

DRAFT REPORT

2nd meeting of the Informal Working Group (IWG) on Event Data Recorder (EDR) and Data Storage System for Automated Vehicle (DSSAD)

Held on 18-20 September 2019,
Geneva (Palais des Nations – Room IX)

Chairmen:

The Netherlands:	Mr. Tim Guiting
Japan:	Mr. Tetsuya Niikuni
USA:	Mrs. Jane Doherty

Secretariat: OICA

1. Welcome and Introduction

The delegates and experts introduced themselves.

2. Approval of the report of the previous session

Documents: EDR-DSSAD-01-11 (Chairs)
Secretary email dated Thursday 5 September, 3:24 pm CEST, titled “*Notes from 1st EDR/DSSAD Skype meeting: preparatory to the 2nd meeting*”

The minutes of the 1st session were adopted with no change.

Minutes of the 5 Sept Skype meeting: D was grateful for these minutes and requested that these are distributed as widely as possible. Then the minutes were adopted with no change.

3. Approval of the agenda

Document: EDR/DSSAD-02-01-Rev.2 (Chairs)

The agenda was adopted with the addition of documents EDR-DSSAD-16 and 17 (EC)

4. Reminder for the scope of 1958&1998 Agreements

Document: EDR/DSSAD-02-03 (Chairs)_Reminder for principles of Agreements

The Chair presented the document EDR-DSSAD-02-03.

The USA pointed out that the exercise for the time being should be to collect elements common to the different parties, in particular with regard to the 58 Agreement and 98 Agreement approaches.

The UNECE Secretariat reminded the content of the EDR/DSSAD terms of reference (ECE/TRANS/WP.29/1147, Annex VII). He referred to the framework document (WP.29/2019/34 & Rev.1), that was the basis at WP.29 to extract the terms of reference and rules of procedure for the EDR/DSSAD informal group. He stressed that the terms of reference mention that the outcomes should be “Agreement neutral”, i.e. workable in both a Type Approval and Self Certification environment. In addition, the documents should be sent to the Secretariat at the latest 5 working days before the meeting. The UNECE Secretary in addition mentioned the framework document and its deadlines (i.e. November 2019 WP.29 session for providing the identification of differences between

DSSAD and EDR, March 2020 WP.29 session for providing requirements for DSSAD dedicated to ALKS, and November 2020 WP.29 session for providing requirements for EDR).

The Chair of GRVA pointed out that the terms of reference were drafted so as to have uniformity between the groups subsidiaries to GRVA. Yet the GRVA Chair stressed that the EDR/DSSAD informal group can be creative in the way to reach the targets.

The informal group endorsed these statements and the Chair committed to adequately report back to GRVA and GRSG at their next sessions.

5. Comparison table EDR/DSSAD

Document: EDR-DSSAD-01-07-r2 (CLEPA-OICA)
 Secretary email dated Thursday 5 September, 3:24 pm CEST, titled “*Notes from 1st EDR/DSSAD Skype meeting: preparatory to the 2nd meeting*”
 WP.29/2019/34
 EDR-DSSAD-02-06 (J)
 EDR-DSSAD-02-08 (FIA)
 EDR-DSSAD-02-10 (FSD, EVU, DEKRA)
 EDR-DSSAD-02-17 (EC)

The Chair tabled the document EDR-DSSAD-02-18, showing the simplified position of each party about the purpose of EDR and DSSAD. He stressed that the group seeks consensus on the purpose of both EDR and DSSAD.

The group agreed that the outcomes of the debate should only address the fundamental differences between EDR and DSSAD. Therefore, the items in the table where the requirements are the same for both systems should be deleted, while the work item should remain in the agenda for the group.

EDR

The Chair questioned whether looking for the legal responsibility should be one purpose of EDR.

D: reconstruction only (responsibility should be addressed at national level)

USA: preferred the term “crash” to “accident, since “accident” implies the intent of the driver (agrees that responsibility should be addressed at national level).

