

# **IWG on EDR/DSSAD**

## **Status Report**

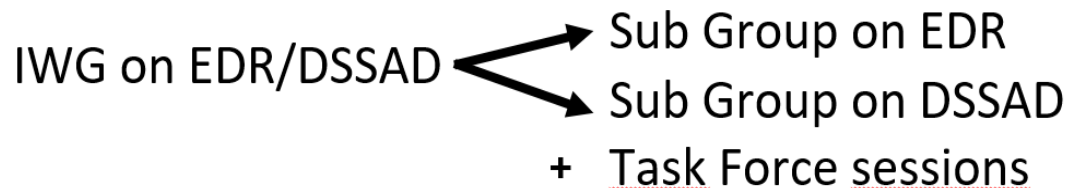
**March 2023**

# Background IWG on EDR/DSSAD

In accordance with the 'Framework Document on automated/autonomous Vehicles' (WP.29-178 June 2019):



The IWG shall develop draft proposals for Event Data Recorder (EDR) for conventional vehicles and automated/autonomous vehicles and for Data Storage System for Automated Driving (DSSAD).



Broad participation (CPs to the 1958 and 1998 Agreements, industry, accident reconstructionists, etc.)

# Activities

EDR	DSSAD
<b><u>Completed:</u></b>	
<ul style="list-style-type: none"> <li>EDR Performance Elements appropriate for Adoption in 1958 and 1998 Agreement Resolutions or Regulations. → UN Regulation 160.00/.01 on EDR</li> </ul>	<ul style="list-style-type: none"> <li>DSSAD requirements within UNR157 on ALKS</li> </ul>
<ul style="list-style-type: none"> <li>Supplement 1 to UN R160.00/.01</li> </ul>	<ul style="list-style-type: none"> <li>DSSAD Objectives/Functions</li> </ul>
<b><u>Current:</u></b>	
<ul style="list-style-type: none"> <li><b>Acceleration data Accuracy verification procedures (.../GRSG/2023/11 and /12)</b></li> </ul>	<ul style="list-style-type: none"> <li>DSSAD performance elements for ADS (development of DSSAD functional, triggering and data element specs)</li> </ul>
<ul style="list-style-type: none"> <li><b>EDR for Heavy Duty Vehicles (GRSG-125-07 and -08)</b></li> </ul>	<ul style="list-style-type: none"> <li>Review of DSSAD requirements for the extension of the lane change function in UNR157 on ALKS</li> </ul>
<b><u>Future:</u></b>	
<ul style="list-style-type: none"> <li>EDR performance elements for ADS</li> </ul>	<ul style="list-style-type: none"> <li>DSSAD performance elements for ADS</li> </ul>
<ul style="list-style-type: none"> <li>EDR Step 2, future and advanced req.</li> </ul>	

# Activities since GRSG-124

October 2022 – March 2023:

1 3-day hybrid IWG session.

10 virtual IWG sessions, including:

- Sub Groups on DSSAD,
- Sub Groups on EDR,
- Task Force on Data Elements.

2 expert groups sessions on ‘accelerometer accuracy’.

# State of play - DSSAD and EDR for ADS

Related to DSSAD the IWG:

- updated the review of national activities (“Inventory of best ADS storage practices” WP.29-188-06);
- working on a common ADS performance elements guidance document for both EDRs and DSSAD systems;
- close collaboration with FRAV/VMAD and SG3.

Related to EDR for ADS:

- Discussions within SG-DSSAD on data collection for ADS in a broader perspective. Later judge what particular elements are to be included in the DSSAD or in the EDR.

# State of play - Acceleration Data Accuracy

The current EDR documents include the data elements “lateral acceleration” and “longitudinal acceleration” with a  $\pm 10\%$  accuracy. It is unclear how to apply this accuracy tolerance.

Proposals ECE/TRANS/WP.29/GRSG/2023/11 and .../12 supplement the current EDR documents by:

- clarifying the accuracy tolerance by specifying that the  $\pm 10\%$  relates to the full range of the accelerometer, and
- in addition introducing a component test to verify the acceleration sensor accuracy.

**GRSG is invited to consider these proposals.**

# State of play - EDR for HDVs

The IWG developed proposals on EDR for Heavy Duty Vehicles (trucks and busses):

- 'UN Regulation on EDR for HDV'.  
**GRSG-125-07** amending, correcting and supplementing official document ECE/TRANS/WP29/GRSG/2023/13.
- 'Guidance document on EDR for HDV appropriate for adoption in 1958 and 1998 Agreement Resolutions or Regulations'.  
**GRSG-125-08** amending, correcting and supplementing official document ECE/TRANS/WP29/GRSG/2023/14.  
More consideration by the IWG on this document is necessary.

**GRSG-125-07: GRSG is invited to consider this proposal and the timeline for forwarding to WP.29.**

# State of play - EDR for HDVs

Brief explanation of the proposal:

- Heavy duty vehicle requirements based on:
  - EDR for light duty vehicles,
  - SAE J2728,
  - data, analyses, research from IWG delegates.
- Unique is triggering, how to trigger a crash event:
  - **acceleration trigger**: but, usually low delta-v (due to large weight disparity between HDV and LDV/VRU);
  - **safety system trigger**: but, HDVs often not equipped with SRS, etc.;
  - **last stop trigger**: captures an event when the vehicle has come to a complete stop for a period of time, but, data is collected of many non-crash related events.



# State of play - EDR for HDVs

Brief explanation of the proposal, yet undecided:

- Alternatively to the EDR-HDV requirements, manufacturers may comply with the EDR-LDV requirements for vehicles with GWV up to [12t].
- Inclusion of [last stop trigger].
- Annex on data elements and format, including considerations on:
  - for privacy reasons, data elements related to location and data/time are excluded, it is difficult to tie a captured data set:
    - to the vehicle. National level requirements on VIN possible,
    - to the actual event. Elements like engine hours and ignition cycle may (partly) compensate this.
  - associated definitions.
- Further details / fine tuning.

**The IWG will continue to work on EDR for HDVs and prepare an informal for GRSG in October resolving all these open issues.**

# State of play - EDR Step 2

The IWG already identified some issues that may need to be part of the 'Step 2' future and advanced requirements.

These were related to additional data elements, new triggering criteria (e.g. 'jerk'), durability provisions and test procedures in particular reinforcing data survivability requirements including fire resistance and water penetration.

Soon, the IWG will do an up-to-date inventory of all items to be considered part of EDR Step 2 for which new requirements may need to be developed.

The result of this inventory will be submitted to GRSG in October for consideration and commentary.

# IWG on EDR/DDSAD deliverables/timelines

GRSG Programme of Work, on EDR:

(ECE/TRANS/WP.29/2023/1/Rev.1 – WP.29-189-15)

**Table 6 Subjects under consideration by the Working Party on General Safety Provisions (GRSG)**

Title	Tasks / Deliverables	References	Timeline (GRSG adoption)	Timeline (WP.29 adoption)
EDR	EDR performance elements for ADS		Oct 2023	June 2024
EDR	Common technical elements document for creation of a UN regulation on EDR for heavy duty vehicles (trucks and busses)	<b><u>GRSG-125-07</u></b> (UN Regulation)  GRSG-125-08 (guidance document)	[Mar 2023] [Oct 2023]	[Nov 2023] [Mar 2024]
EDR	EDR Step#2 - consideration of amendments to Step#1 requirements		Oct 2023	Mar 2024

**Thank you for your attention!**