

## Modifications to ECE/TRANS/WP.29/GRVA/2026/02

### I. Proposal

Paragraph 2.11., amend to read:

- 2.11. ~~{“Data Storage System for Automated Driving (DSSAD)”}~~ means the capability to record and store data concerning the safety performance of a vehicle’s ADS.

Paragraph 7.3.1.13.2., amend to read:

- ~~{7.3.1.13.2. The manufacturer shall justify the use of data elements provided by an alternative format listed in Annex 8.}~~

Annex 8, amend to read:

### Annex 6

## ~~{Data Storage Systems for Automated Driving}~~

### 1. Purpose

- 1.1. ~~This annex defines Data Storage System for Automated Driving (DSSAD) as the data storage capability of a vehicle to monitor the safety performance of ADS and establishes requirements to enable the evaluation of ADS safety performance.~~

~~This annex provides DSSAD specifications in accordance with paragraphs 6.3.1.1., 7.3.1.13., 8.3.1.6., and 8.3.3.1. The manufacturer shall address these specifications in its description of the DSSAD installed on the ADS in accordance with paragraph 7.3.1.13.~~

### 2. Data storage and security

- 2.1. The DSSAD shall be capable of recording and storing time-stamped and time-series data elements as defined in paragraph 5 of this annex.
- 2.2. The DSSAD shall be protected against both unauthorized access and manipulation.
- 2.3. ~~In the case of the data intended to be stored off board the vehicle cannot be transmitted, it shall remain stored on the vehicle.~~

~~Data elements under paragraph 5 of this annex that may be stored off-board the vehicle shall remain stored on the vehicle until the data has been successfully uploaded to an off-board storage facility.~~

### 3. Data format

- 3.1. Each data element listed in paragraph 5 of this annex shall be available in accordance with paragraph 4 of this annex. The output shall be provided in an open standard format (e.g. JSON, CSV, XML), with the exception of ‘sensor

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- data', and the data shall be in a readable form, aside from 'sensor data' and 'visual images'.<sup>1</sup>
- 3.2. Information required to interpret the output to correlate it with respect to the data elements required in paragraph 5 of this annex shall be provided by the manufacturer to an authorized entity on request and subject to applicable national law(s).
- 3.3. Time-stamp data format
- 3.3.1. Time stamp data shall be recorded in a clearly identifiable way with following data:
- (a) The time stamped data element, as listed under paragraph 5.2.1. of this annex.
  - (b) The additional information noted in the table under paragraph 5.2.1. for each time stamped data element as appropriate.
  - (c) Date (Resolution: yyyy/mm/dd)
  - (d) Time stamp
  - (i) Resolution: hh/mm/ss timezone (e.g., 12:59:59 UTC)
  - (ii) Accuracy: +/- 1.0 second
  - (e) Location: global longitude + latitude; shall be recorded in decimal degrees and to at least five (5) decimal places but shall be unrounded.
- 3.3.2. A single timestamp may be allowed for multiple elements recorded simultaneously within the time resolution of the specific data elements. If more than one element is recorded with the same timestamp, the information from the individual elements shall indicate the chronological order.

#### 4. Data Accessibility

- 4.1. The stored data defined in paragraph 5 of this annex shall be readily accessible to the authorised entities for DSSAD data collected by the vehicles in their territory of deployment. The authorised entities and the conditions of access shall be defined by the applicable laws of the territory of deployment.
- 4.2. The DSSAD data (whether stored on or off-board the vehicle) shall be readily available and retrievable through an electronic communication interface that complies with a publicly available interface standard. It is recommended to use an internationally recognized standard.<sup>2</sup>
- 4.3. Instructions for retrieving the DSSAD data via the electronic communication interface shall be maintained by the manufacturer.<sup>2</sup>
- 4.4. The stored DSSAD data shall be retrievable even when the main onboard vehicle power supply is not available.
- 4.5. The DSSAD data shall be retrievable even after an impact to the vehicle of a severity level set by relevant regulations.
- 4.6. If the DSSAD data is intended to be stored on board the vehicle, then the following applies.
- 4.6.1. The data elements concerning the activation and deactivation of the feature in paragraph 5.2.1. of this annex shall be available via the vehicle's information

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<sup>1</sup> Readable means that the data is of numerical values and natural language which can be understood to represent a specific data point with a value associated with it (e.g. <<speed>>35<<speed/>>, not hexadecimal or binary).

<sup>2</sup> Contracting parties may further define technical specifications for data accessibility and/or availability of instructions under national law.

display/user interface where controls related to manual performance of the DDT are provided.

- 4.6.2. Upon request of an authorized entity, the manufacturer shall make available to them the manufacturer-specific tools, software, web service interfaces, and/or support to retrieve the DSSAD data.
- 4.7. If the DSSAD data is intended to be stored off-board the vehicle, then the following applies.
  - 4.7.1. An authorized entity shall not have to install any manufacturer-specific systems or software to retrieve the DSSAD data.

