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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

Working Party on Road Traffic Safety

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Geneva, 19-22 November 2007  
Item 3 (j) of the provisional agenda

**CONSOLIDATED RESOLUTION ON ROAD SIGNS AND SIGNALS (R.E.2)**

Variable message signs

Note by the Small Group on Variable Message Signs

1. This document is submitted in conformity with the mandate of the Working Party (WP.1) as defined in document TRANS/WP.1/100/Add.1 (item c) which aims to develop, update and circulate the Consolidated Resolutions R.E.1 and R.E.2, as well as the Programme of Work for 2006-2010 of the Inland Transport Committee, adopted at its 68th session in 2006 (ECE/TRANS/166/Add.1, item 2.3 (b)).
2. This document presents the revised proposal regarding variable message signs prepared by Spain (chair) in cooperation with the other members of the small group (France, Germany and Netherlands). Once adopted, this proposal will be incorporated into R.E.2.

## VARIABLE MESSAGE SIGNS

### A. Context

The small group on VMS was asked, in the Forty-sixth session of this group, to “prepare the introduction of variable message signs into the Vienna Convention on Road Signs and Signals. This should include a definition of the signs, a list of signs already in the Convention as well as a list of new signs and pictograms that could be used in VMS, as well as on the legal value of signs and messages on VMS in relation to existing fixed signs and on the content and structure of the messages to be transmitted via VMS”.

A proposal for this introduction of VMS into the Convention is added to this document, as a proposed text that could be included in the Consolidated Resolution R.E.2.

It is left to the secretariat of WP.1 to suggest where these texts could be placed in R.E.2. In the opinion of the small group, the addition of these texts makes the current paragraph 2.3 of R.E.2 no longer relevant.

The small group considers the inclusion of these items as a good short term solution. When these items later become part of the Convention on Road Signs and Signals, the small group recommends to consider for the next revision of the Convention:

- (a) To dedicate a separate section to VMS use.
- (b) To introduce “lane control signals” as a separate item, so that they are no longer a special sort of traffic light signals. This because lane control systems nowadays often also use speed limits (or advised speed) as a positive indication that a particular lane may be used, which leads to a strange mix of road signs and traffic lane signals in these systems.
- (c) To extend the meaning of sign A14 (“cyclists entering or crossing”) to “cyclists entering, crossing or using a section of road”.

The small group will gladly assist in effectuating these changes.

### Notes:

1. The road owner, traffic administrator or road operator, should ensure that no conflicting speed limits are shown;
2. The road owner should also ensure that speed limits shown on VMS are never higher limits than those shown on fixed signs on the same stretch of road.
3. As stated in article, 8, paragraph 1 bis, of the Vienna Convention on Road Signs and Signals, the dark coloured symbols may appear in a light colour, light coloured backgrounds then being replaced by dark backgrounds. In a future revision of the Convention it would be better to place this text in the “VMS part” of the Convention.

## B. Proposed signs to be used on VMS

1. It is recommended to use only on VMS the following signs of the Convention on Road Signs and Signals. These signs are also reproduced in Annex 1.

Note that VMS are only switched on when needed. In the case of regulatory signs this means that the restriction is not always present. In the case of warning signs this means that VMS are only used when the danger is imminent (which sometimes gives the message displayed a slightly different meaning than its counterpart already in the Convention). In the case of informative signs this means that VMS are only used temporally when particular information is worth knowing.

