**Definitions (For Both Common Elements and UN Regulation documents)**

For the purposes of these performance elements:

2.1. "*ABS activity*" means the anti-lock brake system (ABS) is actively controlling the vehicle's brakes.

~~2.x. ["~~*~~Active/inactive~~*~~"]~~

2.2. "*Capture*" means the process of buffering EDR data in a temporary, volatile storage where it is continuously updated at regular time intervals.

2.x [AAPC Recommendation - “Data record” means electronic data file(s) stored in non-volatile memory.]

Alt [AAPC Suggestion - “Record” means the process of saving previously captured EDR data into non-volatile memory based on meeting or exceeding a trigger threshold.]

2.3. "*Delta-V, lateral*" means the cumulative change in velocity, as recorded by the EDR of the vehicle, along the lateral axis~~, starting from crash time zero and ending at 0.25 seconds, recorded every 0.01 seconds~~.

2.4. "*Delta-V, longitudinal*" means the cumulative change in velocity, as recorded by the EDR of the vehicle, along the longitudinal axis~~, starting from crash time zero and ending at 0.25 seconds, recorded every 0.01 seconds~~.

2.5. "*Deployment time, frontal air bag*" means (for both driver and front passenger) the elapsed time from crash time zero to the deployment command or for multi-staged air bag systems, the deployment command for the first stage.

2.6. "*Disposal*" means the deployment command of the second (or higher, if present) stage of a frontal air bag for the purpose of disposing the propellant from the air bag device.

2.7. "*End of event time*" means the moment at which the cumulative delta-V within a 20 ms time period becomes 0.8 km/h or less, or the moment at which the crash detection algorithm of the air bag control unit resets.

2.8. "*Engine RPM*" means:

(a) For vehicles powered by internal combustion engines, the number of revolutions per minute of the main crankshaft of the vehicle's engine, and

(b) For vehicles not entirely powered by internal combustion engines, the number of revolutions per minute of the motor shaft at the point at which it enters the vehicle transmission gearbox, and

(c) For vehicles not powered by internal combustion engines at all, the number of revolutions per minute of the output shaft of the device(s) supplying motive power.

2.9. "*Engine throttle, percent full*" means the driver-requested acceleration as measured by the throttle position sensor on the accelerator control compared to the fully depressed position.

2.10. "*Event*" means a crash or other physical occurrence that causes the trigger threshold to be met or exceeded, or any non-reversible deployable restraint to be deployed, whichever occurs first.

2.11. "*Event data recorder*" (EDR) means a device or function in a vehicle that records the vehicle's dynamic, time-series data during the time period just prior to an event (e.g., vehicle speed vs. time) or during a crash event (e.g., delta-V vs. time), intended for retrieval after the crash event. For the purposes of this definition, the event data do not include audio and video data.

2.12. "*Frontal air bag*" means an inflatable restraint system that requires no action by vehicle occupants and is used to meet the applicable national frontal crash protection requirements.

[2.13. "*Front****al*** *air bag warning lamp status*" means whether the warning lamp required by national air bag regulations (if any) is on or off.]

2.14. "*Ignition cycle, crash*" means the number (count) of power cycles applied to the recording device at the time when the crash event occurred since the first use of the EDR.

2.15. "*Ignition cycle download*" means the number (count) of power cycles applied to the recording device at the time when the data was downloaded since the first use of the EDR.

2.16. "*Lateral acceleration*" means the component of the vector acceleration of a point in the vehicle in the y-direction. The lateral acceleration is positive from left to right, from the perspective of the driver when seated in the vehicle facing the direction of forward vehicle travel.

2.17. "*Longitudinal acceleration*" means the component of the vector acceleration of a point in the vehicle in the x-direction. The longitudinal acceleration is positive in the direction of forward vehicle travel.

~~2.x. "~~*~~Mandatory, if equipped~~*~~" [means it is mandatory to record the data element if the vehicle is equipped with the relevant sensors or system is fitted to the vehicle and~~ **~~operational.~~** ~~, if applicable, has been [unlocked by the manufacturer for use]. Data elements from optional fit systems are also mandatory to record if those systems have been selected by the driver.]~~

2.18. "*Maximum delta-V, lateral*" means the maximum value of the cumulative change in velocity, as recorded by the EDR, of the vehicle along the lateral axis~~, starting from crash time zero and ending at 0.3 seconds~~.

