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UN Regulation No. 144 (Accident Emergency Call Systems)**Proposal for amendments to UN Regulation No. 144 (Accident
Emergency Call Systems)****Submitted by the expert from the International Organization of Motor
Vehicle Manufacturers ***

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA) to correct the scope of the new UN Regulation No. 144 on Accident Emergency Call Systems (AECS), as discussed at the 114th session of the Working Party on General Safety Provisions (GRSG) (see report ECE/TRANS/WP.29/GRSG/93, para. 46). The modifications to the current text of UN Regulation No. 144 are marked in bold characters for new and strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, cluster 02.4), 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 1.3., amend to read (footnote ¹ remains unchanged):

- "1.3. Vehicles,
- (a) in the scope of neither UN Regulation No. 94 nor UN Regulation No. 95 and not fitted ~~with an automatic triggering of a AECS~~ **a triggered restraint system**;
 - (b) of category M₁ in the scope of UN Regulation No. 94 ~~or~~ **or/and UN Regulation No. 95** and not equipped with ~~frontal airbag~~ **a triggered restraint system**;
 - (c) of category N₁ in the scope of UN Regulation No. 95 and not equipped with ~~side airbag~~ **a triggered lateral restraint system**;
 - (d) of category M₁ with a total permissible mass above 3.5 t; and
 - (e) armoured vehicles¹
- shall be excluded from the scope of this Regulation."

Insert a new paragraph 2.34., to read:

- "2.34. **"Triggered restraint system" means a restraint system that is triggered by a collision of the vehicle according to Annex 4 to UN Regulation No. 95 (Lateral collision) or Annex 3 to UN Regulation No. 94 (Frontal collision) or both.**"

Part II

Paragraphs 26.2. to 26.2.2.2.3., amend to read:

- "26.2. The installation of the AECD shall be such to receive a trigger signal during a severe vehicle impact. This shall be verified during the vehicle impact test described in this paragraph.
- Upon receiving a trigger signal, the AECS shall perform an emergency call transaction. This shall be verified by one of the test methods described in Annex 11.
- 26.2.1. Vehicles of category M₁ shall be subject to the following:
- 26.2.1.1. Vehicles of category M₁ with a total permissible mass less than or equal to 2.5 tons and R-point height at or below 700 mm, verification of the trigger signal:
- 26.2.1.1.1. when performing a collision of the vehicle according to Annex 3 to UN Regulation No. 94 (Frontal collision) and Annex 4 to UN Regulation No. 95 (Lateral collision); or
- 26.2.1.1.2. in the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 94 (Frontal collision) and UN Regulation No. 95 (Lateral collision) impact:
- (a) a triggering signal was generated;
 - (b) the installation of AECD is not adversely affected by the impact to the vehicle.
- 26.2.1.1.3. **A verification or demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered**

- frontal restraint system that meets the requirements of Annex 3 to UN Regulation No. 94 (Frontal collision).**
- 26.2.1.1.4. A verification or demonstration of the trigger signal in case of a lateral collision is not required when the vehicle is not equipped with a triggered lateral restraint system that meets the requirements of Annex 4 to UN Regulation No. 95 (Lateral collision).**
- 26.2.1.2. Vehicles of category M₁ with a total permissible mass less than or equal to 2.5 tons and R-point height above 700 mm, verification of the trigger signal:
- 26.2.1.2.1. when performing a collision of the vehicle according to Annex 3 to UN Regulation No. 94 (Frontal collision); or
- 26.2.1.2.2. in the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 94 (Frontal collision) impact:
- (a) a triggering signal was generated;
 - (b) the installation of AECD is not adversely affected by the impact to the vehicle.
- 26.2.1.2.3. A verification or demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system that meets the requirements of Annex 3 to UN Regulation No. 94 (Frontal collision).**
- 26.2.1.3. Vehicles of category M₁ with a total permissible mass above 2.5 tons and R-point height less than or equal to 700 mm, verification of the trigger signal:
- 26.2.1.3.1. when performing a collision of the vehicle according to Annex 4 to UN Regulation No. 95 (Lateral collision); or
- 26.2.1.3.2. in the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 95 impact:
- (a) a triggering signal was generated;
 - (b) the installation of AECD is not adversely affected by the impact to the vehicle.
- 26.2.1.3.3. A verification or demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system that meets the requirements of Annex 4 to UN Regulation No. 95 (Lateral collision).**
- 26.2.1.4. Vehicles of category M₁ with a total permissible mass above 2.5 tons and R-point height above 700 mm:
- 26.2.1.4.1. the manufacturer shall demonstrate with existing documentation (report, images, drawing or equivalent) that a triggering signal is available for the purpose of AECS.
- 26.2.1.1.3. A demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system.**

