

WP.1 / GE.3

Presentation 4 4th GoE on LIAV, 1-2 September 2022 Provisional agenda item 2

Activities of other working parties and relevant groups of the United Nations related to automated vehicles

Presentation introducing ECE/TRANS/WP.1/GE.3/2022/8.

Note by the secretariat

Content

- Introduction
 - Purpose of the document
 - Presentation of GRVA
 - Framework in which GRVA operates
 - 1958, 1997 and 1998 Agreements
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Introduction

Background

The experts of WP.1/GE.3 reviewed the results of a study at the third session in May 2022.

Some answers provided by the experts suggested the relevance of sharing information on activities of other working parties.

This presentation mainly focuses on the activities of GRVA.

Content of ECE/TRANS/WP.1/GE.3/2022/8

The document highlights aspects of the work of GRVA that (partially or fully) cover some of the items listed in the answers to question 3 in the survey.

The document does not provide a holistic analysis of each points but simply a few examples.

3. What are the additional road safety risks posed by automated vehicles in comparison to traditional ones that you believe require intervention by road safety

authorities?

- Risks related to the lack of clarity on roles and responsibilities
- Risks related to take over requests, fall-back user
- expectations during transitions demands ■Risks related to technical performance and skill of the vehicle automation
- Risks related to mode awareness (understanding of the real capability of the function)
- Risks related to data protection and hacking
- ■Risks related to poor infrastructure (bad roads)
- Risks related to overreliance (on automation)
- Risks related to telecommunications (e.g., internet coverage)
- Risks induced by ethical aspects relevant to vehicle automation
 Some new risks may not require intervention of Road
- Safety Authorities Other (answered Yes)
- Not relevant. Automated Driving Systems performs better than human drivers





The Working Party on Automated/Autonomous and Connected Vehicles (GRVA)

ITC requested WP.29 to consider establishing a subsidiary Working Party dedicated to Automated and Connected Vehicles in February 2018.

WP.29 responded to the request in June 2018. GRVA was created on the basis of GRRF. Tires related activities were passed to GRB (which became GRBP) and coupling activities were passed to GRSG.

GRVA is subsidiary to WP.29, which is the World Forum for Harmonization of Vehicle Regulations that administers 3 multilateral Agreements dealing with vehicles (1958, 1997 and 1998 Agreement) – GRVA explored the possibility to develop documents outside of the context of the 3 Agreements. This novel approach was welcomed as a new global initiative.

Terms of Reference and Rules of Procedures: <u>ECE/TRANS/WP.29/690/REV.2</u> (see rule 35)

Annual programme of work: see ECE/TRANS/WP.29/20XX/1

UNECE Transport Economic and Social Council Treaty Body Inland Transport Committee Committee of Experts on TDG and GHS Joint Meeting of Experts VP.15 Transport of AC for the ADN on ADN C.3 Sub-Committee of RID/ADR/ADN Joint AC.1 Experts on TDG Meeting C.4 Sub-Committee of Group of Experts on AETR Experts on GHS AC for the AGR ---- SC.1 Road Transport Agreement Group of Experts on the operationalization of the e-CMR procedure Group of Experts tasked with drafting a new legal instrument on international rail passenger hubs AC for the AGC Agreement Group of Experts on the Permanent Identification of Railway Rolling Stock WP.3 Technical and Safety AC for the AGN SC.3 Inland Water Requirements in Agreement Inland Navigation Group of Experts on Road Signs and Signals NP.1 Road Traffic Safety Group of Experts tasked with drafting a new legal instrument on the use of automated vehicles in road traffic Group of Experts on Assessment of VP.5 Transport Trends & Climate Change Impacts and Adaptation for Inland Transport Group of Experts on Benchmarking WP.6 Transport Statistics Transport Infrastructure Construction Costs Group of Experts on cycling Transport, Health and WP.11 Transport of AC for the AGTC Environment Pan-European infrastructure Perishable Foodstu Agreement Programme (THE PEP) WP.24 Intermodal Transport AC for the AGTO GRE Lighting and Light-Protocol Signalling TEM project GRVA Automated/Autonomous AC.1 1958 Agreemen and Connected Vehicles Uniform Technical TER project rescription GRBP Noise and Tyres NP.29 World Forum for AC.3 1998 Agreemen Global Technical GRPE Pollution and Energy Vorking Party (WP) or AC.4 1997 Agreemen AC.2 Coordinating Steering Committee (SC) **Rules for Periodical** GRSG General Safety Provision Committee of WP.29 echnical Inspection Working Party within a AC.2 TIR Convention Working Party GRSP Passive Safety TIR Executive Group of Experts Board eTIR Technical Treaty Body (AC: Implementation WP.30 Border Crossing & Administrative Committee Body AC.3 Harmonization AC function performed by of Frontier Control of Working Party Goods, 1982 ECOSOC bodies serviced by AC-4 Custom **UNECE** secretariat Freatment of Pool ontainers, 1994



