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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on Road Traffic Safety

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Item 4 of the provisional agenda

##### Convention on Road Traffic, 1968

##### Consistency between the Convention on Road Traffic, 1968, and the vehicle technical regulations

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#### Note by the secretariat

1. At its seventy-second session the Inland Transport Committee, recommended that WP.1 continue working, as a matter of priority, to ensure a continuous concordance/consistency between the Convention on Road Traffic, of 1968 and the regulations developed by WP.29.
2. At its fifty-ninth session WP.1 created a small (virtual) group of experts consisting of representatives of from France, Germany, Russian Federation and Spain to prepare a proposal of amendment to the Convention, to be submitted to the sixtieth session of WP.1.
3. The present document is the result of the work done by the small group of experts and is submitted for consideration and possible decision by the Working Party. For the purpose of the present document “vehicle technical regulations”, “regulations”, “vehicle regulations” or “technical regulations” shall be understood as the Regulations annexed to the “Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions”, done at Geneva on 20 March 1958, including the amendments to the Agreement that entered into force on 16 October 1995.

## I. The problem

4. There is a difference between, on one hand, the rather rapid pace and high frequency of change of vehicle technical regulations and, on the other hand, the slow pace and low frequency of amending the Convention on Road Traffic, 1968. This difference is mainly due to the nature of the regulations which is technical, following technical progress and taking into account modern technology, and that of the Convention, which is legal, following strict amendment procedures, as well as by the working manner of the two bodies administering these instruments.

5. This difference results in the technical provisions related to vehicles, such as Annex 5 of the Convention, being often out-of-date – a situation that has led to drivers in international traffic being occasionally fined when driving vehicles that are perfectly complying with the technical regulations but not (anymore) with the Convention.

6. One essential point to remember is that not all Contracting Parties to the Convention on Road Traffic, 1968, are also parties to the “Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions”, done at Geneva on 20 March 1958. This means that any changes will have to be added to the Convention in a generally acceptable way.

## II. Proposals of amendment

7. Ad article 1 (Definitions)

(a) Modify subparagraph (u) to read as follows:

“Articulated vehicle” means:

(i) A combination of vehicles comprising either a motor vehicle and a semi-trailer coupled to the motor vehicle, provided that no transport of persons is operated in the semi-trailer,

(ii) Or a motor vehicle made up of at least two rigid sections which articulate relative to one another and in which free movement of persons is possible”.

8. Alternative proposal added by the Russian Federation, to comply with Special Resolution No. 1 of 15 September 2005 concerning the common definitions of vehicle categories, masses and dimensions (TRANS/WP.29/1045):

"Articulated vehicle" means a vehicle which consists of two or more rigid sections which articulate relative to one another; the passenger compartments of each section intercommunicate so that passengers can move freely between them; the rigid sections are permanently connected so that they can only be separated by an operation involving facilities which are normally only found in a workshop;

(b) Add a new subparagraph to read as follows:

(bb) “Driving assistance system” means a system which can automatically detect an emergency situation and activate the vehicle controls and systems to decelerate the vehicle with the purpose of avoiding or mitigating a collision,

or as alternative definition

(bb) “Driving assistance system” means a system which has automatic “collision warning” and “emergency event preparation” functions for cases of occurrence of a danger of

collision with a forward obstacle, warning the driver of an unintentional drift of the vehicle out of its travel lane, improvement vehicle directional stability and a function of the braking control for mitigating the damage of vehicle collision with a forward obstacle in case of a collision judged imminent or unavoidable.

9. In order to increase the significance of the Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of Such Inspections, 1997, and encourage harmonization of technical requirements for vehicles in use the Russian Federation proposes to amend article 3, para. 3 of the Convention as amended by the 1971 European Agreement. The amendment should lay down the mandatory presence of an International Technical Inspection Certificate for all vehicles registered in countries being Contracting parties to the 1971 European Agreement. This paragraph shall be read as follows:

" Subject to the exceptions provided for in Annex 1 to this Convention, Contracting Parties shall be bound to admit onto their territories in international traffic, motor vehicles and trailers which fulfil the conditions laid down in Chapter III of this Convention as amended by this Agreement and whose drivers fulfil the conditions laid down in Chapter IV; they shall also be bound to recognize registration certificates and international technical inspection certificates, ~~if applicable~~, issued in accordance with the provisions of Chapter III as amended by this Agreement ..."