EVU: accepted to delete responsibility, yet preferred “accident reconstruction”

Conclusion: “accident analysis”

DSSAD:

EC: purpose can go beyond the status (driver vs. ADS), i.e. monitoring systems linked to the automated driving.

Chair: we have an assignment from ACSF to focus on ALKS.

OICA: acknowledged the wish of monitoring the different systems, but stressed the need to well discriminate the different systems. Pointed out that DSSAD is not dedicated to the monitoring of different systems. Other systems should have another name.

EC: keen to keep in mind the other possible use of the system.

USA: agreed that focus is on ALKS at this time.

OICA clarified that the 2 purposes are

- who from the driver of the system was driving, and
- was there any take-over request (from the driver or from the system).

The expert also pointed out that DSSAD is to help Industry improving the system. Determining the legal responsibilities should be in the hands of a judge, not from the DSSAD.

D suggested that after the decision is made, then we should establish a definition.

China: after some enquiry amongst the OEMs in China, seems the purpose is mainly to find back the responsibility, then as a second priority for having improved system.

J: DSSAD is mainly for improving the systems.

F: clarified the responsibility in case of an event. But the purpose of a regulation is to define the technical requirements about the data to be made available. “AD system activation status” is a good way forward.

OICA: “clarifying the interactions between the system and the driver.”

USA on a legal point of view (definition of “interaction”) preferred AD activation status, rather than using terms focused on human behaviour (activity or inactivity)

The Chair proposed to agree on “AD activation status”

The EC found important to collect some other information on the assistant systems. OICA stressed that the DSSAD can detect what happened, but cannot demonstrate who is responsible of the accident.

F proposed “AD operation status”

Storage of status of operation or request of automated activation

OICA: this does not cover the driver overriding; hence suggest “interaction”

Conclusion: “AD system operation status”

The group agreed to exchange the position of the parties line by line.

What it shall/should not do

FIA supported the OICA proposal per document EDR/DSSAD-01-02-Rev.2

EC questioned the OICA proposal: “detecting who is driving” should not be in the column EDR for AD since the GSR may request the EDR to provide data on who is driving.

OICA clarified the technical background behind EDR and DSSAD: the 2 functions are different but may be or not be different devices. For data collection, it is up to the national rules to decide the requirements.

On the meaning of “surroundings”, OICA clarified that the collected data are only those originating onboard sensors.

USA informed that their EDR rule is an if-equipped regulation (not a mandate) and defines the minimum, permitting the OEM to add other data.

The group acknowledged that the table catches the today's situation, and that the regulation may evolve with time.

The group wondered the very interest of this row, some suggested deleting it. The row originally had the purpose of making a negative definition of the roles of each system.

Conclusion: full row deleted

PTI:

FSD proposed postponing the debate on PTI until the access to data is solved.

Conclusion: item postponed

System storage capabilities

China: insisted that 2 events is not sufficient for EDR storage capabilities, which should be 3 events. This is backed by the data provided per document EDR-DSSAD-02-20.

Some expert stressed that the original NHTSA rule was focusing on airbag deployment, and observed that the UN regulation may go beyond.

D: suggested to 1st define “event” and then make a decision. The decision is premature for the time being.

“limited number of events”,

EC: storage capabilities should not be addressed in this regulation since data could be stored outboard.

D was keen that the amount of data be limited to what is necessary. Only meaningful data should be stored.

“Principle of data economy”

OICA clarified that the DSSAD data collection can last for months, hence they should be limited

Conclusion: item postponed, but the final wording should be sent to Chairs and Secretary by 19 September by email, with the aim of well discriminating EDR vs. DSSAD

System crash survivability

EC found the criterion irrelevant for DSSAD as DSSAD is not supposed to store data at the time of the accident

NL: the DSSAD stops recording when the EDR starts recording

J: not necessary to store DSSAD after the crash

D: requested comments about EDR crash resistance. The expert from AECS (Advanced Emergency Call System, i.e. E-call) informed about the e-call discussions, where GNSS must not work after the crash but data from GNSS must be emitted after the crash. Ultimately, it depends on what we need to do with the data. The DSSAD data should be possible to retrieve after a crash.

