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## Economic Commission for Europe

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### World Forum for Harmonization of Vehicle Regulations

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Item 4.8.7 of the provisional agenda

#### 1958 Agreement:

Consideration of draft amendments to existing

UN Regulations submitted by GRSG

## **Proposal for Supplement 1 to UN Regulation No. 151 (Blind Spot Information Systems (BISIS))**

### **Submitted by the experts from the Working Party on General Safety\***

The text reproduced below was adopted by the Working Party on General Safety (GRSG) at its 117th session (ECE/TRANS/WP.29/GRSG/96, para. 36). It is based on ECE/TRANS/WP.29/GRSG/2019/25 as amended by GRSG-117-23 and GRSG-117-24-Rev.1 as reproduced in Annex II to ECE/TRANS/WP.29/GRSG/96. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their March 2020 sessions.

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\* In accordance with the programme of work of the Inland Transport Committee for 2020 as outlined in proposed programme budget for 2020 (A/74/6 (part V sect. 20) para 20.37), 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..

## Supplement 1 to UN Regulation No. 151 (Blind Spot Information Systems (BISIS))

After paragraph 0.6., insert a new paragraph 0.7., to read:

"0.7. This regulation allows the technical services to test other, more or less random, parameter combinations that are not laid down in the table 1 in Appendix 1. It is anticipated that the systems will be more robust, but it makes the test procedure also more complex:

To be able to appropriately analyze the pass or fail of the system according to the requirements in paragraph 5, annex 3 is included to calculate pass and fail values. There could, however, be contradicting requirements where an information signal is not allowed for one test case, but is required for another, in the exact same relative positions of bicycle and vehicle, but for different assumed turn radii and impact positions (which are not detectable by the system at the points of information).

Therefore, the evaluation of the criterium "first point of information" is not carried out for these kinds of tests; it shall be considered sufficient if the false information test (traffic sign) is passed."

Paragraph 2.16., amend to read:

"2.16. "Vehicle front right corner" means the projection of the point that results from the intersection of the vehicle side plane (not including devices for indirect vision) and the vehicle front plane (not including devices for indirect vision and any part of the vehicle which is more than 2.0 m above the ground) on the road surface."

Paragraph 5.2., amend to read:

"5.2. General requirements

5.2.1. The effectiveness of the BSIS shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by compliance with the technical requirements and transitional provisions of UN Regulation No. 10, 04 series of amendments or any later series of amendments.

5.2.2. With the exception of BSIS external elements which are part of another device subject to specific protrusion requirements, BSIS external elements may protrude up to 100 mm beyond the width of the vehicle."

Paragraph 5.3.1.4., amend to read:

"5.3.1.4. The BSIS shall give an information signal at last point of information, for a bicycle moving with a speed between 5 km/h and 20 km/h, at a lateral separation between bicycle and vehicle of between 0.9 and 4.25 metres, which could result in a collision between bicycle and vehicle with an impact position 0 to 6 m with respect to the vehicle front right corner, if typical steering motion would be applied by the vehicle driver. However, the information signal is not required when the relative longitudinal distance between bicycle and front right corner of the vehicle is more than 30 m to the rear or 7 m to the front."

Paragraph 6.5.1., amend to read:

"6.5.1. Using markers and the bicycle dummy, form a corridor according to Figure 1 in Appendix 1 to this Regulation and the additional dimensions as specified in Table 1 of Appendix 1 to this Regulation."

Paragraph 6.5.8., amend to read:

"6.5.8. Verify that the Blind Spot Information signal has not been activated when passing the traffic sign and any markers as long as the bicycle dummy is still stationary."

*Paragraph 6.7.*, amend to read:

- "6.7. The manufacturer shall demonstrate, to the satisfaction of the Technical Service and Type Approval Authority, through the use of documentation, simulation or any other means, that the Blind Spot Information signal is not activated, as described in paragraph 6.5.10., when the vehicle passes any other usual stationary object than the traffic sign. In particular, parked cars and traffic cones shall be addressed."

*Paragraphs 6.5.9 to 6.5.10.*, amend to read:

- "6.5.9. Repeat paragraphs 6.5.1. to 6.5.8. for test cases shown in Table 1 of Appendix 1 to this Regulation.

Where this is deemed justified, the Technical Service may select additional test cases different than shown in Table 1 of Appendix 1, within the range of vehicle speed, bicycle speed and lateral clearance as indicated in paragraphs 5.3.1.3. and 5.3.1.4.

The Technical Service shall check that the parameter combination in the selected test cases would lead to a collision between the bicycle and the vehicle with an impact position in the range as specified in paragraph 5.3.1.4. and shall assure that the vehicle is moving with the selected speed when crossing line C in Figure 1 of Annex 1 by appropriately adjusting starting distances and corridor length for the vehicle and the bicycle.

The criterium "first point of information" is deemed to be complied with when test cases other than those from table 1 in appendix 1 to this regulation are carried out."