10. Ad article 13 (speed and distance between vehicles)

Add a new paragraph 1.a, to read as follows:

" 1.a Driving Assistance Systems with an influence on the way the vehicle is driven, namely in order to enhance the roadholding or the respect of a safety distance between vehicles, shall not be considered contrary to the principles mentioned in paragraphs 1 et 5 of this Article and mentioned in paragraph 5 of Article 8 as well, provided that:

- (i) either these systems can be switched off at any time,
- (ii) or they only optimize at the technical level, some functions the operating of which depend only on the driver,
- (iii) or they operate in case of emergency when the driver has lost or is about to lose the control of the vehicle".

11. The Russian Federation would prefer the paragraph 1.a to start "Driving Assistance Systems ~~with an influence on the way the vehicle is driven, namely in order to enhance the roadholding or the respect of a safety distance between vehicles,~~ shall not be considered [...]"

12. Germany has transmitted an alternative proposal to deal with Driving Assistance Systems: to include it into the Consolidated Resolution on Road Traffic (R.E.1) or to approve a separate resolution on this subject as follows:

### **Part I, Chapter I**

A new paragraph 1.10 is added:

#### 1.10 Intervening Driver Assistance Systems

##### 1.10.1 Context

Different studies show that Driver Assistance Systems (DAS) have an immense potential to further improve road safety and for meeting the environmental and economic

policy challenges of road transport. DAS are in-vehicle systems which support the driver in performing his driving tasks. Some of them are designed as intervening systems, for example the systems which automatically control the distance between vehicles or control the speed of the vehicle on behalf of the driver. In some cases the designing of DAS may pose the question of conformity with the principles of the Convention on road traffic, especially the principle of controlability. At the same time DAS have been the subject of Regulations annexed to the " Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions", done at Geneva on 20 March 1958 (UNECE-Regulations). That may potentially lead to a contradiction between type approved systems and their consistency to the principles of the Convention on road traffic.

### 1.10.2 Legal background

The Convention on road traffic contains as a principle the controllability of the vehicle by the driver. This principle is laid down in the following provisions:

- (a) Article 8 (1): "Every moving vehicle or combination of vehicles shall have a driver" (not two drivers: the system and the driver).
- (b) Article 8 (5): "Every driver shall at any time be able to control his vehicle..."
- (c) Article 13 (1) first sentence: "Every driver of a vehicle shall in all circumstances have his vehicle under control so as to be able to exercise due and proper care and to be at all times in a position to perform all manoeuvres required of him."
- (d) Article 1 No. 5: "Driver" means any person who drives a motor vehicle or other vehicle ..." (this means a natural person, not a system).

13. Considering that the relationship between the Convention on road traffic and UNECE-Regulations is laid down in paragraph 1a of Annex 5 of the Convention: vehicles that have been type approved in conformity with UNECE-Regulations are deemed to be in conformity with the Annex, provided that the above mentioned Regulations are not contrary to the principles defined in point v of Article 1, paragraph 1 and 5 of Article 8 and paragraph 1 of Article 13 of the Convention. That poses the question what are the prerequisites which DAS have to meet to avoid a contradiction to the mentioned provisions.

14. The following groups of DAS are considered as consistent with the above-mentioned principles from the aspect of the scope of their intervention:

- (a) systems intended to optimize the functional processes in the motor vehicle initiated by the driver; example: anti-block system;
- (b) systems which only inform the driver (visually, acoustically, haptically); whereby it is up to the driver to decide to what extent he makes use of this information for the handling of his vehicle; example: in-vehicle information about dangers or information about a maximum admissible speed;
- (c) systems intervening in such situations in which the driver might not be able to properly perform his driving task and the intervention is in keeping with the wish of the driver; examples: Electronic Stability Control (ESC), automatic emergency brake system;
- (d) systems which can be overridden, meaning that this overriding function may also include the switching off of the system; example: cruise-control, automatic emergency brake system;

(e) systems which cannot be overridden but whose intervention is identical with a usual property of a motor vehicle (and/or its functional limits); example: speed limiting device.

However, systems whose intervention exceeds the extent mentioned, meaning that the driver is overridden and cannot intervene himself, are considered to be not acceptable.

### 1.11.3 Recommendations

To avoid contravening to the principles defined in point v of Article 1, paragraph 1 and 5 of Article 8 and paragraph 1 of Article 13 of the Convention on Road Traffic the intervening DAS have to be designed in such a way that:

- (a) either these systems can be switched off at any time;
- (b) or they only optimize at the technical level some functions whose operation depends exclusively on the driver;
- (c) or they operate in case of emergency when the driver has lost or is about to lose the control of the vehicle.

