|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Data element | Condition for requirement | Recording interval/time | Data sample rate | Minimum range | Accuracy | Resolution | Event(s) recorded for |
| **Driver control assistance system status** | **Mandatory** | **Event** | **2** | **N/A** | **N/A** | **Faulted**  **Active,**  **Passive,**  **Inactive,**  **Off,** | **All 5.3.1. triggers** |
| **Driver control assistance system driver monitoring system status, time elapsed since last warning** | **Mandatory** | **Event** | **2** | **[0 to 60 sec]** | **+/- 0.1 sec** | **0.1 sec** | **All 5.3.1. triggers** |
| **Driver control assistance system driver monitoring system status, last warning type issued** | **Mandatory** | **Event** | **2** | **[0 to 60 sec]** | **N/A** | **Hands-on, request**  **Eyes-on request,**  **Direct Control Alert (due to driver disengagement, Direct Control Alert (due to exiting system boundaries)** | **All 5.3.1. triggers** |
| **Driver control assistance system driver monitoring system status, number of warnings issued on current journey due to driver disengagement** | **Mandatory** | **Event** | **2** | **[0 to 100 warnings]** | **+/- 0 warnings** | **Hands-on, request**  **Eyes-on request,**  **Direct Control Alert** | **All 5.3.1. triggers** |
| **Acceleration control for pedal error status** | **Mandatory** | **-5.0 to 0 seconds** | **2** | **N/A** | **N/A** | **Faulted, Off, On but not intervening, Intervening** | **All 5.3.1. triggers** |

Proposal

**2. Definitions**

**2.xx.** **“Driver Control Assistance System (DCAS)” means the hardware and software collectively capable of assisting a driver in controlling the longitudinal and lateral motion of the vehicle on a sustained basis.**

**2.xx.** **“Acceleration Control for Pedal Error (ACPE)” means a system to detect misapplication of the accelerator control by the driver and to control unintended acceleration.**

Justification

**Definitions:** Definitions for the data elements to be reported are required to ensure a common interpretation of the relevant systems. The definitions proposed were taken over from regulations:

* Driver Control Assistance Systems UN R171 (identical)
* Acceleration Control for Pedal Error UN R175 (identical)

**Data elements and format:**

The proposed additional data elements are intended to further extend the usefulness of EDRs for collision research purposes in relation to driver assistance systems and their impact on road safety. EDRs are used for more than just collision investigation, the data they produce can be aggregated to help assess the effectiveness of new driver assistance systems. With the additional data elements in this proposal, it provides a greater utility of EDRs which could help support a case for mandating them in countries where they are currently optional. It would also allow evaluation of whether the assistance systems are making a positive impact on road safety. The justification of the data elements is summarised below:

* Data elements for Driver Control Assistance Systems (DCAS): The new regulation on DCAS is coming into force and there have already been high-profile cases of these types of systems being engaged during fatal collisions. The data elements listed can be used to analyse how often these systems were engaged at the time of a collision and compare this with the incidence rate of non-assisted driving. When these systems are engaged, they monitor the attentiveness of the driver via a driver monitoring system, which is key to keeping the driver engaged. The number of engagement requests given during a drive cycle can help ascertain if the driver monitoring system was suitable enough for keeping the driver engaged with the driving task if a collision occurred. It will also help us to understand whether these requests are being made ahead of a collision to give an indication of the driver state. All this data can be used to understand the systems benefits, optimise real-world effectiveness and assess if these systems are leading to driver distraction and therefore increasing the risk of unsafe driving. Given the potential for mode confusion between assisted and automated driving, it’s very important to ensure DCAS systems are being used appropriately and safely to gain trust that the technology can be deployed and continue to evolve.
* Acceleration control for pedal error (ACPE): A new regulation on ACPE has just been adopted in WP.29 which is looking to address collisions caused by unintended acceleration resulting from a driver applying the accelerator pedal instead of the brake pedal, which have been shown to be on the increase in recent years. The data generated will be important for analysing the effectiveness of these systems, which can help progress the next stage of regulatory and system developments in this area. It can be used to analyse how often these systems were intervening immediately before a collision and whether they were a factor in how severe the collision was. It will also be helpful to understand when and how the intervention is being activated, as real-world experience of such incidents has not been easy to distinguish. Therefore, the data generated would be beneficial in corroborating the triggering threshold and other aspects of the requirements as well future developments of the regulation.