ICS 45.060 SLOVENSKÁ TECHNICKÁ NORMA Jún 2017

STN	**Elektronické zariadenia pre železnice. Palubné multimediálne a telematické subsystémy pre železnice. Časť 1: Všeobecná architektúra.**	**STN EN 62580-1** 33 3558

Electronic railway equipment - On-board multimedia and telematic subsystems for railways - Part 1: General architecture

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. 05/17

Obsahuje: EN 62580-1:2016, IEC 62580-1:2015

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EUROPEAN STANDARD **EN 62580-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM November 2016

ICS 45.060

English Version

Electronic railway equipment - On-board multimedia and telematic subsystems for railways - Part 1: General architecture (IEC 62580-1:2015)

Matériel électronique ferroviaire - Sous-systèmes ferroviaires multimédias et télématiques embarqués - Partie 1: Architecture générale (IEC 62580-1:2015)

Elektronische Betriebsmittel für Bahnen - Bordinterne Multimedia- und Telematik-Untersysteme für Bahnanwendungen - Teil 1: Allgemeine Architektur (IEC 62580-1:2015)

This European Standard was approved by CENELEC on 2015-03-24. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 62580-1:2016 E

European foreword

The text of document 9/1990/FDIS, future edition 1 of IEC 62580-1, prepared by IEC/TC 9 "Electrical equipment and systems for railways" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62580-1:2016.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2017-05-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-11-11

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 has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive 2008/57/EC amended by Commission Directive 2011/18/EU, see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 62580-1:2015 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
-	-	Railway applications - Classification system for railway vehicles - Part 4: Function groups	EN 15380-4	-
IEC 61375	Series	Electronic railway equipment - Train communication network (TCN)	EN 61375	Series
IEC 61375-2-3	-	Electronic railway equipment - Train communication network (TCN) - Part 2-3: TCN communication profile	EN 61375-2-3	-
IEC/TS 61375-2-4	-	Electronic railway equipment - Train communication network (TCN) - Part 2-4: TCN Application profile	-	-
IEC 61375-2-6 [1)]	-	Electronic railway equipment - Train communication network - Part 2-6: Onboard to ground communication	EN 61375-2-6 [1)]	-
IEC 62280	-	Railway applications - Communication, signalling and processing systems - Safety related communication in transmission systems	-	-
ISO/IEC 8824	series	Information technology - Abstract Syntax Notation One (ASN.1)	-	-
ISO/IEC 8825-1	-	Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)	-	-
ISO/IEC 9646	series	Information technology - Open Systems Interconnection - Conformance testing methodology and framework	-	-
ISO/IEC/IEEE 42010	2011	Systems and software engineering - Architecture description	-	-

[1)] At draft stage.

Annex ZZ
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex lll of the EC Directive 2008/57/EC (also named as New Approach Directive 2008/57/EC Rail Systems: Interoperability).

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard given in Table ZZ.1 relating to 'rolling stock - locomotives and passenger rolling stock' and Table ZZ.2 relating to the 'telematics applications for passenger services' of the rail system in the European Union, confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZZ.1 - Correspondence between this European Standard, the RST LOC&PAS TSI (published in the Official Journal L 356 on 12 December 2014, p. 228) and Directive 2008/57/EC

Clauses of this European Standard	Chapter / § / points / of RST LOC&PAS TSI	Essential Requirements (ER) of	Comments
The whole standard is applicable	4.2.5. Passenger-related items 4.2.12.2 General documentation: - description of computerised on-board systems	2. Requirements specific to each sub-subsystem 2.4. Rolling Stock 2.4.2. Reliability and availability 2.4.3. Technical compatibility	The TSI does not impose any technical solution regarding physical interfaces between units. The standard offers a general multi-purpose solution for the digital communication between applications and it is relevant to interoperability.

Table ZZ.2 - Correspondence between this European Standard, the TAP TSI (published in the Official Journal L 123 on 12 May 2011, p. 11) and Directive 2008/57/EC

Clauses of this European Standard	Chapter / § / points / of TAP TSI	Essential Requirements (ER) of	Comments
The whole standard is applicable	4.2.21. Networking and communication 4.2.21.1. General architecture	2. Requirements specific to each sub-subsystem 2.4. Rolling Stock 2.4.2. Reliability and availability 2.4.3. Technical compatibility	

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

IEC 62580-1

Edition 1.0 2015-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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IEC 62580-1:2015-02(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRONIC RAILWAY EQUIPMENT – ON-BOARD MULTIMEDIA AND TELEMATIC SUBSYSTEMS FOR RAILWAYS –

Part 1: General architecture

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62580-1 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

The text of this standard is based on the following documents:

FDIS	Report on voting
9/1990/FDIS	9/2005/RVD

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 62580 series, under the general title *Electronic railway equipment – On-board multimedia and telematic subsystems for railways*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

IEC 62580-1 defines the general architecture of the On-board Multimedia and Telematic Subsystems (OMTS), so as to achieve compatibility between subsystems in the same vehicle and between subsystems on-board of different vehicles in the same train.

