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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Lighting and Light-Signalling****Ninety-first session**

Geneva, 22–25 October 2024

Item 6 (a) of the provisional agenda

Installation UN Regulations:**UN Regulation No. 48 (Installation of Lighting and Light-Signalling Devices)****Proposal for a Supplement to the 06, 07, 08 and 09 series of amendments to UN Regulation No. 48****Submitted by the expert from the International Automotive Lighting and Light-Signalling Expert Group***

The text reproduced below was prepared by the expert from the International Automotive Lighting and Light-Signalling Expert Group (GTB) with the aim to allow the projection of a pattern for predicted trajectory. The modifications to the existing text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2024 as outlined in proposed programme budget for 2024 (A/78/6 (Sect. 20), table 20.5), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Paragraph 5.35.10., amend to read:

“5.35.10. Except for the wrong way warning, **predicted trajectory** and risk of collision warning, Driver Assistance Projection shall not be switched ON when the vehicle speed is below 65 km/h. However, when the projection is already switched ON, it may remain switched ON as long as the vehicle speed remains above 40 km/h.”

Paragraph 5.35.11., amend to read:

“5.35.11. **Except for predicted trajectory, the** lateral distance from the outer edges of the Driver Assistance Projection with respect to the longitudinal median plane or to the trajectory of the centre of gravity of the vehicle shall not be more than 1,250 mm.

~~This shall be demonstrated by the manufacturer by calculation or by other means accepted by the Type Approval Authority.”~~

Insert new paragraphs 5.35.12. and 5.35.12.1., to read:

“5.35.12. Irrespective of the requirements of paragraph 5.35.11., for predicted trajectory illustrated in Annex 16:

5.35.12.1. The Driver Assistance Projection may be adapted according to the predicted trajectory of the centre of gravity of the vehicle. It shall not be wider than the width of the vehicle including any fitted accessories and trailer if applicable and, in any case, shall not be more than 2,600 mm.”

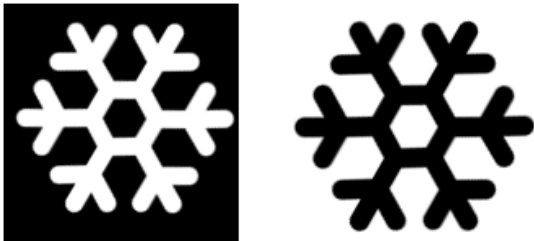

Insert a new paragraph 5.35.13., to read:

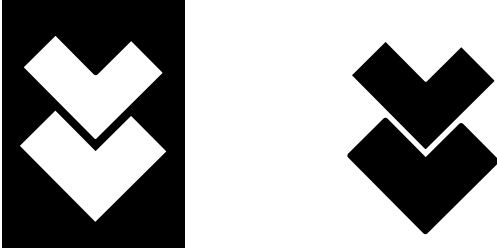
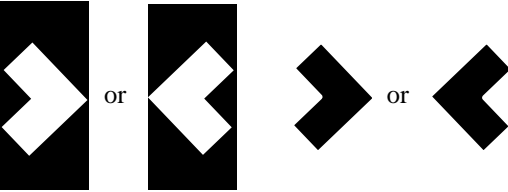
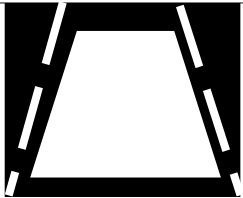
“5.35.13. Compliance with paragraphs 5.35.11. and 5.35.12.1. shall be demonstrated by the manufacturer by calculation or by other means accepted by the Type Approval Authority.”

Annex 16, amend to read:

“Annex 16

Symbols and patterns for the use as Driver Assistance Projections and Explanations of the Warnings/Highlights

<i>Symbols and Pattern</i>	<i>Use case</i>	<i>Conditions and remarks</i>
	Slippery road warning	
	Risk of collision warning	Triggered when the relative speed is larger than 30 km/h and Risk of Collision Time is less than 1.4 s. Flashing at 4.0 hz +/- 1.0 hz allowed.

	Wrong way warning	<p>Activated when the vehicle is entering a one-way road or a highway in opposite direction.</p> <p>Flashing at 4.0 hz +/- 1.0 hz allowed.</p>
	Lane keeping assist warning	Activated if the vehicle unintentionally exits its lane.
 <p>This figure is showing an example of the basic quadrilateral shape of the Driver Assistance Projection for predicted trajectory, as seen from the driver's perspective of a car in straight forward motion. The dashed lines are not part of the projection. They are a representation of the lines delineating the lane on which the vehicle is travelling, and only added to clarify the image and lateral boundaries of the predicted trajectory projection.</p>	Predicted trajectory	<p>This shape may change when adapted in conformity with the requirements in paragraph 5.35.12.</p>

II. Justification

1. A pattern for predicted trajectory was originally part of the initial GTB proposal for driver assistance projections (DAP) (ECE/TRANS/WP.29/GRE/2021/18).
2. Due to the comments by Contracting Parties during the eighty-fifth session of the Working Party on Lighting and Light-Signalling (GRE), GTB decided to delete this pattern and defer this possibility to a future consideration, in order to allow GRE to approve the rest of the proposal without further delays (informal document GRE-85-33).
3. During the eighty-seventh session of GRE, a night demonstration was organized showing predicted trajectory patterns with transformation. The Contracting Parties who took part in the night demonstration recognized that such type of pattern was not distracting for the driver nor for the other road users (e.g. pedestrians and oncoming drivers).
4. GTB made a further attempt to introduce a pattern for predicted trajectory at the eighty-eighth session of GRE (ECE/TRANS/WP.29/GRE/2023/7). Due to the concerns expressed by the representative of Japan, the proposal was not approved and GTB was invited to liaise with Japan on this matter.
5. GTB had several exchanges with the representatives of Japan since the eighty-eighth GRE session in order to arrive at a clear joint understanding of the remaining concerns and how they can be addressed.
6. At the eighty-fifth session of GRE an agreement was reached on indicating the symbols and patterns of Annex 16 also by means of negative contrast, obtained by the removal of light in correspondence with the intended symbol or pattern within a rectangular

illuminated surface. Hence, projecting a rectangular shape on the road surface does not constitute a safety hazard.

7. The projection of a predicted trajectory will improve road safety by providing valuable assistance to the driver while driving the vehicle. In addition, this DAP is a feature that cannot be provided to the driver by other means, such as a heads-up display (HUD) or dashboard.

8. This revised proposal has been drafted to clarify the intention of the predicted trajectory projection and to avoid any unintended misuse.