OICA suggested to split in 2 lines, i.e. device survivability and data survivability: the DSSAD might not survive the crash, but the data should survive.

There was a debate on the relevancy of resistance to crashes.

About the level of deceleration, OICA mentioned that the statistics do not need to collect 100% of accident data. D proposed: “Resistance to high deceleration and mechanical stress of a severe impact”.

USA was keen that the DSSAD be capable of recording some data during some crash event. The expert challenged the reliance of the DSSAD group on only the draft ALKS work since it is currently discussed under the auspices of the 58 Agreement.

Conclusion:

- “Resistance to high deceleration and mechanical stress of a severe impact”
- USA to raise at GRVA their objection

“event” definition

EVU: the system will not be able to record every event as a “crash” since light decelerations are not recorded. A story in Berlin generated some discussions in D, that ended up with the possibility to trigger EDR by the standstill status of the vehicle, so as a driver would generate the EDR after having hit e.g. a pedestrian and then having stopped their vehicle. The experts stressed that the pedestrian impact is already regulated in the last version of the US EDR.

D suggested that the group decide whether a VRU impact should be detected by the EDR or not.

The debate was further continued. EC proposed “crash-related event”. EC wanted to include the “reversible restraint systems” in order to include e.g. the active bonnet. OICA pointed out that these systems are included in the “that causes the trigger threshold to be met”. Seems the origin of the “non-reversible” wording is the possibility of unwanted airbag ignition.

USA objected to using a definition of “event” that would include reversible restraint systems or the standstill status of the vehicle.

Japan suggested deleting the definition of “event” and replacing it for both the EDR and the DSSAD by a definition of “trigger”.

CLEPA suggested to well align on the US definition for EDR and refer to “non-reversible restraint systems”.

CLEPA pointed out that the event is what is observed, then this generates the trigger.

Conclusion: event definition is deleted, replaced by “trigger” definition. For DSSAD, the experts agreed that “change in the system operation status” is not limited to “ON/OFF”

“Battery restitution”

Conclusion: deleted, item to be out of the comparison table, to be reviewed in the technical requirements.

“environmental robustness”

There was a debate as to whether this entry would be remaining in the table. ROK was keen that this item be well addressed in the technical requirements discussions.

OICA clarified that a malfunction detection would be similar between EDR and DSSAD, and that it is indeed necessary to cover the malfunctions due to e.g. environment (heat, water, etc.).

Some parties challenged this since water could delete the data stored in the system, w/o system malfunction.

Conclusion: deleted from the table, Chairs to report back to GRVA and GRSG about the substance of the debates. Item to be addressed in the definition of the requirements.

Data technique

The USA found that the “trigger” definition agreed above is a primary distinction between DSSAD and EDR.

OICA, supported by USA, voiced that the requirements should be technology neutral. The data could be stored whenever we want. The EC was strongly willing the EDR data are stored within the vehicle. The EC expert believed, should there be no consensus on this point, the line should not be included into the table.

The Chair suggested deleting all rows related to data technique.

Conclusion: row fully deleted

Data usage

The Chair pointed out that, on the regulatory point of view, requirements related to data usage should not be included in the table.

D and EC supported this point of view. The EC stressed that some privacy items should be addressed in a later stage.

Conclusion: row fully deleted.

The Chair questioned whether there were missing elements in the table.

D suggested adding the vehicle categories, or at least generating the debate since the data could differ according to the vehicle category.

The Chair stressed that DSSAD should be aligned on the ALKS categories, at least as a preliminary approach.

OICA supported a wide scope for DSSAD.

The group acknowledged that the DSSAD scope limitation is temporary, due the mandate received from WP29 and the link to the ACSF informal group.

For EDR, OICA, supported by USA, informed that the heavy vehicles cannot be included since there is currently no EDR for heavy vehicle.