NOTE 1 The acronym OMTS replaces the previous OMMS (On-board MultiMedia Subsystem) definition, due to a change in the title of this standard.

The multimedia and telematic system is composed of but not limited to:

A Video surveillance/CCTV

B Driver and crew orientated services

C Passenger orientated services

D Train operator and maintainer orientated services

OMTSs installed in the same vehicle (consist) communicate by means of the consist network.

OMTSs, installed in different vehicle (consist) in the same train, communicate by means of the train network.

It is likely that each OMTS exchanges information with applications installed on-ground by means of a wireless communication gateway.

The on-board communication and the on-board to ground communication are specified by the IEC 61375 series.

NOTE 2 Board-to-ground communication is intended as a generic link, with no assumption on the underlying technology (radio, satellite or other).

As illustrated in Figure 1, the IEC 62580 series is structured as follows:

IEC 62580-1: General architecture

IEC 62580-2: Video surveillance/CCTV services

Driver and crew orientated services, passenger orientated services and train operator/maintainer orientated services are matters of standardisation which can be addressed in the future.

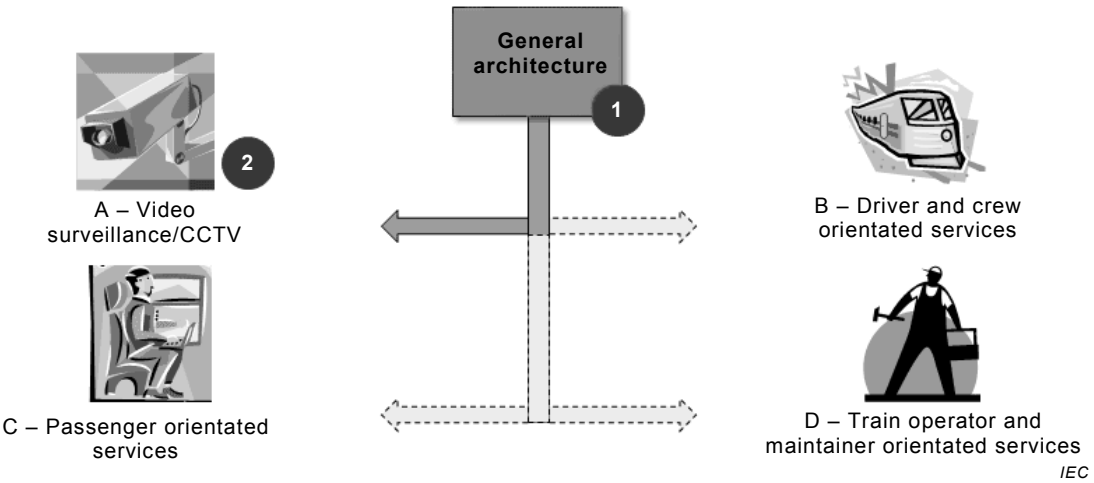

Figure 1 – OMTS categories and structure of the IEC 62580 series

ELECTRONIC RAILWAY EQUIPMENT – ON-BOARD MULTIMEDIA AND TELEMATIC SUBSYSTEMS FOR RAILWAYS –

Part 1: General architecture

1 Scope

This part of IEC 62580 specifies the general architecture of the On-board Multimedia and Telematic Subsystem, which includes four categories of multimedia and telematic subsystems identified as:

A Video surveillance/CCTV

B Driver and crew orientated services

C Passenger orientated services

D Train operator and maintainer orientated services

This part establishes:

- the boundary between the OMTS and the on-board communication system, as described by the IEC 61375 series
- the methodology to describe an OMTS in terms of abstract model
- the general principles and the basic requirements to specify the services provided/needed by each category
- the approach to ensure interoperability between services

This part gives guidelines for:

- OMTS classification
- functional breakdown structuring
- system breakdown structuring
- formal specification of an OMTS

This part is applicable to any type of train, e.g. open trains, multiple unit trains and closed trains.

NOTE The general architecture provides a common basis for the application categories defined in part 2 and possible future parts of this series of standards. Consequently, the approach is homogeneous for all multimedia and telematic subsystems addressed by this series of standards.

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.

IEC 61375 (all parts), *Electronic railway equipment – Train communication network (TCN)*

IEC 61375-2-3, *Electronic railway equipment – Train communication network (TCN) – Part 2-3: TCN communication profile*

IEC 61375-2-4, *Electronic railway equipment – Train communication network (TCN) – Part 2-4: TCN application profile*[1]

IEC 61375-2-6, *Electronic railway equipment – Train communication network – Part 2-6: On-board to ground communication*

IEC 62280, *Railway applications – Communication, signalling and processing systems – Safety related communication in transmission systems*

ISO/IEC 8824 (all parts), *Information technology – Abstract Syntax Notation One (ASN.1)*

ISO/IEC 8825, *Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)*

ISO/IEC 9646 (all parts), *Information technology – Open Systems Interconnection – Conformance testing methodology and framework*

ISO/IEC 42010:2011, *Systems and software engineering – Architecture description*

EN15380-4, *Railway applications – Classification system for railway vehicles – Part 4: Function groups*

1 To be published.