Prohibitory, restrictive or mandatory signs	Danger warning signs	Direction, position or indication signs and additional panels
<i>Prohibitory or restrictive</i>	A, 4a;  A, 4b 	<i>Direction, position or indication</i>
C, 1a 	A, 5 	G, 1a 
C, 2 	A, 9 	G, 1b 
C, 3e 	A, 16 	G, 1c 
C, 10 	A, 17a 	G, 11b 
C, 13aa 	A, 23 	G, 12 
C, 13ba 	A, 24 	G, 17 
C, 14 	A, 31 	<i>Additional panels</i>
C, 17b 	A, 32 	H, 1 
C, 17c 		H, 2 
C, 17d 		H, 5a 
<i>Mandatory</i>		
D, 1a 		
D, 9 		

2. Moreover, it is recommended to use, only on VMS, these new signs which are also reproduced in Annex 2.

Special regulation signs	Danger warning signs	Direction, position or indication signs and additional panels
(E, 19) (lane allocation) 	(A, 33) (pedestrians) 	<i>Direction, position or indication</i>
(E, 20a, E, 20b, E, 20c) (hard shoulder use) 	(A, 34) (slippery road –ice or snow) 	(G, 23) (rerouting)  
(E, 21) (HOV lane) 	(A, 35) (accident) 	(G, 24) (road closed) 
	(A, 36) (fog) 	(G, 25) (exit closed) 
		(G, 26) (exit after exit closed) 

Rules for the choice between indicating a warning or an advice on a VMS:

Some rules are presented to make it possible to decide on the display of a warning sign (with red triangle) or an informative sign.

Parameters for this choice are the distance between the sign and the dangerous situation and the time difference between the message and the dangerous situation.

Rules for message content and message structure for VMS:

Finally some rules are given for the use of VMS by the road operator.

**PROPOSED TEXT FOR INCLUSION IN CONSOLIDATED RESOLUTION R.E.2.**

**1. Definition**

A Variable Message Sign (VMS) is a sign for the purpose of displaying one of a number of messages that may be changed or switched on or off as required.

**2. Existing Convention signs that can be used on VMS**

The following signs of the Vienna Convention can be used on VMS:

Danger warning signs

Note: In case of a difference in meaning when used on a VMS (vs. posted) the meaning is underlined.

A, 4 <sup>a</sup>	Carriageway narrows
A, 4 <sup>b</sup>	Carriageway narrows
A, 5	<u>Warning of an open swing bridge</u>
A, 9	Slippery road
A, 16	Road works
A, 17 <sup>a</sup>	Light signals
A, 23	Two-way traffic
A, 24	<u>Warning of traffic congestion currently on the section of the road ahead</u>
A, 31	<u>Warning of a strong crosswind on the section of the road ahead</u>
A, 32	Other dangers

Prohibitory or Restrictive signs

C, 1a	No entry
C, 2	Closed to all vehicles in both directions
C, 3e	No entry for goods vehicles
C, 10	Driving of vehicles less than ... metres apart prohibited
C, 13 <sup>aa</sup>	Overtaking prohibited

C, 13 <sup>ba</sup>	Overtaking by goods vehicles prohibited
C, 14	Speed limit
C, 17 <sup>b</sup>	End of speed limit
C, 17 <sup>c</sup>	End of prohibition of overtaking
C, 17 <sup>d</sup>	End of prohibition of overtaking for goods vehicles

#### Mandatory signs

D, 1 <sup>a</sup>	Direction to be followed
D, 9	Snow chains compulsory

#### Direction, position or indication signs

G, 1 <sup>a</sup>	Advance direction sign
G, 1b	Advance direction sign
G, 1 <sup>c</sup>	Advance direction sign
G, 11 <sup>b</sup>	Indication of the number and direction of traffic lanes
G, 12	Indication of the closure of a traffic lane
G, 17	Advisory speed

#### Additional panels

H, 1	Distance to the section of road or the zone to which the regulation applies
H, 2	Length of the dangerous section of road or the zone to which the regulation applies
H, 5 <sup>a</sup>	Restriction to goods vehicles

### **3. New signs to be used only on VMS**

#### Danger warning signs

*In brackets, possible numbers to be attributed to these signs.*

(A, 33)	Warning of the expected presence of pedestrians walking along the road
(A, 34)	Warning of a section of road ahead that is slippery because of ice or snow
(A, 35)	Warning of an accident on the section of the road ahead
(A, 36)	Warning of reduced visibility due to fog, rain or snow on the section of the road ahead

#### Special regulation signs

(E, 19)	Sign notifying a lane allocation If there is no possibility to show the signals over the traffic lanes, the lane allocation can be shown in one sign. Any other combinations of crosses and arrows are allowed, even for roads with more than two lanes. Note: this as an alternative to "lane signals" above each lane of a carriageway, proposed in the amendment of the Vienna Convention that entered into force on
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30 Nov 1995.

