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## **Economic Commission for Europe**

Inland Transport Committee

**Global Forum for Road Traffic Safety**

**Group of Experts on drafting a new legal instrument  
on the use of automated vehicles in traffic**

**Fifth session**

Geneva, 12 December 2022

Item 3 of the provisional agenda

**Substantive activities**

### **Zero-draft - Skeleton of new international legal instrument (Convention) [on the use of automated vehicles in traffic]**

#### **Submitted by the representatives of Finland and the Netherlands**

This document was submitted by the experts from Finland and the Netherlands on behalf of the drafting volunteers of the Group of Experts (GoE) on drafting a new legal instrument on the use of automated vehicles in traffic (LIAV) - see ECE/TRANS/WP.1/GE.3/2022/5, para 38. It was prepared during informal meetings organized by the experts from Finland and the Netherlands with drafting volunteers, between the fourth and the fifth session of the GoE on LIAV. This document includes a general explanatory note listing some working assumptions, documents of reference as well as the list of chapters and articles that could be included in the legal instrument on the use of automated vehicles in traffic as well as a description of their intended content. It is submitted for review by the GoE on LIAV.

## I. General explanatory notes

1. The aim of this work done between September and December 2022 was to deliver to the official meeting of GE.3 in December 2022 a draft describing the basic structure (possible Chapters and possible Articles) for the new legal instrument (Convention).
  - (a) The draft is the first attempt to address issues to be included in the articles in a short and descriptive manner. The draft does not contain a complete set of articles.
  - (b) The draft does not contain paragraphs, the actual contents of the articles or even ready names for the Articles, it only outlines some possible contents of the possible Articles.
  - (c) The draft aims to bring together work already done by various UNECE bodies, and also interesting work done elsewhere.
    - (i) Displaying the previous work is intended to inform later discussions about the work done so far and to inspire discussions. It is not to advocate that the article should contain the previous work of some elements of it, or the level of details of the previous work.
    - (ii) The basic starting point, when describing possible contents of possible articles, are the WP.1 2018 and 2022 Resolutions concerning automated driving.
2. The aim was to produce a draft that is compact.
3. The new legal instrument (Convention) aims to address issues that concern road traffic safety in the context of road transport automation.
  - (a) Compare with the short introductory wording of the existing Conventions:
    - (i) The Contracting parties, desiring to facilitate international road traffic and to increase road safety through the adoption of uniform traffic rules. (The Vienna Convention)
    - (ii) The Contracting States, desirous of promoting the development and safety of international road traffic by establishing certain uniform rules. (The Geneva Convention)
3. The existing Conventions and new legal instrument (Convention) should complement each other and not contradict each other.
4. The Convention is envisaged to begin with a Chapter consisting the “General provisions” and end with “Final provisions”. Its structure will follow the best practical reasoning possible for the purposes of regulating automated driving, not for example the structures of the existing Conventions.
5. The Convention is binding? the Contracting Parties, who are responsible for taking the appropriate measures to ensure that the provisions of the new Convention will be in force and applicable in their respective territories. However, the draft will also aim to identify the various requirements/responsibilities of various stakeholders “on the field”. These concern especially: Automated Driving Systems, human beings in various roles relating to automated driving, companies/other entities.
6. Compare with the structure of the existing Conventions: Art. 3 of the Vienna Convention and Art. 6 of the Geneva Convention. The task of the Contracting parties is not repeated in every article, and the Rules of the Road are directed mainly to the driver and other road users.
7. The draft has, as a dividing line, the use of driver assistance systems ADAS on the one hand and the use of Automated Driving Systems ADS on the other hand. Driver Assistance Systems are not in the scope the new Convention.
8. The draft, where possible, avoids provisions for vehicles with different levels of automation, but seeks to address “automated driving systems” as one.

## II. Main sources

9. This list contains main reference documents from especially WP.1 and WP.29 work, but also other documents which may include possibly useful concepts and/or approaches that could be evaluated in the course of the work. This list is constantly open for new inputs, desirably resulting from co-operation of multiple parties.

