SVENSK STANDARD SS-EN 61375-3-2

Fastställd	Utgåva	Sida	Ansvarig kommitté
2012-11-14	1	1 (1+99)	SEK TK 9

Elektronisk utrustning för järnvägar – Kommunikationsnätverk för tåg (TCN) – Del 3-2: MVB (Multifunction Vehicle Bus) – Provning av överensstämmelse

Electronic railway equipment –
Train communication network (TCN) –
Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing

Som svensk standard gäller europastandarden EN 61375-3-2:2012. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61375-3-2:2012.

Nationellt förord

Europastandarden EN 61375-3-2:2012

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61375-3-2, First edition, 2012 - Electronic railway equipment - Train communication network (TCN) - Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 45.060

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

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Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

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Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61375-3-2

August 2012

ICS 45.060

English version

Electronic railway equipment - Train communication network (TCN) - Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing

(IEC 61375-3-2:2012)

Matériel électronique ferroviaire - Réseau embarqué de train (TCN) - Partie 3-2: Essais de conformité MVB (Bus de Véhicule Multifonctions) (CEI 61375-3-2:2012)

Elektronische Betriebsmittel für Bahnen - Zug-Kommunikations-Netzwerk - Teil 3-2: MVB (Multipurpose-Vehicle-Bus) Konformitätsprüfung (IEC 61375-3-2:2012)

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61375-3-2:2012 E

SEK Svensk Elstandard

Foreword

The text of document 9/1645/FDIS, future edition 1 of IEC 61375-3-2, 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 61375-3-2:2012.

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)	2013-04-26
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-07-26

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(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 61375-3-2:2012 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60063 + A1 + A2	1963 1967 1977	Preferred number series for resistors and capacitors	-	-
IEC 60571	-	Electronic equipment used on rail vehicles	-	-
IEC 60807	Series	Rectangular connectors for frequencies below 3 MHz	-	-
IEC 61375-2-1	-	Electronic railway equipment - Train communication network (TCN) - Part 2-1: Wire Train Bus (WTB)	EN 61375-2-1	-
IEC 61375-2-2	-	Electronic railway equipment - Train communication network (TCN) - Part 2-2: Wire Train Bus conformance testing	EN 61375-2-2	-
IEC 61375-3-1	-	Electronic railway equipment - Train communication network (TCN) - Part 3-1: Multifunction Vehicle Bus (MVB)	EN 61375-3-1	-
ISO/IEC 8482	1993	Information technology - Telecommunications and information exchange between systems - Twisted pair multipoint interconnections	-	-
ISO/IEC 9646-1	1994	Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts	-	-
ISO/IEC 9646-7	1995	Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements	-	-

CONTENTS

INTRODUCTION

TCN is an International Standard with the aim of defining interfaces so as to achieve plug-in compatibility:

a) between equipment located in different vehicles, and

b) between equipment and devices located within the same vehicle.

One of the key success factors for the deployment of any technology is standardisation and ensuring interoperability among various implementations. To facilitate interoperability a conformance test should be implemented.

In this part of IEC 61375, the conformace testing of the MVB defined in IEC 61375-3-1 is specified.

This standard is structured into 5 clauses and 2 annexes.

The clauses and annexes are listed and briefly described in Table 1.

Table 1 – Document structure

Clause	Description
1 Scope	This clause describes the scope of this standard and.
2. Normative references	This clause contains a list of referred norms.
3 Terms and definitions	This clause introduces basic terms and abbreviations not reported in IEC 61375-3-1.
4 Conformance test: approach, requirements and boundaries	This clause is an overview of the methods of TCN implementation verification that are available to the developer and regulatory personnel. Supplies information concerning the ICS and IXITpPro-forma(s).
5 Conformance test of an MVB device	This clause covers all tests on MVB devices that are grouped by classes, from Class 0 up to Class 4. The main contents are: the MVB PICS and PIXIT; the MVB test suites; the MVB test procedures.
6 Conformance test of RTP	This clause covers the conformance tests of real time protocols.
7 Conformance test of NM	This clause covers network management services' testing.
Annex A – Test laboratory role and client role	This annex is normative.
Annex B – Test instrumentation and dedicated test beds	This annex is informative.

ELECTRONIC RAILWAY EQUIPMENT – TRAIN COMMUNICATION NETWORK (TCN) –

Part 3-2: MVB (Multifunction Vehicle Bus) conformance testing

1 Scope

This part of IEC 61375 applies to all equipment and devices implemented according to IEC 61375-3-1, i.e. it covers the procedures to be applied to such equipment and devices when the conformance should be proven.

The applicability of this standard to a TCN implementation allows for individual conformance checking of the implementation itself and is a pre-requisite for further interoperability checking between different TCN implementations.

NOTE 1 An example of TCN implementation is given in UIC 556.

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 60063: 1963, *Preferred number series for resistors and capacitors*
Amendment 1:1967
Amendment 2:1977

IEC 60571: *Electronic equipment used on rail vehicles*

IEC 60807 (all parts), *Rectangular connectors for frequencies below 3 MHz*

IEC 61375-2-1: *Electronic railway equipment – Train Communication Network (TCN) – Part 2-1: Wire Train Bus (WTB)*

IEC 61375-2-2: *Electronic railway equipment – Train Communication Network (TCN) – Part 2-2: Wire Train Bus conformance testing*

IEC 61375-3-1: *Electronic railway equipment – Train Communication Network (TCN) – Part 3-1: Multifunction Vehicle Bus (MVB)*

ISO/IEC 8482: 1993, *Information technology – Telecommunications and information exchange between systems – Twisted pair multipoint interconnections*

ISO/IEC 9646-1:1994, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts* (Also available as ITU-T Recommendation X.290 (1995))

ISO/IEC 9646-7:1995, *Information technology – Open Systems Interconnection –Conformance testing methodology and framework – Part 7: Implementation Conformance Statements* (Also available as ITU-T Recommendation X.296 (1995))