- (E, 20) Sign notifying the temporary use of the hard shoulder.  
Three different signs may be used in case of the temporary use of hard shoulder:
- E, 20<sup>a</sup>: Sign notifying that the hard shoulder may be used
  - E, 20<sup>b</sup>: Sign notifying the end of the use of the hard shoulder
  - E, 20<sup>c</sup>: Sign notifying that the hard shoulder may not be used
- (E, 21) Sign notifying the availability of a High Occupancy Vehicle (HOV) lane  
Other designs are allowed depending on the occupancy requested per vehicle.

#### Direction, position or indication signs

- (G, 23) Sign notifying a recommended alternative route  
(G, 24) Sign notifying that the section of the road ahead is temporary closed and the next exit is compulsory  
(G, 25) Sign notifying that the next exit is closed  
(G, 26) Sign notifying that the exit after the next exit is closed

#### **4. Rules for the choice between indicating a warning or an advice on a VMS**

When displaying a warning on a VMS, a red triangle should be used around the pictogram when the dangerous spot or stretch of road is nearby the VMS (for instance < 2 km). When a VMS is used to inform about a dangerous situation at some distance (for instance > 2 km) or in the future (e.g. expected road works), informative signs have to be used. In many cases the same symbols can be used, but then in a square box, without the red triangle. In that case additional information (e.g. distance, or respectively an indication of date and time) is necessary.

#### **5. Rules for message content and message structure for VMS**

##### Traffic related VMS messages

*For the secretariat: it would be desirable to make reference to the Vienna Convention, to say for example: "As stated in article, 8, paragraph 1 bis, of the Vienna Convention on Road Signs and Signals, the prescribed dark-coloured signs or symbols used for VMS may appear in a light colour, light-coloured backgrounds then being replaced by dark backgrounds, but the red colour of the symbol of a sign and its border shall not be changed."*

1. When using VMS with pictograms the main information is given by the pictogram. The use of specific pictograms instead of generic ones (e.g., a pictogram representing "congestion" instead of general danger A, 31) is preferred, when they exist.
2. Make use of graphical elements as much as possible when using text (e.g., pictograms, symbols).
3. Avoid alternating messages.
4. Avoid redundancy, except for the purpose of making drivers familiar with new pictograms.

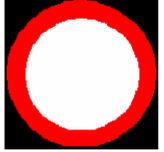
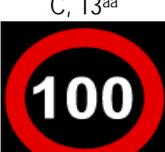
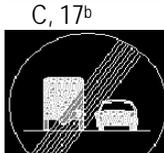
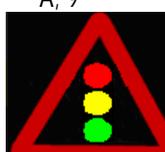
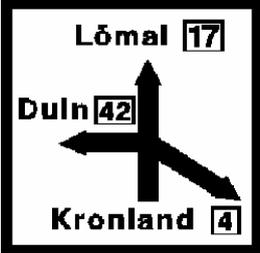
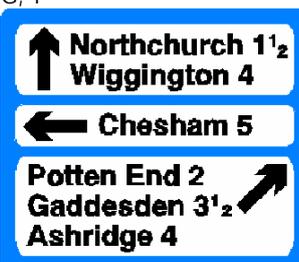
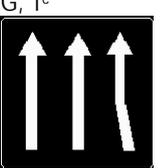
5. Use only well-known and international abbreviations (e.g., 'KM' for kilometre, 'MIN' for minutes, etc.).
6. Minimize the number of words and symbols (e.g. maximum 7).
7. Use regulatory messages without any text, if possible.
8. When using words in danger warning messages, place the information about the nature of the danger on the first line, leave the second line blank (when you have three lines) and give brief complementary advice on the bottom line if necessary.
9. When using words in messages about distant dangerous events (for instance, > 2 km), first give the information concerning the nature of the event on the first line, then distance and/or length on the second line, and if useful, complementary information (e.g. advice, cause) on the third line.