### A. WP.1

#### 1. Resolutions

10. 2018 Resolution: Global Forum for Road Traffic Safety (WP.1) resolution on the deployment of highly and fully automated vehicles in road traffic

11. 2022 Resolution: Global Forum for Road Traffic Safety (WP.1) resolution on safety considerations for activities other than driving undertaken by drivers when automated driving systems issuing transition demands exercise dynamic control.

#### 2. Informal documents submitted to the WP.1

12. HF-IRADS 2022: Informal paper No.3, WP.1 85th session, Human Factors Principles to Guide the Design, Standards and Policies for Automated Driving Systems, submitted by Human Factors in International Regulations for Automated Driving Systems.

13. IGEAD 2022: Informal document No.8, WP.1 85th session, Discussion paper on key human roles in the context of automated driving, submitted by Finland (in the capacity of IGEAD chair).

14. Informal document No.11, WP.1 85th session, ADS recognizability, submitted by the Netherlands.

15. Informal document No.1/Rev.1 (September 2021), Automated Driving, submitted by the United Kingdom (concerning Remote Driving).

#### 3. Informal documents submitted to the GE.3

16. GE.3-03-02, Informal document No. 2 of the third session of GE.3 : Initial thoughts on “road safety challenges posed by the use of automated vehicles in traffic that an international legal instrument could adequately address”, submitted by Professor Bryant Walker Smith.

### B. WP.29/GRVA

17. WP.29 Framework Document: Framework Document for Automated/Autonomous Vehicles ECE/TRANS/WP.29/2019/31/Rev.2, adopted by the World Forum for Harmonization of Vehicle Regulations (WP.29) at its 178th session, ECE/TRANS/WP.29/1147, and amended by ECE/TRANS/WP.29/2021/151)

18. WP.29-187-10: Guidelines and Recommendations concerning safety requirements for automated driving systems (based on the GRVA Informal document GRVA-13-36).

### C. Regional or national legislation (either in force or under development) and reports

19. (EU) 2022/1426: Commission implementing regulation (EU) 2022/1426 laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of the automated driving system (ADS) of fully automated vehicles.

20. Uniform automated operation of vehicles act: Uniform automated operation of vehicles act, drafted by National Conference of Commissioners of Uniform State Laws (ULC), 2019.

21. Automated Vehicles: Summary of joint report: Automated Vehicles: Summary of joint report, Law Commission, 26 January 2022.

### III. Index and “skeleton” of the new legal instrument

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## Convention on [the name of the Convention]

[Preamble?]

- Is there a need to have a preamble for the Convention?
- Neither of the existing Conventions seem to have a preamble in a way for example the 2018 and 2022 Resolutions have. The Geneva Convention seem to have in the beginning a section describing the history leading to the agreement on the Convention.
- A preamble might describe the general aims of the Convention (the bigger picture).
- A preamble might also contain a reference to the existing Conventions and that this Convention is intended to complement the existing ones?

## The Contracting Parties,

[Desiring to...]

Have agreed upon the following provisions:

- Compare with the short chapeaux of the existing Conventions.

## Chapter I: General provisions

### *Article 1: Scope of the Convention?*

- There is no such Article in the existing Conventions
- Scope is usually defined for clarifying reasons. Is it needed in the new Convention?
- If needed, better to be formulated at a later stage of drafting.

