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BSI Standards Publication

Railway applications — Procedure to determine the performance requirements for radio systems applied to radio-based train control systems

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The UK participation in its preparation was entrusted to Technical Committee GEL/9, Railway Electrotechnical Applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RAILWAY APPLICATIONS – PROCEDURE TO DETERMINE THE PERFORMANCE REQUIREMENTS FOR RADIO SYSTEMS APPLIED TO RADIO-BASED TRAIN CONTROL SYSTEMS

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62773, which is a technical specification, has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
9/1823/DTS	9/1899/RVC

Full information on the voting for the approval of this technical specification 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.

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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

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INTRODUCTION

The purpose of this Technical Specification is to provide a guideline for the rail transport authority and/or the supplier of the radio system to determine performance requirements of the radio system from the conditions of the railway systems using the radio-based train control systems.

This Technical Specification specifies the procedure to determine the performance requirements for radio system applied to the radio-based train control systems. The performance requirements are related to the radio parameters. Each radio parameter needs to be set to an appropriate value to enable data exchange with quality of service that will meet the requirements from the railway system as a whole and particularly the train control functions. Radio parameters are then decided based on the analysis of the conditions of the railway system using the train control system.

RAILWAY APPLICATIONS – PROCEDURE TO DETERMINE THE PERFORMANCE REQUIREMENTS FOR RADIO SYSTEMS APPLIED TO RADIO-BASED TRAIN CONTROL SYSTEMS

1 Scope

The objective of this Technical Specification is to establish a procedure to be used by rail transport authorities and/or radio suppliers to determine the appropriate performance requirements of radio system for a radio-based train control system, consistent with their specific business needs and existing conditions: the Technical Specification itself consists in defining a procedure linking preconditions to some radio parameters. Then, the appropriate performance requirements are deduced by the user of the Technical Specification from the radio parameters.

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.

None.

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1
capacity
maximum amount of information transmitted and received per unit time on the radio link

3.1.2
data rate
amount of data transmitted over a given period of time (usually expressed in “bits per second” or “bytes per second”)

Note 1 to entry: The minimum data rate needs to take into account the maximum amount of transmitted data per unit time for the train control system.

3.1.3
encryption
method of transmitting information so that third parties cannot decode it

Note 1 to entry: It serves to enhance the secrecy of information transmitted and received within the system.

3.1.4
handover
shift of connection to an adjacent radio base station