15. Ad article 32 “Rules of the use of lamps” [Germany is still analyzing the proposal].

(a) correct (in the English version only) the typing error in item 4: “Fog lamps may be lit only in thick fog, falling snow, heavy rain or similar conditions and, as regards front fog ~~maps~~ **lamps**, as a substitute for passing lamps”.

(b) modify the second sentence of item 7 to read “Rear position lamps ~~shall~~ **may** in this case be used together with the front lamps”.

(c) modify item 12 to read “Reversing lamps may be used only when the vehicle is reversing or about to reverse; **optional additional reversing lamps may remain illuminated during slow forward manoeuvres.**”

16. Ad annex 1 [Germany is still analyzing the proposal].

Modify item 2 to read as follows:

(a) Tyres, near their point of contact with the ground and connections of tyre-pressure ~~indicators~~ **gauges** (in the English version only);

(c) ~~Driving mirrors~~ **Rear view mirrors/devices for indirect vision** so designed as to yield ~~both forwards and~~ backwards under moderate pressure so that they no longer project beyond the permissible maximum width;

(d) Side direction-indicators, marker lamps, **position lamps and parking lamps** ~~provided that such projection does not exceed a few centimetres;~~

(f) **Service-door lighting;**

(g) **Exterior courtesy lamp.**

17. Ad annex 5 (Technical provisions regarding vehicles and trailers) [Germany is still analyzing parts of the proposal].

Add a new paragraph 1.a as follows:

" 1.a Vehicles, their systems, parts or equipment that have been approved in conformity with the Regulations annexed to the " Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions”, done at Geneva on 20 March 1958, including the Amendments, are deemed to be in conformity with the Annex, provided that the above

mentioned Regulations are not contrary to the principles defined in letter v of Article 1, paragraph 1 and 5 of Article 8 and paragraph 1 of Article 13 of the Convention".

- add a new subparagraph (b) to item 18 in Chapter I, D (Braking of motor cycles), and modify the numbering consequently, as follows:

**(b) as an alternative to the provisions of subparagraph (a) of this paragraph, a motorcycle may be equipped with a brake system that operates the brakes on all wheels, consisting of two or more subsystems actuated by a single control designed so that a single failure in any subsystem (such as a leakage-type failure of a hydraulic subsystem) does not impair the operation of any other subsystem.**

(c) In addition to the provisions [...]

- modify items 40, 42 and 42 quinquies of Chapter II (Vehicle lighting and light-signalling devices), to read as follows:

“40. If front fog lamps are fitted on a motor vehicle they shall emit white or selective-yellow light, be two or, in the case of motor cycle, one or two in number and be placed in such a way that no point on their illuminating surface is above the highest point on the illuminating surface of the passing lamps.”

“42. No lamps, other than direction-indicator lamps, **emergency stop-lamp signals** and special warning lamps, shall emit a winking or flashing light. Side lamps may wink at the same time as direction-indicator lamps.”

“42 quinquies. Every motor vehicle and every trailer more than 6 m long shall be fitted with amber side reflex-reflectors. **The rearmost side reflector may be red if it is grouped with another rear lamp.**”

- modify the sub-title in Chapter III (Other requirements) to read “Driving (rear-view) mirror/**devices for indirect vision**”;
- modify item 47 to read as follows:

“47. Every motor vehicle shall be equipped with one or more driving (rear-view) mirrors/**devices for indirect vision**; the number, dimensions and arrangement of these mirrors shall be such as to enable the driver to see the traffic to the rear of his vehicle.”

- modify Appendix to Annex 5 to read as in Annex I to the present document.

18. Ad Part III “Distinguishing signs used on vehicles in international traffic”

- modify sub-title to read “Status as at ~~1 February 2007~~ **the date when amendment will be adopted**”;
- Add distinguishing sign for Burkina Faso (BF);

## Annex I

### Definition of colour boundaries for obtaining the colours referred to in this annex (trichromatic coordinates 1)

"Red" means the chromaticity coordinates (x,y) \* of the light emitted lie inside the chromaticity areas defined by the boundaries:

R <sub>12</sub>	yellow boundary:	$y = 0.335$
R <sub>23</sub>	the spectral locus	
R <sub>34</sub>	the purple line	(its linear extension across the purple range of colours between the red and the blue extremities of the spectral locus).
R <sub>41</sub>	purple boundary:	$y = 0.980 - x$

with intersection points:

	x	y
R <sub>1</sub> :	0.645	0.335
R <sub>2</sub> :	0.665	0.335
R <sub>3</sub> :	0.735	0.265
R <sub>4</sub> :	0.721	0.259