### *Article 2: Definitions*

For the purpose of this Convention the following expressions shall have the meanings hereby assigned to them:

- As an example, the following very basic definitions are included in this 0-version and some preliminary considerations related to them:
  - a) The driver
    - Does this definition need updating in the context of automated driving?
    - Compare with Vienna Convention Art. 1(v) and Geneva Convention Art. 4: "Driver" means any person who drives a motor vehicle or other vehicle (including a cycle), or who guides cattle, singly or in herds, or flocks, or draught, pack or saddle animals on a road;"
  - b) Automated driving system
    - According to new Art. 1(ab) of the Vienna Convention, "Automated driving system" refers to a vehicle system that uses both hardware and software to exercise dynamic control of a vehicle on a sustained basis.
    - GRVA-13-36: "Automated Driving System (ADS)" means the hardware and software that are collectively capable of performing the entire DDT on a sustained basis.
  - c) Dynamic control
    - According to new Art. 1(ac) (ac) "Dynamic control" refers to carrying out all the real-time operational and tactical functions required to move the vehicle. This includes controlling the vehicle's lateral and longitudinal motion, monitoring the road, responding to events in the road traffic, and planning and signaling for manoeuvres.
    - GRVA-13-36: "Dynamic control" means the real-time execution of operational and tactical

functions required to operate a vehicle based on perception, information processing, and decision making.

- There are also other concepts that might be used in the new Convention, and therefore there might also be a need to have a definition of such a concepts. These include, for example: Dynamic driving task (DDT), operational design domain (ODD), transition demand, the user in charge (UIC), user or ADS vehicle user, minimal risk condition (MRC), minimal risk maneuver (MRM), fall back, remote management, etc.
- For the later discussions, the following should be noted:
  - o The number of the definitions should be limited to such definitions that are really necessary.
  - o Already existing work especially in the WP.1 will should be as a starting point to the widest extent possible.
  - o Including technical definitions should be avoided since they are beyond the scope of this convention.
  - o If a definition is needed only once, it should be included in the Article in question.
  - o Definitions will be drafted when they are needed (case by case).

### *Article 3: Obligations of the contracting parties*

The Contracting Parties shall take appropriate measures to ensure that the rules...

- Compare with Art. 3 of Vienna Convention and Art. 6 of the Geneva Convention.
- This Article could also help describing room/need for national decision making, but such needs could also be addressed in various articles.
- This article could also contain other issues, for example encouraging the Contracting Parties to consider how to make road traffic rules readily available for developers and facilitate development of guidelines for how they can be met by an ADS.

### *Any other Articles in this Chapter?*

- Any other issues to be dealt with under Chapter I?

## **Chapter II: General functional requirements for the automated driving systems**

This chapter aims to define, for all ADS vehicles:

- General functional requirements for allowing the ADS to exercise the dynamic control to safely integrate into traffic
- General requirements for the ADS interaction with the human beings.

The provisions of this chapter have a connection with chapters V and VI that deal with responsibilities of companies and possible other entities.

### *Article 4: Basic safety related capabilities required of the automated driving systems*

1. ADS must, without the need for human intervention and the need for (constant) human monitoring?:
  - Make road safety a priority (2018 Resolution);
  - Comply with the traffic rules (2018 Resolution);
  - Monitor and safely interact with the surrounding traffic environment (2018 Resolution);
  - React to unforeseen situations in a way that minimizes dangers to the vehicle's users and other road users (2018 Resolution);

- Be capable of achieving a state that maximizes road safety when a given trip cannot or should not be completed for example in case of a failure in the automated driving system or other vehicle system (2018 Resolution);

2. Possible other aspects? Like safe by design –principle?

#### *Article 5: ADS interaction with vehicle users*

ADS must:

- Endeavour to safely tolerate errors of the vehicles' users, inside and outside of the vehicle, in order to minimize potential effects of such errors (2018 Resolution)
- Communicate with their users in a clear, effective and consistent way, by providing sufficient information about their status and intention, and enabling an appropriate interaction (2018 Resolution);

#### *Article 6: ADS interaction with other road users*

1. ADS must monitor the surrounding traffic environment and safely interact with the other road users
  - 2018 Resolution also includes:
    - Endeavour to safely tolerate errors of the other road users, inside and outside of the vehicle, in order to minimize potential effects of such errors;
    - Communicate with the other road users in a clear, effective and consistent way, by providing sufficient information about their status and intention, and enabling an appropriate interaction;
  - Compare with GRVA-13-36: The ADS shall interact safely with other road users, as part of the “drive safely” -principle
2. The ADS interaction with other road users should be consistent and predictable and should not require other road users to have any special consideration for ADS-driven vehicles.
  - Compare with 2018 Resolution: (ADS should) communicate with their users in a clear, effective and consistent way, by providing sufficient information about their status and intention, and enabling an appropriate interaction

*Any other articles in this Chapter?*

- For example other vehicle users than drivers (passengers, owners, persons with special needs)?