## 5.Data elements

- 5.1. The DSSAD shall record and store the data elements listed under paragraph 5.2. and 5.3. of this annex. This requirement shall be without prejudice to applicable laws governing access to data, availability, privacy, and data protection.
- 5.2. Time-stamp data elements
  - 5.2.1. The following table details the data elements of time-stamp data to be recorded, along with any additional information **and recording conditions**.

<i>Event</i>	<i>Additional Information</i>	<i>Recording condition</i>
Activation of the feature	ADS feature is activated by the: (a) system, or (b) user	
<b>The following data elements shall be recorded if they occur while an ADS feature is active.</b>		
Deactivation of the feature	ADS feature is deactivated by the: (a) <del>system, or</del> Initiated by the system, or (b) <del>user</del> Initiated by a user.	<del>While the feature is active</del>
ODD exit		<del>While the feature is active</del>
Start of ADS fallback to user, if applicable	<del>Deactivation of the ADS feature initiated due to:</del> ADS fallback to user initiated due to: (a) Foreseen condition (b) Unforeseen condition (c) Failure (d) Input to the driving controls, or (e) ODD exit.	<del>While the feature is active</del>
Start of ADS fallback to an MRC	<del>MRC resulting from:</del> Fallback to an MRC initiated due to: (a) ODD exit (b) ADS failure (c) Collision detected (d) Detection that fallback user is not available when they have no longer met the conditions of paragraph 4.2.2.1.6 of this Regulation (if applicable), or (e) Failure of the fallback user to take control following	<del>While the feature is active</del>

	a system-initiated deactivation of the ADS.	
User input to the driving controls, if applicable	Application of: (a) brake control, (b) acceleration control, (c) steering control, or (d) direction indicator.	<del>While the feature is active</del>
Application of the passenger stop request as designated in paragraph 4.2.3.1. of this Regulation		<del>While the feature is active</del>
Prevention of user takeover, if applicable	Prevention of user takeover (if applicable) due to: (a) Unintentional user input, (b) Current situation unsuitable, (c) Current situation unsafe, or (d) User not suitably engaged.	<del>While the feature is active</del>
Detection that fallback-user is not available when they have no longer met the conditions of paragraph 4.2.2.1.6. of this Regulation, if applicable		<del>While the feature is active</del>
Start of Emergency Manoeuvre		<del>While the feature is active</del>
End of Emergency Manoeuvre		<del>While the feature is active</del>
Event Data Recorder (EDR) trigger input <sup>3</sup>		<del>While the feature is active</del>
Detected collision		<del>While the feature is active</del>
MRC achieved	Indication of end states per paragraph 5.3.1.14 of this Regulation	<del>While the feature is active</del>
Detected failure <del>situation that compromises the ADS capability to perform the DDT</del>	<del>The failure could include the following: (a) — ADS (b) — Sensor (c) — Other vehicle systems (mechanical, electrical, etc.)  Nature of failure in accordance with para. 5.3.1.15.</del>	<del>While the feature is active</del>
Remote intervention in a tactical function, if applicable.		<del>While the feature is active</del>

5.3. Time series data elements

5.3.1. ~~¶~~The data elements shall be recorded in compliance with paragraph 5.3.x if the following thresholds are reached or conditions occur:

- (a) Detected collision
- (b) EDR trigger input (excluding last stop trigger)~~¶~~

<sup>3</sup> Excluding any last stop trigger.

5.3.1.1. If there is no system or sensor designed to provide the data element to be recorded and stored under paragraph 5.3. of this annex, alternative data may be utilized if the data provides equivalent information to the specified data element.

5.3.2. The following table details the data elements of time-series data to be recorded during a triggering event.

<i>Data element</i>	<i>Condition for requirement</i>	<i>Recording interval/time (relative to time stamp)</i>
Visual images <sup>4</sup>	Mandatory	
Detected object distance, longitudinal	Mandatory, if available	
Detected object distance, lateral	Mandatory, if available	
Detected object relative velocity, longitudinal	Mandatory, if available	
Detected object relative velocity, lateral	Mandatory, if available	
Detected object classification	Mandatory, if available	
Sensor data <sup>5</sup>	Mandatory if 'Detected object elements' are not available	
ADS-requested accel demand	Mandatory	
ADS-requested service braking demand	Mandatory	
ADS-requested parking brake demand	Mandatory	
ADS-requested steering demand	Mandatory	
Vehicle acceleration, longitudinal	Mandatory	
Vehicle acceleration, lateral	Mandatory	
ADS-determined vehicle speed	Mandatory	

<sup>4</sup> This data element is generally represented by a camera image; however, this image may be a construct of other sensor data if camera images are unavailable.

<sup>5</sup> e.g., camera, radar, LiDAR, used by the ADS for decision making. This shall be documented in the information package provided to the Authorised Entity. This shall include a "Visual Representation" submitted to the Authorised Entity at the time of providing the DSSAD Data ~~and shall comply with the requirements of 4.1 and 5.4.~~