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Intelligent transport systems — Lane keeping assistance systems (LKAS) — Performance requirements and test procedures

Systèmes intelligents de transport — Systèmes d'aide au suivi de voie — Exigences de performance et modes opératoires d'essai

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Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Symbols and abbreviated terms ... **3**
4.1 Symbols ... 3
4.2 Abbreviated terms ... 3

5 Requirements ... **3**
5.1 Functionality ... 3
5.2 Basic driver interface and intervention capabilities ... 4
5.3 Minimum functionality ... 5
5.4 Operational limits ... 5
5.5 Failure reactions ... 5

6 Performance evaluation test methods ... **6**
6.1 Environmental conditions ... 6
6.2 Test course conditions ... 6
6.3 Test vehicle conditions ... 6
6.4 Test system installation and configuration ... 6
6.5 Test procedure ... 7

Annex A (informative) **Example for a track for the test procedure in a curve** ... **9**

Annex B (informative) **National road markings** ... **11**

Bibliography ... **19**

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 204, *Intelligent transport systems*.

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Introduction

The main system function of a Lane Keeping Assistance System (LKAS) is to support the driver in keeping the vehicle within the current lane. LKAS acquires information on the position of the vehicle within the lane and, when required, sends commands to actuators to influence the lateral movement of the vehicle. LKAS provides status information to the driver.

Issues such as specific requirements for the detection sensor function and its performance, or the communication links for co-operative solutions, will not be considered here.

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Intelligent transport systems — Lane keeping assistance systems (LKAS) — Performance requirements and test procedures

1 Scope

This International Standard contains the basic control strategy, minimum functionality requirements, basic driver interface elements, minimum requirements for diagnostics and reaction to failure, and performance test procedures for Lane Keeping Assistance Systems (LKAS). LKAS provide support for safe lane keeping operations by drivers and do not perform automatic driving nor prevent possible lane departures. The responsibility for the safe operation of the vehicle always remains with the driver. LKAS is intended to operate on highways and equivalent roads. LKAS consist of means for recognizing the location of the vehicle inside its lane and means for influencing lateral vehicle movement. LKAS should react consistently with the driver expectations with respect to the visible lane markings. The support at roadway sections having temporary or irregular lane markings (such as roadwork zones) is not within the scope of this International Standard. This International Standard is applicable to passenger cars, commercial vehicles, and buses.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2575, *Road vehicles — Symbols for controls, indicators and tell-tales*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
subject vehicle
vehicle equipped with LKAS as defined herein

3.2
system states
one of several stages or phases of system operation (see Figure 1)

3.2.1
LKAS off state
system is switched off

3.2.2
LKAS on state
system is switched on

3.2.3
LKAS stand-by state
system is switched on but the activation criteria are not all met

3.2.4
LKAS active state
system is switched on and the activation criteria are met

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