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**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations**

**Working Party on General Safety Provisions**

**130th session**

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Item 12(a) of the Provisional Agenda

**UN Regulation No. 160 (Event Data Recorder)**

 Proposal for Supplement 1 to the 02 Series of Amendments to Regulation No. 160 (Event Data Recorder)

 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 0.4.,* to read:

“**0.4. Supplement 1 to the 02 series of amendments is introduced to take vehicles of categories X and Y into account, and ~~including~~ other vehicles which can be ~~manually driven~~ operated by a driver or ~~as well as can be operated by~~ an ADS.**”

**1. Scope**

*Paragraph 1.1., footnote 1,* amend to read:

 "1 As defined in ~~Section 2 of~~ the Consolidated Resolution on the Construction of Vehicles (R.E.3)**,**  ~~(~~document ECE/TRANS/WP.29/78/Rev.~~6~~**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: VIN, associated vehicle details, location/positioning data, information of ~~the~~ **a user** ~~driver~~ **~~(if applicable)~~**, and date and time of an event.”

**2. Definitions**

*Paragraphs 2.16., 2.23., 2.29., 2.37., 2.38., 2.55., 2.56., 2.58., 2.67.,* amend to read:

"2.16. "*Deployment time, frontal air bag*" means (for ~~both driver and front passenger~~ **front seated occupants**) the elapsed time from crash time zero to the deployment command or for multi- staged air bag systems, the deployment command for the first stage.”

"2.23. “*Far-side impact centre air bag deployment, time to deploy*" means the deployment time of an air bag between ~~driver and front seat passenger~~ **the ~~outer~~ front seated occupants**, relative to Time 0.”

"2.29. "*Lateral acceleration*" means the component of the vector acceleration of a point in the vehicle in the y-direction. The lateral acceleration is positive from left to right, from the perspective of the frontmost seat ~~driver~~ **~~(if applicable)~~** when seated in the vehicle facing the direction of forward vehicle travel.”

"2.37. "*Occupant size classification*" means, for front ~~passenger~~ **seated occupants**, the classification of an occupant as an adult and not a child, and for the driver **(if applicable)**~~,~~ the classification of the driver as not being of small stature as indicated in the data format.”

"2.38. *"Operational"* means that the system or sensor, at the time of the event, is active or can be activated/deactivated ~~by the driver~~ **~~(if applicable)~~**.”

"2.55. "*Time to deploy, pretensioner*" means the elapsed time from crash time zero to the deployment command for the safety belt pretensioner (for ~~both driver and front passenger~~ **front seated occupants**).”

“2.56. "*Time to deploy, side air bag/curtain*" means the elapsed time from crash time zero to the deployment command for a side air bag or a side curtain/tube air bag (for ~~both driver and front passenger~~ **front seated occupants**).”

"2.58. "*Time to nth stage*" means the elapsed time from crash time zero to the deployment command for the nth stage of a frontal air bag (for ~~both driver and front passenger~~ **front seated occupants**).”

"2.67. "*Y-direction*" means in the direction of the vehicle’s Y-axis, which is perpendicular to its X-axis and in the same horizontal plane as that axis. The Y-direction is positive from left to right, from the perspective of the principal direction of forward vehicle travel ~~frontmost seat~~ ~~driver~~ **~~(if applicable)~~** ~~when seated~~ ~~in the vehicle facing the direction of forward vehicle travel.”~~

*Paragraph 4.4.1., footnote 2*, amend to read:

"2 The distinguishing numbers of the Contracting Parties to the 1958 Agreement are reproduced in Annex 3 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev.~~6~~**8, Annex 3** –
 <https://unece.org/transport/vehicle-regulations/wp29/resolutions>"

*Annex 4,* amend to read:

