**DRAFT AGENDA**

**19th meeting of the Informal Working Group (IWG)
on Event Data Recorder (EDR) and Data Storage System for Automated Vehicle (DSSAD)**

14-16 February 2023

Paris, France (OICA offices)

(Secretary Notes in Red)

**NOTE**

In-person attendance is limited to 45 delegates maximum.

To get on the list please RSVP to the secretary at sschmidt@autosinnovate.org

Zoom link for remote participants on back of document

**Time:**

 Tuesday 14 February 9:30 – 17:30

 Wednesday 15 February 9:30 – 17:30

 Thursday 16 February 9:30 – 12:30

**Venue:** Venue:

OICA - International Organization of Motor Vehicle Manufacturers

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**Contact:** Mr Olivier Fontaine

**Chairpersons**:

The Netherlands: Mr. Tim Guiting

Japan: Mr. Hidenori Nonaka

 USA: Mrs. Jane Doherty

**Secretariat**: OICA Mr. Scott Schmidt

1. **General:**
	1. **Welcome and Introduction**
	2. **Anti-trust rules**

Antitrust guidance was provided to the industry delegates.

* 1. **UNECE Wiki page requirements/limitations**

Chair reinforced to the delegates that documents submitted to be posted need to be free of any unauthorized copyrighted content.

* 1. **Approval of the report of the previous session**

Document: SG-DSSAD-12-01-Agenda Joint 12th SG-DSSAD & 18th EDR-DSSAD IWG conference call meeting Secretary notes rev1

 SG-DSSAD-13-01 – Agenda 13th SG-DSSAD conference call meeting Secretary notes

 SG-EDR-33-01-Agenda 33rd SG-EDR Triggers & Data Elements Conference Call Meeting Secretary Notes

Secretary notes were approved as presented.

* 1. **Approval of the agenda**

Document: EDR-DSSAD-19-01 Agenda 19th EDR-DSSAD IWG

Agenda approved as presented.

1. **Development of DSSAD functional and data element specifications.**
	1. **Specification development**

Document: SG-DSSAD-11-02 DSSAD worksheet

 EDR-DSSAD-19-02 DSSAD Trigger-Data Element Proposal Comparison Matrix

 EDR-DSSAD-19-06 German ADS Act

 EDR-DSSAD-19-07 German ADS Ordinance

 EDR-DSSAD-19-08 VIN\_chassisNo.\_JP

Chair opened the discussion by briefly reviewing the scope as well as primary and secondary performance elements that the SG-DSSAD will be developing.

Germany noted that that English translations of the German ADS Act and regulatory Ordinance have been issued and will be forwarded to the Secretary for posting and distribution. It was also noted that DSSAD Trigger-Data Element Proposal Comparison Matrix column for Germany was updated to reflect the contents of the actual Act and Ordinance and place the specifications in that appropriate category.

Vehicle Identification/VIN:

Japan delivered a brief presentation highlighting that they cannot support reporting the fill VIN but us a concept called the “Chassis number” that provides some link from the data to the vehicle. As such they recommended that the IWG consider either a truncated VIN or “chassis” number.

It was also noted that Germany supported using the full VIN for vehicles without a human driver (L4 -L5), while using a truncated VIN for L3 (due to data protection requirements when humans are driving the vehicle).

UK position was that it was important to tie the vehicle to an event of interest (especially when the event does not trigger an EDR record). As such they support the recording of the full VIN and vehicle location.

Chair indicated that this first version would need to be refined to the “strict essentials”/”bare bones” and thus would likely reduce down to a truncated vin or chassis number.

Agreement was not reached and CP’s to consider this topic further at the next meeting.

Time Stamp Data:

SG has agreement on the data element and decided to move it from “Basic Information About Vehicle” category to the “Information about Operation of ADS”

Vehicle Position Data:

Some contracting parties determined that in some use cases it could be appropriate but not in all cases. However, there was not agreement on inclusion or any universally appropriate language.

