IEC 61375-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electronic railway equipment – Train communication network (TCN) – Part 1: General architecture

Matériel électronique ferroviaire – Réseau embarqué de train (TCN) – Partie 1: Architecture générale

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colour inside

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Part 1: General architecture

FOREWORD

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International Standard IEC 61375-1 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

This third edition cancels the second edition published in 2007 and constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

- new structuring of standard parts. The content of the previous edition has now been moved to IEC 61375-2-1 and IEC 61375-3-1.
- this part of the standard describes now the general architecture of the onboard train communication network.

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

FDIS	Report on voting
9/1641/FDIS	9/1665/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

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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

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- replaced by a revised edition, or
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INTRODUCTION

IEC 61375-1 defines the general architecture of the Train Communication Network (TCN) so as to achieve compatibility between consist networks defined by this part of IEC 61375 and train backbones defined by this part of IEC 61375.

The TCN has a hierarchical structure with two levels of networks, a train backbone and a consist network:

a) for interconnecting vehicles in close or open trains, this part of IEC 61375 specifies train backbones with different characteristics;

b) for connecting standard on-board equipment, this part of IEC 61375 specifies consist networks with different characteristics.

The general architecture of the TCN, which is defined in this part of the standard, shall

c) establish the rules for interconnecting consist networks with train backbones, as
   - identifying the interfaces;
   - defining the principles of how train topology changes can be discovered;
   - defining the basic communication services provided by train backbones to be used by consist networks;

d) establish basic rules for the train backbone and for the consist network;

e) establish rules for communalities in operation, as:
   - patterns for the communication between users;
   - addressing principles;
   - data classes to be supported.