- 26.2.1.1.4. A demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system.**
- 26.2.2. Vehicles of category N₁ shall be subject to the following:
- 26.2.2.1. Vehicles of category N₁ with a R-point height at or below 700 mm, verification of the trigger signal:
- 26.2.2.1.1. when performing a collision of the vehicle according to UN Regulation No. 95 (Lateral collision); or
- 26.2.2.1.2. in the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 95 (Lateral collision) test:
- (a) a triggering signal was generated;
 - (b) the installation of AECD is not adversely affected by the impact to the vehicle.
- 26.2.2.1.3. A verification or demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system that meets the requirements of Annex 4 to UN Regulation No. 95 (Lateral collision).**
- 26.2.2.2. Vehicles of category N₁ with a R-point height above 700 mm:
- 26.2.2.2.1. the manufacturer shall demonstrate with existing documentation (report, images, drawing or equivalent) that a triggering signal is available for the purpose of AECS.
- 26.2.2.2.2. A demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system.**
- 26.2.2.2.3. A demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system."**

Part III

Paragraphs 35.5.1. to 35.5.2.2.3., amend to read:

- "35.5.1. Vehicles of category M₁ shall be subject to the following:
- 35.5.1.1. Vehicles of category M₁ with a total permissible mass less than or equal to 2.5 tons and R-point height at or below 700 mm, verification of the trigger signal:
- 35.5.1.1.1. when performing a collision of the vehicle according to Annex 3 of UN Regulation No. 94 (Frontal collision) and Annex 4 to UN Regulation No. 95; or
- 35.5.1.1.2. In the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulation Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 94 (Frontal collision) and UN Regulation No. 95 (Lateral collision) impact:
- (a) a triggering signal was generated;

- (b) the installation of AECS is not adversely affected by the impact to the vehicle.
- 35.5.1.1.3. A verification or demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system that meets the requirements of Annex 3 to UN Regulation No. 94 (Frontal collision).**
- 35.5.1.1.4. A verification or demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system that meets the requirements of Annex 4 to UN Regulation No. 95 (lateral collision).**
- 35.5.1.2. Vehicles of category M₁ with a total permissible mass less than or equal to 2.5 tons and R-point height above 700 mm, verification of the trigger signal:
- 35.5.1.2.1. when performing a collision of the vehicle according to Annex 3 to UN Regulation No. 94 (Frontal collision), or
- 35.5.1.2.2. In the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 94 (Frontal collision) impact:
- (a) a triggering signal was generated;
- (b) the installation of AECS is not adversely affected by the impact to the vehicle.
- 35.5.1.2.3. A verification or demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system that meets the requirements of Annex 3 to UN Regulation No. 94 (Frontal collision).**
- 35.5.1.3. Vehicles of category M₁ with a total permissible mass above 2.5 tons and R-point height less than or equal to 700 mm, verification of the trigger signal:
- 35.5.1.3.1. when performing a collision of the vehicle according to Annex 4 to UN Regulation No. 95 (Lateral collision), or
- 35.5.1.3.2. in the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 95 (Lateral collision) impact:
- (a) a triggering signal was generated;
- (b) the installation of AECS is not adversely affected by the impact to the vehicle.
- 35.5.1.3.3. A verification or demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system that meets the requirements of Annex 4 to UN Regulation No. 95 (Lateral collision).**
- 35.5.1.4. Vehicles of category M₁ with a total permissible mass above 2.5 tons and R-point height above 700 mm:
- 35.5.1.4.1. the manufacturer shall demonstrate with existing documentation (report, images, drawing or equivalent) that a triggering signal is available for the purpose of AECS.

