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|  | United Nations | DRAFT ECE/TRANS/WP.29/GRSG/2025/YY |
| _unlogo | **Economic and Social Council** | Distr.: GeneralXX XX 2025Original: English |

**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations**

**Working Party on General Safety Provisions**

**130th session**

Geneva, 6-9 October 2025

Item 12(b) of the Provisional Agenda

**UN Regulation No. 169 (Event Data Recorders for Heavy-Duty Vehicles)**

 Proposal for Supplement 1 to the original version of Regulation No. 169 (Event Data Recorders for Heavy-Duty Vehicles)

 Submitted by the experts of the Informal Working Group on EDR/DSSAD[[1]](#footnote-2)\*

The text reproduced below was prepared by the experts of the Informal Working Group on EDR/DSSAD. It follows the work from the GRSG-TF-AVRS amending the UN Regulations under purview of GRSG in order to enable the application of those Regulations to vehicles equipped with an ADS. The modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

 **I. Proposal**

1. **Introduction**

*Insert new paragraph 0.5.,* to read:

“**0.5. Supplement 1 to the original version of this Regulation is introduced to take vehicles of categories X and Y into account, including vehicles which
 can be manually driven by a driver as well as can be operated by an ADS.**”

**1. Scope**

*Paragraph 1.1., footnote \*,* amend to read:

 "\* As defined in ~~Section 2 of~~ the Consolidated Resolution on the Construction of Vehicles (R.E.3)**,**  ~~(~~document ECE/TRANS/WP.29/78/Rev.~~7~~**8, para 2**~~)~~ –

 <https://unece.org/transport/vehicle-regulations/wp29/resolutions>"

*Paragraph 1.3.,* amend to read:

“1.3. The following data elements are excluded from the scope: Vehicle Identification Number (VIN), associated vehicle details, location/positioning data, information on ~~the~~ **a** driver **(if applicable)**, and date and time of an event.”

**2. Definitions**

*Paragraph 2.40.,* amend to read:

"2.40. "*Vehicle master control switch*" means the device by which the vehicle's on-board electronics system is brought, from being switched off~~, as in the case where a vehicle is parked without the user driver~~ **~~(if applicable)~~** ~~being present,~~ to normal operation mode”.

*Amend paragraph 5.3.1.2., to read:*

 5.3.1.2. Last Stop: Trigger shall be activated if any of the following applies:

(a) Vehicle speed is reported as 0 km/h for 20 s.

(b) While vehicle speed is reported as 0 km/h, and

i. parking brake system is applied, or

ii. vehicle master control switch is deactivated.

Re-activation of last stop trigger due to threshold criterion (a.) shall be disabled if the vehicle speed is not reported as 24 km/h or more for a minimum of 6s.

**“In case of threshold criterion (a.), the EDR may write the captured data in volatile memory only. The data from the volatile memory shall be written in the non-volatile memory if any other trigger [of paragraph 5.3.1.] occurs or the vehicle master control switch is deactivated.”**

*Paragraph 5.4.,* amend to read:

5.4. Survivability

5.4.1. The data elements listed in Annex 4 shall be retrievable in the format specified even after an impact. Therefore, event data recorders shall resist inertial loads which may occur during a vehicle crash and be mounted in the vehicle in a position of sufficient structural integrity to protect against physical damage due to front and side impacts that would prevent the retrieval of data. To demonstrate these capabilities, Option 1 or Option 2 applies at the choice of the manufacturer.

Option 1:

EDR’s shall withstand mechanical shocks at a severity level as specified in the component test of Annex 9C of the 03 or any later series of amendments to UN Regulation No. 100. The devices shall be connected to the test fixture only by the intended mountings provided for the purpose of attaching the event data recorders to the vehicle and in an orientation representative of the vehicle installation.

EDR device(s) shall be mounted in [the vehicle cab, ~~passenger~~ **occupant** compartment, or in] a position of sufficient structural integrity to protect against physical damage (mechanical integrity) that would prevent the retrieval of data at least in front and side impacts of a severity level corresponding to the mechanical shock requirements above. For positions outside the vehicle cab or/ ~~passenger~~ **occupant** compartment, the sufficient structural integrity shall be demonstrated to the technical service together with appropriate documentation (e.g. calculations or simulations).

Option 2:

The manufacturer demonstrates that data is retrievable even after an impact of a severity level set by UN Regulations Nos. 94 (Annex 3), 95 (Annex 4) or 137 (Annex 3).

*Annex 4,* amend to read:

 Annex 4

 Data Elements and Format

Table 1 - List of data elements [[2]](#footnote-3)

| Data element | Condition for requirement[[3]](#footnote-4) | Recording interval/time[[4]](#footnote-5) (relative to trigger event) | Data sample rate (samples per second) | Minimum range | Accuracy[[5]](#footnote-6) | Resolution | Data recorded for the following triggers |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Frontal Airbag system status11 | Mandatory | Event8 | N/A | N/A | N/A | Faulted, suppressed (~~passenger~~ **occupant**), deployed, not deployed | Supplemental restraint system |

 **II. Justification**

The Regulation is amended to account for vehicles equipped with an ADS.

1. \* In accordance with the programme of work of the Inland Transport Committee for 2025 as outlined in proposed programme budget for 2025 (A/79/6 (Sect. 20), table 20.6), the World Forum will develop, harmonize and update UN Regulations to enhance the performance of vehicles. The present document is submitted in conformity with that mandate. [↑](#footnote-ref-2)
2. Format requirements specified below are minimum requirements and manufacturers can exceed them. [↑](#footnote-ref-3)
3. "Mandatory" is subject to the conditions detailed in paragraph 1. [↑](#footnote-ref-4)
4. Pre-crash data and crash data are asynchronous. The sample time accuracy requirement for pre-crash time is -0.1 to 1.0 sec (e.g., T = -1 would need to occur between -1.1 and 0 seconds.) [↑](#footnote-ref-5)
5. Accuracy requirement only applies within the range of the physical sensor. If measurements captured by a sensor exceed the design range of the sensor, the reported element shall indicate when the measurement first exceeded the design range of the sensor. [↑](#footnote-ref-6)