



BSI Standards Publication

Railway applications — Communication, signalling and processing systems — European Rail Traffic Management System

Part 2: Ergonomic arrangements of CSM-R information

National foreword

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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Railway applications - Communication, signalling and processing systems - European Rail Traffic Management System - Part 2: Ergonomic arrangements of GSM-R information

Applications ferroviaires - Systèmes de signalisation, de télécommunications et de traitement - Système européen de gestion du trafic ferroviaire - Interface de conduite - Partie 2: Aménagement ergonomique des informations GSM-R

Bahnanwendungen - Telekommunikationstechnik, Signaltechnik und Datenverarbeitungssysteme - Europäisches Leitsystem für den Schienenverkehr - Teil 2: Ergonomische Anordnungen der GSM-R Informationen

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Contents	Page
European foreword.....	6
Introduction.....	7
1 Scope.....	8
2 Normative references.....	8
3 Terms, definitions and abbreviated terms.....	8
3.1 Terms and definitions.....	8
3.2 Abbreviated terms.....	11
4 General DMI-related principles.....	12
4.1 General ergonomic principles.....	12
4.2 Hardware.....	12
4.3 Areas on the DMI.....	12
4.4 Colours.....	16
4.5 Information.....	16
4.6 Flashing.....	22
4.7 Sounds.....	22
4.8 Lists.....	22
5 GSM-R functions shown on the DMI.....	23
5.1 Introduction.....	23
5.2 General functions.....	23
5.3 Registration functions.....	45
5.4 Network selection.....	49
5.5 Call-related functions: incoming non-emergency.....	50
5.6 Call-related functions: outgoing non-emergency.....	53
5.7 Call-related functions: incoming emergency.....	58
5.8 Call-related functions: outgoing emergency.....	59
5.9 Supplementary Services.....	61
5.10 Other calls.....	69
5.11 Select a called party.....	75
5.12 Use of in-call menu.....	80
5.13 Loss of network.....	80
5.14 Shunting.....	81
5.15 Direct mode.....	85
5.16 Text messaging.....	85
6 Sounds.....	86
6.1 General.....	86
6.2 Incoming calls (R1, R2, R3).....	87
6.3 Outgoing calls (R4, R5, R6, R7, R8).....	89
6.4 R9 – Public address – incoming / outgoing.....	93
6.5 R10 – Positive link assurance.....	94
6.6 R11 – Negative link assurance.....	94
6.7 R12 – Loss of the network.....	95
6.8 R13 – PTT pressed.....	95
6.9 R14 – Uplink Busy.....	96
6.10 R15 – Failed action.....	97
Bibliography.....	98

Figures

Figure 1 — Areas of the DMI Display	13
Figure 2 — GSM-R Cab Radio Modes and States	23
Figure 3 — Basic Screen – Train Mode	24
Figure 4 — Basic Screen - Shunting Mode	25
Figure 5 — Adjusting brightness (Light sensor ‘inactive’)	41
Figure 6 — Adjusting brightness (Light sensor ‘active’)	42
Figure 7 — Self Test	44
Figure 8 — Language Selection	45
Figure 9 — Register Train Running Number	46
Figure 10 — Forced Deregistration	47
Figure 11 — Working position selection (function code)	48
Figure 12 — Select mobile radio network	49
Figure 13 — Receiving a point-to-point call (before connection)	50
Figure 14 — Receiving a point-to-point call (established)	51
Figure 15 — Receiving a group call (before connection)	52
Figure 16 — Receiving a group call (connected)	52
Figure 17 — Call primary controller	54
Figure 18 — Group call to other drivers in the same area	55
Figure 19 — Entering a group ID	56
Figure 20 — Choosing ‘group call’	57
Figure 21 — Receiving a Railway Emergency Call	58
Figure 22 — Outgoing Railway Emergency Call (established)	60
Figure 23 — Call on hold	61
Figure 24 — On-going call plus waiting call	62
Figure 25 — On-going call plus held call	63
Figure 26 — Incoming RAG with Call Waiting	64
Figure 27 — Forwarding a call to another number	65
Figure 28 — Activating forwarding	65
Figure 29 — Cancelling Forwarding a call to another number	67
Figure 30 — Call Forwarding unconditional activated	67
Figure 31 — Cancelling Forwarding a call to a hand-held portable	68
Figure 32 — Call Chief Conductor (Paging)	69
Figure 33 — Public Address call	70
Figure 34 — Incoming Intercom call (established)	71
Figure 35 — Selecting other drivers on train	72
Figure 36 — Drivers connected in a multi-party call	73
Figure 37 — Intercom call from train staff to controller (established)	75
Figure 38 — Calling a controller with a single keystroke	76