- 35.5.1.4.2. A demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system.**
- 35.5.1.4.3. A demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system.**
- 35.5.2. Vehicles of category N₁ shall be subject to the following:
- 35.5.2.1. Vehicles of category N₁ with a R-point height at or below 700 mm, verification of the trigger signal:
- 35.5.2.1.1. when performing a collision of the vehicle according to UN Regulation No. 95 (Lateral collision), or
- 35.5.2.1.2. In the case of the extension of type approvals to this Regulation, or in the case of the approval of vehicle types already approved to UN Regulations Nos. 94 or 95 prior the entry into force of this Regulation, when demonstrating with existing documentation (report, images, simulation data or equivalent) that during a UN Regulation No. 94 and UN Regulation No. 95 test:
- (a) a triggering signal was generated;
 - (b) the installation of AECD is not adversely affected by the impact to the vehicle.
- 35.5.2.1.3. A verification or demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system that meets the requirements of Annex 4 to UN Regulation No. 95 (Lateral collision).**
- 35.5.2.2. Vehicles of category N₁ with a R-point height above 700 mm:
- 35.5.2.2.1. the manufacturer shall demonstrate with existing documentation (report, images, drawing or equivalent) that a triggering signal is available for the purpose of AECS.
- 35.5.2.2.2. A demonstration of the trigger signal in case of a frontal collision is not required, when the vehicle is not equipped with a triggered frontal restraint system.**
- 35.5.2.2.3. A demonstration of the trigger signal in case of a lateral collision is not required, when the vehicle is not equipped with a triggered lateral restraint system."**

II. Justification

1. From 2013 through 2016 GRSG agreed to establish an Informal Working Group (IWG) on Accident Emergency Call Systems (AECS) to elaborate a draft new UN Regulation on AECS, to be annexed to the 1958 Agreement. This IWG finalized its work in 2016 and the outcome was tabled and adopted at the 173rd session of the World Forum WP.29 in November 2017 on the basis of ECE/TRANS/WP.29/2017/132. The new UN Regulation No. 144 entered into force on 19 July 2018.

2. The approach of the Regulation is such that only vehicles fitted with airbags should be fitted with AECS since the airbag deployment is considered as an evidence of the existence of an automatic trigger in the vehicle for initiating an emergency call. As a logical consequence, the vehicles not fitted with an airbag should not be regulated with respect to their AECS. Following this logic, the IWG on AECS agreed to align the scope of the

Regulation with those of UN Regulation No. 94 (Frontal collision) and UN Regulation No. 95 (Lateral collision), but letting aside those vehicles within the scopes of these passive safety regulations but not equipped with airbags. This is one of the purposes of paragraph 1.3. in the text of the AECS Regulation.

3. However, it appeared that by the current wording of paragraph 1.3(c) the IWG on AECS erroneously "forgot" that the vehicles of category M_1 are also included in the scope of UN Regulation No. 95. As a consequence, the vehicles of category M_1 in the scope of UN Regulation No. 95 and not fitted with a side airbag should not be obliged to trigger the AECS in case of a lateral impact.

4. It was certainly not the intention of the IWG to exclude the vehicles of category N_1 without airbag and at the same time to ignore/forget to exclude the vehicles of category M_1 without airbag.

5. For the purpose of consistency, it is also suggested to replace the wording side airbag and front airbag by respectively "triggered lateral restraint system" and "triggered frontal restraint system". This would include then also the cases in the scope of these UN Regulation where no airbag but still a triggered pre-tensioner system would be available.

6. The revised paragraph 1.3(b) addresses points 3., 4. and 5. and deliberately indicates "triggered restraint system" without specifying "front" or "lateral". The actual required frontal or lateral verification of an AECS trigger is further specified in paragraph 26.2.1. of Part II and paragraph 35.5.1. of Part III to ensure respectively that a lateral trigger check is not required when no lateral restraint system is present and that a frontal trigger check is not required when no frontal restraint system is fitted to the vehicle.

7. For a better understanding of this subject, the various vehicle restraint system combinations and its scope in view of UN Regulations 94, 95 and 144 were summarized in a table annexed to this document. The table indicates the inconsistencies. The table was also supplemented with a reference on the scope of the European Union "eCall" Regulation showing similar inconsistencies.

8. While revising paragraphs 26.2.1. and 35.5.2, other mistakes in paragraphs 26.2.2.2 and 35.5.2.2. were noted:

"26.2.2.2. Vehicles of category N_1 with a R-point height above 700 mm:

26.2.2.2.1. the manufacturer shall demonstrate with existing documentation (report, images, drawing or equivalent) that a triggering signal is available for the purpose of AECS."

and

"35.5.2.2. Vehicles of category N_1 with a R-point height above 700 mm:

35.5.2.2.1. the manufacturer shall demonstrate with existing documentation (report, images, drawing or equivalent) that a triggering signal is available for the purpose of AECS."

9. Both paragraphs concern N_1 vehicles that are out of scope of UN Regulation No. 95 but the current wording nevertheless requires a demonstration (with existing documentation) that trigger signal is available. Thus, a new provision was added to clarify that this is not required if no frontal or lateral triggered restraint system is present on the vehicle.