Non-traffic related VMS messages

10. A VMS should be blank when no traffic related messages have to be displayed. An exception could be the display of dots or the time to indicate that the VMS is working,
11. Other messages, e.g. commercial/advertising should be forbidden.

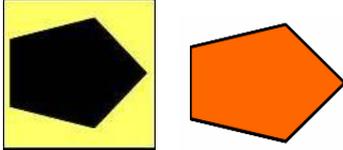
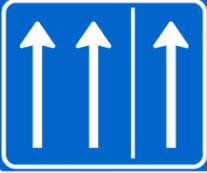
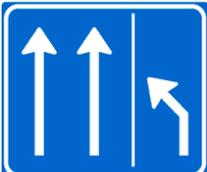
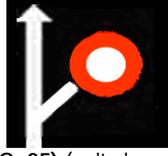
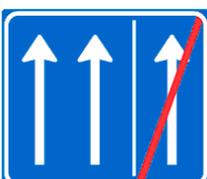
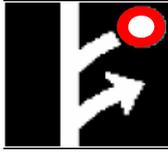
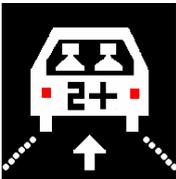
**Annex I**

**List of recommended Vienna Convention signs for use on VMS**

Prohibitory, restrictive or mandatory signs	Danger warning signs	Direction, position or indication signs and additional panels
<p><i>Prohibitory or restrictive</i></p>  <p>C, 1a</p>  <p>C, 2</p>  <p>C, 3e</p>  <p>C, 10</p>  <p>C, 13aa</p>  <p>C, 13ba</p>  <p>C, 14</p>  <p>C, 17b</p>  <p>C, 17c</p>  <p>C, 17d</p>	 <p>A, 4a</p>  <p>A, 4b</p>  <p>A, 5</p>  <p>A, 9</p>  <p>A, 16</p>  <p>A, 17a</p>  <p>A, 23</p>  <p>A, 24</p>  <p>A, 31</p>  <p>A, 32</p>	<p><i>Direction, position or indication</i></p>  <p>G, 1a</p>  <p>G, 1b</p>  <p>G, 1c</p>  <p>G, 11b</p>  <p>G, 12a</p>  <p>G, 17</p> <p><i>Additional panels</i></p>  <p>H, 1</p>  <p>H, 2</p>  <p>H, 5a</p>
<p><i>Mandatory</i></p>  <p>D, 1a</p>  <p>D, 9</p>		

**Annex II**

**New signs for use on VMS**

Special regulation signs	Danger warning signs	Direction, position or indication signs and additional panels
 <p>(E, 19) (lane allocation)</p>	 <p>(A, 33) (pedestrians)</p>	<p><i>Direction, position or indication</i></p>  <p>(G, 23) (rerouting)</p>
	 <p>(A, 34) (slippery road -ice or snow)</p>	 <p>(G, 24) (road closed)</p>
	 <p>(A, 35) (<i>accident</i>)</p>	 <p>(G, 25) (exit closed)</p>
 <p>(E, 20<sup>a</sup>, E, 20<sup>b</sup>, E, 20<sup>c</sup>), (hard shoulder use)</p>	 <p>(A, 36) (<i>fog</i>)</p>	 <p>(G, 26) (exit after exit closed)</p>
 <p>(E, 21) (HOV lane)</p>		