2.19. "*Maximum delta-V, longitudinal*" means the maximum value of the cumulative change in velocity, as recorded by the EDR, of the vehicle along the longitudinal axis~~, starting from crash time zero and ending at 0.3 seconds~~.

2.20. "*Maximum delta–V, resultant*" means the time-correlated maximum value of the cumulative change in velocity, as recorded by the EDR or processed during data download, along the vector-added longitudinal and lateral axes.

~~[2.x. "~~*~~Memory locking~~*~~" means that event data elements recorded in the EDR, corresponding to a specific event will be prevented from being overwritten by subsequent events].~~

2.21. "*Multi-event crash*" means the occurrence **of a minimum of** 2 events, the first and last of which begin not more than 5 seconds apart.

2.xx [AAPC Suggestion - “Non-reversible occupant restraint system” (NRORS) device” means a one-time restraint system device that does not return automatically, or with a mechanical input, to a condition in which it can be reused.]

2.22. "*Non-volatile memory*" means the memory reserved for maintaining recorded EDR data in a semi-permanent fashion. Data recorded in non-volatile memory is retained after a loss of power and can be retrieved with EDR data extraction tools and methods.

2.23. "*Normal acceleration*" means the component of the vector acceleration of a point in the vehicle in the z-direction. The normal acceleration is positive in a downward direction and is zero when the accelerometer is at rest.

2.24. "*Occupant position classification*" means the classification indicating that the seating posture of a front outboard occupant (both driver and front passenger) is determined as being out-of-position.

2.25. "*Occupant size classification*" means, for front passenger, the classification of an occupant as an adult and not a child, and for the driver, the classification of the driver as not being of small stature.

**2.xx “Operational” means that the system or sensor, at the time of the event, is active or can be activated/deactivated by the driver.**

2.26. "*Pretensioner*" means a device that is activated by a vehicle's crash sensing system and removes slack from a vehicle safety belt system.

~~[2.27. "~~*~~Record~~*~~" means the process of saving captured EDR data into a non-volatile storage for subsequent retrieval.]~~

2.28. "*Safety belt status*" means the feedback from the safety system that is used to determine that an occupant's safety belt (for both driver and front passenger) is fastened or unfastened.

2.29. "*Seat track position switch, foremost, status*" means the status of the switch that is installed to detect whether the seat is moved to a forward position.

~~[2.x. "~~*~~Secondary safety protection system~~*~~" means a system that helps to mitigate the consequences of a collision, such as an airbag or a pop-up bonnet.]~~

~~[2.x. "~~*~~Secondary safety sys~~*~~tem" means a deployable vehicle system designed to reduce injury consequences by offering protection during a collision, such as a pop-up bonnet or airbag.]~~

2.30. "*Service brake, on and off*" means the status of the device that is installed in or connected to the brake pedal system to detect whether the pedal was pressed. The device can include the brake pedal switch or other driver-operated service brake control.

2.31. "*Side air bag*" means any inflatable occupant restraint device that is mounted to the seat or side structure of the vehicle interior, and that is designed to deploy in a side impact crash to help mitigate occupant injury and/or ejection.

2.32. "*Side curtain/tube air bag*" means any inflatable occupant restraint device that is mounted to the side structure of the vehicle interior, and that is designed to deploy in a side impact crash or rollover and to help mitigate occupant injury and/or ejection.

2.33. "*Speed, vehicle indicated*" means the vehicle speed indicated by a manufacturer-designated subsystem designed to indicate the vehicle's ground travel speed during vehicle operation.

2.34. "*Stability control*" means any device that complies with national, "Electronic stability control systems".

2.35. "*Steering input*" means the angular displacement of the steering wheel measured from the straight-ahead position (position corresponding to zero average steer angle of a pair of steered wheels).

[2.36. "*Suppression switch status*" means the status of the switch indicating whether an air bag suppression system is on or off.]

