



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
 - Framework document FDAV
- Activities under the FDAV
- The current situation for the contracting parties of the 1958 Agreement
- The current situation for the European Region
- Examples of points of interest that are addressed by GRVA

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.

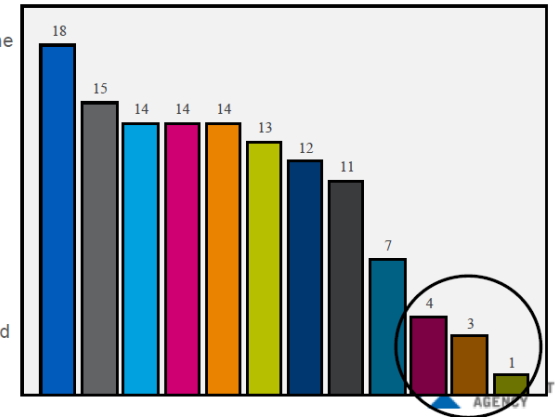
Content of ECE/TRANS/WP.1/GE.3/2022/8

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)

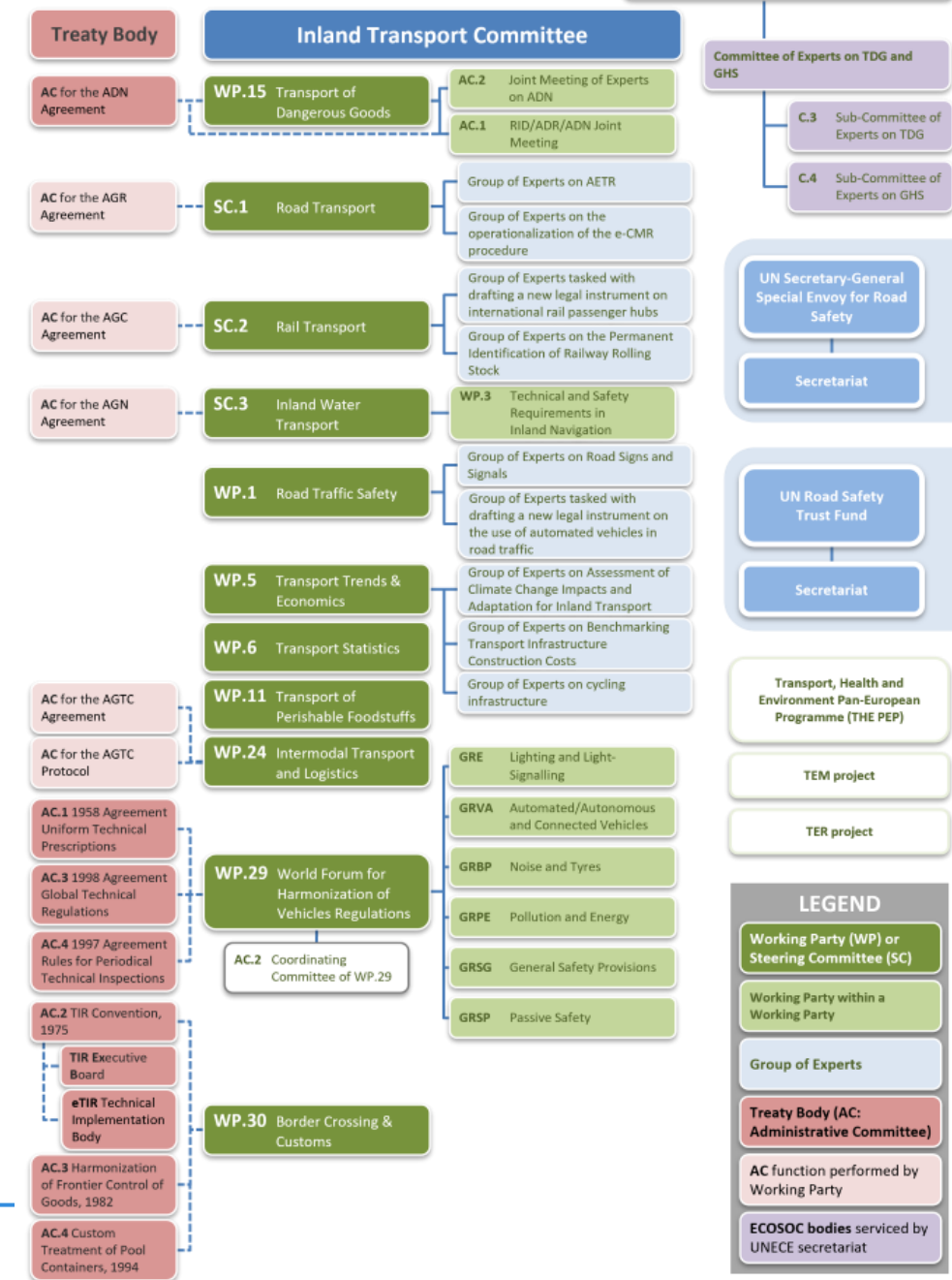
ITC requested WP.29 to consider establishing a subsidiary Working Party dedicated to Automated and Connected Vehicles in February 2018.

