RAILS.
Robotics & AI Law Society

Producer's Liability for Damages caused by Autonomous Vehicles under German and European Law

Conference „Autonomous Vehicles and AI:

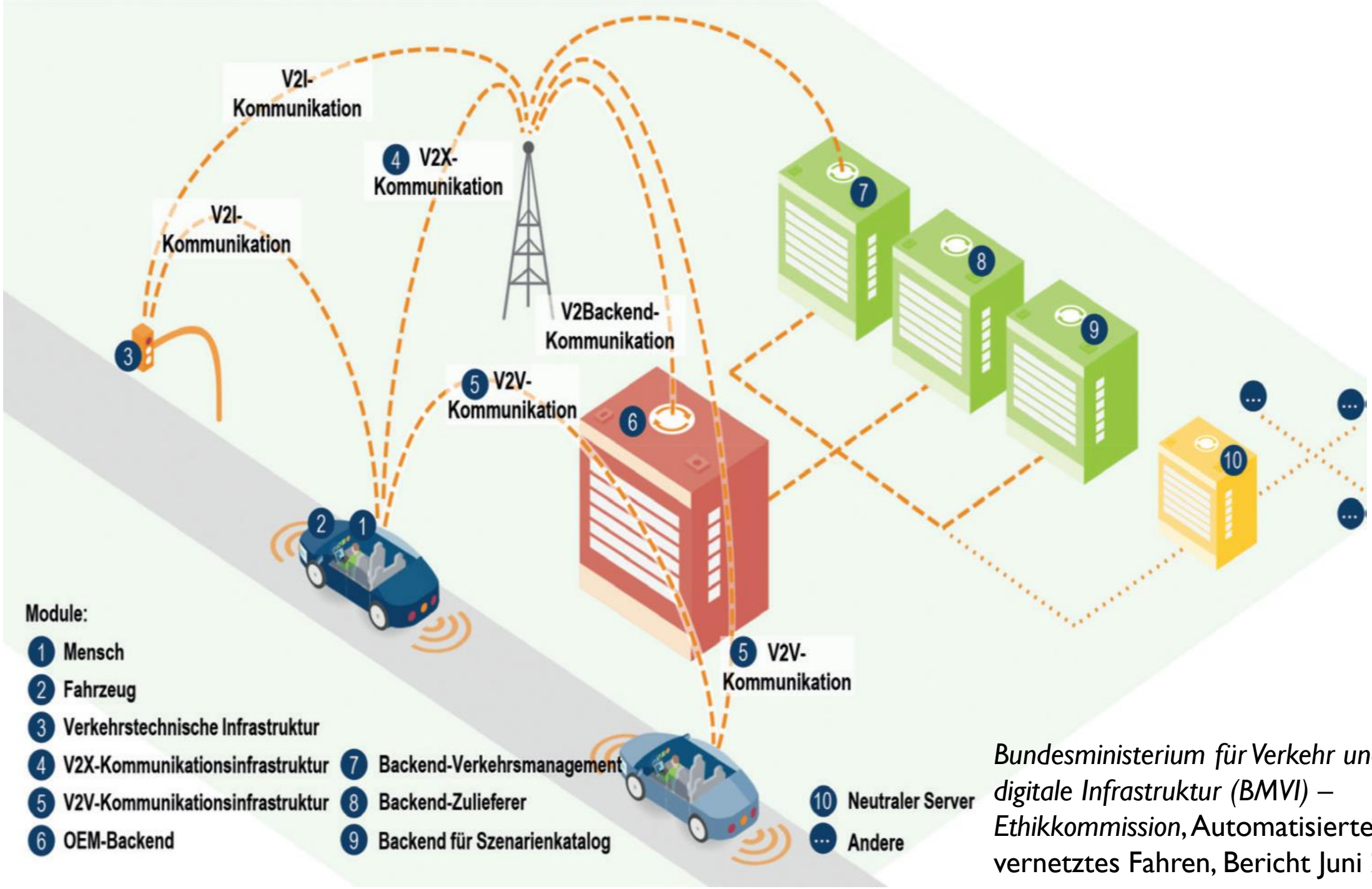
Prague, 25th October 2021

Prof. Dr. Martin Ebers
Universität Tartu (Estonia)
Robotics & AI Law Society (RAILS)

