| **TNI** | **Dráhové aplikácie**
Vlaková riadiaca jednotka pre displeje (TDC)
v kabíne rušňovodiča
Časť 1: Všeobecná architektúra | **TNI**
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Railway applications - Driver`s cab train display controller (TDC) - Part 1: General architecture

Táto technická normalizačná informácia obsahuje anglickú verziu CLC/TR 50542-1:2025.
This Technical standard information includes the English version of CLC/TR 50542-1:2025.

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Railway applications - Driver's cab train display controller (TDC) - Part 1: General architecture

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Bahnanwendungen - Display-Steuereinheit für Führerräume - Teil 1: Allgemeine Architektur

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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European foreword

This document (CLC/TR 50542-1:2025) has been prepared by CLC/TC 9X "Electrical and electronic applications for railways".

This document supersedes CLC/TR 50542-1:2018 and all of its amendments and corrigenda (if any).

CLC/TR 50542-1:2025 includes the following significant technical changes with respect to CLC/TR 50542-1:2018:

•   No technical changes.

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.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Introduction

This document is the first one of a series of three documents:

— CLC/TR 50542-1, *Railway applications — Driver's cab Train Display Controller (TDC) — Part 1: General architecture* (this document);

— CLC/TR 50542-2, *Railway applications — Driver's cab Train Display Controller (TDC) — Part 2: Display systems FIS*;

— CLC/TR 50542-3, *Railway applications — Driver's cab Train Display Controller (TDC) — Part 3: Other train systems FIS*.

These documents are not standards but studies on the future view of the system. They do not describe an existing solution for the Train Display System (TDS).

The purpose of this series of documents is to propose harmonization for communication between the displays on the driver's desk and the train onboard systems.

The need for this harmonization has grown out of several trends.

One trend is that the rolling stock is being computerized more and more, enabling sophisticated functions within various train onboard systems.

Furthermore, the driver's desk of such rolling stock is built around one or several computerized displays. These allow the driver to interact with rolling stock functions and train onboard systems. The user interfaces are typically user friendly, featuring e.g. graphics and colours.

In case of degraded situation (display failure) and with several displays available on the desk, relocation of important information to a display that is still working will improve operational availability.

A second trend is the ongoing harmonization of the interfaces on the train.

A third trend is that a European market is opened for onboard equipment.

Traditionally, some onboard systems are linked to a country and/or to a rolling stock type. This has effectively limited the rolling stock to operate within a limited number of countries. The two trends above are useful to reduce this limitation.

The combination of the above trends leads to the conclusion that during train operation, train onboard systems need to have access to the displays on the desk. Furthermore, it is desirable to maintain the advantages of multi-display installations, allowing the ability to switch to another display in case of a display failure. Thus a certain level of integration and harmonized communication is helpful.

Another motivation for this series of documents is related to the Life-Cycle Cost and supports the easier replacement of displays and desk equipment during the lifetime of the vehicle, independently of the supplier.

In this series of documents, the Other Train Systems (OTS), the displays and the Train Display Controller (TDC) are considered only regarding their functionalities and not as physical devices.

1 Scope

In accordance with the ERTMS/ETCS specifications (mainly Subset 026 and ERA_ERTMS_015560 document), UIC 612 leaflet, EN 50126 series, EN 16186 series and EN 61375 series requirements, this document describes the Train Display System (TDS) in the driver's cab which comprises the Train Display Controller (TDC) and the following six interfaces:

— Interface with Command Control Display (CCD);

— Interface with Train Radio Display (TRD);

— Interface with Electronic Timetable Display (ETD);

— Interface with Technical and Diagnostic Display (TDD);

— Interface with ETCS Onboard systems and the interfaced STMs, which is excluded from the scope of this document;

— Interface with Other Onboard Systems.
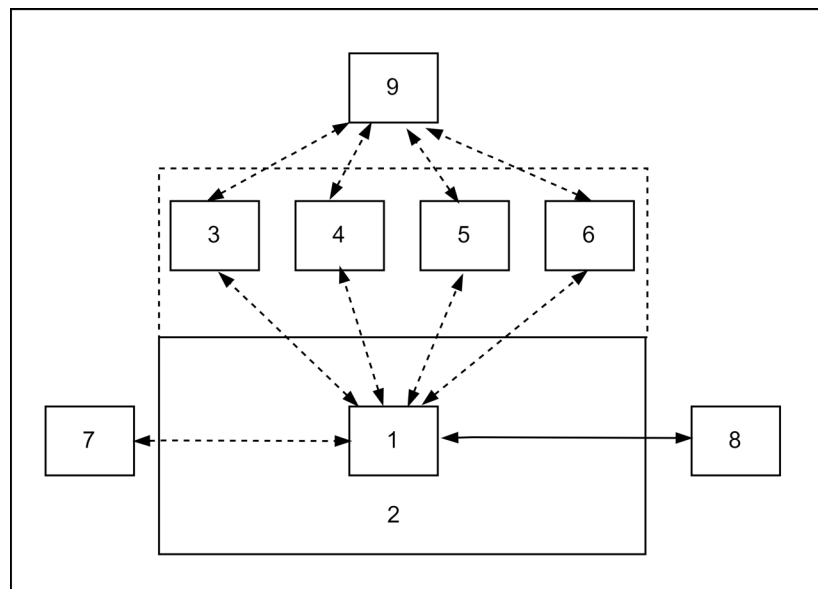
Key

1	TDC	6	TDD
2	TDS	7	ETCS / STM Onboard systems
3	CCD	8	Other Onboard Systems
4	TRD	9	Driver
5	ETD		

Figure 1 — Functional architecture

NOTE   Dotted lines are not described by this document.

The scope of this document is to define the functional architecture around the TDC.

This document excludes the following items:

— communication protocols (e.g. EN 61375 series);

— ergonomic aspects;

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— interface with ETCS Onboard systems and the interfaced STMs;

— train functions;

— GSM-R EIRENE functions;

— use of the displays as terminals for maintenance purpose.

2　Normative references

There are no normative references in this document.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN