Proposal

**2. Definitions**

…

**2.xx. “Blind spot monitoring system” means a system that detects and communicates to the driver the presence of another vehicle in a zone to the side of the subject vehicle or the approach of another vehicle into that zone.**

**Industry position**

* CP should show the relevance of this data element for accident analysis compared to the other data elements.
* Clear UN-R definition required, otherwise collected data is not comparable, relation to SAE definition is not feasible, because this could be changed without notice.

 🡪 delete this element for phase 2

**2.xx. "Emergency stop signal" means a signal to indicate to other road users to the rear of the vehicle that a high retardation force has been applied to the vehicle relative to the prevailing road conditions.**

 **Industry position**

* CP should show the relevance of the data element for accident analysis compared to the other data elements.
* How does this data element is useful just on the “target” vehicle? Which use case?

 🡪 delete the element

**2.xx. “Advanced driver distraction warning” means a system that helps the driver to continue to pay attention to the traffic situation and that warns the driver when he or she is distracted.**

**Industry position**

* UN-R definition required, otherwise data is not comparable, relation to EU delegated act definition is not feasible, because this could be changed without notice.
* What’s the difference to the data element proposed by UK?

CLEPA comment: The [commission delegated regulation 2023/2590](https://eur-lex.europa.eu/eli/reg_del/2023/2590) says:



In a Q&A Session, it was discussed:



CLEPA recommends to avoid conflicts by using the output of ADDW in EDR, which is an other system in the vehicle (except HMI)
Similar considerations might be applicable for DDAW and DCA

🡪 delete the element in general due to conflict with EU delegated act

**2.xx “Current trip” means the period of time extending from the present moment back to either activation of the vehicle master control switch or opening of the driver’s door, whichever period is shorter.**

**2.xx. “Driver drowsiness and attention warning” means a system that assesses the driver’s alertness through vehicle systems analysis and warns the driver if needed**

**Industry position**

* UN-R definition required, otherwise data is not comparable, relation to EU delegated act definition is not feasible, because this could be changed without notice.
* What’s the difference to the data element proposed by UK?

 🡪 delete the element in general due to conflict with EU delegated act

**2.xx. “Rear automatic braking system” means a system which can automatically detect an imminent reversing collision and activate the vehicle braking system to decelerate the vehicle with the purpose of avoiding or mitigating a collision.**

**Industry position**

* Additional trigger needed to capture the data
* Data should be possible to overwrite (equal to other new AEB trigger).
* Use case unclear: how does an accident looks like? Which data should be stored? How often the data will be stored?
* Clarification is needed by CP, better to shift to phase 3

**2.xx. “Direction indicator switch” means a device operated by the driver to signal to other road users the intention to change the driving direction to the left or right.**

**Industry position**

* No new definition needed, definition by China should be used
	+ **Status of turn signal switch**
	+ **Status indicating the turning or lane changing intent of a vehicle, which is applicable to vehicles with a bus transmitting the turning signal.**

…

Some additional data elements could be beneficial.

2.xx. “Gear” means actual gear, which is applicable to vehicles with a bus transmitting such signal.”

2.xx. “Brake pedal position” means actual position of brake pedal, range from not depressed position to fully depressed position. It may be stated in the EDR reading report that when the brake pedal position percentage is less than 100%, the braking system of the vehicle can realize 100% braking. This data is applicable to vehicles equipped with brake pedal position sensor.”

2.xx. “Status of parking system” means status used to detect whether the parking brake is activated, which is applicable to vehicles with a bus transmitting the state of parking system.

**Annex 4 - Data elements and format**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Data element | Condition for requirement | Recording interval/time | Data sample rate | Minimum range | Accuracy | Resolution | Event(s) recorded for |
| … | … | … | … | … | … | … | … |
| **~~Blind spot monitoring system status~~** | **~~If fitted~~** | **~~[-5.0 to 0 second relative to time zero~~*~~; subject to discussion on Step 2 triggers~~*~~]~~** | **~~[~~*~~subject to general discussion on Step 2 recording frequency~~*~~]~~** | **~~N/A~~** | **~~N/A~~** | **~~Off, Faulted,~~** **~~On not~~** **~~warning, On~~** **~~warning left-~~****~~side, On~~** **~~warning~~** **~~right-side~~** | **~~All 5.3.1. triggers~~** |
| **~~Emergency stop signal status~~** | **~~If fitted~~** | **~~[-5.0 to 0 second relative to time zero~~** | **~~[~~*~~subject to general discussion on Step 2 recording frequency~~*~~]~~** | **~~N/A~~** | **~~N/A~~** | **~~Faulted, off, on, [active warning]~~** | **~~Planar~~****~~VRU~~****~~AEB~~** |
| **~~Advanced driver distraction warning, time elapsed since last warning,~~****~~between last start of warning and event~~** | **~~If fitted~~** | **~~Event~~** | **~~N/A~~** | **~~0 to 60 sec~~**  | **~~Full range~~****~~+/- 10%~~** | **~~1s~~** | **~~All 5.3.1. triggers~~** |
| **~~Advanced driver distraction warning, number of warnings issued on current trip~~**  | **~~If fitted~~** | **~~Event~~** | **~~N/A~~** | **~~0 to 100 warnings~~** | **~~+/-1~~** | **~~1~~** | **~~All 5.3.1. triggers~~** |
| **~~Driver drowsiness and attention warning time elapsed since last warning,~~****~~between last start of warning and event~~** | **~~If fitted~~** | **~~Event~~** | **~~N/A~~** | **~~0 to 3600 sec~~** | **~~Full range +/- 10%~~** | **~~1s~~** | **~~All 5.3.1. triggers~~** |
| **~~Driver drowsiness and attention warning, number of warnings issued on current trip~~**  | **~~If fitted~~** | **~~Event~~** | **~~N/A~~** | **~~[0 to 100 warnings]~~** | **~~+/-1~~** | **~~1~~** | **~~All 5.3.1. triggers~~** |
| **Rear automatic braking system status** | **If fitted** | **[-5.0 to 0 second relative to time zero*; subject to discussion on Step 2 triggers*]** | **[*subject to general discussion on Step 2 recording frequency*]** | **N/A** | **N/A** | Actively Engaged, Faulted, Off, Not Active | **Planar****VRU****new trigger?** |
| **~~Direction indicator switch status~~** | **~~Mandatory~~** | **~~[-5.0 to 0 second relative to time zero~~*~~; subject to discussion on Step 2 triggers~~*~~]~~** | **~~[~~*~~subject to general discussion on Step 2 recording frequency~~*~~]~~** | **~~N/A~~** | **~~N/A~~** | **~~Off, on~~** | **~~All 5.3.1. triggers~~** |
| **Turn signal switch status** | **Mandatory** | **-5.0 to 0 second relative to time zero** | **2** | **N/A** | **N/A** | **Off, left, right, emergency flasher** | **All 5.3.1. triggers** |
| **Gear** | **If fitted** | **-5.0 to 0 second relative to time zero** | **2** | **N/A** | **N/A** | **P/R/N/D** | **All 5.3.1. triggers** |
| **Brake pedal position** | **If fitted** | **-5.0 to 0 second relative to time zero** | **2** | **0-100%** | **Full range +/- 10%** | **5%-steps** | **All 5.3.1. triggers** |
| **Parking system status** | **If fitted** | **-5.0 to 0 second relative to time zero** | **2** | **N/A** | **N/A** | **On/off/faulted** | **All 5.3.1. triggers** |
|  |  |  |  |  |  |  |  |

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 or based on regulations and technical standards or developed for this proposal. The following sources were used:

* Blind spot monitoring system status: SAE J2802 (adapted)
* Emergency stop signal status: UNR48 (identical)
* Advanced driver distraction warning status: Regulation (EU) 2019/2144 (identical)
* Current trip: Developed for this proposal and used in the context of recording the number of distraction/drowsiness warnings previously issued to the driver. When the engine is turned off and on again (vehicle master control switch) it must be assumed that a new trip has started. Additionally, on long trips a driver may swap position with a passenger (who then carries on driving) without turning the engine off, which should also be considered as a new trip because a new driver has taken control of the vehicle. To identify this situation, opening of the driver’s door was included as a criterion. Note: Group feedback suggested to use SAE definition of the term ‘trip’; however, the definition identified in SAE J3016 (“*The traversal of an entire travel pathway by a vehicle from the point of origin to a destination.*”) was not considered specific enough to be translated into the same technical recording requirement by different manufacturers.
* Driver drowsiness and attention warning status: Regulation (EU) 2019/2144 (identical)
* Rear automatic braking system status: UNR152 (adapted)
* Direction indicator switch status: Developed for this proposal

**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 active safety systems. Note: In this updated VERSION 2 of proposal EDR-DSSAD-IWG-25-07, two data elements have been removed:

* Trigger activated: This data element has been moved to the AEB trigger proposal to discuss both aspects in conjunction, i.e. it is still proposed for recording but contained in a different proposal.
* Reversing motion VRU detection system status: This data element has been removed from the list because no suitable trigger could be identified that would capture collision where this system is relevant. Note: In UNR169, relevant collisions could be captured by the last stop trigger, but this trigger is not included in UNR160.

The expected use of the new data elements is summarised below:

* Blind spot monitoring system status: This data can be used to analyse the prevalence of warnings in lane change collisions in order to quantify the real benefit of blind spot monitoring systems compared to non-equipped vehicles and understand more/less effective warning strategies in order to improve system effectiveness in interaction with the driver.
* Emergency stop signal status: The regulation governing emergency stop signal does not set a fixed deceleration threshold at which to activate the system. This discretion for manufacturers allows varying implementations that are compliant with the regulation but potentially of different real-world effectiveness. EDR data would allow comparing collision rates of vehicle models with different activation thresholds in order to identify the most effective threshold and thus inform future updates to the regulatory requirements.
* Advanced driver distraction warning / Driver drowsiness and attention warning, time elapsed since last warning / number of warnings issued on current trip: This data can be used to analyse the prevalence of distraction / drowsiness and driver reaction to warnings in order to study the system benefit and find ways to optimise real-world effectiveness. In real-world cases it appears unlikely that a drowsiness or distraction warning would be issued within the precise few seconds before a collision that are usually captured by pre-trigger EDR data. Therefore, an approach is proposed to record the time elapsed since the last warning was issued to the driver and the number of warnings that have already been issued on the current trip. This data would allow to understand whether drowsiness / distraction were relevant issues on the pre-crash trip and whether warnings have been issued in close time before the relevant moment. The maximum duration since the last warning for drowsiness has been extended compared to V1 because group feedback indicated that 60 seconds was not long enough to capture a potentially relevant drowsiness warning.
* Rear automatic braking system status: Capture data to analyse interventions and driver reactions to understand system benefit of rear automatic braking and characterise residual collisions that are not prevented by current system designs.
* Direction indicator switch status: Drivers setting the direction indicator typically overrides the lane departure warning system as it is assumed that the driver is intentionally changing lane. In relevant collisions where no lane departure warning was activated it is important to be able to understand from EDR data whether the system was overridden by the direction indicator. This can prevent falsely concluding that the lane departure system was faulty.

The recording interval proposed is currently aligned with existing requirements for other pre-crash data elements. *However, definition of a suitable interval will need to take into account potential new triggers (e.g. AEB) as these might occur up to ca. 1 second prior to a collision and might therefore warrant another recording interval.* *Working group input on this aspect is appreciated.*

*The sample rate should also be aligned with other pre-crash data elements after discussions on Step 2 recording frequency have concluded in the working group.*

The resolution proposed is aligned, where possible, with UNR169 or other data elements in UNR160.

‘Event(s) recorded for’ has been reviewed based on group feedback and reduced compared to V1 to relevant triggers where not all 5.3.1. triggers are applicable.