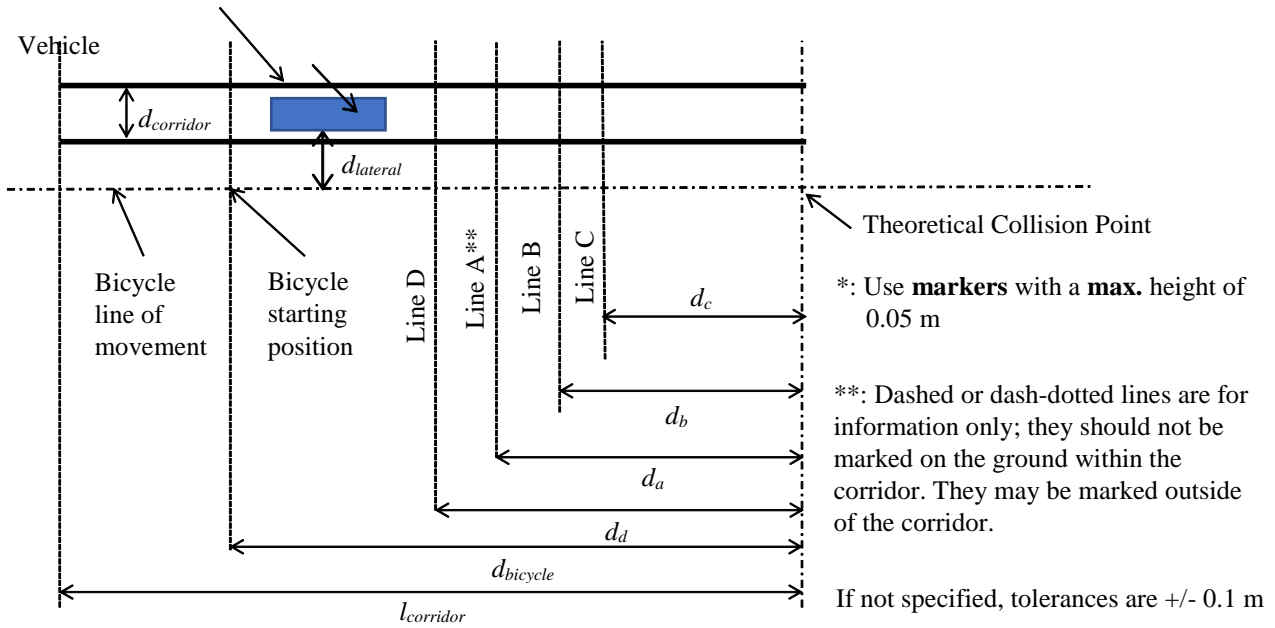
- 6.5.10. The test is passed when the Blind Spot Information signal has been activated in all test cases as shown in Table 1 of Appendix 1 to this Regulation before the foremost point of the vehicle has reached line C but not before the foremost point of the vehicle has reached line D (see paragraph 6.5.7. above, where line D is only relevant for test cases taken from Table 1 of Appendix 1) and the Blind Spot Information signal has not been activated in any test run when the vehicle passes the traffic sign (see paragraph 6.5.8. above). However, the information signal is not required when the relative longitudinal distance between bicycle and front right corner of the vehicle is more than 30 m to the rear or 7 m to the front.

For vehicle speeds up to 5 km/h, it is deemed satisfactory if the information signal is activated 1.4 seconds before the bicycle has reached the theoretical collision point as specified in Appendix 1, Figure 1.

For vehicle speeds above 25 km/h, where the stopping distance is higher than 15 m,  $d_c$  as specified in Appendix 1, Figure 1 shall be as specified in Appendix 1, Table 2.

Appendix 1, Figure 1, amend to read:

Mark corridor using markers \*, spacing not more than 5 m



Appendix 1, Table 1, amend to read:

Test Case	$v_{bicycle}$ [km/h]	$v_{vehicle}$ [km/h]	$d_{lateral}$ [m]	$d_a$ [m]	$d_b$ [m]	$d_c$ [m]	$d_d$ [m]	$d_{bicycle}$ [m]	$l_{corridor}$ [m]	$d_{corridor}$ [m]	For information only (not influencing test parameters)	
											Impact Position [m]	Turn Radius [m]
1	20	10	1.25	44.4	15.8	15	26.1	65	80	vehicle width + 1 m	6	5
2	20	10			22	15	32.3				0	10
3	20	20			38.3	38.3	-				6	25
4	10	20	4.25	22.2	43.5	15	43.2				0	25
5	10	10			19.8	19.8	-				0	5
6	20	10			44.4	14.7	15				26.1	6
7			17.7	29.1		3					10	

Annex 3, final paragraphs, amend to read:

"For vehicle speeds below 5 km/h, it is sufficient if the information signal is given at a distance corresponding to a TTC value of 1.4 seconds (similar to the static tests)."