Accumulated Miles Data:

SG spent time discussing what measure of exposure would be the most appropriate (i.e., Odometer? Miles in ADS mode total? or how many miles in an ADS “trip”). Alternatively, it was suggested that “operating time” could also be a measure to consider. It was also suggested that the SG review input from VMAD. In general EC/DE provisionally supported recording some form of these data while the US and OICA did not express support. CPs supporting inclusion of accumulated miles data noted an interest in determining how many incidents per mile, as an example. The US noted that many of the proposed safety calculations made from accumulated miles could be misleading and subject to gaming.

No agreement was reached with more discussion/information needed, including the safety purpose.

Vehicle Heading:

SG felt that this data element was more appropriate for consideration for EDR-ADS purposes and thus was agreed not to include in DSSAD.

Vehicle Connectivity Failure Data:

There was some discussion about exactly what the data element was intended to record that would not already be captured by the ADS Failure Mode data element. If it has more than one purpose, the data element should be split to make that clear (and not conflate purposes).

In the meantime, OICA was tasked to provide a recommendation given the different purposes discussed.

Power Supply Data:

It was clarified that this was not specifically focused on propulsion power, but more generally the vehicle system’s (low voltage) power supplies. OICA indicated that this would also be covered under the system failure data element.

Reference Speed Data:

It was generally felt that this data element was more appropriate for consideration for EDR-ADS purposes and would not be included in DSSAD. However, DE still considers this relevant for DSSAD to tie to ODD compliance, but it would need to be tied to specific trigger. More discussion needed to resolve.

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* 1. **R157 Impact of different/regional requirements for DSSAD storage duration.**

OICA to provide further considerations into potential solutions.

Document: EDR-DSSAD-19-09 OICA Revised Presentation on Harmonization of R157 Storage Duration

SG was generally sympathetic to OICA’s concerns. However, some of the CP’s indicated that they did not have any direct influence over national legislation, and that national legislation took into account certain “statute of limitation” period considerations/constraints (which differ between regions).

However, there was a desire to get a better understanding of the specific cost burdens associated with complying with the different storage durations. Thus, OICA was tasked to provide more information regarding their proposed Max/Min period as well as some overall/aggregated sense of the cost burdens.

1. **Review of UK privacy considerations by use case**

Document: EDR-DSSAD-19-04 UK DSSAD and personal data

In the UK presentation they highlighted the fact that the privacy concerns are situational and that the DSSAD should record the data, but the privacy limits would be imposed on retrieval and subsequent storage/use.

Their main conclusions were:

* Privacy concerns refer to how the data is used not whether the DSSAD collects it in the first place
* We should not discount a particular data element if it would be useful for either use case
* The purpose of the data when it is used will determine whether it must be anonymised.

In the subsequent discussion there were concerns about the practicality of providing different “retrieval codes” to control the amount/type of data that could be downloaded for different purposes. It was felt that these codes would be very difficult to control.

Another option was to develop a “data center” concept to control the usage of the data. This concept raised questions about who would control/administer the data center and foot the cost for it.

No decisions/resolutions reached at this meeting.

1. **Other presentations**

No other presentations were delivered.

1. **Development of EDR specifications for heavy duty vehicles**

Results of these discussions are captured in the following worksheets. Revisions to the previous GRSG proposals that have been agreed upon are shaded in green.

SG-EDR-34-02 ECE-TRANS-WP.29-GRSG-2023-aae.docx compiled worksheet

SG-EDR-34-03 ECE-TRANS-WP.29-GRSG-2023-zze.docx compiled worksheet

* 1. **Scope**

Document: Updated OICA proposal on including alternate compliance with R160 for vehicles up to a certain weight.

In the regulation document “zz”, section 1.1 was amended to remove reference to the 98 agreement and category 1 and 2 vehicles. OICA clarified that the reference to R.E.3. at the vehicle categories needs to be included.