[2.37. "*Time from event 1 to* ***n*** *~~2~~*" means the elapsed time from time zero of the first event to time zero of the ***nth*** ~~second~~ event.]

2.38. "*Time, maximum delta–V, lateral*" means the time from crash time zero to the point where the maximum value of the cumulative change in velocity is found, as recorded by the EDR, along the lateral axis.

2.39. "*Time, maximum delta-V, longitudinal*" means the time from crash time zero to the point where the maximum value of the cumulative change in velocity is found, as recorded by the EDR, along the longitudinal axis.

2.40. "*Time, maximum delta–V, resultant*" means the time from crash time zero to the point where the maximum delta–V resultant occurs, as recorded by the EDR or processed during data download.

2.41. "*Time to deploy, pretensioner*" means the elapsed time from crash time zero to the deployment command for the safety belt pretensioner (for both driver and front passenger).

2.42. "*Time to deploy, side air bag/curtain*" means the elapsed time from crash time zero to the deployment command for a side air bag or a side curtain/tube air bag (for both driver and front passenger).

2.43. "*Time to first stage*" means the elapsed time between time zero and the time when the first stage of a frontal air bag is commanded to fire.

2.44. "*Time to nth stage*" means the elapsed time from crash time zero to the deployment command for the nth stage of a frontal air bag (for both driver and front passenger).

2.45. ["*Time zero*" **is the time reference for the EDR data timestamps of an event** ~~means the starting point of an event~~.]

2.46. "*Trigger threshold*" means the appropriate physical parameter has met the conditions for recording an EDR event.

~~[2.x. "~~*~~Unlocked event~~*~~" means an EDR record that does not meet the locking condition. It may be overwritten by subsequent events.]~~

2.47. "*Vehicle roll angle*" means the angle between the vehicle y-axis and the ground plane.

2.48. "*Volatile memory*" means the memory reserved for buffering of captured EDR data. The memory is not capable of retaining data in a semi-permanent fashion. Data captured in volatile memory is continuously overwritten and is not retained in the event of a power loss or retrievable with EDR data extraction tools.

**2.x. “Vulnerable road used secondary safety system” means a deployable vehicle system outside the occupant compartment designed to mitigate injury consequences to vulnerable road users during a collision.**

~~2.x. "~~*~~Vulnerable road user (VRU)~~*~~" means a person using no vehicle, such as a pedestrian, or using a vehicle without protective occupant compartment, such as a pedal cyclist, micro-vehicle user or motorcyclist.~~

2.49. "*X-direction*" means in the direction of the vehicle’s X-axis, which is parallel to the vehicle's longitudinal centerline. The X-direction is positive in the direction of forward vehicle travel.

2.50. "*Y-direction*" means in the direction of the vehicle’s Y-axis, which is perpendicular to its X-axis and in the same horizontal plane as that axis. The Y-direction is positive from left to right, from the perspective of the driver when seated in the vehicle facing the direction of forward vehicle travel.

2.51. "*Z-direction*" means in the direction of the vehicle’s Z-axis, which is perpendicular to the X and Y-axes. The Z-direction is positive in a downward direction.

**Potential additional data element definitions contingent upon inclusion of associated data element:**

2.x [“Adaptive Cruise Control” (ACC) is a system that, when activated, exercises longitudinal control over the vehicle using sensors and automation, with the purpose of maintaining a set distance relative to other slower moving vehicles in front up to a set speed, set by the driver.]

2.x [“Cruise Control” is a system that, when manual activated, maintains a driver-selected constant speed without the use of the accelerator pedal, it does not exercise any control over the vehicles braking system.]

2.x [“Intelligent Speed Assistance (ISA”) means a system that determines the applicable speed limit and aids the driver in not exceeding it by providing feedback or limiting the vehicle speed.]

2.x "Power On Time" means the cumulative time that the vehicle has been operating since it was last switched on.

2.x Safety belt status means the feedback from the safety system that is used to determine that an occupant's safety belt (for a rear seat passenger) is fastened or unfastened.

