Status report on WP.29 activities related to Automated and Connected Vehicles

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Content

• Presentation of WP.29 and GRVA

• Automated vehicles – strategic activity

• Requirements for automated vehicles – as of today
UNECE and vehicle regulations

What is WP.29 doing?
- Emissions of pollutants and CO₂
- General safety
- Passive safety
- Noise and tires
- Automated/autonomous and connected vehicles
- Lighting and light signalling

Where?

Notes:
- Some countries not marked here apply unilaterally (some of) the UN vehicle Regulations
- Concept of mutual recognition of approvals for a number of countries

Our structure:
⇒ WP.29, 6 working groups, ~40 informal working groups
Organization of WP29

The U.N. Economic Commission for Europe (UNECE)

World Forum for Harmonization of Vehicle Regulations (WP.29)

Automated driving (GRVA)
General safety (GRSG)
Passive safety (GRSP)
Lighting (GRE)
Noise and tyres (GRBP)
Pollution and energy (GRPE)

Created in June 2018
Content

• Presentation of WP.29 and GRVA

• Automated vehicles – Strategic activity

• Requirements for automated vehicles
Framework document for automated vehicles

Authors

Purpose
Guides WP.29’s groups
Programme management

Highlights
Safety vision
Key safety elements
Timeline

Adopted in June 2019

Outline of the Framework document

● Safety Vision
   “an automated/autonomous vehicle shall not cause any non-tolerable risk”, meaning that automated/autonomous vehicle systems, under their automated mode ([ODD/OD]), shall not cause any traffic accidents resulting in injury or death that are reasonably foreseeable and preventable.

● Key issues and principles to be considered by WP29 subsidiary bodies as a priority

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Four dedicated Informal Working Groups in the Framework document

• Functional Requirements for Automated Vehicles (FRAV)

• Validation Method for Automated Driving (VMAD)

• Data Storage System for Automated Driving (DSSAD) vehicles + EDR

• Cybersecurity and (OTA) software updates
Focus on the following key safety elements:
• System safety
• Failsafe Response
• HMI /Operator information
• OEDR (Functional Requirements)

Delivery:
• Common functional requirements based on
  - existing national/regional guidelines
  - other relevant reference documents
Focus on the following key safety elements:
- OEDR (Assessment Method)
- Validation for System Safety (including CEL)

Delivery:
- Review of the existing and upcoming methods
- Propose way forward for the assessment of AD
Focus on the following key safety elements:
- Cyber security
- Software Updates

Ambition:
Completion in March 2020
**EDR / DSSAD**

Event Data Recorder and Data Storage System for Automated Driving

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**Leaders**

- Japan
- Netherlands
- USA

**Secretariat**

- OICA

**EDR**

- Not only for ICVs
- Harmonization work
- C-EDR, US-EDR
- Accident reconstruction

**DSSAD**

- For ICVs
- Purposes
  - Research
  - Monitoring
  - Liability
  - Legal responsibility

**Outcome**

- EDR vs. DSSAD ✓
- DSSAD for ALKS ✓

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Focus on the following key safety elements:
- DSSAD/EDR

**Delivery:**
- DSSAD for Lane Keeping systems (levels 3/4)
- DSSAD / EDR
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UN Regulation No. 79 (Steering)

• Scope (active safety and ADAS):
  – Steering systems, incl.:
    – Emergency Steering Function
    – Corrective Steering Function
    – Remote Maneuvering Systems
    – Automatically Commanded Steering Function
      • Low speed «ACSF of category A» e.g. RCP
      • Lane keeping «ACSF of category B1» (Level 2)
      • Lane change «ACSF of category C» (Level 2)
  • ADAS covered since November 2017
Automated Lane Keeping Systems – ALKS

- First Regulation in the area of vehicles of Level 3 and higher
  - Use case
    - Motorway
    - Low speed (< 60 km/h)
- Safety related provisions highlights:
  - Dynamic Driving Task
  - Emergency manoeuvre
  - Transition demand
  - Minimum Risk Manoeuvre
  - Driver Monitoring Function
  - Activation criteria and system override provisions
  - …
Conclusion

• Presentation of WP.29 and GRVA
  – Dedicated Working Party on Automated/ Autonomous and Connected Vehicles was established in June 2018

• Automated vehicles – Strategic activities
  – The Framework document, the foundament of WP.29 work on automated vehicles, was adopted in June 2019

• Requirements for automated vehicles – as of today
  – The First Regulation in the area of vehicles of Level 3 was drafted.
THANK YOU VERY MUCH FOR YOUR ATTENTION

UNECE/WP29

www.unece.org/trans/main/welcwp29

www.unece.org/automated-vehicles

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