

Submitted by the experts from
CITA, EVU

4th session IWG EDR/DSSAD
28th-30th January 2020

**Proposal for Data Storage Requirements for Draft ALKS Regulation
(Working Paper EDR/DSSAD-03-16)**

The text reproduced below aims at proposing improvements to the text Data Storage Requirements for Draft ALKS Regulation. The modifications to the existing text of the proposed Data Storage Requirements for Draft ALKS Regulation (Working Paper EDR/DSSAD-03-16) are marked in **bold** for new text and strikethrough for deleted text.

Data Storage Requirements for Draft ALKS Regulation

NOTE: Text in brackets will be discussed at IWG's January 2020 meeting in Tokyo. Terms in yellow will need to be defined by the group.

Specifications:

Each vehicle with a DSSAD shall meet the requirements specified below:

2.2. Data elements

2.2.1. Each vehicle equipped with a DSSAD shall store the data elements listed below: [only one time stamp is allowed if the time stamp would be identical for more than one [significant] interaction]

- Time stamped switches of the ALKS from a status to another status
- Time stamped Transition Demand by the ALKS so that the reason why it was given can be determined from being either :
 - a) **Driver not available or attentive** (*see 6.1. + 6.3.1.1. ACSF-25-03*)
 - b) **System override** (*see 2.13. ACSF-25-03*)
 - c) **System or function failure**
 - d) **Planned event, or** (*see 2.4. ACSF-25-03*)
 - e) **Unplanned event** (*see 2.5. ACSF-25-03*)
- Time stamped Minimal Risk Maneuver engagement by the ALKS
- **Time stamped Emergency Manoeuvre** (*see 2.8. ACSF 25-03*)
 - a) **Severe vehicle failures** (*see 5.4.4.1.1. ACSF 25-03*)
 - b) **Severe ALKS failures**
- Time stamped **system** override through steering, brake, and accelerator control by the driver
- **Time stamped driver input that is reduced or suppressed by the system** (*see 6.3.5. ACSF 25-03*)

~~Time stamped Driver not available~~

~~Time stamped System failure~~

~~{Other data elements?}~~

~~Additional elements may be required at the national level.~~

2.2.2. Notwithstanding paragraph 2.2.1 DSSAD shall be able to store additional data elements required by national or regional law.

[e.g. GNSS data for position determination, ODD status information, C-ITS signals]

2.3. Data format

Each data element listed in paragraph 2.2 shall be recognized without any possible confusion by the [standardised format **China**: chosen by the manufacturer]. Each timestamp attached to this data shall enable to determine when the interaction occurred with [specified time stamp accuracy requirements].

2.4. Data storage

2.4.1. The fulfilment of the provisions of this paragraph shall be demonstrated by the manufacturer and shall be supported by documented evidence. This shall be assessed by the Type Approval Authorities or Technical Service according to Annex [X].

2.4.2. DSSAD shall be able to store [minimum number OR minimum] time stamped interactions or [minimum number OR minimum] period of use, whichever is achieved first.

Once these storage limits of DSSAD are achieved, additional data storage may erase the previous data.

2.4.3. Notwithstanding paragraph 2.4.1. data shall be stored according to national or regional law.

2.4.4. The DSSAD [shall/may] be fitted with an embedded hardware, allowing authentication and access to the over the air (OTA) interface.

2.4.5. The DSSAD shall be able to recognize, when a data transmission is successfully completed.

2.5. Data retrievability

2.5.1. The fulfilment of the provisions of this paragraph shall be demonstrated to the Type Approval Authority or the Technical Service and tested according to the relevant tests in Annex [X].

2.5.2. The data shall be retrievable after an impact [test procedures to be named] by ~~{commercially available tool or~~ the electronic communication interface}. If the main-on-board vehicle power supply is not available, it shall be possible to retrieve stored timestamped data from the DSSAD **by a manufacturer-specific method.**

~~2.5.3. Even after an impact [test procedures to be named], it shall be possible to retrieve timestamped data stored from the DSSAD.~~

2.5.3. The manufacturer shall provide an information package to any interested manufacturer or repairer of components, diagnostic tools or test equipment in machine-readable way (e.g. ISO 22901) which includes the information about how the timestamped data can be retrievable and interpretable via the use of the electronic communication interface.

Furthermore, the manufacturer shall provide authorities or parties entrusted by national or regional legislation the information which allows the direct OTA-access to the timestamped data.

2.5.4. If the access to timestamped data is protected by a security algorithm, the manufacturer shall ensure authorities and parties authorized by national or regional legislation the authorization to access the timestamped data in an easy manner.

2.5.5. At Roadworthiness testing, including the periodic technical inspection, it shall be possible to access at least the most recent timestamped data set via the electronic communication interface to test the storage functionality and the plausibility of the data set.

[2.6. Protection against manipulation

It shall be ensured that there is adequate protection against manipulation of stored data such as anti-tampering design.]

The anti-tampering design strategies put in place shall be described by the manufacturer and their safety shall be demonstrated to the satisfaction of the Technical Service in accordance with Annex [..].

2.7. Information to the [driver OR vehicle owner]

Information provided to the [driver OR vehicle owner], if any, will be an issue of national law.

2.x Definitions:

~~{Interaction is defined as xxxx}~~

2.x.1. “Interaction” is the explicit or implicit communication of intentions, actions and system states between an ADS and the driver, as well as influencing weather and traffic situations that occur in the driving environment while the ADS is activated.

2.x.2. “Over the air (OTA) interface” means an interface that can establish a wireless connection and allows data transfer.