Submitted by European Commission

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Proposal for Supplement 1 to the UN Regulation No. 160 (Event Data Recorder) and to the 01 series of amendments to UN Regulation No. 160

Submitted by the expert from the European Commission

The text reproduced below was prepared by the experts from the European Commission to add the requirements of recording of additional data elements by Event Data Recorders of vehicles fitted with Automated Driving System. The modifications to the current text of the UN Regulation are marked in bold for new characters.

I. Proposal

In Regulation No 160 and in 01 Series of Amendments to Regulation 160, insert:

- new paragraphs 2.56-2.59, to read:

"**2.56. "Automated Driving System Change in Status" means the operating mode of the Automated Driving System.**

2.57. "Automated Driving System Transition demand" is a logical and intuitive procedure to transfer the Dynamic Driving Task (DDT) from the system (automated control) to the human driver (manual control). This request is given from the system to the human driver.

2.58. "Automated Driving System Minimum Risk Manoeuvre" means a procedure aimed at minimising risks in traffic, which is automatically performed by the system after a transition demand without driver response or in the case of a severe ADS or vehicle failure.

2.59. "Automated Driving System override" means a situation when the driver provides an input to a control which has priority over the longitudinal or lateral control of the system, while the system is still active."

- new rows in Table 1 in Annex 4, to read:

Table 1

Data element	*Condition for requirement*[*]	*Recording interval/time*[†] *(relative to time zero)*	*Data sample rate (samples per second)*	*Minimum range*	*Accuracy*[‡]	*Resolution*	*Event(s) recorded for*[§]
Automated Driving System - Change in Status	**Mandatory**	**-30.0 to 0 second relative to time zero**	**2**	**N/A**	**N/A**	**Activation, Manual Deactivation, Automatic Deactivation**	**Planar VRU Rollover**
Automated Driving System - Transition Demand	**Mandatory**	**-30.0 to 0 second relative to time zero**	**2**	**N/A**	**N/A**	**Driver Not Available, Driver Override, System Failure, Planned Event, Unplanned Event**	**Planar VRU Rollover**
Automated Driving System - Minimal Risk Manoeuvre	**Mandatory**	**-30.0 to 0 second relative to time zero**	**2**	**N/A**	**N/A**	**Yes or No**	**Planar VRU Rollover**
Automated Driving System - Override	**Mandatory**	**-30.0 to 0 second relative to time zero**	**2**	**N/A**	**N/A**	**Steering Control, Brake Control, Accelerator Control**	**Planar VRU Rollover**

II. Justification

Data concerning the status of the Automated driving system shortly before the collision can provide a better understanding of the circumstances in which a crash involving vehicles fitted with ADS occur. Even if similar information is already collected by the DSSAD system, it should be kept in mind that the purpose of collection and legal requirements applicable notably to storing of EDR data differ from those for DSSAD data. Furthermore, the privacy regimes and the frameworks applicable to legal processing may differ between the two systems under the national or regional legislation. DSSAD data may not be allowed to be used jointly with the EDR data.

For this reason, the relevant data elements should be added in Annex 4 to the UN Regulation on EDR and to its 01 series of amendments.

[*] "Mandatory" is subject to the conditions detailed in Section 1.

[†] Pre-crash data and crash data are asynchronous. The sample time accuracy requirement for pre-crash time is -0.1 to 1.0 sec (e.g., T = -1 would need to occur between -1.1 and 0 seconds.)

[‡] Accuracy requirement only applies within the range of the physical sensor. If measurements captured by a sensor exceed the design range of the sensor, the reported element shall indicate when the measurement first exceeded the design range of the sensor.

[§] "Planar" includes triggered events in sections 5.3.1.1, 5.3.1.2, and 5.3.1.3 and “VRU” includes triggered events in section 5.3.1.4.