In section 4.1 of the same document, the OICA proposed scope modifications (with some textual “tweaks”) was agreed except for the 12t weight limit. This remains in brackets pending more justification/discussion.

In the common elements document “aa”, the OICA proposed scope modifications (with some textual “tweaks”) was agreed except for the 12t weight limit. This remains in brackets pending more justification/discussion.

* 1. **Event triggers and data elements**
		1. **Triggered event scenario matrix**

Document: SG-EDR-32-04 Triggered Event Scenario Matrix (updated with CP input)

 EDR-DSSAD-19-05 FKA-TRL EDR Trigger Analysis

Secretary indicated that he has not received any further comments or updates to the scenario matrix.

TRL presented the results of its analysis of the SAE HD EDR triggers which resulted in a proposal for an acceleration threshold of 3.25 m/s2 and time threshold of 0.7 seconds.

* + 1. **Review and update GRSG HD EDR proposal documents (both triggering and data elements)**

Document: EDR-DSSAD-19-03 ECE-TRANS-WP.29-GRSG-2023-aae.docx compiled worksheet rev 1

Section 2. Definitions - SG indicated that there were several missing/incomplete definitions. In addition, since blind spot detection was removed that definition could be deleted. OICA was tasked to provide recommendations for the incomplete/missing definitions. EC was tasked to generate a definition for “collision detection system”. SG Agreed that the definitions may need to be updated once the discussions on data elements are completed.

Data Capture – SG agreed to add text, as currently in R160, to the regulation document (only) specifying that “*The EDR shall record the captured data in the vehicle and this data shall remain in the vehicle subject to the provisions of paragraph [reference to overwriting], at least until they are retrieved in compliance with national or regional legislation, or they are overwritten in compliance with paragraph [reference to overwriting*].”

Section 3.3.1.1. Sudden Deceleration - Based on TRL presentation EDR-DSSAD-19-05, SG agreed on the following text/revisions: *“Change in longitudinal vehicle velocity ~~between~~ ~~8.0~~* ***greater than 11.7*** *km/h/s ~~and 22.5 km/h/s~~ and persists beyond that threshold for at least 0.****7****~~5~~ seconds.”*

Section 3.3.1.2. Last Stop – SG agreed to the first sentence including the removal of the parenthetical clause with the 15 second wait time: *“The vehicle speed is reported as 0 ~~(which may wait for 15 seconds or less after)~~.”* Wait time provisions were moved to section 3.3.2.1.

However, there was extensive discussion regarding the recurrence specification. There was a proposal to consider using distance instead of time. However, no agreement was reached, and this section remains in brackets. EC offered to make a written proposal for using distance as a potential alternative recurrence specification.

Section 3.3.1.3., Active or passive safety system trigger table – It was agreed to include “(if fitted)” in the system column title to further clarify that these system triggers only apply to systems that are actually fitted on the vehicle.

For the Safety Restraint System, the SG agreed to revise the title to read “Occupant Restraint System” and to trigger on “Deployment command of a restraint device”.

For the Antilock Braking System, the SG agreed to trigger on “System intervention”

For the Automatic Emergency Braking system, the SG agreed to add the following in parenthesis to the system title “(including pedestrian/cyclist if equipped)”. The SG also agreed to trigger on “System intervention”.

The SG agreed to remove Blind Spot Warning from the table as a trigger.

EC proposed to add triggers for Vulnerable Road User Secondary Safety System and Collision detection system. DE noted that Collision detection system was different from AEB in that it is defined as a system that includes lateral control. Industry representative objected to inclusion of VRU secondary safety system as a trigger, stating that no heavy vehicles were equipped with such a system. EC stated its intent to be forward thinking with this regulation. Since the SG could not reach consensus to add these triggers they were put in brackets for more discussion/justification. DE asked for time on the agenda at the next SG meeting to provide evidence supporting the addition of the vulnerable road user secondary safety system and collision detection system trigger.

