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TNI	**Dráhové aplikácie Vlaková riadiaca jednotka pre displeje (TDC) v kabíne rušňovodiča Časť 1: Všeobecná architektúra**	**TNI CLC/TR 50542-1 34 2660**

Railway applications - Drivers cab train display controller (TDC) - Part 1: General architecture

Táto technická normalizačná informácia obsahuje anglickú verziu CLC/TR 50542-1:2018.
This Technical standard information includes the English version of CLC/TR 50542-1:2018.

Táto technická normalizačná informácia bola oznámená vo Vestníku ÚNMS SR č. 08/18

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English Version

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

Applications ferroviaires - Contrôleur d'écrans de cabine (TDC) - Partie 1 : Architecture générale

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

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

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CLC/TR 50542-1:2018

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European foreword

This document (CLC/TR 50542-1:2018) has been prepared by CLC/TC 9X “Electrical and electronic applications for railways”.

This document supersedes CLC/TR 50542-1:2014.

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.

The significant technical changes with respect to CLC/TR 50542-1:2014 are listed below:

— The Scope has been shortened and synthetized;

— Some terms, definitions and missing abbreviations have been added;

— For consistency with CLC/TR 50542-2:2016 and CLC/TR 50542-3:2016, missing functions have been added and definition of functions have been improved to be consistent;

— Delays and failure modes have been deleted because they depend on the technical implementation of the system;

— Certification/validation section has been adapted;

— Informative Annex A has been adapted to be consistent with CLC/TR 50542-2:2016 and CLC/TR 50542-3:2016.

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

— this document;

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

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

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

Introduction

The purpose of this Technical Report 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, it should be possible to relocate important information to a display that is still working. This improves 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 equipment 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 display failure. Thus a certain level of integration and harmonized communication is required.

Another motivation for this Technical Report is related to the Life-Cycle Cost. The recommendations written here support the easier replacement of displays and desk equipment during the lifetime of the vehicle, independently of the supplier.

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

The CLC/TR 50542 series 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).

1 Scope

In accordance with the ERTMS/ETCS specifications, Subset 121, UIC 612 leaflet, ERA_ERTMS_015560 document, EN 50126 and EN 61375 series requirements, this Technical Report describes the Train Display System (TDS) in the driver's cab, and the link between the TDS/TDC and some of its interfaces (Blue box and blue links only):

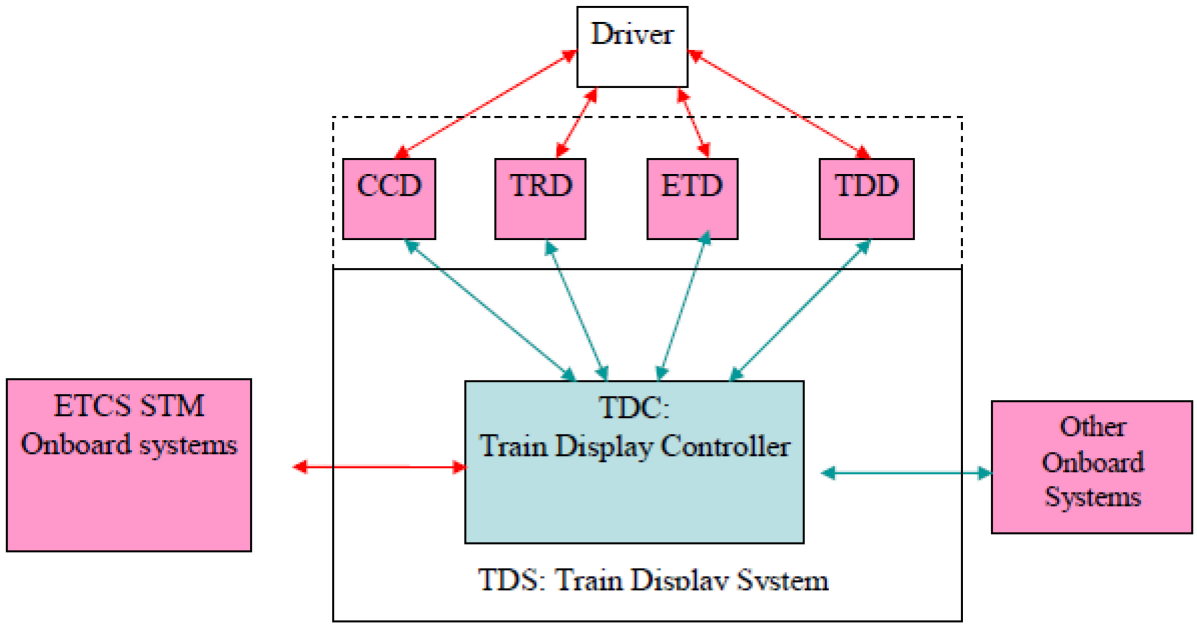

Figure 1 — Functional architecture

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

This Technical Report excludes the following items:

- Communication protocols (e.g. EN 61375 series);
- Ergonomic aspects;
- Interface with ETCS (Subset 121);
- 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.