SLOVENSKI STANDARD
SIST-TS CEN/TS 15504:2009

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Javni prevoz - Cestna vozila - Vidne spremenljive naprave v vozilu za informiranje potnikov

Public transport - Road vehicles - Visible variable passenger information devices inside the vehicle

Öffentlicher Verkehr - Straßenfahrzeuge - Sichtbare wechselnde Fahrgastinformationsträger im Fahrzeug

Transport public - Véhicule routier - Information par panneau à message variable dans les véhicules

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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

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English Version

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Foreword

This document (CEN/TS 15504:2007) has been prepared by Technical Committee CEN/TC 278 “Road Transport and Traffic Telematics”, the secretariat of which is held by NEN.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This specification outlines the requirements for electronic Interior Variable Message Signs (IVMS) for the presentation of dynamic passenger information in public transport vehicles, like e.g. buses, trams, trolleybuses.

1 Scope

This standard applies to different IVMS systems mounted in public transport vehicles, like e.g. buses, tramways, trolleybuses, and specifies the installation location, dimensions, characteristics of the sign system, information contents and cabling.

At present there are several technologies for these kinds of IVMS (e.g. LCD, LED, VFD etc.).

2 Normative references

Not applicable.

3 Terms and definitions

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

3.1
Automatic Vehicle Monitoring System
enables actualisation of the vehicle route to be displayed on the IVMS should any change in route occur during the ride

3.2
Interior Variable Message Signs
indicator with a sign panel mounted in long-distance and short-distance vehicles indicating the planned vehicle route

3.3
Internal stop sign
indicator with a sign panel indicating the name of the next stop.

3.4
On-board transmission bus
enables the control of IVMS by the board controller of the Vehicle Board Information and Control System (VBICS).

3.5
Precise time and tariff zone sign
indicator with a sign panel indicating the course of the route, the actual stop, perhaps also the line number, interchange facilities etc. of the actual route.

3.6
Route sign
indicator with a sign panel indicating informing of the course of the route, the actual stop, perhaps also the line number, interchange facilities etc. of the actual route.

4 Abbreviations

In this document the following abbreviations are used:

4.1
AVMS
Automatic Vehicle Monitoring System

4.2
IVMS
Interior Variable Message Sign

4.3
VBICS
Vehicle Board Information and Control System

5 Requirements

5.1 General

The sign technology is not to be standardised in this document. Each system should, independently of the number of passengers, guarantee good visibility and legibility.

The visible sign space shall be placed vertically or inclined towards the passenger seats.

The sign system shall be adapted to the characteristics of the vehicle and it should be possible to integrate them optimally in the passenger compartment.

The sign elements are to be protected against vandalism, e.g. by non-reflecting glass.

5.2 Installation location of the signs

5.2.1 Next stop IVMS

The next stop IVMS should be fitted as high up as possible in the vehicle as a hanging device or a built-in device depending on the seat arrangement of the vehicle. If the seats are fitted in and against the running direction, the signs should be mounted in the front and in the rear of the vehicle. In case of articulated vehicles, signs are to be provided in each vehicle part. The sign must be fixed high enough to enable safe passage of passengers.

5.2.2 Route IVMS

Depending on the characteristics of the vehicle, the route sign should be fitted laterally above the window either vertically or inclined; installation locations opposite the boarding areas are preferred. Double-sided signs should be fitted at the window next to the middle-boarding door.

5.2.3 Precise time and tariff zone IVMS

The internal stop sign should be fitted as high up as possible as a hanging device or a built-in device depending on the seat arrangement of the vehicle. If the seats are fitted in and against the running direction, the signs should be mounted in the front and rear of the vehicle. In case of articulated vehicles, signs are to be provided in each vehicle part.

5.3 IVMS information content

5.3.1 Next stop IVMS

The next stop IVMS shall indicate the name of the next stop. If possible, additional information such as the line number, route terminus, actual time and date etc. should be displayed. The sign acknowledging the passenger's stop request should either appear in a separate field or in the sign itself. If additional information, like actual traffic messages, information on connecting lines, advertisements etc., is required on the sign, then additional sign spaces or alternating messages are allowed.

The example of this type of the sign is shown in Figures A.1 and A.2

NOTE This additional Information can be depicted statically clocked or by a moving text, depending on the sign technology.

5.3.2 Route IVMS

The route IVMS shall indicate the route of the vehicle. It should be designed so that the actual stop names, terminus and line number can be shown.

It can also include information on interchange facilities and about the next stop.

By the design of the sign, attention should be paid to a clear division of information. Additional inscriptions or markings should be made above the corresponding sign fields.

An example of this type of sign is shown in Figure A.4. The double sided route IVMS fitted at the window next to the middle boarding door shall inform the route of the vehicle on the interior side and on the exterior side about the route number, terminus name and next stop name.

5.3.3 Precise time and tariff zone IVMS

The precise time and tariff zone IVMS shall inform passengers as to the precise time and actual tariff zone if they are used.

An example of this type of sign is shown in Figure:A.3.

5.4 Fonts

5.4.1 General

The characters shall be depicted in the matrix of pixels. The number of lines and columns of the character matrix must be selected depending on the sign technology and national language alphabet.

An imitation of the type of Helvetica is to be preferred for the graphic representation of the character.

The seven-segment display may be used for depicting numbers.

The information may be shown in one or several lines.

In order to obtain better legibility, large and small writing is to be applied. It shall be possible to depict all the capitals and small letters of the respective national language.

The sign shall have space for the display of at least 16 characters for the stop names.

NOTE The minimum matrix of the pixels for the character is 7 lines and 5 columns. This minimum matrix is not usable for all national languages. The matrix 9 lines and 7 columns is sufficient for most national languages.

5.4.2 Colours

The colour of the depiction shall be determined in the operator’s technical specifications.

NOTE The colour of the sign elements generally depends on the sign technology applied.

5.4.3 Character height

The character height depends on the maximum resolution of the character. The minimum character height is 40 mm for Next stop IVMS and 8 mm for the Route IVMS.