Finally, OICA expressed some concern that system intervention could have various levels of intervention and that a strict interpretation could result in significant false positive triggered event recordings. As such, OICA offered to develop a definition of “system intervention” or a specific paragraph in the specifications” that permits manufacturer discretion on what constitutes a “system intervention” for event triggering purposes. It was further suggested that OICA draft language to this effect to also be added to section 0 (Forward).

Section 3.3.2 – SG agreed to the following revision: “Conditions for ~~triggering locking of data~~ **recording to non-volatile memory and locking of data**.”

Section 3.3.2.1 was agreed to be modified as follows: **In case of the last stop trigger,** ~~writing to non-volatile memory for the last stop trigger may be delayed by~~  **data shall be written to non-volatile memory** only if **the vehicle speed is reported as 0 for** ~~up to~~ [~~15~~ **20** seconds] **or longer, or** as part of key-off shutdown process whichever comes first. ~~The write of last stop shall not happen unless the vehicle speed reached a speed of 24.0 km/h (14.9 mph) or more for a minimum of 6 seconds since the last write. However, in case of Power or Communication failure (3.3.3), data recording is not needed~~

China proposed to the extension of the wait time from 15 to 20 seconds. It remains in brackets pending consideration and agreement at the next SG meeting.

Section 3.3.2.2 was added and agreed upon as follows: **In all the cases where either a ~~non-reversible~~ occupant restraint system or a vulnerable road user secondary safety system is deployed, the memory for the event shall be locked to prevent any future overwriting of the data by subsequent event.**

~~Writing to non-volatile memory for the last stop trigger may be delayed by up to 15 seconds or as part of key-off shutdown process whichever comes first. The write of last stop shall not happen unless the vehicle speed reached a speed of 24.0 km/h (14.9 mph) or more for a minimum of 6 seconds since the last write. However, in case of Power or Communication failure (3.3.3), data recording is not needed.]~~

Section 3.3.3. Conditions for establishment of time zero - SG agreed to modify this provision as follows: “Time Zero is established by the occurrence of any of the above triggers ~~whereby the last stop time zero shall by the time when speed is reported as 0~~.”

SG agreed to add a new section (3.3.4 in current draft) that incorporates the overwriting provisions that are currently in R160.

Annex 1 - Data Elements:

Obsolete text between the Data Elements table title and table was deleted since it is captured in the main requirements section.

OICA indicated that the data recording parameters be kept at 2 samples per second, recording 5 seconds of data and writing to 3 slots of non-volatile memory buffer. The reason for limiting the non-volatile memory buffer to 3 slots is that for 2026 New Type regulatory implementation there are not any current ERD systems that have more than 3 slots.

With respect to recording time interval, the NL indicated that a larger recording interval than for light duty EDR is necessary as the event is not necessarily triggered directly by a collision. Therefore, an interval of -10 to +10 sec should be considered.

EC noted that the SAE recommended recording interval is -15 to +15 seconds for a total recording time of 30 seconds. However, they believe that a longer precrash recording time is beneficial and thus recommended -20 to +10 seconds, keeping the total recording time the same as SAE.

OICA noted that the SAE specifications were only recommendations, and they are typically not adhered to completely by each OEM.

DE indicated that lead-time could be considered but would need a technical analysis to justify it.

OICA indicated that the memory constraints were a function of the number of data element, the recording frequency, and number of non-volatile memory buffer slots. As such it was suggested that it is premature to discuss what is practicable until the number and type of data elements are determined.

SG agreed to modify the “Event(s) recorded for” column title to read “Data recorded for the following triggers”. The SG also agreed to revise the last column of the data elements, except for the occupant restraint related data elements, HD EDR Unit Software Part #, Vehicle Make, and Accident emergency call system status, to state: “All 3.3.1 triggers”. The occupant restraint system data elements will state: “Occupant restraint system (planar events)” except for the Roll Rate data element which states: “Occupant restraint system (rollover events)”. The “Accident emergency call system status” data element will simply state “Occupant restraint system”.