 Annex 4

 Data elements and format1

Table 1

| *Data element* | *Condition for requirement1* | *Recording interval/time2 (relative to time zero)* | *Data sample rate (samples per second)* | *Minimum range* | *Accuracy3* | *Resolution3* | *Event(s) recorded for4* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ~~Safety belt status, driver~~ | ~~Mandatory~~ | ~~-1.0 sec~~ | ~~N/A~~ | ~~Fastened, not fastened~~ | ~~N/A~~ | ~~Fastened, not fastened~~ | ~~Planar~~~~Rollover~~ |
| ~~Safety belt status, front passenger~~~~(9)~~ | ~~Mandatory~~ | ~~-1.0 sec~~ | ~~N/A~~ | ~~Fastened, not fastened~~ | ~~N/A~~ | ~~Fastened, not fastened~~ | ~~Planar~~~~Rollover~~ |
| ~~Safety belt status, rear passengers~~~~(17)~~ | ~~Mandatory~~ | ~~-1.0 sec~~ | ~~N/A~~ | ~~Fastened, not fastened~~ | ~~N/A~~ | ~~Fastened, not fastened~~ | ~~Planar~~~~Rollover~~ |
| **Safety belt status (position x–y) (9)(17)** | **Mandatory** | **-1.0 sec** | **N/A** | **Fastened, not fastened** | **N/A** | **Fastened, not fastened** | **Planar****Rollover** |
| (9) "If recorded" means if the data is recorded in non-volatile memory for the purpose of subsequent downloading.(17) ~~List this element n times, once for each device in 2nd, 3rd, row.~~**This data element shall be recorded for all seating positions equipped with systems and sensors in accordance with paragraph 1.4. A separate row shall be added to the report for each seating position, and the positions shall be denoted as: x = seat row number, starting with 1 at the vehicle front; y = seat number, starting with 1 at the vehicle’s left side. For example, ‘position 1-1’ denotes the front leftmost seat and ‘position 1-2’ denotes the front second seat from the left.** |
| ~~Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, driver.~~ | ~~Mandatory~~ | ~~Event~~ | ~~N/A~~ | ~~0 to 250 ms~~ | ~~±2 ms~~ | ~~1 ms~~ | ~~Planar~~ |
| ~~Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, front passenger.~~ ~~(8)~~ | ~~Mandatory~~ | ~~Event~~ | ~~N/A~~ | ~~0 to 250 ms~~ | ~~±2 ms~~ | ~~1 ms~~ | ~~Planar~~ |
| **Frontal air bag deployment, time to deploy, in the case of a single stage air bag, or time to first stage deployment, in the case of a multi-stage air bag, front seated occupants. (8)** | **Mandatory** | **Event** | **N/A** | **0 to 250 ms** | **±2 ms** | **1 ms** | **Planar** |
| (8) List this element n times, once for each device. |
| ~~Frontal air bag deployment, time to nth stage, driver.~~ ~~(17)~~ | ~~Mandatory if fitted with a driver’s frontal air bag with a multi- stage inflator.~~ | ~~Event~~ | ~~N/A~~ | ~~0 to 250 ms~~ | ~~±2 ms~~ | ~~1 ms~~ | ~~Planar~~ |
| ~~Frontal air bag deployment, time to nth stage, front passenger.~~ ~~(16) (9)~~ | ~~Mandatory if fitted with a front passenger’s frontal air bag with a multi-stage inflator.~~ | ~~Event~~ | ~~N/A~~ | ~~0 to 250 ms~~ | ~~±2 ms~~ | ~~1 ms~~ | ~~Planar~~ |
| **Frontal air bag deployment, time to nth stage, front seated occupants. (9)(16)** | **Mandatory if fitted with a front seat occupants frontal air bag with a multi-stage inflator.** | **Event** | **N/A** | **0 to 250 ms** | **±2 ms** | **1 ms** | **Planar** |
| (9) "If recorded" means if the data is recorded in non-volatile memory for the purpose of subsequent downloading.(16) List this element n - 1 times, once for each stage of a multi-stage air bag system. |
| Side air bag deployment, time to deploy, ~~driver~~ **front seat, vehicle’s near ~~left~~ side** | Mandatory | Event | N/A | 0 to 250 ms | ±2 ms | 1 ms | Planar |
| Side air bag deployment, time to deploy, ~~front passenger~~ **front seat, vehicle’s far ~~right~~ side** | Mandatory | Event | N/A | 0 to 250 ms | ±2 ms | 1 ms | Planar |
| Side curtain/tube air bag deployment, time to deploy, ~~driver~~ **vehicle’s near ~~left~~** side | Mandatory | Event | N/A | 0 to 250 ms | ±2 ms | 1 ms | PlanarRollover |
| Side curtain/tube air bag deployment, time to deploy, ~~passenger~~ **vehicle’s far ~~right~~** side | Mandatory | Event | N/A | 0 to 250 ms | ±2 ms | 1 ms | PlanarRollover |
| ~~Pretensioner deployment, time to fire, driver.~~ | ~~Mandatory~~ | ~~Event~~ | ~~N/A~~ | ~~0 to 250 ms~~ | ~~±2 ms~~ | ~~1 ms~~ | ~~Planar~~~~Rollover~~ |
| ~~Pretensioner deployment, time to fire, front passenger.~~ ~~(9)~~ | ~~Mandatory~~ | ~~Event~~ | ~~N/A~~ | ~~0 to 250 ms~~ | ~~±2 ms~~ | ~~1 ms~~ | ~~Planar~~~~Rollover~~ |
| **Pretensioner deployment, time to fire, front seated occupants. (8)(9)** | **Mandatory** | **Event** | **N/A** | **0 to 250 ms** | **±2 ms** | **1 ms** | **Planar****Rollover** |
| ~~Seat track position switch, foremost, status, driver~~ | ~~Mandatory if fitted and used for deployment decision~~ | ~~-1.0 sec~~ | ~~N/A~~ | ~~Yes or No~~ | ~~N/A~~ | ~~Yes or No~~ | ~~Planar~~~~Rollover~~ |
| ~~Seat track position switch, foremost, status, front passenger~~ ~~(9)~~~~.~~ | ~~Mandatory if fitted and used for deployment decision~~ | ~~-1.0 sec~~ | ~~N/A~~ | ~~Yes or No~~ | ~~N/A~~ | ~~Yes or No~~ | ~~Planar~~~~Rollover~~ |
| **Seat track position switch, foremost, status, front seated occupants (8)(9).** | **Mandatory if fitted and used for deployment decision** | **-1.0 sec** | **N/A** | **Yes or No** | **N/A** | **Yes or No** | **Planar****Rollover** |
| ~~Occupant size classification, driver~~ **~~(if applicable)~~** | ~~If recorded~~ | ~~-1.0 sec~~ | ~~N/A~~ | ~~5th percentile female or larger.~~ | ~~N/A~~ | ~~Yes or No~~ | ~~Planar~~~~Rollover~~ |
| Occupant size classification, front ~~passenger~~ **seated occupant** (9). | Mandatory if fitted and used for deployment decision | -1.0 sec | N/A | **[5th percentile female or larger or]** 6yr old HIII US ATD or Q6 ATD or smaller | N/A | Yes or No | PlanarRollover |

 **II. Justification**

The Regulation is amended to account for vehicles equipped with an ADS.
References to “driver” and “passenger” are amended to “occupants”, where relevant.

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)