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Convention on Road Traffic (1968):

Automated driving-Vehicles with automated driving systems:

The concept of activities other than driving

Global Forum for Road Traffic Safety (WP.1) resolution on safety considerations for activities other than driving undertaken by the driver when the automated driving system is exercising dynamic control

Submitted by Canada, Finland, France, Germany, Japan, Luxembourg, Netherlands, Sweden and United Kingdom

This document contains an alternative text for a proposed WP.1 resolution on “activities other than driving” in the context of automated driving.

I. Preamble

1. The Global Forum for Road Traffic Safety (WP.1) of the United Nations Economic Commission for Europe;

(a) Aiming at providing a reference for Contracting Parties to the 1968 and 1949 Conventions on Road Traffic, to offer safety considerations to help these parties in establishing domestic traffic laws for drivers performing activities other than driving in a vehicle with an automated driving system that issues transition demands;

(b) Considering that road traffic safety will be increasingly defined and influenced by the combination of and interaction between automated driving system capabilities, human behaviour, infrastructure and other interactions;

(c) Noting that the advent of driving under the control of an automated driving system creates new circumstances in which the prohibition of certain non-driving related activities for manual driving is no longer justified on safety grounds;

(d) Noting that automated driving systems may demand that the driver take dynamic control, and that it may be necessary for the driver to both be ready and able to take dynamic control of the vehicle;

(e) Acknowledging that the enhancement of road safety will be informed by the ongoing development of technical requirements and/or validation methods to confirm the safety of automated driving systems and to confirm the ability of such systems to support a driver to safely undertake activities other than driving;

(f) Noting that in order to protect road safety, especially where there are threats of fatalities or serious injuries, there is a need to take account of relevant scientific evidence or lack thereof, when regulating and introducing new road traffic technologies;

(g) Recognizing there may be a need to further explore the variety of human roles in automated driving;

has prepared and adopted this Resolution on [date].

II. Definitions

2. For the purposes of this Resolution:

(a) “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. An advanced driver assistance system is not an automated driving system;

(b) “Dynamic control” refers to carrying out 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 environment, responding to events in the road traffic environment, and planning and signaling for manoeuvres;

(c) “Transition demand” refers to an instruction from the automated driving system to the driver to exercise dynamic control.

III. Recommendations regarding automated driving systems issuing transition demands

3. Automated driving systems issuing transition demands should:

(a) Safely interact with the driver through an effective and intuitive human-machine interface;

(b) Safely exercise dynamic control when engaged;

(c) Monitor whether the driver is ready and able to respond to a transition demand;

- (d) Manage the driver's attention if necessary to ensure that the driver is ready and able to respond to a transition demand;
- (e) Issue a transition demand when appropriate, in an effective manner with sufficient lead time for the driver to safely assume dynamic control;
- (f) After issuing a transition demand, continue exercising dynamic control during the lead time, and until the driver has intentionally taken dynamic control of the vehicle;
- (g) Transition dynamic control safely and predictably to the driver;
- (h) Verify that the driver is exercising dynamic control at the end of a transition;
- (i) Perform a risk mitigation manoeuvre if the driver does not exercise dynamic control.

IV. Recommendations for drivers

4 Drivers should:

- (a) Comply with applicable laws, including when performing activities other than driving. Prior to any road use, drivers should familiarise themselves with how to operate the vehicle and the requirements regarding activities other than driving;
- (b) Maintain physical and mental skills to safely exercise dynamic control of the vehicle;
- (c) Respond to a transition demand by exercising dynamic control in an appropriate and timely manner when required to do so by national regulations, traffic rules or guidance;
- (d) Refrain from activity other than driving if that activity may impede this response or is unsafe;
- (e) Refrain from interfering with the automated driving system in a way that could compromise safety.

V. Recommendations for manufacturers of automated driving systems issuing transition demands

5. Manufacturers of automated driving systems issuing transition demands should:

- (a) Ensure that the performance of the automated driving system is consistent with the above recommendations for automated driving systems, including consistency with applicable laws;
- (b) Inform and educate drivers about their role in the safe operation of the vehicle, including the above recommendations for drivers;
- (c) Refrain from misleading names, descriptions, or marketing that could encourage improper use of the automated driving system;
- (d) Consider additional measures, as appropriate to ensure proper use of the automated driving system and to otherwise promote road traffic safety, as automated driving systems technology evolves and additional best practices are observed.

VI. Recommendations for Contracting Parties

6. Contracting Parties are encouraged to:

- (a) Consider appropriate domestic measures to address activity other than driving;
- (b) Consider the roles of driver education and driver testing in ensuring that drivers have the skills and knowledge necessary to manage the demands of new technologies;

(c) Continue the cooperation within and between the Global Forum for Road Traffic Safety (WP.1) and the World Forum for Harmonization of Vehicle Regulations (WP.29), including on activity other than driving in the context of automated driving.

VII. Conclusion

7. This Resolution will be periodically reviewed and updated to address technological and/or regulatory developments concerning vehicles equipped with an automated driving system, as well as further the development of human roles in interacting with an automated driving system.