Event Data Recording Complete element was approved without modification to the format (except last column detailed above).

Engine Hours, Odometer, and Ignition cycle data elements were discussed together with respect to the ability to tie the recorded data to a relevant event. SAE indicated that there should be either odometer or engine hours recorded. EC preferred engine hours while OICA supported recording odometer. US did not support either engine hours or odometer. While the EC preferred engine hours it could accept Ignition cycles. No agreement reached – further discussion/consideration needed.

HD EDR Unit Hardware Part# and HD EDR Unit Software Part # data elements were approved with a footnote indicating that “If serial number traceability is integral to part # - it does not need to be reported.

Vehicle Make/Model or VIN/truncated VIN was discussed. EC advocated that for the EU market to combine make/model in one element to record type-variant-version code according to Regulation (EU) 2018/858, Annex I, Part B. Since this was not acceptable to other CP’s it was decided that these data elements would be subject to national legislation and not included in this document.

* 1. **Data Survivability**

Section 3.4 Survivability – EC proposed this section using language from the R157 DSSAD survivability provisions. Even tough this language was accepted by OICA for R157, there were some questions regarding the applicability of the crash test requirements and what documentation would be needed for section 3.4.1(b). OICA offered to consider these provisions further and provide recommendations. It was noted that if modifications were made to these provisions, the SG should propose similar modifications to R157.

SG agreed to add a new section (3.4.2 in current draft) covering power failure under the proposed survivability (3.4) section.

1. **R160 acceleration data accuracy verification procedure transition requirement implementation plan**

Chair indicated that the subject documents have already been submitted as a “supplement” to R160. If OICA needs to add transitional provisions, it will need prepare an informal document for the next GRSG to add the transitional provisions and that endorsement of the proposal may be delayed until the October GRSG meeting.

1. **Information on CP HD EDR implementation**

Canada reported that based on its 2018 feasibility study conducted by Mecanica, it was in the process of developing a “best practices” guide that will be available this year. This will be followed up with a more formal guidance document that is expected to be aligned with the UNECE work in the winter of 2023.

1. **Other Business**

Korea was invited to present its presentation on light-duty EDR fire resistance at the upcoming March 23rd, 2023, meeting.

1. **List of action items.**
* OICA was tasked to provide a recommendation for DSSAD vehicle connectivity failure data element given the different purposes discussed.
* With respect to its concerns regarding DSSAD storage durations differences, OICA was tasked to provide more information regarding their proposed Max/Min period as well as some overall/aggregated sense of the cost burdens.
* OICA was tasked to provide recommendations for the incomplete/missing HD EDR definitions.
* EC was tasked to generate a definition for “collision detection system”.
* DE asked for time on the agenda at the next SG meeting to provide evidence supporting the addition of the collision detection system trigger.
* OICA offered to develop a definition of “system intervention” or a specific paragraph in the specifications” that permits manufacturer discretion on what constitutes a “system intervention” for event triggering purposes. It was further suggested that OICA draft language to this effect to also be added to section 0 (Forward).
* Secretary was tasked to send out a Doodle poll to identify suitable dates for scheduling future data element task force conference call meetings.
1. **Dates and venues of next meetings**

SG-EDR-34 & EDR/DSSAD IWG #20 February 28, 2022, 7am (3 hrs) (will focus on EDR)

SG-EDR-35 & EDR/DSSAD IWG #21 March 23, 2022, 7am (3 hrs)

SG-EDR-36 April 18, 2022, 7am (2 hrs)

SG-DSSAD-14  April 20, 2022, 7am  (2hrs)

Secretary was tasked to send out a Doodle poll to identify suitable dates for scheduling future data element task force conference call meetings.

SG agreed to schedule its next “in-person” IWG meeting in September (6-8 – tentative dates subject to venue availability) in either Japan or the United States.