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Electronic railway equipment —
Train communication network
(TCN)

Part 2-7: Wireless Train Backbone (WLTB)
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TECHNICAL REPORT

Electronic railway equipment – Train communication network (TCN) – Part 2-7: Wireless Train Backbone (WLTB)

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 45.060

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRONIC RAILWAY EQUIPMENT – TRAIN COMMUNICATION NETWORK (TCN) –

Part 2-7: Wireless Train Backbone (WLTB)

FOREWORD

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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC TR 61375-2-7, which is a technical report, has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.
The text of this technical report is based on the following documents:

<table>
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Full information on the voting for the approval of this technical report 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.

A list of all parts of IEC 61375 series, under the general title *Electronic railway equipment – Train Communication Network (TCN)*, 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 website 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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

**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 TR 61375-2-7 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways, in the frame of the IEC 61375 series.

Considering that:

a) inauguration is not automatic;

b) some parameters are configured manually in the guided traction vehicle;

c) the parameters required in the leading traction vehicle depend on the application;

d) inauguration verification is manual and based on checking pressure in the train pipe;

IEC technical committee 9 decided to consider the result of the preparation work not suitable for being an international standard within the IEC 61375 series, nevertheless decided to publish the result of the work as a technical report which can offer to the reader the status of the technology used for the implementation of a radio based train communication network.
1 Scope

This part of IEC 61375 describes the protocols stack of a radio based Wireless Train Backbone which is used in distributed power freight trains. This part provides information on the physical layer, the data link layer, the application layer and distributed power application.

The automatic inauguration of the radio based Wireless Train Backbone is not considered in this technical report.

2 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

2.1 Terms and definitions

2.1.1 application layer
upper layer in the OSI model, interfacing directly to the application

2.1.2 application process
element within a real open system which performs the information processing for a particular application

2.1.3 broadcast
nearly simultaneous transmission of the same information to several destinations

2.1.4 bus
communication medium which broadcasts the same information to all attached participants at nearly the same time, allowing all devices to obtain the same sight of its state, at least for the purpose of arbitration

2.1.5 communication devices
devices connected to consist network or train backbone with the ability to source and sink data.

2.1.6 composition
number and characteristics of the vehicles forming a train

2.1.7 configuration
definition of the topology of a network, the devices connected to it, their capabilities and the traffic they produce; by extension, the operation of loading the devices with the configuration information before going to regular operation