Submitted by the expert from OICA

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Proposal for supplement 01 to the 00 series of amendments to UN Regulation No. 130

Submitted by the experts from the International Organization of Motor Vehicle Manufacturers

I. Proposal

Scope, amend to read:

(The modifications to the current text of the Regulation are marked in **bold** characters)

1. Scope and purpose

"1.1 This Regulation applies to the lane departure warning system of vehicles of category M_2, N_2, M_3 and N_3[1] **not belonging to the following list:**

1) **category N2 tractor for semi-trailer with a maximum mass between 3,5 tonnes and 8 tonnes;**
2) **categories M_2 and M_3 vehicles of Class A, Class I and Class II;**
3) **category M_3 articulated buses of Class A, Class I and Class II;**
4) **off-road vehicles of categories M_2 , M_3 , N_2 and N_3;**
5) **special purpose vehicles of categories M_2 , M_3 , N_2 and N_3;**
6) **vehicles of categories M_2, M_3 , N_2 and N_3 with more than three axles [and a maximum mass exceeding 25 t or a maximum wheel diameter code exceeding 19.5];**

1.2. At the request of the manufacturer, this Regulation may also apply to vehicles listed in (1) to (6) in the list of paragraph 1.1.

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[1] As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.2, para. 2."

II. Justification

General approach:

1. Vehicle manufacturers are currently implementing LDWS on a large variety of models, e.g. to fulfil mandatory requirements by some Contracting Parties. This implementation work confirms the concerns which have been brought up for discussion during the AEBS/LDWS informal group activities and sheds light on a number of technical issues that appeared when installing obstacle and lane marking detection devices on some specific vehicles, in particular in case of huge technical diversity and where the vehicle environment can have negative impact on system reliability and on its ability to operate.

For example:

- Due to the technical environment specific to off-road vehicles (thickness of windshield, split windshields, asymmetrical cabs, front hood vehicles etc.) robust and reliable sensor integration is not always possible.
- Robust sensor installation on special purpose vehicles is often not possible (snow plows, external devices etc.).
- The environment conditions for construction vehicles may also negatively affect the sensors, in a similar way as for off road vehicles (dust, mud, humidity in off-road areas or on gravelled tracks…)..

- (See more technical background further down in this justification.)

2. The proposal here is to exclude from the scope of the regulation all vehicle categories where the technical and external environment generates conditions affecting correct operation of the system, and technical issues to properly install the system.

3. However, a paragraph 1.2. has been added for the case where a vehicle manufacturer may want to approve a LDWS on a vehicle excluded from scope, if the system can be installed in such a way that the LDWS requirements can all be fulfilled. It may also give the opportunity to a vehicle manufacturer to respond to a Contracting Party which may mandate the installation of LDWS on vehicles excluded from the scope, due to some traffic / market specificities in this particular country.

Detailed technical background for the different vehicle categories excluded from scope:

- LDWS is most efficient for "long distance trucks and coaches" travelling on highways. LDWS is primarily designed to support the driver during monotone driving conditions on highways.
- **Category N2 tractor for semi-trailer with a maximum mass between 3,5 tonnes and 8 tonnes;**
  These vehicles are typical vehicles not much distributed because they have particular utilizations. Due to this rarity it is currently difficult to equip them with LDWS in an economically efficient way.
- **Categories M_2 and M_3 vehicles of Class A, Class I and Class II;**
  Category M_3 articulated buses of Class A, Class I and Class II
  Vehicles of Class A, I and II are predominantly driven in city conditions. City driving mostly occurs below 60 km/h (the activation speed of LDWS). Due to often stop & go the driver is very active and drowsiness due to monotone driving is not expected.
- **Off-road vehicles;**
  Off-road vehicles are designed to drive under off-road conditions where there is no lane marking. Not only LDWS is useless in off-road conditions, but in addition a high rate of manual or automatic LDWS deactivation is expectable which can lead to loss of driver's acceptance, even in normal road conditions. Due to the technical environment specific to off-road vehicles (thickness of windshield, split windshields, asymmetrical cabs, front hood vehicles etc.) robust and reliable sensor integration is not always possible.
- **Special purpose vehicles of categories M2 , M3 , N2 and N3**
  Robust sensor installation on special purpose vehicles is often not possible (snow plows, external devices etc.). Typically, these vehicles have a low mileage for a high number of operating hours: monotone driving is not to be expected. As a consequence, the deactivation rate can be such that it can considerably reduce the acceptance of the system.
- **Vehicles of categories M3, N2 and N3 with more than three axles and a maximum wheel diameter code exceeding 19.5 or with a maximum mass exceeding 25 t**
  Vehicles with more than 3 axles in the EU are often construction vehicles, which are seldom used on highways and rarely in conditions where LDWS would be most efficient. Moreover, the environment conditions for these construction vehicles may negatively affect the sensors, in a similar way as for off road vehicles. 4 axle vehicles in Japan are mostly used for long haulage transport, thus are not excluded from the scope.