.

In the example discussed above, the approval has been granted to the automated vehicle that is unable to function properly without visible lane markings. The approval has been granted against the background of a certain infrastructure, in this case of good visible lane marking on highways. The approval has been granted for the use on highways. This approval sets the standard that could be expected from the road which the vehicle has been approved for, and gives rise to the user's expectation that the automated vehicle can function safely on the approved roads. As a consequence, the

² Cees van Dam, *European Tort Law* (2nd edn, Oxford University Press 2013).

³ Arlette JG Schrijns, Christa PJ Wijnakker 2013. 'Aansprakelijkheid van de wegbeheerder ex art. 6:174 BW' in Cees van Dam (ed), *Aansprakelijkheid van de wegbeheerder* (ANWB, The Hague 2013).

⁴ See for the Netherlands: Rijkswaterstaat, 'Wegbeheerders' <www.rijkswaterstaat.nl/kaarten/wegbeheerders.aspx> accessed 31 July 2019.

highway with the worn down lane markings does not meet the standards which in these circumstances could be set for such a highway. Therefore, the road authority can be held liable ex art. 6:174 of the Dutch Civil Code for the damage caused by the automated vehicle from the example.

6.4 Conclusion

This example from Dutch Law illustrates the effect that the type-approval will have on tort law due to the development of automated vehicles. The type-approval will set the standards for the liability of the road authority. This is a new development triggered by the development of automated vehicles. Both approval authorities and road authorities should be aware of this development and its effect on the liability risks for road authorities, which shall require special coordination between the two authorities.

Epilogue: (Type-)approval and Liability Risks

Although the focus of this research is on traffic law and tort law, the EU General Data Protection Regulation (GDPR)¹ can offer some inspiration as to how to approach liability challenges. The GDPR can serve as a model on how to approach questions of liability of the different stakeholders in automated driving. It can thereby provide more clarity on the liability risks of, for instance, public authorities, the producer of the automated vehicle, and the user of the automated vehicle.

The General Data Protection Regulation came into force in May 2018, thereby repealing Directive 95/46/EC, or Data Protection Directive.² The GDPR was deemed necessary in order to combat fragmentation in the way data protection was implemented and to overcome challenges posed by rapid technological developments, in order to “(...) allow the digital economy to develop across the internal market, put individuals in control of their own data and reinforce legal and practical certainty for economic operators and public authorities.”³

The GDPR entails a number of principles on the collecting and processing of personal data and special categories of data. Personal data is defined as “any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person(...)”⁴ In addition, a number of special categories of personal data are identified in Article 9 of the GDPR. One such special category of personal data is data concerning health.⁵ This

¹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L 119/1

² See on the differences between the GDPR and the Data Protection Directive: W. Gregory Voss, ‘European Union Data Privacy Law Reform: General Data Protection Regulation, Privacy Shield, and the Right to Delisting’ (Winter 2016-2017) 72 *The Business Lawyer* 221.

³ Para I of the Explanatory Memorandum to the Proposal for a Regulation of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation) COM (2012) 011 final, Recitals 6 and 7 GDPR.

⁴ Article 4 (1) GDPR.

⁵ Article 9 (1) GDPR.

category is of special interest in the situation described above, where cameras are tracking the physical state of the driver.⁶

The GDPR requires a data protection impact assessment “where a type of processing in particular using new technologies, and taking into account the nature, scope, context and purposes of the processing, is likely to result in a high risk to the rights and freedoms of natural persons”⁷ The data protection impact assessment entails an assessment of the impact of the envisaged processing operations on the protection of personal data. The origin, nature, particularity and severity of the risk to the rights and freedom of natural persons should be evaluated in particular.⁸ Based on the assessment, appropriate measures should be taken to bring the processing of personal data in conformity with the GDPR.⁹ In addition, data protection by design and data protection by default are two tools to assist in reaching the appropriate level of data protection.¹⁰ Given Article 25 (1) GDPR, data protection by design requires one to consider data protection from the very first steps of designing a system that processes (personal) data. Data protection by default entails “measures for ensuring that, by default, only personal data which are necessary for each specific purpose of the processing are processed.”¹¹ These tools could also offer a new approach for challenges concerning liability for damage caused by an automated vehicles.

Similarly to concept of the privacy by design within the General Data Protection Regulation, almost a sort of ‘liability by design’ could be incorporated into the technical requirements that need to be met in order for the (type-)approval of a vehicle to be awarded, thereby taking into account liability issues within the design stages of the development of automated vehicles.¹² By clearly distinguishing the different roles held by each stakeholder, and requiring that it be technological impossible for one stakeholder to perform the role of another, or to perform their own role only partially, the requirements for the (type-)approval could provide clarity on the legal positions of the stakeholders involved. For instance, by equipping a SAE

⁶ See on this topic: Trix Mulder, Nynke E Vellinga, ‘Handing over the wheel, giving up your privacy?’ (13th ITS European Congress, Eindhoven, June 2019).

⁷ Article 35 (1) GDPR.

⁸ Recital 84 GDPR.

⁹ Recital 84, 90 GDPR.

¹⁰ Article 25 GDPR.

¹¹ Article 25 (2) GDPR.

¹² This includes the UNECE Regulations to which the Community has acceded: art. 34, 35 Directive 2007/46/EC.