2.x "Audible warning device" means a device consisting of one or several sound emission outlets that are excited simultaneously, emitting an acoustic signal which is intended to give audible warning of the presence of a vehicle in a dangerous road traffic situation and which is intentionally operated by a driver;

2.x "Direction indicator" means a device mounted on a motor vehicle or trailer which, when operated by the driver, signals the latter's intention to change the direction in which the vehicle is proceeding.

2.x "Hazard warning signal" means the simultaneous operation of all of a vehicle's direction-indicator lamps to show that the vehicle temporarily constitutes a special danger to other road users.

2.x "Driving-beam (main-beam) headlamp" means the lamp used to illuminate the road over a long distance ahead of the vehicle.

2.x "Passing-beam (dipped-beam) headlamp" means the lamp used to illuminate the road ahead of the vehicle without causing undue dazzle or discomfort to oncoming drivers and other road-users.

2.x "Adaptive front lighting system" (or "system") means a lighting device, providing beams with differing characteristics for automatic adaptation to varying conditions of use of the dipped-beam (passing-beam) and, if it applies, the main-beam (driving-beam) with a minimum functional content, such systems consist of the "system control", one or more "supply and operating device(s)", if any, and the "installation units" of the right and of the left side of the vehicle.

2.x "Stop lamp" means a lamp used to indicate to other road users to the rear of the vehicle that the longitudinal movement of the vehicle is intentionally retarded.

2.x "Tyre Pressure" means the inflation pressure of the tyres while the vehicle is in transit.

2.x "Tyre Pressure Monitoring System (TPMS)" means a system fitted on a vehicle, able to perform a function to evaluate the inflation pressure of the tyres or the variation of this inflation pressure over time and to transmit corresponding information to the user while the vehicle is running.

2.x Brake Pedal Position means an indication of the brake pedal position within the range from not depressed to fully-depressed.

2.x Brake warning indicator status means the displayed status of the brake warning system.

2.x “Roll rate” means the change in angle over time of the vehicle about its X-axis prior to and during an event.

2.x "Roll over detection" means a function that monitors the vehicle's roll around the X-axis and issues a signal when a rollover situation is detected.

2.x “Yaw angle” means the angle of the vehicle about its Z-axis (relative to initial vehicle orientation) prior to an event.

2.x “Yaw rate” means the change in angle of the vehicle about its Z-axis prior to an event.

2.x A "traction control device" means a system that selectively retards a vehicle's wheel speed to mitigate a loss of traction.

2.x "Advanced Emergency Braking System (AEBS)" means a system which can automatically detect an imminent forward collision and activate the vehicle braking system to decelerate the vehicle with the purpose of avoiding or mitigating a collision.

2.x "Steering Assist Function" means a control function which can automatically detect a potential collision and automatically activate the vehicle steering system for a limited duration, to steer the vehicle with the purpose of avoiding or mitigating a collision, with an obstacle obstructing the path of the subject vehicle or when the obstruction of the subject vehicle’s path is deemed imminent.

2.x "Emergency Call System" means a system that is activated either automatically via in-vehicle sensors or manually, which carries, by means of public mobile wireless communications networks, a set of crash-related data and establishes an emergency audio channel between the occupants of the vehicle and an answering point.

2.x "ISA speed limit" means the means the applicable speed limit as obtained by the speed limit determination system of the ISA system.

2.x "Blind Spot Monitoring System" means a system to aid the driver to perform safe lane changes by informing of the presence of adjacent vehicles.

2.x "Lane Departure Warning System (LDWS)" means a system to warn the driver of an unintentional drift of the vehicle out of its travel lane.

2.x "Lane Keep Assist" means a function which assists the driver in keeping the vehicle within the chosen lane, by influencing the lateral movement of the vehicle.

2.x ‘Emergency lane-keeping system’ means a system that assists the driver in keeping a safe position of the vehicle with respect to the lane or road boundary, at least when a lane departure occurs or is about to occur and a collision might be imminent.

2.x "Lane Centering Assist" means a function which is initiated/activated by the driver and which keeps the vehicle within its lane by influencing the lateral movement of the vehicle for extended periods without further driver command/confirmation.

2.x "Forward Collision Warning" means a function, which may be part of an AEBS system, and that warns the driver when a potential forward collision is detected.

