JRC Comments on FRAV input to EDR/DSSAD
(Comments on document FRAV-13-08)

General

The terms "EDR", "DSSAD", and "data logger" seem to be interpreted differently…

EDR and DSSAD are unambiguously defined, as well as their different aim and different characteristics - see for e.g. comparison table in EDR-DSSAD-01-07-r3 but also IWG EDR/DSSAD ToR:

"…systems collecting and storing a determined range of vehicle data, including:

- Information related to collisions valuable for accident reconstruction (EDR);

- The status of the automated/autonomous driving system and the status of the driver (DSSAD). "

slide 1

VMAD in-use performance covers 3 objectives (see pillar description in VMAD NATM): safety confirmation, scenarios generation, and safety recommendations. ADS fleet performance evaluation through aggregated data can only address objective #1, while data from accidents, incidents, near miss and other abnormal events can support objective #2 and 3#.

slide 2

Basic vehicle performance data (same data as collected by conventional vehicle EDR)

EDR recording is triggered in case of accident conditions only, and in case of conventional vehicle does not include any image. This will probably not be sufficient to evaluate the ADS performance in case of accident or other abnormal conditions.

slide 3

Data recorded for accident investigations purpose are recorded and stored onborad the vehicle, accessible to the investigation Authority to define accident liability and accountability for law infringement - as it is today for EDR and DSSAD. We can expect that for ADS without human interaction, some of the occurrences foreseen for ALKS will not be applicable while new entries should be considered depending on the application (e.g. interaction or intervention with the remote control centre for urban shuttles), while the list of data elements recorded by EDR could be expanded for ADS, including the annotated image. Aggregated data on the ADS DDT performance are not needed for accident investigation, but rather for research purposes (in-service monitoring and reporting).

Data for evaluation of the in-service ADS safety performance have no direct legal implications, can be stored offborad, collected and elaborated by the manufacturers in the first place, then communicated to the Authority. As observed from other transport fields, it is important to establish independent authorities in charge of collecting and analysing in-service data, different from those in charge of the legal accident investigations, in order to facilitate the information sharing aimed at improving ADS safety ad broader level.

Therefore, the data elements framework, could be shaped using EDR and DSSAD as the already existing basis:

Purpose of Data Collection	Applicability of Data	Data Set	General Description
Accident analysis/ reconstruction	All vehicles	A	EDR
	Vehicles equipped with an ADS	C1	(EDR) + annotated image DSSAD (e)-(k)
	Vehicles equipped with an ADS designed to interact with a user / remote control centre	C2	(EDR) + annotated image Full DSSAD
In-service data monitoring & reporting (Evaluation of system operations/research/ sharing)	All ADS		C1 or C2 for Safety investigation in case of accidents
	Vehicles equipped with an ADS	D1	Non-crash ADS operational performance data (including DDT performance)
	Vehicles equipped with an ADS designed to interact with a user	D2	Non-crash user interactions with ADS (including DDT performance)

Therefore the proposed configurations would be modified as follows:

- Conventional (manual only) vehicle → A

- ADS with human driver controls → A + C2 + D2

- Driverless passenger vehicle → A + C1 + D1

- Driverless commercial vehicle (no occupants) → A + C1 + D1

slide 4

Would ADS data relevant to crash and crash-like events be additional EDR data applicable to an ADS vehicle?

ADS vehicles are likely equipped with additional sensors compared to a conventional vehicle, therefore additional useful information could be available (e.g. the annotated image).

If EDR is intended to address crash events, would DSSAD address operational performance?

The occurrances currently covered by DSSAD can provided some information on the operational performance (e.g. emergency manoeuvre, MRM, ADS failure, vehicle failure,…): to be noted that once the storage limit of the DSSAD is reached, data will be overwritten except in case of accident. DSSAD data access is regulated by national and regional law, i.e. might not be accessible for research purpose.

"Aggregated, anonymous data providing indicators of performance across ADS fleets" could instead be derived from information directly provided by the manufacturer.