Submitted by the Co-Chairs of
the IWG on EDR/DSSAD

VMAD (SG3) Workshop day #2
24 March 2022

Activities of IWG on EDR/DSSAD

March 2022

Mission of the EDR/DSSAD IWG

ToR of the IWG (ECE/TRANS/WP.29/1147 Annex VII)
(adopted in the 178th WP.29 in 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) for automated/autonomous vehicles. These categories shall be understood as systems collecting and storing a determined range of vehicle data, including:

a. Information related to collisions valuable for accident reconstruction (EDR);
b. The status of the automated/autonomous driving system and the status of the driver (DSSAD).

To this effect, the IWG shall address the following issues:

a. Define the scope and specific objectives of and differences between EDR and DSSAD,
b. Define EDR and DSSAD requirements.

In particular, the IWG will consider defining the categories of data recorded, the events triggering recording, as well as technical specifications in terms of performances of such systems, such as the required endurance, accessibility, storage capacity or the specific security requirements, as well as the required privacy and data protection by design features.

Activities of the IWG To Date

- During the 2 years and 9 months since the first meeting in July 2019 to date, 56 meetings have been held, including
  - 16 IWG meetings
    - 2 additional sessions not counted in the count
    - 4 co-hosted with SG
  - 20 SG EDR meetings
  - 7 SG DSSAD meetings and
  - 15 EDR-related TF meetings

Projects Completed To Date

Comparison between EDR and DSSAD (WP29-179-19)
(Reported with a note that “the document is still work in progress” in Nov. 2019)

Items		EDR for conventional vehicles	EDR for ADs	DSSAD (L3-L4)
Scope (categories of vehicles in the text)		Step1: Passenger cars and light duty vehicles (Vehicle categories according to R.E.3: M1, N1) Step 2: Heavy duty vehicles (Vehicle categories according to R.E.3: M2,M3,N2, N3)		Step1: Passenger cars and light duty vehicles of automation level 3 or 4 with ALKS Step 2: Heavy duty vehicles
System				
	Purpose (why do the contracting parties want to introduce this function into the vehicle?)	Accident analysis		Research, monitoring, liability, legal responsibility
	…	…		…

It was noted in the January 2022 GRVA that the above paper, prepared two years ago, needs to be revised and will be discussed in the IWG.

Projects Completed To Date

DSSAD requirements (within ALKS (UNR157))
Adopted in the 181st WP.29 in June 2020

Amendments are under discussion; expected to be adopted in the June session of WP.29.

8. Data Storage System for Automated Systems

- 8.1. Each vehicle equipped with ALKS (the system) shall be fitted with a DSSAD that meets the requirements specified below. The fulfilment of the provisions of paragraph 8 shall be demonstrated by the manufacturer to the technical service during the inspection of the safety approach as part of the assessment to Annex 4.
  This Regulation is without prejudice to national and regional laws governing access to data, privacy and data protection.
- 8.2. Recorded occurrences
- 8.3. Data elements
- 8.4. Data availability
- 8.5. Protection against manipulation
- 8.6. Availability of DSSAD operation

Projects Completed To Date

EDR requirements (UNR 160 00/01 series)

Adopted in the 183rd WP.29 in March 2021, and
Amendments adopted in the 186th WP.29 in March 2022

- WP.29 183rd session:
  - adopted the proposals for a new UN Regulation on EDR and 01 Series of Amedments to it.
    (UN Reg. 160 on EDR entered into force 30 Sept. 2021)
- WP.29 186th session:
  - adopted the proposals for amendments on 00/01 series of EDR
    - editorial amendments on definitions and main text
    - editorial amendments to range and resolution for several data elements etc.

Projects are ongoing

- EDR Performance Elements for ADS:
  - EDR for ALKS (moved to GRVA, proposal on amending R157 potentially adopted by 187th WP.29 in June 2022)
  - EDR for ADS (part of SG-DSSAD, first work on data collection for ADS in general, in cooperation with FRAV and VMAD)
- EDR for Heavy Duty Vehicles
- EDR ‘Step 2’ (future work on new and advanced requirements)

Projects are ongoing

EDR and DSSAD in GRVA in the latest Programme of Work
(ECE/TRANS/WP.29/2022/1)

Table 5
Subjects under consideration by the Working Party on Automated / Autonomous and Connected Vehicles (GRVA)

Title	Tasks / Deliverables	References	Allocations / IWGs	Timeline	Initiator	Comments
Data Storage System for Automated Driving vehicles (DSSAD)	Inventory of best ADS storage practices. **DSSAD performance elements for ADS**	Framework document for automated/autonomous vehicles ECE/TRANS/WP.29/2019/34 as revised	GRVA, IWG on EDR/DSSAD	November 2022 **June 2024** (WP.29)	WP.29	Ongoing
Event Data Recorder (EDR)	**EDR Performance Elements for ADS**	Framework document for automated/autonomous vehicles ECE/TRANS/WP.29/2019/34 as revised	GRSG in cooperation with GRVA, IWG on EDR/DSSAD	**June 2024** (WP.29)	WP.29	Ongoing

Projects are ongoing

EDR in GRSG in the latest Programme of Work
(ECE/TRANS/WP.29/2022/1)

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)	Comments
Event Data Recorder	Complete EDR Common Performance Elements for 1958/1998 Contracting Parties Corrections/ amendments to existing EDR R160.00 and R160.01	ECE/TRANS/WP.29/2019/34/Rev1. ECE/TRANS/WP.29/2022/25/Rev.1 ECE/TRANS/WP.29/2022/26	Oct. 2022 Oct. 2021	March 2023 March 2022	IWG reporting both to GRSG and GRVA
Event Data Recorder	**EDR performance elements for ADS**		Oct 2023	**June 2024**	
Event Data Recorder	Common technical elements document for creation of a UN regulation on EDR for heavy duty vehicles (trucks and busses)		Oct. 2022	Mar 2023	
Event Data Recorder	EDR Step#2 - consideration of additional technical provisions		Oct. 2023	Mar 2024	

Collaboration with FRAV/VMAD

The IWG has been considering the requirements on data recording, consistent with the activities of FRAV/VMAD.

- Initial Feedback from FRAV to EDR/DSSAD Concerning Data Collection for ADS vehicles (FRAV-18-07, 9th September 2021)

  Category A: Data elements for crash analysis applicable to all vehicles

  Category B: Data elements for crash analysis only applicable to ADS vehicles

  Category B1: all ADS vehicles / Category B2: ADS user interactions where applicable

  Category C: Data elements relevant to general safety performance

  Category C1: all ADS vehicles / Category C2: ADS user interactions where applicable

- Transitions of Control: ADS Data Elements Illustration (FRAV-25-10, 15-16 Feb. 2022)
  - TOC sequences differ depending upon conditions and user responses.
  - Objectives and use of data differ between EDR and ISMR
  - The critical need is to ensure consistency and alignment.

- The EDR/DSSAD IWG would like to consider how to take into account the list of occurrences to be monitored that has been identified by VMAD/SG3 in its consideration of DSSAD (and EDR for ADS) data elements.

Collaboration with FRAV/VMAD

- The table below shows the recommendation of data categories by FRAV, and the ToC issue raised by FRAV can be placed in the Lv.3 column and the data related to ISMR in the general safety performance row, respectively.
- Of course, there may be other areas of collaboration with FRAV and VMAD, and it remains to be seen whether this data categorization is the best or not.
- The important thing is to decide on data elements communicating with both IWGs.