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Global Forum for Road Traffic Safety

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Other Activities – Alternative language

Submitted by University of South Carolina

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

Global Forum for Road Traffic Safety (WP.1) resolution on “activity other than driving” in the context of automated driving

Preamble

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

- (a) Noting the contributions to global road traffic safety of the Convention on Road Traffic done at Geneva on 19 September 1949 and the Convention on Road Traffic done at Vienna on 8 November 1968,
 - (b) Recognizing that road traffic safety is influenced by the relationship among humans, infrastructure, and vehicle systems,
 - (c) Highlighting both the ongoing development of automated driving systems and the ongoing definition of roles that humans may play in the performance of these systems,
 - (d) Noting that the 1949 Convention on Road Traffic requires a driver to “conduct himself in such a way as not to endanger or obstruct traffic,” to “avoid all behaviour that might cause damage to persons, or public and private property, and to “drive in a reasonable and prudent manner,”
 - (e) Noting that the 1968 Convention on Road Traffic requires a road user to “avoid any behaviour likely to endanger or obstruct traffic, to endanger persons, or to cause damage to public or private property” and to “minimize any activity other than driving,”
 - (f) Recalling the Global Forum’s principles for understanding “activity other than driving” in the context of certain vehicle systems [ECE/TRANS/WP.1/157],
 - (g) Recalling the Global Forum’s Resolution on the Deployment of Highly and Fully Automated Vehicles in Road Traffic [.....], and
 - (h) Aiming to assist Contracting Parties to the 1949 and 1968 Conventions on Road Traffic in applying their domestic road traffic safety frameworks in the context of automated driving,
- Has prepared and adopted this Resolution on [date].

Definitions

1. 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 signalling for manoeuvres.
- (c) “Transition demand” refers to an instruction from an automated driving system to an expected driver to exercise dynamic control.
- (d) “Expected driver” refers to a human who might need to exercise dynamic control, in whole or in part, at some point during the remaining portion of a vehicle trip.
- (e) “Vehicle trip” refers to the journey of a vehicle between an origin and a destination where the vehicle can be safely and lawfully parked.

Recommendations for automated driving systems

2. An automated driving system that might issue a transition demand during a vehicle trip should:

- (a) Communicate with an expected driver through an intuitive human-machine interface.
- (b) Monitor whether an expected driver is ready and able to respond to a transition demand.

- (c) Manage an expected driver's attention if necessary to ensure that the expected driver is ready and able to respond to a transition demand.
- (d) Issue a transition demand when appropriate, in an effective manner, and with sufficient lead time for an expected driver to safely respond.
- (e) Continue exercising dynamic control during this lead time.
- (f) Transition dynamic control smoothly and predictably to an expected driver.
- (g) Verify that an expected driver is exercising dynamic control at the end of this transition.
- (h) Perform a risk mitigation manoeuvre if an expected driver does not exercise dynamic control.

Recommendations for expected drivers

3. An expected driver should:

- (a) Comply with traffic laws, including rules regarding activity other than driving.
- (b) Understand the expected driver's role in the safe operation of the vehicle.
- (c) Have the physical and mental skills to exercise dynamic control of the vehicle.
- (d) Respond to a transition demand by exercising dynamic control in an appropriate and timely manner.
- (e) Refrain from activity other than driving if that activity may impede this response, is unsafe, is incompatible with the automated driving system, or is unlawful.
- (f) Refrain from interfering with the automated driving system in a way that could compromise safety.

Recommendations for manufacturers of automated driving systems

4. A manufacturer of an automated driving system that might issue a transition demand during a vehicle trip should:

- (a) Ensure that the performance of the automated driving system is consistent with the above recommendations for automated driving systems.
- (b) Educate expected drivers about their role in the safe operation of the vehicle, including the above recommendations for expected drivers.
- (c) Refrain from misleading names, descriptions, or marketing that could encourage improper use of the automated driving system or of another vehicle system.
- (d) Consider additional measures to ensure proper use of the automated driving system and to otherwise promote road traffic safety.

Other recommendations

5. 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 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.