TECHNICAL REPORT

ISO/TR 21245-2

First edition
2016-11-01

Railway applications — Rail project planning process —

Part 2: **Conditions**

Applications ferroviaires - Processus de planification de projets ferroviaires —

Partie 2: Conditions

Reference number
ISO/TR 21245-2:2016(E)

© ISO 2016



COPYRIGHT PROTECTED DOCUMENT

© ISO 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

 © ISO 2016 – All rights reserved

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Conditions of rail projects **1**
4.1 Natural conditions 1
4.1.1 Geology/topography 1
4.1.2 Weather and climate 2
4.1.3 Other natural conditions 2
4.2 Economic & social conditions affecting rail project 2
4.2.1 Urbanism and population 3
4.2.2 Industrial environment 3
4.2.3 Other obstacles 3
4.2.4 Civil works, networks and systems 3
4.3 Existing railway system facilities 4
Bibliography **5**

© ISO 2016 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 269, *Railway applications.*

© ISO 2016 – All rights reserved

Introduction

Railway represents an efficient transport mode to overcome societal and environmental issues, such as economic growth, road traffic congestion, pollution emission reduction, accessibility, and so on. Therefore, rail projects can provide great benefits for people all over the world. However, desired outcomes cannot always be gained, since all rail projects are influenced by many factors and external conditions as well as by stakeholder's expectations. It therefore requires time and funding to identify conditions and translate stakeholder's expectations into specifications and requirements.

Expectations and conditions can be common or different among projects. These need to be identified, analysed, prioritized and taken into account while advancing the project. If not, it is possible that the project will not produce the expected benefits and result in a waste of time and money. In order to avoid such a waste, these factors are generalized and standardized as much as possible.

By better identifying stakeholders, taking into account their needs as well as external conditions, project planning can be optimised. The project management will then proceed more smoothly after the planning stage with expected benefits on costs, quality and delivery.

The scope of this document is the planning stage (before design stage) of rail projects. It addresses all types of rail projects, such as new lines, retrofitting, upgrading, operation, maintenance and so on.

It is expected that this series of documents will be useful to contracting entities for:

— identifying and prioritizing needs, interests and conditions;

— assuring the coverage of all relevant regional and environmental conditions;

— advancing technical and financial optimization of a project.

In addition, this series of Technical Reports will be useful to suppliers for:

— preparing an optimum proposal;

— minimizing time and costs in the planning stage;

— clarifying their role and related responsibility in justifying to the relevant contracting entity the plan of a project.

Therefore, both clients and suppliers can promote rail projects smoothly while contributing to rail development.

This series of documents will be developed as two provisional groups:

— Part 1 Stakeholders and their needs/interests;

— Part 2 Conditions.

Pending decision of ISO/TC 269, additional standards will be developed using those reports, addressing correlation, interaction and causality

© ISO 2016 – All rights reserved

Railway applications — Rail project planning process —

Part 2: Conditions

1 Scope

This document aims to identify basic conditions of rail projects, which are essential input for the design of rail systems. This document does not interfere with existing national and local laws, legal requirements and regulations. It considers only the "planning stage" of rail projects and does not deal with the "execution stage". Any type of rail projects is intended to be dealt with, such as building a new line, retrofitting or upgrading of existing lines and change of operation or maintenance.

In this document, conditions are dealt with as premises or constraints, which can be difficult to adjust or change by stakeholders concerned in the project.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. Terms that are in common usage with Part 1 can be found in Part 1.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
condition
premises or constraints, which can be difficult to adjust or change by stakeholders concerned in the project

3.2
hazard
potential source of harm

[SOURCE: ISO/IEC Guide 51:2014, 3.14]

4 Conditions of rail projects

4.1 Natural conditions

Natural conditions to be taken into account while planning the project include the following, but not limited to:

4.1.1 Geology/topography

— gradient;

© ISO 2016 – All rights reserved