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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

Sixty-second session

Geneva, 6 - 9 October 2009

Item 5(f) of the provisional agenda

**COLLECTIVE AMENDMENTS**

Regulations Nos. 48 and 123

Proposal for draft Supplement 5 to the 04 series of amendments to Regulation No. 48

Submitted by the expert from the Working Party "Brussels 1952" \*/

The text reproduced below was prepared by the expert from the Working Party "Brussels 1952" (GTB) to introduce provisions for the automatic gradual adaptation of the main beam. The modifications to the existing text of the Regulation, including Supplement 3 to the 04 series of amendments, are marked in bold characters.

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\*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

A. PROPOSAL

Paragraph 2.7.28.6., amend to read:

"2.7.28.6. "Neutral state" means the state of the AFS when a defined mode of the class C passing beam ("basic passing beam") or of the main beam **in the maximum position of activation**, if any, is produced, and no AFS control signal applies."

Insert a new paragraph 2.7.28.7., to read:

"2.7.28.7. "**gradual adaptation of the main beam**" means a main beam that adapts to the presence of oncoming and preceding vehicle in such a way that improved visibility is achieved for the driver without causing discomfort to other road users."

Paragraph 6.22.7., amend to read:

"6.22.7. **Electrical connections**

6.22.7.1. Main beam lighting (if provided by the AFS)

(a) The lighting units for the main-beam may be activated either simultaneously or in pairs. For changing over from the dipped-beam to the main-beam at least one pair of lighting units for the main-beam shall be activated. For changing over from the main-beam to the dipped-beam all lighting units for the main-beam shall be de-activated simultaneously.

(b) **The main-beam may be gradually adapted.**

**In this case, if the main-beam is gradually adapted, the provisions in paragraph 6.22.9.3. apply. It shall always be possible to switch the main-beam ON and OFF manually.**

(c) The dipped-beams may remain switched on at the same time as the main-beams.

(d) Where four concealable lighting units are fitted their raised position must prevent the simultaneous operation of any additional headlamps fitted, if these are intended to provide light signals consisting of intermittent illumination at short intervals (see paragraph 5.12.) in daylight."

Insert a new paragraph 6.22.8.3., to read:

"6.22.8.3. **If the vehicle is equipped with a system as described in paragraphs 6.22.7.1 (b), 6.22.9.2.3. and 6.22.9.3. below, visual information shall be provided to the driver to indicate that the gradual adaptation of the main beam function is activated.**"

Paragraph 6.22.8.3. (former), renumber as paragraph 6.22.8.4.

Insert a new paragraph 6.22.9.2.3., to read:

**"6.22.9.2.3. To verify, that the automatic gradual adaptation of the main beam does not cause any discomfort (e.g. excessive glare) to oncoming and preceding drivers, the technical service shall perform a test drive which comprises any situation relevant to the system control on the basis of the applicants description; it shall be notified whether the adaptive main beam is activated, performing and de-activated according to the applicant's description. Obvious malfunctioning shall be contested."**

Insert new paragraphs 6.22.9.3. to 6.22.9.3.3., to read:

**"6.22.9.3. Automatic operation of the AFS main beam**

**6.22.9.3.1. The AFS main beam may be operated to provide automatic gradual adaptation using a sensor(s) system that shall be capable to detect other vehicles within a minimum field of  $\pm 12^\circ$  horizontal and of  $+5^\circ / -2^\circ$  vertical.**

**6.22.9.3.2. The correct reaction of the system shall be demonstrated by a test drive in clear atmosphere with a speed of 70km/h  $\pm 10$  km/h.**

**6.22.9.3.3. The sensor shall be able to detect on a straight flat road with two lanes;  
an oncoming vehicle at  $\geq 200$ m and  
a preceding vehicle at  $\geq 100$ m."**

Paragraphs 6.22.9.3. and 6.22.9.4. (former), renumber as paragraphs 6.22.9.4. and 6.22.9.5.

## B. JUSTIFICATION

At the sixtieth session of GRE, the expert from GTB presented an overview of the development of an adaptive main beam based upon sensors and image processing and intended as a driver assistance system. A copy of this presentation is available in the list of informal documents of the sixtieth session. This proposal identifies the necessary provisions that are required in Regulation No. 48.

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