

English version

**Railway applications –
Communication, signalling and processing systems –
European Rail Traffic Management System –
Driver-Machine Interface
Part 5: Symbols**

Applications ferroviaires –
Systèmes de signalisation, de
télécommunications et de traitement –
Système européen de gestion du trafic
ferroviaire –
Interface de conduite
Partie 5: Symboles

Bahnanwendungen –
Telekommunikationstechnik, Signal-
technik und Datenverarbeitungssysteme –
Europäisches Leitsystem für den
Schienenverkehr –
Mensch-Maschine Schnittstelle
Teil 5: Symbole

This Technical Specification was approved by CENELEC on 2005-05-07.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This Technical Specification was prepared by SC 9XA, Communication, signalling and processing systems, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the vote and was approved by CENELEC as CLC/TS 50459-5 on 2005-05-07.

The following date was fixed:

- latest date by which the existence of the CLC/TS
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Introduction

This Technical Specification forms Part 5 of a series, the other parts being:

- | | |
|----------------|---|
| CLC/TS 50459-1 | for ergonomic principles for the presentation of ERTMS/ETCS/GSM-R information |
| CLC/TS 50459-2 | for ergonomic arrangements of ERTMS/ETCS information |
| CLC/TS 50459-3 | for ergonomic arrangements of ERTMS/GSM-R information |
| CLC/TS 50459-4 | for data entry procedure for ERTMS/ETCS/GSM-R |
| CLC/TS 50459-6 | for audible information for ERTMS/ETCS/GSM-R |

This document does not cover symbols to be used for STM.

1 Scope

This Technical Specification describes from an ergonomic point of view how ERTMS information shall be arranged and displayed. This Technical Specification describes more ergonomic details than currently provided by the ERTMS/ETCS/GSM-R specifications.

This Technical Specification defines the ergonomics for the Driver-Machine Interface (DMI) for the ERTMS/ETCS Train Control System, and for the integrated ERTMS/GSM-R Train Control and Train Radio Systems, and for the stand alone ERTMS/GSM-R Train Radio Systems and for other technical systems currently provided on the engines.

The ergonomics covers the:

- general arrangements (dialogue structure, sequences, layout philosophy, colour philosophy);
- symbols;
- audible information;
- data entry arrangements.

The aims of the ERTMS/ETCS/GSM-R Train Control and Train Radio Systems are standardised systems facilitating interoperable movement of trains and permitting economies of scale in procurement and operations. The objective of this Technical Specification is to define the minimum requirements on the DMI that are necessary to enable these objectives to be achieved. Hence the Technical Specification is limited to ergonomic considerations and does not define the technology to be used for the implementation.

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

- achieving harmonised and coherent presentation for ERTMS/ETCS and STM information. Given the large number of STM's requiring the use the ERTMS/ETCS DMI, only a harmonised 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 working with different trains fitted with ERTMS/ETCS and ERTMS/GSM-R.
- facilitating train operation with a unified ergonomics, hence reducing the cost of driver training.

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

The scope of this part of the Technical Specification (Part 5) is to define the symbols used with the ERTMS/ETCS and the ERTMS/GSM-R DMI. The actual use of the symbols is depending on the availability of the function addressing the symbol.

2 Normative references

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

CLC/TS 50459-1, *Railways applications – Communication, signalling and processing systems – European Rail Traffic Management System – Driver-Machine Interface – Part 1: Ergonomic principles for the presentation of ERTMS/ETCS/GSM-R information*

CLC/TS 50459-2, *Railways applications – Communication, signalling and processing systems – European Rail Traffic Management System – Driver-Machine Interface – Part 2: Ergonomic arrangements of ERTMS/ETCS information*

CLC/TS 50459-3, *Railways applications – Communication, signalling and processing systems – European Rail Traffic Management System – Driver-Machine Interface – Part 3: Ergonomic arrangement of ERTMS/GSM-R information*

CLC/TS 50459-4, *Railways applications – Communication, signalling and processing systems – European Rail Traffic Management System – Driver-Machine Interface – Part 4: Data entry for the ERTMS/ETCS/GSM-R systems*

UIC 651, *Layout of driver's cabs in locomotives, railcars, multiple-unit trains and driving trailers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in CLC/TS 50459-1 apply.

4 Symbols and abbreviations

For the purposes of this document, the symbols and abbreviations given in CLC/TS 50459-1 apply.

5 Use of symbols

5.1 Principles

The principles underlying the design and use of the symbols presented in the following clauses are described within CLC/TS 50459-1.

The appearance of the symbols in this Technical Specification is normative. However, this does not imply that the symbol must be shown on the DMI if a function is considered to be optional. The explicit meaning is, that if the function is available, it must be presented in the way described in this document. If it is not needed, then the DMI does not show the information.

If a symbol is used, its form, shape, colour and size shall be as specified in this Technical Specification (CLC/TS 50459-5). Other information in Tables 1 to 11 is for reference. See also CLC/TS 50459-1 for further information.

The symbol area codes for the ERTMS/ETCS symbols refer to Part 2 of this Technical Specification; for the ERTMS/GSM-R symbols to Part 3 of this Technical Specification.

5.2 ERTMS/ETCS symbols

NOTE The "Symbol Area" column in the descriptions below is included for clarity and ease of understanding.

For good visibility all symbols are presented with the recommended background colour 'dark blue'. In an application the symbols shall have transparent background.

In general, symbols for area D2/3/4 with the size 20 x 20 have their reference point at the bottom of the symbol itself.