

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

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

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

I. Proposal

Insert an Introduction, to read:

"Introduction (for information)

The intention of this Regulation is to establish uniform provisions for lane departure warning systems (LDWS) fitted to motor vehicles of the categories M₂, M₃, N₂ and N₃¹ primarily used under highway conditions. These vehicle categories will benefit from the fitment of a lane departure warning system, especially in the field of monotonous driving situations. The benefit of such system installation is to support a distracted or drowsy driver by warning if the vehicle is unintentionally leaving the road.

While, in general, those vehicle categories will benefit from the fitment of an advanced emergency braking system, there are sub-groups where the benefit is rather uncertain because they are primarily used in other conditions than highway conditions. For example vehicles of category M₂/M₃ class A, I & II (including articulated busses), off road vehicles.

Regardless from the benefit, there are other sub-groups where the installation of LDWS would be technically difficult. For example:

- Vehicles equipped with split windshields, asymmetrical cabs, windshield of high thickness, front hood vehicles, etc.
- Vehicles whose utilization makes them subject to dust, mud and humidity, which can have negative impacts to the system. Off-Road vehicles are driven seldom on highways, rather on e.g. graveled tracks, off-road, etc.
- Furthermore special purpose vehicles where the fitment of the sensors is either not possible or doesn't fulfill the supplier's installation recommendations (e.g. snow plows, equipment on the hood area etc.). Typically these kinds of vehicle have a high number of operating hours relating to a small number of kilometers.
- In EU vehicles with more than 3 axles are mainly used in built areas and extremely rare on highways.

The system shall automatically detect a potential leaving of the road and provide the driver with a warning to bring back the vehicle into the lane.

In the case of a failure in the system, the safe operation of the vehicle shall not be endangered.

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

The system shall provide as a minimum an acoustic or haptic warning, so that an inattentive driver is made aware of a critical situation.

The Regulation cannot include all the traffic conditions and infrastructure features in the type-approval process. Actual conditions and features in the real world should not result in false warnings to the extent that they encourage the driver to switch the system off."

II. Justification

1. The vehicle manufacturers are currently implementing LDWS on a large variety of models, e.g. to fulfil requirements mandated 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 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.

2. LDWS is most efficient for "long distance trucks and coaches" travelling on highways and is primarily designed to support the driver during monotone driving conditions in these conditions.

For example:

- Due to the technical environment specific to off-road vehicles (windshield thickness, split windshields, asymmetrical cabs, front hood vehicles etc.) robust and reliable sensor integration is not always possible.
- 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...).

3. LDWS is most efficient for "long distance trucks and coaches" travelling on highways and is primarily designed to support the driver during monotone driving conditions in these conditions.
