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Intelligent transport systems — Forward vehicle collision warning systems — Performance requirements and test procedures

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Contents

Page

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. www.iso.org/directives

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

This second edition cancels and replaces the first edition (15623:2002), which has been technically revised.

Introduction

The main system function of a forward vehicle collision warning system (FVCWS) is to warn the driver when the subject vehicle encounters the situation of a forward vehicle in the subject vehicle's trajectory becoming a potential hazard. This is done by using information such as: (1) the range to forward vehicles, (2) the relative velocity of the forward vehicles with respect to subject vehicle and (3) whether a forward vehicle is in the subject vehicle trajectory. Based upon the information acquired, the controller identified as "FVCWS target selection and warning strategy" in Figure 1 produces the warning to the driver.

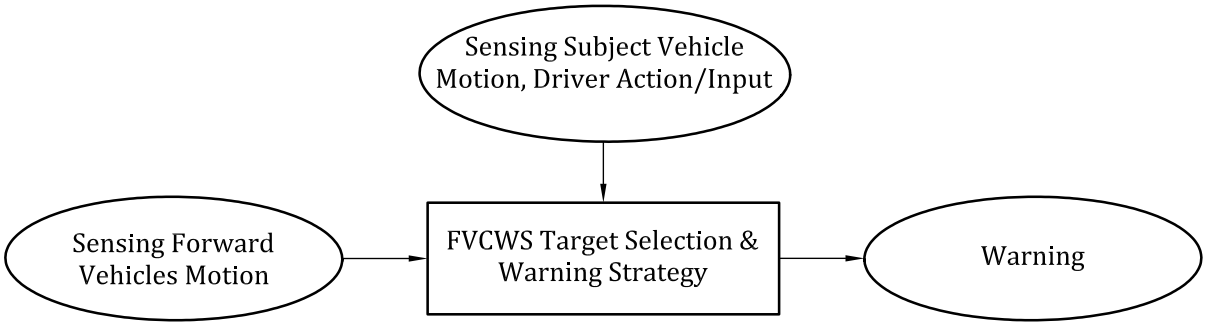

Figure 1 — Functional forward vehicle collision warning system's elements

Automobile manufacturers and component suppliers throughout the world have been vigorously pursuing the development and commercialisation of these FVCWS systems. Systems of this type have already been introduced on to the market in some countries. Thus the standardization efforts began in 1994 amongst interested countries. This International Standard is composed to address only the basic performance requirements and test procedures for the FVCWS type systems. This International Standard may be used as a basis by other standards for systems which have more features and may extend beyond this International Standard.

INTERNATIONAL STANDARD ISO 15623:2013(E)

Intelligent transport systems — Forward vehicle collision warning systems — Performance requirements and test procedures

1 Scope

This International Standard specifies performance requirements and test procedures for systems capable of warning the driver of a potential rear-end collision with other vehicles ahead of the subject vehicle while it is operating at ordinary speed. The FVCWS operate in specified subject vehicle speed range, road curvature range and target vehicle types. This International Standard covers operations on roads with curve radii over 125 m, and motor vehicle including cars, trucks, buses, and motorcycles. Responsibility for the safe operation of the vehicle remains with the driver.

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.

IEC 825-1:1993, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide* (includes update of 1994)

3 Terms and definitions

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

3.1
collision warning
information that the system gives to the driver indicating the need for urgent action to avoid or reduce the severity of a potential rear end collision with another forward vehicle

Note 1 to entry: This warning is issued in the advanced stages of a dangerous situation to warn the driver of the need to perform emergency braking, lane changing or other emergency manoeuvres in order to avoid a collision.

3.2
reflection coefficient of test target
RCTT
optical radar reflectivity of the target, which is defined as the radiated intensity towards the receiver (Iref - W/sr) measured at target level, immediately after the reflection; divided by the intensity of irradiation received from the transmitter (Et - W/m^2) measured at target level, immediately before the reflection

Note 1 to entry: The units for RCTT value are in m^2/sr (see Annex C).

3.3
forward vehicle
vehicle in front of and moving in the same direction and travelling on the same roadway as the subject vehicle

3.4
forward vehicle collision warning system
FVCWS
system capable of warning the driver of a potential collision with another forward vehicle in the forward path of the subject vehicle