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:
[ECE/TRANS/WP.29/690/REV.2](https://www.unece.org/transport/working-party-on-automated-vehicles-and-connected-vehicles) (see rule 35)

Annual programme of work: see [ECE/TRANS/WP.29/20XX/1](https://www.unece.org/transport/working-party-on-automated-vehicles-and-connected-vehicles)



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

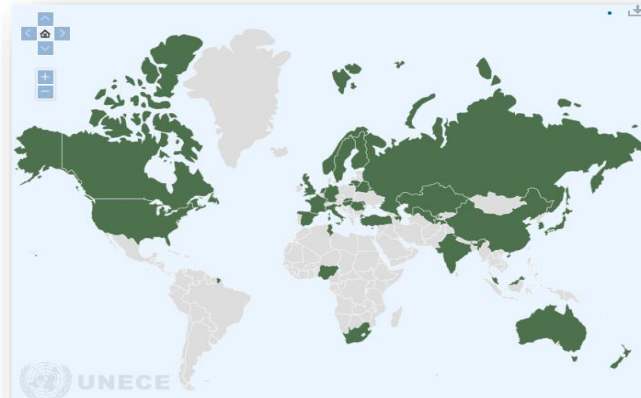
1958 Agreement:

- “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



1997 Agreement:

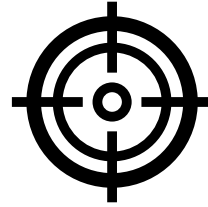
- “UN Rules”
- On PTI
- Directly applicable by the stakeholders/industry
- Mutual recognition



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



Authors



Purpose

To guide WP.29's groups
Provide a programme management



Highlights

Safety vision
Key safety elements
Timeline



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:

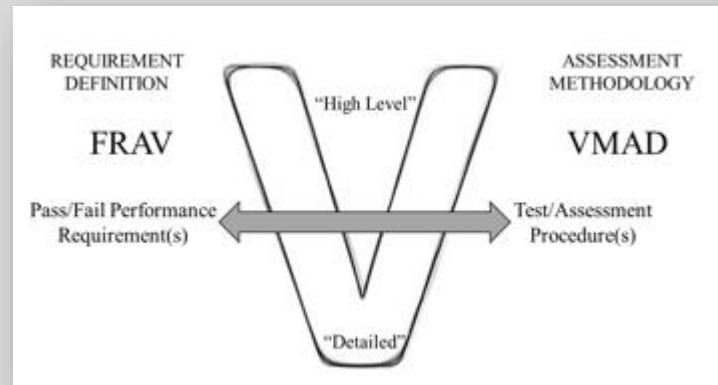
- <https://unece.org/reference-documents-0>
- <https://unece.org/transport/vehicle-regulations-wp29/standards/addenda-1958-agreement-regulations-141-160>

Automated and Connected Vehicles

The de facto two workstreams of the Framework Document

- Guidance documents
Aimed to cover
- all ADS
 - all types of vehicles
 - all ODD and use cases

The FRAV/VMAD activities



WP.29 decision

Activities on ALKS under the 1958 Agreement initiated before the FRAV adoption

- Initiated before the FRAV adoption:
Regulation covering the current needs of
- Contracting Parties
 - Industry



- UN Regulation No. 157
- PC (M₁) only
 - Motorway
 - < 60 km/h



- UN Regulation No. 157
- PC (M₁), trucks and buses
 - Motorway
 - < 60 km/h



- UN Regulation No. 157
- "Motorway autopilot"
 - Incl. lane changes
 - Etc.