RAILS.
Robotics & AI Law Society

Contents

RAILS.
Robotics & AI Law Society



Bundesministerium für Verkehr und digitale Infrastruktur (BMVI) – Ethikkommission, Automatisiertes und vernetztes Fahren, Bericht Juni 2017

RAILS.
Robotics & AI Law Society

Introduction

Liability Framework - Overview

- **Tort Law, § 823 BGB**
  - Fault-Based Liability
  - Case-Law for Producer‘s Liability

- **Product Liability Act (Produkthaftungsgesetz, ProdHaftG)**
  - Transposition of the Product Liability Directive

- In practice, the **Product Liability Act is little used**!
  - Liability under § 823 BGB and ProdHaftG is alike (= both are fault-based)
  - ProdHaftG restricts the scope of compensable loss

RAILS.
Robotics & AI Law Society

Introduction

Liability Framework - Overview

- **Road Traffic Act (Straßenverkehrsgesetz, StVG)**
  - **Liability of Vehicle Keeper**, § 7 StVG
    - Strict Liability for damages to third parties arising from the operation of a motor vehicle
  - **Liability of the Vehicle Driver**, § 18 StVG
    - Fault-based
    - BUT: Presumption of Fault

RAILS.
Robotics & AI Law Society

Recent Amendments to the German Road Traffic Act

Amendments of 2017 (for SAE-level 3)

- **§ 1a Road Traffic Act**
- (1) The operation of a motor vehicle by means of a **highly or fully automated driving function is permitted** if the function is used as intended.
- (2) Motor vehicles with a highly or fully automated driving function (…) are vehicles equipped with technology that:
  - 1. when activated, is able to **control the motor vehicle** (…) to perform the driving task;
  - 2. is able (…) to **comply with the relevant traffic rules**;
  - 3. can be **overridden or deactivated manually by the driver** at any time;
  - 4. is able to **identify the need for the driver to retake manual control** of the vehicle;
  - 5. is able to **indicate to the driver** (…) **the need to retake manual control** of the vehicle with a sufficient time buffer (…); and
  - 6. **indicates that use is running counter to the system description**.

RAILS.
Robotics & AI Law Society

Recent Amendments to the German Road Traffic Act

Amendments of 2017 (for SAE-level 3)

- **§ 1a Road Traffic Act**
- (4) A **person who activates** a highly or fully automated driving function (…) and uses such a function (…), **shall also be deemed to be a driver.**"

RAILS.
Robotics & AI Law Society

Recent Amendments to the German Road Traffic Act

Amendments of 2021 (for SAE-level 4)

- **§ 1d Road Traffic Act**
- (1) A motor vehicle with an **autonomous driving function** (…) is a motor vehicle that can perform the driving task independently **within a defined operating area** without a person driving the vehicle, (…)
- (2) A **defined operating area** (…) means the locally and geographically determined public road space in which a motor vehicle with an autonomous driving function may be operated (…).
- (3) The **technical supervisor** (…) is the **natural person** who can **deactivate** this motor vehicle during operation and **approve alternative driving maneuvers**

RAILS.
Robotics & AI Law Society

Recent Amendments to the German Road Traffic Act

Amendments of 2021 (for SAE-level 4)

- **§ 1f Road Traffic Act**
- (1) The **keeper of a motor vehicle (…)** is obliged to maintain the road safety (…). He shall
  - 1. Ensure **regular maintenance** of the systems (…)
  - 2. Take precautions to **ensure compliance with other traffic regulations** not directed at the driving of the vehicle; and
  - 3. To ensure that the **tasks of technical supervision are fulfilled**.

RAILS.
Robotics & AI Law Society

Recent Amendments to the German Road Traffic Act

Amendments of 2021 (for SAE-level 4)

- **§ 1f Road Traffic Act**
- (2) The **technical supervisor of a motor vehicle (…)** shall,
  - 1. Evaluate an **alternative driving maneuver** (…) and activate the motor vehicle for this purpose,
  - 2. **Deactivate the autonomous driving function** immediately as soon as this is indicated visually, acoustically or otherwise perceptibly by the vehicle system,
  - 3. **Evaluate signals from the technical equipment** regarding its own functional status and, if necessary, initiate required measures for road safety, and
  - 4. immediately **establish contact with the passengers** of the motor vehicle (…)

RAILS.
Robotics & AI Law Society

Recent Amendments to the German Road Traffic Act

Amendments of 2021 (for SAE-level 4)

- **§ 1f Road Traffic Act**
- (3) The **manufacturer** (…) shall
  - 1. demonstrate to the competent authority (…) **cybersecurity**,
  - 2. carry out a **risk assessment** for the motor vehicle,
  - 3. demonstrate a **wireless connection that is sufficiently secure**,
  - 4. prepare a **system description** and an **operating manual**
  - 5. provide **training for the persons involved in operation**, in which the technical functioning, in particular with regard to the driving functions and the performance of the tasks of the technical supervisor, are conveyed, and
  - 6. as soon as he recognizes **manipulations, to report them immediately** to the competent authority and to initiate the necessary measures.