The group agreed to introduce the scope in a 2-step approach.

F proposed to link the DSSAD scope to the type of ADS

D suggested to address DSSAD heavy duty vehicle in a 2nd step.

OICA supported that the heavy-duty vehicles be in the 1st step

Conclusion:

- 2nd step in []
- Final wording to be reviewed by GRVA and GRSG

The group agreed not to introduce a row for STU (Separate Technical Unit)

The group subsequently reviewed the proposed rows for the scope. D then proposed to include the two steps in one row, where the steps are discriminated.

USA: disagreed that HDVs are already included into the scope for DSSAD.

There was a debate as to whether the reference to DSSAD in the last column heading should also include "ALKS". D was keen to delete this reference since the revised framework document clearly indicate that the task covers the whole DSSAD, and is not restricted to ALKS. However F had the fear that the discrepancy between the heading and the content may lead to misunderstanding

6. DSSAD

Document: EDR-DSSAD-02-02 (CLEPA-OICA)
 EDR-DSSAD-02-06 (J)
 EDR-DSSAD-02-07 (J)
 EDR-DSSAD-02-05-en (GDV)
 EDR-DSSAD-02-11 (FSD, EVU, DEKRA)

J presented the document EDR-DSSAD-02-07.

FSD presented the document EDR-DSSAD-02-11.

Definitions:

- DSSAD: extension necessary to comply with the requirements
- Data: need to add “position data”.
- “Authorized parties” to clarify that this is regulated nationally
- “generic scan tool”: need to clarify it must be independent to the manufacturer
- “backend”: need to take into account the oncoming solutions
- “data transmission”: should be limited to the process of transmitting the data
- “data set”:
- “OTA interface”: technically neutral proposed definition, inspired from CS/software update regulation.

Data format: FSD believed the format should be standardized as it is important for working out the data after extraction.

Position determination: copy/paste from the AECS regulation. Accuracy is considered important

Data storage: suggest the flexibility to store the data in- or outboard. Up to the contracting parties to define whether the backend should that of the manufacturer or another one.

Data retrievability:

- there is a mistake in 6.5.1.; will be fixed at a later stage
- only authorized parties should have access to the data (as defined by the contracting parties)

Information to the driver:

- tries to address e.g. data privacy

System de-activation: should not be deactivated, of course the requirement should be aligned on those of the ACSF.

OICA made the following preliminary comment: CITS input is currently not standardized, hence this cannot be regulated, i.e. each contracting party may have their own CITS standard, hence mutual recognition is difficult. CITS should be discussed as a secondary item.

USA:

- the proposal seems quite 58 Agreement minded
- In USA only the vehicle is regulated by the Federal government, not the driver. Hence what is related to the use of the data by the driver should not be part of the text.
- Requiring that vehicle owners never deactivate ALKS systems would not be possible in the United States due to vehicle owners’ right to repair and US authorities, which are linked to first sale of a vehicle..

D:

- Of course the regulatory text should be agreement neutral,
- hence let’s use the table we established, rather than going in the proposal 02-02. This would limit the surprises when entering the technical requirements.

List of parameters:

The group collected the list of parameters in slide 2 of the document 02-07 and in the OICA proposal of the 1st session, and evaluated the possibility to include them into the table of comparison.

Activation

D was keen to add the geostamp in []

The EC opposed this idea because the location in some case could be sensitive data, hence data collection may be subject to data privacy legislation.

USA opposed the inclusion of geolocation information in the DSSAD.

Conclusion:

- geo-stamp in []
- D to provide justifications for the addition of location information.

Transition Demand

USA: challenged “Driver not available” since this appears to focus more on the person not the vehicle; there might be confusion if this is understood as a system being a non-human driver. Noted that USA legal interpretations and guidance currently state that a “driver” could be a human or a system. OICA however clarified that a driver is always human, and the in the context ALKS, there is per definition always a driver since the driver is still the back-up.