Figure 39 — Free-dial a number	77
Figure 40 — Select from Telephone Book	78
Figure 41 — Select from received calls list	79
Figure 42 — Loss of radio network.....	80
Figure 43 — Select shunting area.....	81
Figure 44 — Select Shunting group ID	82
Figure 45 — Alerting of a controller	84
Figure 46 — Receiving a text message	85
Figure 47 — R1 - Internal incoming call	88
Figure 48 — R2 - External incoming call	89
Figure 49 — R3 - Incoming emergency call	89
Figure 50 — R4 - Connection	90
Figure 51 — R5 - Line ringing.....	91
Figure 52 — R6 - Line busy.....	91
Figure 53 — R7 - Barred call.....	92
Figure 54 — R8 - Outgoing emergency call	93
Figure 55 — R9 - Public address.....	93
Figure 56 — R10 - Positive link assurance	94
Figure 57 — R11 - Negative link assurance	95
Figure 58 — R12 - Loss of the network	95
Figure 59 — R13 - PTT pressed.....	96
Figure 60 — R14 - Uplink busy	97
Figure 61 — R15_Failed_action	97

Tables

Table 1 — Description of functions used in each are.....	13
Table 2 — Description of functions associated with keys	14
Table 3 — TRD Symbols	17
Table 4 — TRD main structure	26
Table 5 — TRD menu structure (Shunting).....	35
Table 6 — Menu structure (while in a call).....	37
Table 7 — Summary of sounds	86
Table 8 — R1 - Internal incoming call.....	88
Table 9 — R2 - External incoming call.....	88
Table 10 — R3 - Incoming emergency call.....	89
Table 11 — R4 - Connection	90
Table 12 — R5 - Line ringing	90
Table 13 — R6 - Line busy	91
Table 14 — R7 - Barred call	92

Table 15 — R8 - Outgoing emergency call.....	92
Table 16 — R9 - Public address – incoming / outgoing	93
Table 17 — R10 - Positive link assurance.....	94
Table 18 — R11 - Negative link assurance.....	94
Table 19 — R12 - Loss of the network.....	95
Table 20 — R13 - PTT pressed	96
Table 21 — R14 - Uplink busy	96
Table 22 — R15 - Failed action.....	97

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European foreword

This document (CLC/TS 50459-2:2021) has been prepared by CLC/SC 9XA "Communication, signalling and processing systems", of Technical Committee CLC/TC 9X "Electrical and electronic applications for railways".

This document supersedes CLC/TS 50459-2:2015.

CLC/TS 50459-2:2021 includes the following significant technical changes with respect to CLC/TS 50459-2:2015:

- updated general principles for the presentation of ERTMS/ETCS/GSM-R information correlated with ERA document ERA_ERTMS_015560;
- updated ergonomic arrangements in line with EN 16186 series.

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* [the present document];
- *Part 3: Ergonomic arrangements of non ETCS information*.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Introduction

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

The CLC/TS 50459 series contains the ergonomic arrangements of information on the ERTMS/DMI Display (Control Command Display (CCD) and Train Radio Display (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;
- 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.

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1 Scope

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

This document defines the ergonomics for the Driver-Machine Interface (DMI) for the stand alone ERTMS/GSM-R Voice Radio Systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 16186-2, *Railway applications - Driver's cab - Part 2: Integration of displays, controls and indicators*

EN 16186-3:2016+A1:2018, *Railway applications - Driver's cab - Part 3: Design of displays*

CLC/TS 50459-1:2021, *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*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

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

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1.1

auto-answered

automatically answered from a mobile station to a call if the incoming call is of or exceeds a defined priority level

[SOURCE: EIRENE]

3.1.2

broadcast call

call made to all members of a pre-defined group within a local geographical area

Note 1 to entry: Only the initiator of the call may talk, with all other group members listening only.

3.1.3

call forwarding unconditional

CFU

supplementary service which permits a called mobile subscriber to have the network send incoming calls to another number no matter what the condition of the termination (radio)