RAILS.
Robotics & AI Law Society

Producer's Liability

Liability for Manufacturing Defects

- Defect of the product due to a problem in the manufacturing process
  - E.g. defective sensors
- Producer can escape tort liability if he can show that the defect was a "runaway" (Ausreißer)
- However, this requires to name *every* individual involved in the manufacturing process and prove his 'innocence'

RAILS.
Robotics & AI Law Society

Producer's Liability

Liability for Design Defects

- **Design Defect**
  - occurs when there is an inherent flaw/error in a product's design that renders it unreasonably dangerous

- **Design Defect because AI cannot be (fully) controlled?**
  - (-), if autonomous vehicles provide at least the same safety as human drivers

- **Design Defect = Malfunctioning of the vehicle?**
  - (-), because a product is not defective for the sole reason that it is put into circulation

RAILS.
Robotics & AI Law Society

Producer's Liability

Liability for Design Defects

- **Violation of Safety Standards?**
  - ISO 26262 (Road Vehicles = Functional Safety)
  - IEC 61508 (Functional Safety of Electronic-safety-related systems)
  - ISO 8000 (Data Quality)

  - Violation of safety standards only indicates a design defect!

- **Comparing autonomous vehicles with Human Behavior?**
  - Design defect if vehicle makes an error which the circumspect human would not make?
  - Machines make different mistakes than humans!

RAILS.
Robotics & AI Law Society

Producer's Liability

Liability for Design Defects

- **Comparing the autonomous vehicle with other autonomous vehicles?**
  - "Best" available system as absolute benchmark?
  - "Best" available system as relative benchmark?
    - E.g.: Systems are defective, if they deviate by x% from the best system

- **Relevant Time: Putting the Procuct into Circulation**
  - Dir. 85/577: Updates/upgrades are not covered
  - Dir. 85/577: No duties to monitor the product

RAILS.
Robotics & AI Law Society

Producer's Liability

Liability for Insufficient Instructions

- **Producer must**
  - inform about correct use and
  - warn against (likely) incorrect use

- **Information:**
  - for which purpose the vehicle is suitable
  - how the system must be configured and operated
  - to what extent the system must be monitored while driving
  - how to react to a system failure

RAILS.
Robotics & AI Law Society

Producer's Liability

Liability for Breach of the Duty to Warn/Recall

- Duties after the product is put into circulation
  - Duty to (actively) **monitor** the vehicle
  - Duty to **warn** about the vehicle
  - Duty to **recall** the vehicle
  - Duty to **update software**?

- Duty to warn concerns
  - the **functioning of the vehicle** itself
  - how the **vehicle interacts with accessories** of other producers
  - how the **vehicle interacts with other vehicles**?

RAILS.
Robotics & AI Law Society

Critical Assessment

Producer's Liability – Burden of Proof

- **Victim has to proof**
  - Defect
  - Damage
  - Causal Relationship between defect and damage

- **Problems**
  - «Many-hands» Problem
  - No event data recorder
  - Opaqueness of AI systems

RAILS.
Robotics & AI Law Society

Critical Assessment

Consequences

- Victims will not claim against the producer
  - Due to the burden of proof!

- Instead, they will **claim damages from the vehicle keeper**
  - Vehicle keeper's liability is strict!
  - Mandatory car insurance will pay for damages

- **Redress of the vehicle keeper's insurance against the producer?**
  - Unlikely, because of burden of proof!

RAILS.
Robotics & AI Law Society

Critical Assessment

Consequences

- **Result**
  - Under German law, damage is not indemnified by the responsible party/cheapest cost avoider!
  - **German law cannot be changed**, because Product Liability Directive is based on **full harmonization**
    - CJEU, case C-183/00, ECLI:EU:C:2002:255, *González Sánchez*
  - Need for European Action!

Thank you for your attention!