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**Economic Commission for Europe**

Inland Transport Committee

**Global Forum for Road Traffic Safety**

**Eighty-second session**

Geneva, 8-12 March 2021

Item 9 of the provisional agenda

**Other Business**

**Other Business**

This document, submitted by Finland, France, Germany, Japan, Luxembourg, The Netherlands, Sweden, United Kingdom, describes history of informal group of experts on automated driving and topics for possible future work.

In October 2015 the IGEAD was established in the following context, set out in the extract from the report of the October 2015 meeting (document ECE/TRANS/WP1/151), in which the following underlinings show the broad aims regarding the substantive topics:

“15. ... WP.1 agreed that the issue of more advanced vehicle automation vis-à-vis the driver’s role requires very close cooperation between WP.1 and WP.29 in order to properly address the issues of the human and machine interaction. ... on issues related to advancements in technology and human behaviour, but also to comply with the invitation of ITC to seek novel institutional approaches between both Working Parties (para. 42 (d), ECE/TRANS/248).

16. As a result of these discussions, WP.1 decided to establish an informal group of experts which will continue to explore possibilities for WP.1 to work closer with WP.29 on the human factors issues (especially human-machine interaction) in the context of technological advances”.

Since then, under the auspices of WP.1, members have worked in the IGEAD on discussion papers and draft resolutions, submitted for discussion at WP1 both as formal and informal papers, which have added to the scope of WP.1’s thinking and productivity in the area of automated vehicles, bearing in mind WP1’s ongoing pursuit of road traffic safety and the Sustainable Development Goals<sup>1</sup> especially the targets 3.6 and 11.2 of the Inland Transport Committee (ITC). WP1 has arranged special sessions to work on the ‘Global Forum for Road Traffic Safety (WP.1) resolution on the deployment of highly and fully automated vehicles in road traffic’ (document ECE/TRANS/WP.1/2018/4/Rev.3), adopted in 2018, and WP1 has tasked the IGEAD with other projects such as the draft Resolution on safety considerations for activities other than driving, which has been discussed as a formal paper (ECE/TRANS/WP.1/2019/3 and revisions) in a number of WP1 meetings and will be discussed again in March 2021 (82<sup>nd</sup> session). WP1 also tasked IGEAD with considering topics such as situations when a driver operates a vehicle from outside it, which is currently under development. In September 2019, WP1 tasked the authors of the proposed amendment adding an Article 34bis to the Vienna Convention, with preparing a new joint proposal in IGEAD meetings, based on WP1 discussions, to present as a formal paper at the March 2020 meeting: this enabled WP1 to review and finalise an advanced draft which was then adopted in September 2020. The IGEAD also prepared the Explanatory Memorandum which accompanied the amendment, and which was adopted by WP1 in September 2020.

During the last IGEAD-meetings of 2020, contracting parties of WP1 have, in addition to the above, identified the following topics as requiring work and collaboration between countries in the shorter term. These will need work in any case, which can be information gathering/exchange of information, but can also lead to papers for WP1.

### **Possible topics for further work on use of automated vehicles, identified during IGEAD meetings by contracting parties**

#### **1. Driver, passenger and user related**

- a. Driver role and definition of driver. How can the population of drivers be meaningfully segmented, taking into account the differences between drivers in skill, personality and experience? What type of drivers are we talking about, in combination with an automated vehicle? And what are the responsibilities if you’re a driver, user, passenger, or user in charge? What can reasonably be expected in which situation of a driver, passenger, or user in charge?
- b. Driver education and self-awareness. How is this to be improved by training/education for drivers, and changes to the driving test. What about similar education regarding driver assistance systems and consumer misuse or overestimation of assistance systems’ capacities? What might be the equivalent principles for consumer education by vehicle manufacturers on how their vehicle should be used?

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<sup>1</sup> Report of the Inland Transport Committee on its eighty-first session, Addendum 2. At page 11, there are links between WP.1 and the SDG targets 3.6 and 11.2.

- Goal 3: Ensure healthy lives and promote well-being for all at all ages. Item 3.6: By 2030, halve the number of global deaths and injuries from road traffic accidents.
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Item 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport Systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

- c. Principles for safe driving with ADS in situations with transition of control. Under which conditions can control be handed to the vehicle and back to the driver? Is the driver allowed to take back control in case of a risk avoidance manoeuvre? Who is liable in which situation? What to do if the driver does not react? How to ensure that the quality of control of the vehicle is sufficient for safe control, before handing back control?
- d. Driver Vehicle Interaction (aka Human Machine Interaction; is related to b and c). How can the interaction between the vehicle and driver be used to educate and inform drivers about the systems available? How to avoid mode confusion? What kind of commonality has to be in place to ensure interchangeability for different vehicles? How does the system manage driver's attention and expectations about its capabilities?
- e. Driver outside of the vehicle (already under consideration), role of the driver, and supervision of automated vehicles by (fleet) operators.
- f. Road and traffic safety aspects of signalling to indicate to other road users that an automated driving system is engaged in a vehicle. HMI and external traffic safety: ADV's light-signalling inside and outside the vehicle (should the ADV emit some kind of signal or lighting, when the ADS is engaged, from inside or outside the vehicle, and visible to others on the road?). What are the pros and cons of such a signal? What are the road safety- and traffic-related considerations (also for police and other road users, including VRUs)? Liaison may be needed between WP1 (with support from IGEAD) and WP.29 / GRVA / IWG FRAV / IWG VMAD to understand the extent of their discussions on the topic, and the appropriateness of WP1 forming an opinion on this to support them.

## 2. Cooperation in relevant international fora, and goals

- a. Cooperation with relevant groups at WP29/GRVA (e.g. FRAV, TF-ALKS), including:
  - i. How the work of WP29/GRVA relates to the assumptions and expectations about ADS performance and capabilities set out in WP 1 resolutions such as:
    - 1. Part IV of the Global Forum for Road Traffic Safety (WP.1) resolution on the deployment of highly and fully automated vehicles in road traffic (adopted in September 2018);
    - 2. Part IV of the draft resolution on the safety considerations for activities other than driving undertaken by the driver in a vehicle when its automated driving system is engaged (tabled for discussion in March 2021);
  - ii. state of play on automated driving systems regulations, like ALKS;
  - iii. planning of future Automated Driving functions;
  - iv. ensuring data recording requirements are appropriate to enable investigation of the cause of incidents and determination of liabilities.
- b. Exchange of information: state of play of AD in the IGEAD contracting parties.

## 3. Liaison in the context of the establishment of the Formal Group of Experts for drafting a new legal instrument on automated driving.

The formal group has a single mandate to draft a new legal instrument. In the meantime, before the new legal instrument is drafted and enters into force, the above issues need also short-term attention or elaboration, so maybe we can see how the various groups can be of additional value to each other.