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

Current situation under UN Regulation No. 1058

Level 2

UN Regulation No. 79

(Lane keeping)

(Lane change on motorway)

New Reg. on DCAS*



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

UN Regulation No. 79 includes in its scope:

Level 2 Lane keeping hands on (“ACSF of category B1”)

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”)

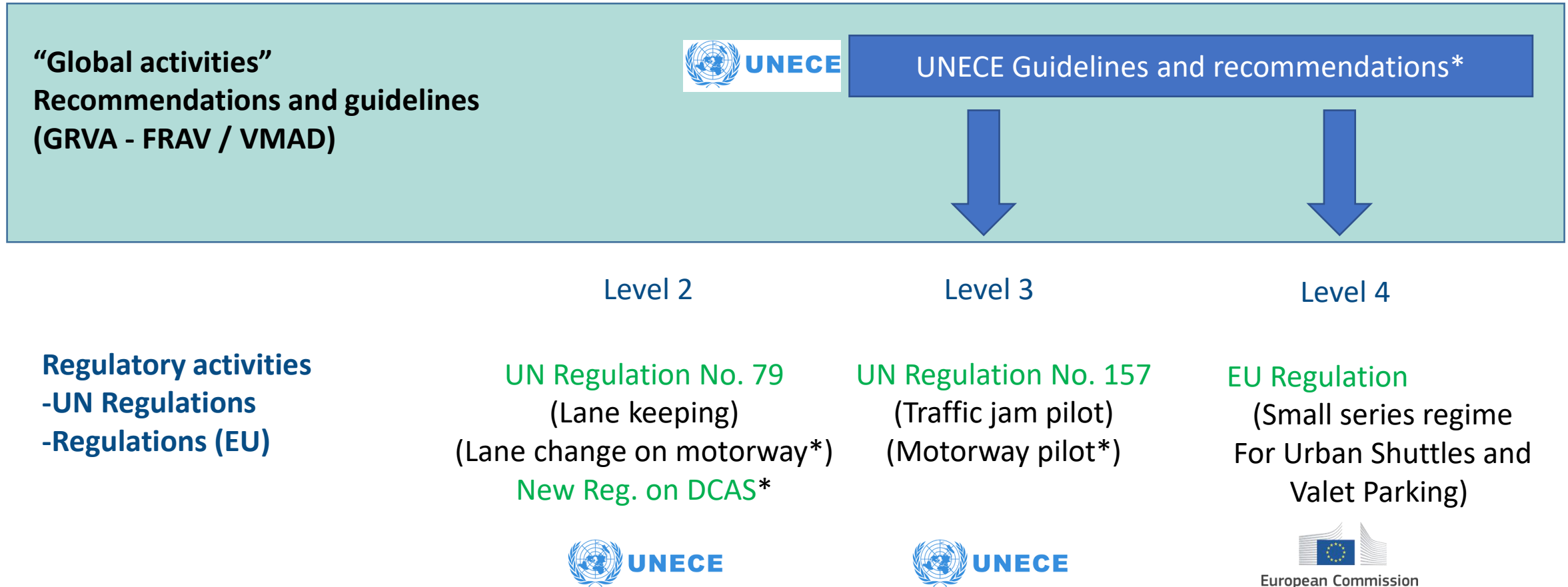
UN Regulation prohibits the approval of ACSF of Categories B2, D and E

→ This led to activities on DCAS

→ Information etc.

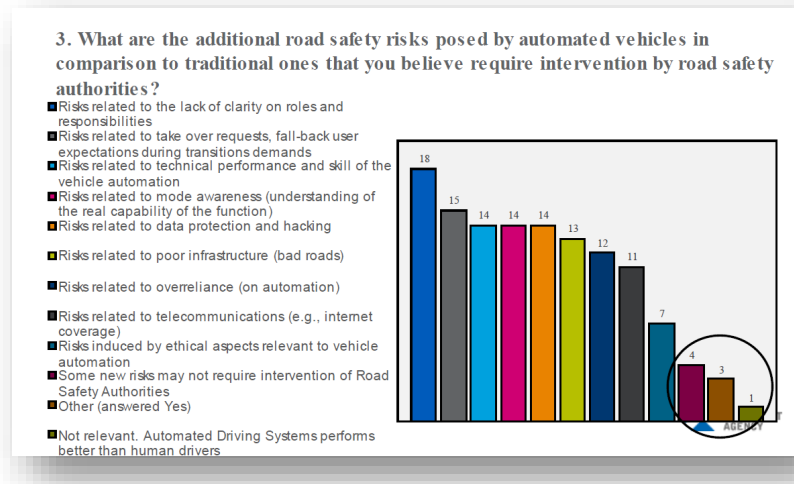
* Under preparation

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!