### **Chapter III: Additional functional requirements for the ADSs issuing transition demands**

This Chapter aims to establish additional general functional requirements for ADSs that issue transition demands, which allows the human to delegate dynamic control to the ADS.

#### *Article 7: ODD of the automated vehicle*

- This article is seeking to provide that it is not the task of the human driver to discover the conditions and boundaries of the ODD, but the task of the system.
- Compare with:
  - ADSs should only operate within their ODD?



- Clearly and effectively provide appropriate notice, if the vehicle leaves its ODD?
- The ADS shall recognize its ODD conditions and boundaries of the ODD?

*Article 8: ADS interaction with the drivers*

- ADS must enable their deactivation in a safe manner? (2018 Resolution)
- Automated driving systems issuing transition demands must:
  - Safely exercise dynamic control when engaged and interact with the driver through an effective and intuitive human-machine interface;
  - Monitor the driver's availability and manage the driver's attention to ensure that the driver is ready and able to respond to a transition demand;
  - Issue a transition demand when appropriate, in an effective manner with sufficient lead time for the driver to safely assume dynamic control;
    - Compare with 2018 Resolution: Clearly and effectively provide appropriate notice, if the vehicle leaves its ODD
  - After issuing a transition demand, continue exercising dynamic control until the driver has taken dynamic control of the vehicle;
  - Transition dynamic control safely and in a clear and foreseeable manner to the driver;
  - Verify that the driver is exercising dynamic control at the end of a transition process;
  - Perform a risk mitigation maneuver if the driver does not take over dynamic control.

*Article 9: Dynamic control of the vehicle*

At any time, the dynamic control of the vehicle can only be held either by the driver or by the ADS. There is a need to know, whether it is the human or the ADS that has the dynamic control. However, various cases can be identified:

1. The human user/driver must be aware of this at all times
    - (ADS should) operate in a way that enables verification as to whether or not (the user(s)) are or were performing dynamic control
    - Also has to do with ADS interaction with the ADS vehicle users by HF-IRADS: ADS should support user role awareness.
  2. Recognizability of ADS engagement
    - The law enforcement authorities, first responders and possible other authorities need to quickly, reliably and credibly ascertain whether an automated vehicle has the ADS engaged, in all countries where the vehicle might be used.
  3. It might be necessary to find this out later, especially in cases of accidents/incidents
    - To assess the performance of or investigate an incident involving an automated vehicle, automated driving system, or company providing automated driving services, a safety authority might need to access safety-related data.
      - These data might include personally identifiable or business-proprietary information.
      - The question might also be of cross-border needs of the authorities and possible other entities (like insurance companies).
- These use cases might be treated also in separate articles.

*Any other articles in this Chapter?*



## Chapter IV: Human roles and the basic responsibilities of the humans (using automated vehicles that can be driven by the human/where there is a responsible human inside the vehicle)

Note that there is no definition for automated vehicles that can be driven by the human as well as the ADS within the UNECE.

- (EU) 2022/1426 has a definition for “dual mode vehicles”. They only concern fully automated vehicles (e.g. shuttle busses), but according to the definition, they are designed and constructed with a driver seat, and can be a) driven by the driver in a “manual driving mode”, and b) driven by the ADS without any driver supervision.

