

**UNECE GRRF informal group on AEBS/LDW
1st meeting, Paris, 25 & 26 June 2009**

Agenda item 7.3.a

Proposals for definition of LDW

GRRF-S08-02 + GRRF-65-20 (Germany):

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

GRRF-S08-09 (ISO):

Lane Departure Warning Systems (LDWS) are based on fundamental traffic rules. The main focus of LDWS is to help the driver keep the vehicle in the lane on highways and highway-like roads. Accordingly, a warning is issued to alert the driver in case of lane departure caused by, for example, inattention. LDWS are not intended to issue warnings with respect to collisions with other vehicles or control vehicle motions.

AEBS/LDW-01-04 (EC):

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

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Agenda item 7.3 (b)

Proposals/positions on scope for LDW Regulation

GRRF-S08-02 (Germany):

If vehicles of categories **M2, M3, N2 or N3** are fitted with Lane Departure Warning Systems then they shall meet the requirements of Annex 7.

(If Lane Departure Warning Systems are voluntarily fitted by the manufacturer to a vehicle in categories **M1 or N1** the application of Annex 7 is also possible).

GRRF-S08-03 (CLEPA):

Mandatory for **all vehicles (M & N)**

(Exemption of special purpose vehicles to be discussed)

GRRF-S08-09 (ISO):

The standard shall apply to **passenger cars, commercial vehicles and buses**

GRRF-S08-10 (OICA):

Category **M3** vehicles of class **II and III, > 12 t, 4x2 and 6x2**
(exempt M3G = off-road M3 vehicles)

Category **N3** vehicles, **> 16 t, 4x2 and 6x2**

(exempt N3G = off-road N3 vehicles)

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Agenda item 7.4 (a)

**Proposals/positions on operational scenarios
to be covered by a LDW Regulation**

GRRF-S08-02 (Germany):

Based on ISO 17361:2007 (see GRRF-S08-09 below)

GRRF-S08-03 (CLEPA):

Lane warning mandatory, Lane keeping optional

GRRF-S08-09 (ISO):

- warn driver of lane departure on highways and highway-like roads,
- warning consistent with visible lane markings
- warnings at roadway sections having temporary or irregular lane markings such as road work zones not covered
- no automatic action to prevent possible lane departures

GRRF-S08-10 (OICA):

Warning only, no lane keeping nor lane change assist

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Agenda item 7.4 (b)

**Proposals/positions on detection capabilities and
conditions for activation of LDW systems**

GRRF-S08-02 (Germany):

Based on ISO 17361:2007 (see GRRF-S08-09 below)
but with the following adaptations:

- earliest warning line requirements do not apply
- latest warning line at [0,3 m] outside lane boundary for all vehicles

GRRF-S08-03 (CLEPA):

Maximum 0.3 m outside of lane marking

GRRF-S08-09 (ISO):

- earliest warning line between 0,75 and 1,5 m (in function of rate of departure)
- latest warning line at 0,3 m outside lane boundary for passenger cars and at 1m for trucks and buses

GRRF-S08-10 (OICA):

Based on ISO 17361:2007 (see GRRF-S08-09 above)

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Agenda item 7.4 (c)

Proposals/positions on speed range for LDW systems

GRRF-S08-02 (Germany):

Based on ISO 17361:2007 (see GRRF-S08-09 below)
Class II system , but with the following adaptations:

- LDW automatically activated when vehicle speed exceeds [60 km/h]

GRRF-S08-03 (CLEPA):

Mandatory between 60-130 km/h

Optional outside this range

GRRF-S08-09 (ISO):

- Class I system: vehicle speed ≥ 20 m/s (72 km/h)
- Class II system: vehicle speed ≥ 17 m/s (61,2 km/h)
- Optional at lower vehicle speeds

GRRF-S08-10 (OICA):

Based on ISO 17361:2007 (see GRRF-S08-09 above)

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Agenda item 7.4 (d)

**Proposals/positions on road geometry boundaries
for LDW systems**

GRRF-S08-02 (Germany):

Based on ISO 17361:2007 (see GRRF-S08-09 below)
LDW to be able to give warning under road curvature
condition for class II systems: $R \geq 250$ m

GRRF-S08-09 (ISO):

LDW to be able to give warning under at least one of the
following road curvature conditions :

- Class I system: $R \geq 500$ m
- Class II system: $R \geq 250$ m

Compensation for curve cutting behaviour optional

GRRF-S08-10 (OICA):

Based on ISO 17361:2007 (see GRRF-S08-09 above)

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Agenda item 7.4 (e)

Proposals/positions on HMI issues for LDW systems

GRRF-S08-02 (Germany):

Based on ISO 17361:2007 (see GRRF-S08-09 below)
+ LDW may be fitted with on/off control by driver,
but has to automatically switch on with ignition start

GRRF-S08-03 (CLEPA):

Manual switch-off by driver possible, but automatic default
on 'ON' at start-up
Failure warning & non-failure loss of functionality
indicators mandatory

GRRF-S08-09 (ISO):

Lane departure warning: haptic and/or audible (optional:
indication of direction of departure)
System status indication (failure & system incapable)
On/off control by driver: optional
Suppression request for intended lane departure: optional

GRRF-S08-10 (OICA):

Based on ISO 17361:2007 (see GRRF-S08-09 above)

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Agenda item 7.5

**Proposals on test procedure
for LDW systems**

GRRF-S08-02 (Germany):

Based on ISO 17361:2007 (see GRRF-S08-09 below)
but with adapted criterion for warning generation test
(repeatable warnings within a zone of [30cm] prior to crossing latest
warning line)

GRRF-S08-09 (ISO):

Three types of tests:

- Warning generation
- Repeatability
- False alarm

GRRF-S08-10 (OICA):

Based on ISO 17361:2007 (see GRRF-S08-09 above)