2.x ‘Emergency stop signal’ means a light-signalling function to indicate to other road users to the rear of the vehicle that a high retardation force is being applied to the vehicle relative to the prevailing road conditions.

2.x A "Multi-collision brake" is a device that reduces the speed of the vehicle following a collision to mitigate the severity of any subsequent collisions.

2.x "Rear Cross-traffic Collision Warning" means a system to make the driver aware of vehicles approaching to cross behind the vehicle when reversing.

2.x ‘Advanced driver distraction warning’ means a system that helps the driver to pay attention to the traffic situation and that warns the driver when he or she is distracted.

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

2.x "Alcohol Interlock" means a device that immobilises the vehicle unless a breath sample of the driver indicates an alcohol level legal for driving.

2.x "Rear Advanced Emergency Braking System (AEBS)" means a system which can automatically detect an imminent rearward collision and activate the vehicle braking system to decelerate the vehicle with the purpose of avoiding or mitigating a collision.

2.x "Driving automation system level 2" means a system that performs the sustained and operational design domain-specific execution of both the lateral and longitudinal vehicle motion control subtasks of the dynamic driving task with the expectation that the driver completes the object and event detection response subtask and supervises the driving automation system.

2.x "Automated Driving System" means a system that performs the sustained and operational design domain-specific execution of the entire dynamic driving task with or without a fallback-ready user.

2.x “ADS 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.x “ADS 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.x “ADS override” by the driver 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.

2.x "ADS steering input requested" means the ADS-requested steering input.

2.x "Torque applied at the steering wheel" means the torque between the steering wheel and the steering column.

2.x Deployment status of the VRU secondary safety protection system.

2.x “Occupant/Pedestrian protection device deployment time” means the elapsed time from crash time zero to the deployment command for a VRU secondary safety protection system.

2.x Pedestrian protection device Warning lamp means the status of an indicator in the instrument panel that provides the information to the driver of the existence of an VRU secondary safety protection system malfunction, when lit.

2.x Occupant protection device Warning lamp means the status of an indicator in the instrument panel that provides the information to the driver of the existence of an occupant protection system malfunction, when lit.

2.x A "Pre-Safe System" is a function that makes reversible adjustments to the vehicle or occupant seating position to prepare for an imminent collision.

2.x "Other ADAS" means any additional Advanced Driver Assistance System (ADAS) that is not specifically defined on the list of 'EDR Data Elements'.

2.x "V2X warnings type" means the type of a warning received by an in-vehicle system over the air from another vehicle or an infrastructure unit.

2.x "V2X warnings time" means the time relative to T0 when the V2X warning was received by the in-vehicle system.

2.x "Trigger type" identifies which trigger threshold was exceeded to trigger the recording of data.

2.x A "brake override system" means a system that prevents the unintended application of the accelerator and brake simultaneously.

2.x "Sensor Design Range Exceeded" means the time relative to T0 when a sensor first reaches the maximum value of the specified range of that sensor.

2.x "EDR retrieval tool software version" means the software part number for the data retrieval tool at the time of data retrieval.

2.x “ADS Emergency Manoeuvre” is a manoeuvre performed by the system in case of an event in which the vehicle is at imminent collision risk and has the purpose of avoiding or mitigating a collision.

2.x Safety belt status means the feedback from the safety system that is used to determine that an occupant's safety belt (for mid position front) is fastened or unfastened.

2.x "Far-side impact airbag" means the deployment time of an airbag between driver and passenger, relative to T0.

2.x “Vehicle Pitch Angle” means the angle of the vehicle about its Y-axis (relative to initial vehicle orientation) prior to and during an event.

**Definitions (Unique to UN Regulation document)**

2.x. "*Vehicle type with regard to its Event Data Recorder*" means vehicles which do not differ significantly in such essential aspects as:

(a) The manufacturer’s trade name or mark;

(b) Vehicle features which significantly influence the performances of the
EDR; **Addition of new trigger(s), new data (elements), or modification in their format, shall not be considered as “significantly influencing the performance of EDR”;**

(c) The main characteristics and design of the EDR.