### *Article 10: Describing situations when the human has the dynamic control*

This article would be describing the situations where the human has the dynamic control when using ADS:

- There are additional elements when compared to the “traditional”, completely manual driving and the “old” definition of the driver in the existing conventions
  - The human individual may have full control, assisted control or supervisory control at the tactical and/or operational level of the driving task. The current definition of FRAV states that the driver is a human being who performs in real time part or all of the DDT and/or fallback for a particular vehicle.
  - If someone is required to monitor the driving task, they are a driver.
  - When using vehicles with no automation or vehicles with driver assistance systems, the human maintains the full range of the responsibilities of “the driver” all the time.

When the automated driving systems are engaged, the human does not have the driving-related responsibilities of the driver, but when the ADS is not engaged, e.g. when the transition phase is finished, he/she regains them a full. A single person can switch user roles during a drive, depending on the available automation. Hence, the dynamic control can switch from the human to the ADS and back along the journey.

### *Article 11: Describing situations when the human is a “user in charge”*

- The driver may delegate the dynamic driving tasks to the automated driving systems?
- The UIC would be the person who delegates the dynamic control to the ADS?
- When the ADS is engaged, there must be a user in charge (unless the vehicle is remotely managed/ automated passenger or freight transport)?

### *Article 12: General responsibilities of the user of a vehicle with ADS*

Users (definition?) of the vehicles equipped with ADS must:

- Prior to any road use, familiarize themselves with which kind of vehicle he/she is using and how to operate the vehicle?
  - Users of automated driving systems in highly and fully automated vehicles should:
    - be aware and informed of their proper use prior to starting the journey
    - meet the requirements for their safe use and follow the procedures for their use
    - be able to communicate with the vehicle
    - Understand if, and when, it is necessary to exercise dynamic control to complete a journey.

- Prior to any road use, familiarize themselves with a) the role of the driver (when the ADS is not engaged) and the responsibilities and (national) liabilities attached to the driver, and b) the role of the user in charge (when the ADS is engaged), and the responsibilities and (national) liabilities related to that role?
- Refrain from interfering with automated driving systems in a way that could compromise the safe functioning of the systems and road safety in general?

*Article 13: Responsibilities of the user in charge when using ADS issuing transition demands*

When using automated driving systems issuing transition demands, the user in charge must:

- Maintain physical and mental ability to safely take over dynamic control of the vehicle
  - Including having access to the controls?
- Respond to a transition demand by taking over dynamic control in an appropriate and timely manner
- Refrain from performing activities other than driving if those activities impede the take-over of dynamic control when a transition demand is issued
- Hold necessary driving permits

*Article 14: Non-driving related responsibilities of the user in charge*

- Loading of vehicles, Art. 30 of the Vienna Convention?
- Behavior in case of accident, Art. 31 of the Vienna Convention?
  - Concerns the driver, but also "other road users"
- Registration, Art. 35 of the Vienna Convention => the driver must carry the valid certification?
- Possible other issues? Seatbelts of the minors, closing the doors, etc.?

*Article 15: Activities other than driving allowed for the user in charge*

- Rules laid down by the national legislation.
- Do we need some kind of framework/principles for national legislation concerning allowed non-driving related activities?
  - Compare with e.g. derogation from article 8(6) of the Vienna Convention (prohibition to use hand-held phone)

*Any other articles in this Chapter?*

**Chapter V: Operational duties for entities responsible to ensure the safe behavior of the automated vehicle while the ADS is engaged (safety requirements are laid down in Chapters II and III)**

This chapter aims to identify entities responsible for the behaviour of the AVs, and is linked to chapters II and III.

*Article 16: Entity responsible for the behavior of the automated vehicle*

- Is there a need for the national authorities to identify entities that are responsible for the behavior of the automated vehicles and make it possible to communicate easily with them?
  - Would usually be vehicle manufacturers or software developers or at least entities that have participated in a substantial manner in the development of an ADS.
  - Which other responsibilities of other entities can be identified? E.g. owners?

- Also very important for cross-border traffic flows; this should include enabling authorities to hold the responsible entity to account and enable genuine access to effective redress for incidents when the ADS is engaged.
- Also very important to transnational character of automated driving functions.