"White" means the chromaticity coordinates (x,y) \*/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

W <sub>12</sub>	green boundary:	$y = 0.150 + 0.640 x$
W <sub>23</sub>	yellowish green boundary:	$y = 0.440$
W <sub>34</sub>	yellow boundary:	$x = 0.500$
W <sub>45</sub>	reddish purple boundary:	$y = 0.382$
W <sub>56</sub>	purple boundary:	$y = 0.050 + 0.750 x$
W <sub>61</sub>	blue boundary:	$x = 0.310$

with intersection points:

	x	y
<u>W<sub>1</sub></u> :	0.310	0.348
W <sub>2</sub> :	0.453	0.440
W <sub>3</sub> :	0.500	0.440
W <sub>4</sub> :	0.500	0.382
W <sub>5</sub> :	0.443	0.382
W <sub>6</sub> :	0.310	0.283

"Amber"<sub>2</sub>/ means the chromaticity coordinates (x,y) <sub>2</sub>/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

A <sub>12</sub>	green boundary:	$y = x - 0.120$
A <sub>23</sub>	the spectral locus	
<u>A<sub>34</sub></u>	red boundary:	$y = 0.390$
A <sub>41</sub>	white boundary:	$y = 0.790 - 0.670 x$

with intersection points:

	x	y
A <sub>1</sub> :	0.545	0.425
A <sub>2</sub> :	0.557	0.442
A <sub>3</sub> :	0.609	0.390
A <sub>4</sub> :	0.597	0.390

"Selective-yellow"<sub>3</sub>/ means the chromaticity coordinates (x,y) <sub>3</sub>/ of the light emitted lie inside the chromaticity areas defined by the boundaries:

SY <sub>12</sub>	green boundary:	$y = 1.290 x - 0.100$
SY <sub>23</sub>	the spectral locus	
SY <sub>34</sub>	red boundary:	$y = 0.138 + 0.580 x$
SY <sub>45</sub>	yellowish white boundary:	$y = 0.440$
SY <sub>51</sub>	white boundary:	$y = 0.940 - x$



with intersection points:

_____	x	y
<b>SY<sub>1</sub>:</b>	<b>0.454</b>	<b>0.486</b>
<b>SY<sub>2</sub>:</b>	<b>0.480</b>	<b>0.519</b>
<b>SY<sub>3</sub>:</b>	<b>0.545</b>	<b>0.454</b>
<b>SY<sub>4</sub>:</b>	<b>0.521</b>	<b>0.440</b>
<b>SY<sub>5</sub>:</b>	<b>0.500</b>	<b>0.440</b>

"**Blue**" means the chromaticity coordinates (x,y) \* of the light emitted lie inside the chromaticity areas defined by the boundaries:

<b>B<sub>12</sub></b>	<b>green boundary:</b>	<b><math>y = 0.805 x + 0.065</math></b>
<b>B<sub>23</sub></b>	<b>white boundary:</b>	<b><math>y = -x + 0.400</math></b>
<b>B<sub>34</sub></b>	<b>purple boundary:</b>	<b><math>y = 1.670 x - 0.222</math></b>
<b>B<sub>41</sub></b>	<b>the spectral locus:</b>	

with intersection points:

_____	x	y
<b>B<sub>1</sub>:</b>	<b>0.090</b>	<b>0.137</b>
<b>B<sub>2</sub>:</b>	<b>0.186</b>	<b>0.214</b>
<b>B<sub>3</sub>:</b>	<b>0.233</b>	<b>0.167</b>
<b>B<sub>4</sub>:</b>	<b>0.148</b>	<b>0.025</b>

To verify the colorimetric characteristics of these filters the light emitted:

a source of white light at a colour temperature of 2854E K (corresponding to illuminate A of the International Commission on Illumination [CIE]) shall be used **in the case of replaceable filament lamps (incandescent lamps)**

**in all other cases, the test voltage specified for this lamp (function) shall be applied to the terminals of the lamp (function).**

This covers the high-intensity gas discharge **lamps** (HID) and light emitting diode (LED) types of lamps.

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- \* CIE Publication 15.2, 1986, Colorimetry, the CIE 1931 standard colorimetric observer.
- 1 In these cases, different limits have been adopted from those recommended by CIE Standard CIE S 004/E-2001.
  - 2 Corresponds to the specification "yellow", a specific part of the "yellow" zone of the triangle of CIE colours.
  - 3 Applies only to the particular case of front fog-lights.