Level 5 vehicle with an unnecessary steering wheel, an unqualified user might try to drive the vehicle himself in an attempt to avoid an accident. If the user then causes damage, a discussion could arise on whether the user or the producer should be liable now that the vehicle was apparently in a dangerous situation and on whether the user should have interfered. Is the vehicle defective now that it has an unnecessary feature, or should the vehicle have brought itself to a safe stop? Should the vehicle authority have approved an SAE Level 5 vehicle with an unnecessary steering wheel or should the users of SAE Level 5 vehicles be qualified to drive manually? Instead, a technical requirement could be set that only vehicles of a lower level of automation need to have a steering wheel. An SAE Level 5 vehicle could then only be approved if it does not have a steering wheel but is equipped with an emergency brake, for example. The position of the user would then be comparable with the position of the passenger of, for instance, a train. There is an emergency brake for emergency situations, such as when someone gets stuck between the doors, but the user does not have to keep a lookout or take over the driving tasks from the automated driving system. It has been made physically impossible for the user to drive the vehicle himself. If damage is then caused by the vehicle, this will likely be because of a problem with the automated driving system and therefore is a matter of liability of the producer, not of the user of the vehicle.

The question of which stakeholder has a duty to prevent an automated vehicle with a safety-critical defect from driving on public roads can be resolved, in the same manner, by the technical standards set for the (type-)approval of the vehicle. Instead of confronting the user of the vehicle with the heavy burden of checking the automated vehicle for safety-critical, even invisible, defects, it should be required that an automated vehicle is equipped with a fail-safe. This fail-safe prevents the vehicle from driving when there is a safety-critical defect, or brings the vehicle to a safe stop if during the trip a safety-critical defect occurs. An automated vehicle should not be approved for use on public roads without such a fail-safe. This requirement also means that discussions on whether the user should have checked the vehicle for defects before driving off and how far this duty goes (should the user also check whether the latest software update has been installed?) are avoided. Questions on whether, if the vehicle causes damage due to a safety-critical defect, the user is liable as he did not notice the defect or whether the producer should be held liable as the vehicle is apparently unsafe, are also avoided. This illustrates how the (type-)approval can be used as a tool to provide clarity on the liability risks of stakeholders.

In addition, the data protection impact assessment of Article 35 of the GDPR also offers inspiration. As this research has shown, the legal positions of different stakeholders will change. What this change will look like will highly depend on national tort law. Therefore, it is advisable for governments to identify the consequences for the liability of the different stakeholders. Similar to the data protection impact assessment, governments could carry out a 'liability impact assessment' which would entail an assessment of the liability risks of the stakeholders involved in automated driving. This should help identify any lacunas in the applicable tort law and should clarify which legal changes are necessary on a national level in order to avoid problems in applying tort law to cases concerning this new technology. The liability risks of governmental institutions should become clear by conducting such an assessment. This assessment should, by identifying the liability risks of the various stakeholders, provide clarity on which risks should be insured. Thereby, a 'liability impact assessment' could benefit all stakeholders involved.

In addition to the GDPR as model to approach liability questions, the protection of the data gathered by the vehicle is governed by the GDPR. Data protection is becoming increasingly important to the development of automated vehicles. As these vehicles will be equipped with numerous sensors and cameras, automated vehicles are expected to collect as much as one terabyte of data per day.¹³ The importance of these data has been underlined by recent developments and is especially relevant in the near future for automated vehicles of SAE Levels 2-4. Vehicles of these levels still have (at least for part of the trip) a driver within the meaning of the Geneva Convention and Vienna Convention. Volvo has recently announced it is planning to equip its vehicles with in-vehicle cameras to monitor the driver of a vehicle to in order to establish whether the driver is distracted or intoxicated.¹⁴ If the driver is intoxicated or distracted, has ignored warnings and risks causing a serious accident, the vehicle will interfere. The vehicle will do so by, for instance, reducing its speed or

¹³ Leslie Hook, 'Driverless cars: mapping the trouble ahead' (*Financial Times*, 21 February 2018) <www.ft.com/content/2a8941a4-1625-11e8-9e9c-25c814761640> accessed 4 July 2019; Stan Dmitriev, 'Autonomous cars will generate more than 300 TB of data per year' <www.tuxera.com/blog/autonomous-cars-300-tb-of-data-per-year/> accessed 4 July 2019.

¹⁴ 'Volvo Cars targets better driving behaviour. 'Volvo Cars to deploy in-car cameras and intervention against intoxication, distraction' (23 April 2019) <www.volvocars.com/au/about/australia/i-roll-eneewsletter/2019/april/volvo-cars-targets-better-driving-behaviour> accessed 3 September 2019.

even by bringing the vehicle to a safe stop.¹⁵ It goes beyond the scope of this thesis to further explore data protection challenges for automated vehicles.

As shown above, the GDPR offers a model to approach the liability questions arising from the development of automated vehicles. Through a 'liability impact assessment' the liability risks of the stakeholders involved can be identified, whereas a 'liability by design' approach takes those liability risks into account in the design of the automated vehicle.

¹⁵ 'Volvo Cars targets better driving behaviour. Volvo Cars to deploy in-car cameras and intervention against intoxication, distraction' (23 April 2019) <www.volvocars.com/au/about/australia/i-roll-eneewsletter/2019/april/volvo-cars-targets-better-driving-behaviour> accessed 3 September 2019.