*Article 17: General operational duties for the safe behavior of the AVs*

- It would be the responsibility of the entity responsible for the safe behavior of automated vehicle to make sure that the ADSs are designed and constructed so that the requirements of chapters II and III are being met?
- Compare with:
  - 2022 Resolution: Manufacturers of ADS issuing transition demands and manufacturers of vehicles equipped with ADS issuing transition demands should:
    - Ensure that the performance of the automated driving systems is consistent with the requirements for automated driving systems laid down in this Convention throughout the systems' life cycles;

*Article 18: Information responsibilities (towards the users?)*

- Possible information and education duties of the entity responsible for the safe behavior of the automated vehicles towards the users of the vehicle.
- Also possible information duties of the entity responsible for the safe behavior of the automated vehicles towards the other road users?
- Compare with:
  - 2022 Resolution: Manufacturers of ADS issuing transition demands and manufacturers of vehicles equipped with ADS issuing transition demands should:
    - Inform and educate drivers about the safe use and limitations of automated driving systems in vehicles;
    - Refrain from using misleading names, descriptions, or marketing that could encourage improper use of automated driving systems;
  - Also compare with HF-IRADS: Accurate depiction of system capabilities: There should be no misleading names for ADS functions and no exaggeration in the description of system capabilities or operation.

*Article 19: Data recording requirements to understand the performance of the ADS and to (nationally) determine liabilities relating to dynamic control*

- There are lots of issues relating to cross-border data flows that would make transport automation function better.
- Also includes the responsibility to allow access to the data according to the national rules.
- Might also include questions relating to what data should be recorded and for how long it should be retained.
- Privacy issues should also be taken into the consideration.

*Article 20: Cyber security and software updates?*

- Is there a need for provisions concerning cyber security/software updates the new convention in terms of road safety?
  - This article could cover issues that are not addressed in the WP.29 Regulations, i.e. the ecosystem of the ADS covering e.g. the cyber security for exchanging information between the ADS and the entity responsible for the safe behavior of the vehicle.

- With software updates there are issues relating to ensuring continued safety of the ADS and communicating any changes in functionality to the users.
- Especially issues relating to software updates have also cross-border aspects that need to be taken into account.
- These issues could also be treated in separate articles.

*Any other articles in this Chapter?*

## **Chapter VI: Additional requirements for remote management (mostly concerning automated passenger and freight transport services)**

- This Chapter covers various modes of remote support/assistance. Remote management of automated vehicles may also include an element of remote driving.
- Note that the terminology is not established yet, and needs to be established.

*Article 21: Entity responsible for remote management (remote management provider?)*

- There would probably be also a need for the national authorities to identify remote operators of the automated vehicles and make it possible to communicate easily with them?
- Would it also be possible/useful to think that this entity would assume the responsibilities of the driver?

*Article 22: Requirements for situations where there is no responsible human inside the vehicle*

- The following minimum safety features might be needed:
  - The vehicle is able to perform MRM (this already follows from Chapter II, but may be useful to repeat here)
  - If there are human (passengers) inside the vehicle, the following is necessary:
    - It must be possible for the human to communicate with the remote management provider
    - The remote management provider must be in a position to immediately respond the communication and organize the assistance that is needed as soon as possible.
  - The ADS must be able to alert the remote management provider to situations where the human intervention is required.
  - Remote management provider must have a strategy to cover situations where human intervention is required.

