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Intelligent transport systems — External hazard detection and notification systems — Basic requirements

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Contents

Page

Foreword ... **iv**

Introduction ... **v**

1 Scope ... **1**

2 Normative references ... **1**

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

4 External hazard detection and notification systems ... **2**
4.1 General ... 2
4.2 Categories of hazard notification ... 2
4.3 Types of external hazard detection and notification system ... 2
4.4 Functional configuration ... 3
4.4.1 Basis of functional configuration ... 3
4.4.2 Detection functional block ... 4
4.4.3 Assessment functional block ... 4
4.4.4 Human machine interface (HMI) functional block ... 4
4.4.5 Communication functional block ... 5
4.5 Time factors of hazard notification ... 5
4.5.1 General ... 5
4.5.2 Detection functional block time factor ... 5
4.5.3 Assessment functional block time factor ... 5
4.5.4 HMI functional block time factor ... 6
4.5.5 Communication functional block time factor ... 6
4.5.6 Time factor after hazard notification ... 6

5 Requirements for external hazard detection and notification systems ... **7**
5.1 Principle ... 7
5.2 Particulars ... 7
5.2.1 General ... 7
5.2.2 Detection information ... 7
5.2.3 Assessment information ... 8
5.2.4 Notification information ... 8
5.2.5 Timing of hazard notification ... 9
5.2.6 Distance of hazard notification ... 11

6 Non-functional requirements ... **14**
6.1 General ... 14
6.2 Consistency ... 14
6.3 Priority ... 14
6.4 Security ... 15
6.5 Quality ... 15
6.6 Integration ... 15

Annex A (informative) **Consideration of timing and distance of hazard notification (case study)** ... **16**

Bibliography ... **19**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

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Introduction

External hazard detection and notification systems recognize vehicle conditions and their ambient environment using on-board remote sensing or cooperatively through communication between infrastructure and vehicle (I-V), or among vehicles (V-V), and warn or inform the driver about external hazards.

This document addresses a number of functions, such as slow vehicle indication, collision hazard warning, lane change assistance, red light warning, and intersection crossing assistance. There are common requirements for several external hazard detection and notification systems. Many other standard development organizations may consider systems that assist driving safety. The scope of ISO/TC 204 is to promote a positive experience of vehicle/roadway warning and control systems for the driver.

This document is not intended to provide requirements for particular systems defined in each individual standard, but basic requirements based on basic principles for external hazard detection and notification systems. They are common requirements in similar systems, such as safety systems on nomadic devices and systems developed in ISO/TC 204, and should become root or primal requirements to define each system's requirements. This document will be referred to when designing various systems in the future. It is expected to ensure uniformity and efficiency and building systems that reduce the likelihood of confusion for the driver.

For a better understanding of basic requirements, examples of typical formulae are shown in this document as informative elements. In addition, calculated examples of some services are given as information in the annex. Fruitful information on particular consideration is listed in the Bibliography.

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Intelligent transport systems — External hazard detection and notification systems — Basic requirements

1 Scope

This document specifies basic requirements for systems to execute notifications such as warning and awareness messages to provide hazard information to a driver.

Requirements include principle of notifying, timing of notification, distance of notification, and information elements that should be included in messages.

NOTE 1 Methods of implementing functions such as hazardous conditions detection, communication, and presentation to drivers are not specified in this document.

NOTE 2 The formulae in Clause 5 and calculated concrete time or distance duration in Annex A are not normative elements but informative elements.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
hazard notification
information that is provided to a driver to notify of external hazards

3.2
warning
type of *hazard notification* (3.1) that requests action be taken immediately to avoid an external hazard

3.3
awareness message
type of *hazard notification* (3.1) that informs the driver about an external potential hazard within a short time in the future

3.4
hazardous condition
external conditions that have intrinsic risks of causing accidents or collisions

3.5
safe state
vehicle state that is achieved after avoiding a *hazardous condition* (3.4)

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