OICA clarified that the td in case of a planned event can last ca 1 minute, while only 2-5 seconds in case an unplanned event. OICA clarified that the origin (nature) of the transition demand is recorded in the DSSAD.

The group agreed to capture the technical parameters into a list to be further scrutinized.

The EC proposed to simplify and clarify the structure of the table.

The group attempted establishing a table of parameters and requirements on the basis of a proposal from the EC.

OICA explained that the Excel data sheet of a DSSAD is in fact quite simple.

J committed to provide a position for the next meeting.

7. EDR

Documents: EDR-DSSAD-01-03 (CLEPA-OICA)

EDR-DSSAD-01-06 (J)

EDR-DSSAD-02-04-r1 (AHEAD)

EDR-DSSAD-02-09 (FIA)

EDR-DSSAD-02-12 (FSD, EVU, DEKRA)

EDR-DSSAD-02-13 (FSD, EVU, DEKRA)

EDR-DSSAD-02-14 (FSD, EVU, DEKRA)

EDR-DSSAD-02-15 (J)

EDR-DSSAD-02-16 (EC)

EDR-DSSAD-02-17 (EU)

EDR-DSSAD-02-18 (J)

EDR-DSSAD-02-19 (China)

EDR-DSSAD-02-20 (China)

EDR-DSSAD-02-21-Rev.1 (ROK)

The Chair firstly asked the floor for their general opinion with regard to the document 01-03

EVU pointed out their document EDR-DSSAD-02-12 (FSD, EVU, DEKRA) EDR Proposal of amendments.

OICA found that the discussions should mainly turn around the following main items:

- Data nature
- Trigger nature
- Storage capacity

EVU presented their document EDR-DSSAD-02-12, stressing that in view of the timeline, the group should focus on what is currently existing. The expert informed that, in the Allianz statistics, only 3% of all accident with airbag deployment, i.e. some kind of “manual trigger” should be added. After investigation, it appeared that the stop of the vehicle should be added as an event. Also, as mentioned by the Chinese representative, there a need for a standardized retrieval means. The group went through the proposal as a preliminary presentation.

The EC:

- Seems many presentation refer mainly to what happens to data after they left the vehicle. EC thinks this is out of the scope and parasites the discussion

- Suggest a gradual approach, better concentrate e.g. on the list of data elements, then moving to the triggering events, and finally on the data retrieval, and stop there, definitely not covering who can access the data.

USA confirmed that data access is subject to national legislation, and has already been addressed by national legislation in the US. Also, the regulation should be technology neutral hence the data storage and access as well.

EVU acknowledged that the requirements concern the vehicle, yet then if there is an external server, there is a need to define the “outer” in the vehicle.

J supported the comments from the EC, the data retrieval should be regulated nationally.

The NL were not yet ready to comment. The expert proposed to set a list of items to be discussed in the next steps.

D (TÜV) noted that the ROK and Chinese presentations were received with a too short notice to be commented. The expert supported EC and USA voiced that a lot of things should be out of the scope of the regulation, yet if there no standardized interface, and no requirements for the in-board part of the interface, then this will be detrimental to the national regulations.

The EC clarified that the retrieval of data should be in the scope, yet should be discussed at a later stage, but the access to data should be out of the scope of the regulation.

OICA:

- Was surprised that the FSD proposed amendments to the draft regulation do not follow the 2-step approach used for the data elements
- Access to data: in a UNECE regulation (including GTR), the concept of mutual recognition must be respected.

F:

- Supported EC, data retrieval must be in the regulation, and F favours a harmonized provision, however the access to data must be addressed at national level.

USA informed having a solution for retrieval: commercially available tool, such that any individual who purchases the tool would access the data in their vehicles independently, this solution has proven efficient for a decade in the USA.

FSD

- Stressed paragraph 2.4: access rights are defined at national level.
- OTA access: “if OTA is equipped on the vehicle, then access must be possible”. Hence this provides the contracting parties the possibility to regulate access to data.
- The German police faces a real problem of unharmonized scan tools. A backend server would keep the costs low enough.