Sustainable Transport Division

Frameworks – relevant UNECE's multilateral Agreements (WP.29)

1958 Agreement:

- "UN Regulations"
- Directly applicable by the Countries and stakeholders/industry
- Mutual recognition of Type Approvals

1998 Agreement:

- "UN Global Technical Regulations"
- Requires transposition in national law
- No administrative procedures
 → suitable for:
 - Self Certification
 - Type Approval



- "UN Rules"
- On PTI
 - Directly app stakeholders
- Mutual recog











Incl. their sub-systems and parts

Global initiative to tackle Automated and Connected Vehicles Framework Document for Automated Vehicles (FDAV)





FDAV: -Adopted in June 2019, -Updated in November 2021



Four dedicated Informal Working Groups

Implementing the programme set by FDAV:



- Functional Requirements for Automated Vehicles (FRAV)
- Validation Method for Automated Driving (VMAD)
- Data Storage System for Automated Driving (DSSAD) + Event Data Recorder (EDR)
- Cybersecurity and (OTA) software updates



Current status of the work under the FDAV

- **FRAV** delivered several iterations of the "Guidelines and Recommendations concerning Safety Requirements for Automated Driving Systems" (see reference documents of GRVA).
- VMAD delivered several iterations of the Master Document and the initial version of the Guidelines (see reference documents of GRVA).
- **EDR/DSSAD** delivered the DSSAD provisions for UN Regulation No. 157 and documents related to EDR and DSSAD.
- CS/OTA delivered UN Regulations Nos. 155 and 156 as well as reference documents for the purpose of the 1998 and 1958 Agreements CPs.

See:

- <u>https://unece.org/reference-documents-0</u>
- <u>https://unece.org/transport/vehicle-regulations-wp29/standards/addenda-1958-agreement-regulations-141-160</u>



Automated and Connected Vehicles The de facto two workstreams of the Framework Document





Current situation under the 1958 Agreement

Level 2

UN Regulation No. 79 (Lane keeping) (Lane change on motorway) New Reg. on DCAS*





Level 3

UN Regulation No. 157 (Traffic jam pilot) (Motorway pilot)





Connectivity

UN Regulation No. 155 (Cyber + CSMS)

UN Regulation No. 156 (SU + SUMS)



→OTA Updates
→New services
→Reporting
→Information etc.

* Under preparation



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Current situation up

Level 2

Why UN Regulation No. 79 and a new UN **Regulation on DCAS?**

UN Regulation No. 79

(Lane keeping)



UN Regulation No. 79 includes in its scope: (Lane change on motorw Level 2 Lane keeping hands on ("ACSF of category B1") New Reg. on DCAS* Level 2 Lane keeping hands off ("ACSF of category B2") Level 2 Lane change on motorway ("ACSF of Category C") Level 2 Lane change on motorway ("ACSF of Category D") Level 2 Lane change on motorway ("ACSF on Category E")

UN Regulation prohibits the approval of ACSF of Categories B2, D and E



 \rightarrow This led to activities on DCAS

 \rightarrow Information etc.



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* Under preparation

UNECE / WP.29 impact on ADS in the European Region



* Under preparation

Examples of points of interests to GE.3 addressed by GRVA



- Risks related to the lack of clarity on roles and responsibilities
 - Information by the system to the "driver"
 - E.g. system status
- Risks related to take over requests, fallback user expectations during transition demands
 - Transition of control and to fallback responses
- Risks related to technical performance and skill of the vehicle automation
 - Validation Method for Automated Driving
- Risks related to mode awareness / overreliance
 - Currently relevant for L2/L3 see ADAS PPT GRVA-12-17
- Risks related to hacking
 - CS/OTA activities
- Risks related to poor infrastructure (bad roads)
 - Potentially covered by the ODD
- Risks related to telecommunication (e.g. internet coverage)
 - ADS vs. remote driving
- Risks induced by ethical aspects relevant to vehicle automation
 - Current state of art
 - Should computing time be used to compute subjective ethical parameters or be used to optimize DDT and avoid or mitigate the consequences of crashes?





WP.1 / GE.3 4th session, 1-2 September 2022

Thank you!

