



Federal Ministry
of Transport and
Digital Infrastructure



ITU Symposium on *The Future Networked Car*
5th March 2014

“Automated Driving – the legislator’s perspective“

Dr. Julia Pullen, Division LA 20, Federal Ministry of Transport and Digital Infrastructure, Germany



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Automated
Driving

Technical aspects

Social aspects

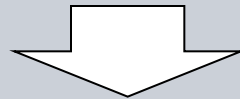
Legal aspects



“Automated Driving – the legislator’s perspective”

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1: Motivation



2: Current systems and future technology



3: Legal / legislative challenges



4: Our strategy



“Automated Driving – the legislator’s perspective” – 1. Motivation

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Statistics say:

MORE THAN 90% OF TRAFFIC ACCIDENTS ARE CAUSED BY HUMAN ERROR.

If vehicle systems undertake a task which originally belongs to the driver, the driver cannot fail to comply with this task any longer.

If the systems undertake the drivers’ tasks, they relieve them. Consequently the driver is able to give greater focus to the other tasks. Especially in complex and critical situations, this effect can help to increase driving safety.

Automated systems have a high potential to improve road safety and reduce injuries and fatalities





“Automated Driving – the legislator’s perspective” – 2. Current Systems

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At the current stage of technology and under present legislation vehicle systems undertake a certain task.

Emergency brake assist:

- the system identifies an obstacle in front
- the system alerts the driver
- if the driver fails to react, the system initiates emergency braking



(org.: adac.de)

Lane keep assist:

- the system detects when the vehicle leaves its lane unintentionally
- the system alerts the driver
- newer systems automatically take corrective measures



(org.: bosch-automotivetechnology.com)



“Automated Driving – the legislator’s perspective” – 2. Future Technology

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Future technology aims at releasing the driver from his entire driving task!

The vehicle itself performs the driving task

- without the driver’s contribution
- and even without his mere attention.



(org. dvr)

Several projects from the automotive industry have autonomous research vehicles driving on public roads and coping with complex situations like roundabouts or pedestrians crossings!



“Automated Driving – the legislator’s perspective” – 3. Challenges

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These “vehicle skills” have a significant influence on the driver’s role and responsibility and on the entire traffic as such!

Various issues
arise:

Human-Machine-
Interaction

operation and
maintenance of
the systems

social acceptance

***Is the current legal framework
appropriate for automated driving?***



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Example 1: The Vienna Convention on Road Traffic

Article 8:

“Every driver shall at all times be able to control his vehicle or to guide his animals”

Conflict between automated systems and this basic rule!

If the system acts automatically the driver cannot control it at the same time!

Need for an update!

**An amendment draft is on the agenda of the next WP1 Session this March
(WP 1 = Working Party on Road Traffic Safety)**



“Automated Driving – the legislator’s perspective” – 3. Challenges

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Example 2: Straßenverkehrsordnung („Road Traffic Regulation“)

§ 1 Grundregeln

(1) Die Teilnahme am Straßenverkehr erfordert ständige Vorsicht und gegenseitige Rücksicht.

§1 Basic Rules

(1) Participation in traffic requires permanent attention and mutual respect.

Problem: What happens if automated vehicle technology enables the driver to focus on other things but the driving task (e.g. checking emails...)?

Possible solutions:

- Either amend this rule and allow the distraction of the driver
- Or keep it and have new technology not totally discharge the driver



“Automated Driving – the legislator’s perspective” – 3. Challenges

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Example 3: Straßenverkehrsordnung („Road Traffic Regulation“)

§ 4 Abstand

(1) Der Abstand zu einem vorausfahrenden Fahrzeug muss in der Regel so groß sein, dass auch dann hinter diesem gehalten werden kann, wenn es plötzlich gebremst wird. Wer vorausfährt, darf nicht ohne zwingenden Grund stark bremsen.

§4 Distance

(1) As a general rule the distance to a vehicle travelling in front shall be large enough to enable a stop in case of a sudden deceleration. The vehicle travelling in front shall not break heavily without compelling reasons.

**Are automated systems capable of equivalent skills to comply with this rule?
If not: The infringement of this rule is a traffic offence and can be fined!**

Possible Solutions:

- Adapt the rule to new automation technology?**
- Keep the rule and leave the choice to the driver whether he trust the system and pays a possible fine for the system or not?**



“Automated Driving – the legislator’s perspective” – 4. Strategy

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Round Table “Automated Driving”

- Ministries
- Research facilities
- Representatives of the Automotive and Insurance Industry

Working Group
„Law“

Working Group
„Driver/ Car“

Working Group
„Research“

- **determine the status quo**
- **identify open questions /inconsistencies**
- **elaborate work objectives/ propose solutions**



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Round Table “Automated Driving”

Roadmap

Nov. `13

Inaugural
session of
Round Table

Jan/Feb. `14

1st sessions
of Working
Groups

End of `14

First
Findings



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Thank you for your attention!