*Article 23: Additional requirements for the systems used for the remote management (adding to the requirements established in Chapter II)*

- Allow the remote operator get enough information concerning the vehicle, passengers and/or cargo and the current (traffic) situation, weather conditions and other conditions that might affect the remote operation task
- Have a consistency in data transmission to address variability in latency or time lag, to the extent that is necessary taken into account the nature of remote management
- Have strategies to minimize risk of signal loss and/or degradation, to the extent that is necessary taken into account the nature of remote management

*Article 24: Duties of the remote management providers*

- To organize the operations in the remote operation “centers”
- To make sure that the working conditions promote safe operation of the vehicles (breaks, shifts, workload, attention of the remote operators)
- To ensure that remote agents have the appropriate training and qualifications
- To ensure that the systems and vehicles are maintained and road worthy
- To ensure the safety of the passengers
- To ensure the resilience of their operations and having strategies to deal with failures in connectivity and systems
- To ensure cyber-security associated with remote operations
- Etc.?

*Article 25: Duties of remote agents*

- These would be individuals acting on behalf of the remote management operator
- To have and maintain physical and mental capabilities and the competence
- To hold appropriate training and qualifications
- To be aware of the passengers inside the vehicle and ensure their safety, to the extent that is necessary taken into account the nature of the operations
- To monitor cargo and luggage, to the extent that is necessary taken into account the nature of the operations
- etc.?

*Article 26: Safe behavior of passengers in vehicles with remote management*

- Must comply with existing international and national legislations, same as thus far?
  - Is there a need for special provision clarifying this?

*Any other articles in this Chapter?*

- Contracting parties may wish consider the need to limit (some) remote management operations or some parts of them to be carried out on their territory, in particular where there are difficulties with enforcement?

## **Chapter VII: Other provisions**

*Article 27: Vehicle registration*

- Should the vehicle be registered as an automated vehicle with the (national) competent authority? The aim of this Article is to make sure that the relevant authorities have this information at hand, when needed to accomplish their duties.
  - This may require review of vehicle registration requirements in different countries to inform drafting of the legal text
- Also includes indication that the vehicle has the capability required by the ADS in chapter II?
- Is registration the responsibility of the owner of the vehicle, or some other entity?
- Would sharing the information in the national registries and especially the status of the vehicle as an automated vehicle amongst the competitive authorities of the Contracting Parties help enforcement of rules worldwide?

*Article 28: Issues relating to data sharing*

- Would it be necessary to have a special article on data sharing? It has to be taken into account that there are many aspects related to data sharing, it may not be possible to treat all of them in this Convention (also possible that need to be treated in separate articles).
  - Need to establish what data?
  - Data protection aspects must be taken into account (incl. privacy legislations)
- For example, a law enforcement officer, first responder, or other authority in one state might need to quickly, reliably, and credibly:
  - ascertain whether a vehicle operating in that state is under automated operation,
  - identify and contact the company facilitating the automated operation of that vehicle,
  - establish to this company that the law enforcement officer, first responder, or other authority is legitimate and authorized to act,
  - Issue requests to the company for data or other actions where required to manage risk in traffic situations, or for enforcement
- Could be a duty of Contracting Parties to cooperate in order to ensure that the outcomes described in this Article are met?

*Article 29: Information on human behavior and functioning of automated vehicles*

- Should Contracting Parties establish procedures for collecting information on incidents involving AVs in order to assess their safety, inform continuous improvement to these vehicles and their behavior and inform the need to improve the rules on their use?

*Article 30: Driving permits*

- Do the articles on driving permits in the existing Conventions need some updating in the context of automated driving?
  - For example, an individual (passenger?) is not required to hold a driving license to take a completely automated trip (in a vehicle that can be driven by the human/have a responsible human inside the vehicle)?

*Any other articles in this Chapter?*

- The governments should consider: Working on security measures including cybersecurity, to safeguard the proper functioning of automated driving systems in highly and fully automated vehicles.
- Lawful behavior of the vehicle user in a general manner?

**Chapter VIII: Final provisions**

*Article 31: Ratification process*

*Article 32: Notifications*

*Article 33: Entry into force*

*Article 34: Amendments to the Convention*

- Fitness of the legislation: remain flexible to amend the legislation when deemed necessary, e.g. due to new scientific insights or vehicle automation developments

*Article 35: Dispute solving*

*Any other articles in this chapter?*

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