EVU stressed the problem currently faced by the authorities in the USA because there is no rule mandating a harmonized tool. USA stressed that they succeed retrieving the data in majority of cases.

China explained that some districts in China need low cost retrieval tool, hence favoured a low-cost solution. Bosch informed that normally the data are retrieved via the OBD. The problem occurs when the OBD connector is out of function because of the crash. In that case, the tool is proper to the manufacturer, and prices increase. FSD acknowledged this.

Conclusion:

- Data access out of the scope of the informal group.
- Retrieval means is part of the scope of the informal group to a certain extend

OICA stressed that there are 2 different usages of the data: if there is a claim regarding the accident, access to data is necessary. The other usage of the data is statistics, and in that case, there is a need for a high quantity of data.

The Chair questioned the group about :

- VRU: do we address it at 1st stage?
- Onboard/outboard storage

VRU data:

- OICA:
 - o VRU: both FSD and OICA propose AEBS intervention. Even under the point of view of the regulation this should well fit the roadmap.
 - o We must remain in the UNECE context.
- EC:
 - o VRU, element soft data: EC support a maximum possible data. EC did not find a reason not to introduce these data in the regulation.
- D (TÜV):
 - o supported EC for a maximum data, will send their own list to the group for the next meeting. All installed active systems (when regulated and installed) should provide their data.

There was a debate as to whether the collected data should be those of the UNECE context or not. The group acknowledged that in the context of the world forum for harmonization, only the systems globally defined can be referred to in the regulation.

Tentative conclusion by the Chair:

- no VRU detection per se
- collection of data from safety related systems
- can go beyond if installed on a voluntary basis.

This conclusion was not endorsed by the group.

Conclusion:

- guidance to be requested to the parent groups.
- check in the elements of data which elements can be reasonably included

Onboard/outboard storage:

EC: definitely in the vehicle. Outboard storage is a separate issue, to be discussed at a later stage

USA: up to the manufacturer to decide where the data should be stored, item should be out of the scope of the group. The technical requirements must remain neutral as to storage location.

EVU, on behalf of the D representative: in Germany, the Police requires OTA access.

TÜV: no firm position in this regard.

OICA representative: in France, the Police is aware that they cannot have access to the EDR data.

For information, the E-call does not permit sending the EDR data.

F: still in discussion between the different ministries. Current trend is that the data must be available in the vehicle.

In NL, in or outboard, but at the minimum there must be unified access

Conclusion:

- informal group to ask guidance

8. List of action items

Proposal to create task-forces dedicated to specific items (DSSAD, EDR, drafting, etc.). Niikuni san informed being ready to lead the DSSAD task-force.

Skype meetings to be organized for the preparing the next session. Investigation then proposal for a date to be sent by email.

9. Dates and venues of next meetings

Meeting	Dates	Venue	Note
EDR-DSSAD-02	From 18 September 1:30 pm to 20 September 12:30 am	Palais des Nations	Room IX
GRVA-04	24-27 September 2019	Palais des Nations	Room VII
GRSG-117	8-11 October 2019	Palais des Nations	Room VII
WP.29-179	12-15 November 2019	Palais des Nations	
ACSF-24	18-20 November 2019	IDIADA (Spain)	
2 nd EDR/DSSAD Skype	TBD	NA	preparatory to the 3 rd meeting
EDR-DSSAD-03	10-12 December 2019	OICA	Venue is confirmed
EDR-DSSAD-04	28-30 January 2020	JASIC (Tokyo)	
GRVA-05	10-14 February 2020	Palais des Nations	
EDR-DSSAD-Buffer	TBC	TBC	
WP.29-180	10-13 March 2020	Palais des Nations	
EDR-DSSAD-07	TBC	TBC	

10. Report to GRVA and GRSG

The Chair presented the draft report to GRVA and GRSG
The EC suggested including a potential step2 for the EDR as well.
The Chairs committed to update the presentation accordingly.