ICS 03.220.30, 13.180, 35.240.60

SLOVENSKÁ TECHNICKÁ NORMA

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STN	**Dráhové aplikácie. Komunikačné a signalizačné systémy a systémy na spracovanie údajov. Európsky systém riadenia železničnej dopravy. Rozhranie rušňovodič - zariadenie. Časť 1: Všeobecné princípy pre zobrazovanie informácií ERTMS/ETCS/GSM-R.**	**STN P CLC/TS 50459-1** 34 2660

Railway applications - Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 1: General principles for the presentation of ERTMS/ETCS/GSM-R information

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/15

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Supersedes CLC/TS 50459-1:2005

English Version

Railway applications - Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 1: General principles for the presentation of ERTMS/ETCS/GSM-R information

Applications ferroviaires - Systèmes de signalisation, de télécommunications et de traitement - Système européen de gestion du trafic ferroviaire - Interface de conduite - Partie 1: Principes généraux pour la présentation des informations ERTMS/ETCS/GSM-R

Bahnanwendungen - Telekommunikationstechnik, Signaltechnik und Datenverarbeitungssysteme - Europäisches Leitsystem für den Schienenverkehr - Mensch-Maschine Schnittstelle - Teil 1: Ergonomische Grundsätze für die Darstellung von ERTMS/ETCS/GSM-R Informationen

This Technical Specification was approved by CENELEC on 2015-07-20.

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European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (CLC/TS 50459-1:2015) has been prepared by CLC/SC 9XA “Communication, signalling and processing systems”, of Technical Committee CENELEC TC 9X “Electrical and electronic applications for railways”.

This document supersedes CLC/TS 50459-1:2005.

CLC/TS 50459-1:2015 includes the following significant technical changes with respect to CLC/TS 50459-1:2005:

— update general principles for the presentation of ERTMS/ETCS/GSM-R information correlated with ERA_ERTMS_015560;

— update ergonomic arrangements with EN 16186 series.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document should be read in conjunction with ERA_ERTMS_015560 “*ETCS Driver Machine Interface”* and EN 16186 series, “*Railway applications — Driver's Cab*”.

CLC/TS 50459 series consists of the following parts under the general title “*Railway applications – Communication, signalling and processing systems – European Rail Traffic Management System – Driver-Machine Interface*”:

— *Part 1: General principles for the presentation of ERTMS/ETCS/GSM-R information*;

— *Part 2: Ergonomic arrangements of GSM-R information*[1)];

— *Part 3: Ergonomic arrangements of non ETCS information*[1)].

1) At final draft stage.

Introduction

CLC/TS 50459 series contains the ergonomic arrangements of information on the ERTMS/DMI Display (CCD and TRD). Most items are illustrated with an example.

The reasons for defining the ergonomics of the DMI are as follows:

— achieving harmonized and coherent presentation for ERTMS/ETCS and NTC information. Given the large number of NTC's requiring the use the ERTMS/ETCS DMI, only a harmonized approach is feasible;

— defining Driver-Machine Interface ergonomics that is compatible with agreed interoperable ERTMS specifications;

— to reduce the risk of incorrect operation by a driver;

— facilitating train operation with a unified ergonomics, hence reducing the cost of driver training;

— better understanding of the tasks to be performed;

— increasing speed and accuracy of driver actions.

1 Scope

This Technical Specification describes from an ergonomic point of view how ERTMS and non-ERTMS information will be arranged and displayed. More specifically, it covers information that is out of the scope of ERA_ERTMS_015560. This Technical Specification describes more ergonomic details than currently provided by the ERTMS/GSM-R specifications.

This Technical Specification defines the ergonomics for the Driver-Machine Interface (DMI) for the following applications:

— stand-alone ERTMS/GSM-R Train Radio Systems;

— non-ERTMS/ETCS Train Control Systems;

— other technical systems currently provided on the rolling stock.

The ergonomics covers

— the general arrangements (dialogue structure, sequences, layout philosophy, colour philosophy),

— the symbols,

— the audible information,

— the data entry arrangements.

This Technical Specification is limited to ergonomic considerations and does not define the technology to be used for the implementation but it does give guidelines about how to implement the requirements using different technology types (soft keys, touch screen device, LCD, electromechanical instruments, indicator lamps, etc.).

This Technical Specification is applicable to all trains fitted with the ERTMS/ETCS and also to trains fitted with train radio (GSM-R) DMI.

The scope of Part 1 of CLC/TS 50459 is to define ergonomic principles for the interface between the driver and the above listed applications.

TDD is out of scope of CLC/TS 50459 series.

For human factor items, such as display of information, display location, viewing angles and organization of the screens, see EN 16186 series.

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.

ERA_ERTMS_015560, *ETCS Driver Machine Interface*, Version 3.4.0, 2014-05-12

EN 16186-1, *Railway applications – Driver's cab – Part 1: Anthropometric data and visibility*

prEN 16186-2:2015, *Railway applications – Driver's cab – Part 2: Integration of displays, controls and indicators* [2)]

prEN 16186-3, *Railway applications – Driver's cab – Part 3: Design of displays* [2)]

2) At draft stage.