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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

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Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 24675-2

Railway Applications — Running time calculation for timetabling — Part 2: Distance-speed diagrams and speed curves

ICS: 45.020; 03.220.30

ISO/TC 269/SC 3

Secretariat: JISC

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2025-04-25

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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 (see 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 (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 269, *Railway applications*, Subcommittee SC 3, *Operations & Services*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The purpose of this document is to help many railway-related organizations around the world, regardless of their experience, to calculate accurate train running time between two points such as stations for all rolling stock types and its speed, helping to improve the punctuality of railways around the world.

Improving railway punctuality can increase the competitiveness of railway transportation against other modes of transportation such as planes, buses and cars. More customers using railway means more income for railway infrastructure managers, railway operators and related organizations. It also means promotion of national economic growth, increased social efficiency, and use of environmentally friendly energy leading to increased global sustainability. Overall, increased use of railway leads to an improvement of “Quality of Life (QoL)” for customers.

This document describes the requirements for shortest running time calculation when setting up daily timetables, seasonal timetables, annual timetables, strategic timetables for long-term perspective, and other timetables of a railway system. It is necessary to note that these timetables are created not only with the shortest running time shown in this document but also with other factors for safety and punctuality during commercial operations.

In many cases, running time calculation is realised using many detailed factors of practical real railway operations. However, it is almost impossible to verify the appropriateness of the running time calculation from the viewpoint of all such factors. On the other hand, suitable and practical verification procedures for running time calculation are to be identified to ensure the quality and validity of the running time calculation for punctual timetabling.

Running time calculation consists of two steps in general. The first step is to determine a speed curve based on Newton’s laws. Here, a speed curve is shown as a graph expressing the train speed on each train position along its route. In practice, a speed curve involves much information on distinctive characteristics of the railway operation field. The second step is to calculate the time by numerically integrating the given speed curve and is based on general calculation procedures not only for the railway operation field. In other words, railway-domain knowledge is reflected into the calculation at the first step. Once the speed curve is prepared, running time can be obtained at the second step using the speed curve.

As it is described above, a practical running time calculation involves many factors of real railway operations. But in order to establish clear verification procedures of running time calculation, this document mainly focuses on physical movements of a train.

ISO 24675-1 specifies the requirements with input parameters for running time calculation and with verification of the usage of those parameters. [Figure 1](#) shows the relation between this document and ISO 24675-1.

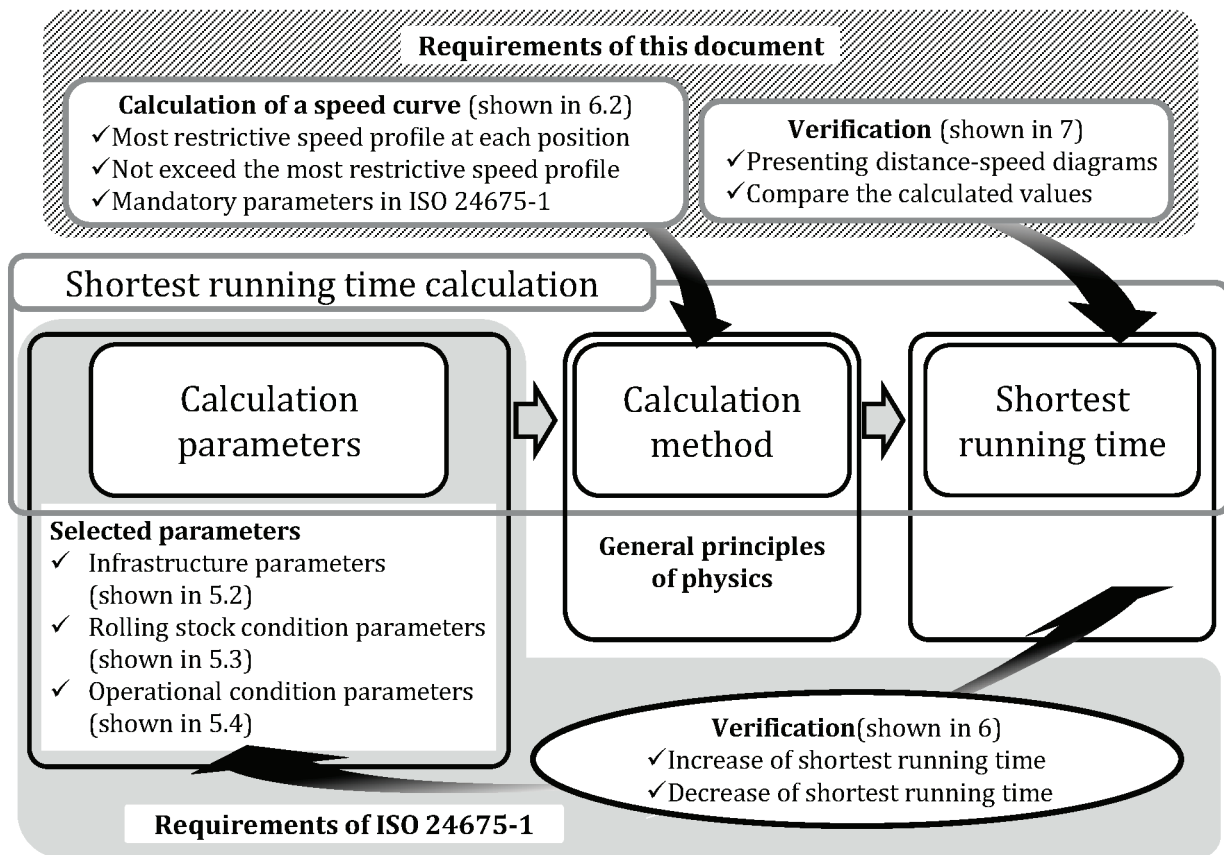


Figure 1 — Relation between this document and ISO 24675-1

In addition to this document, further documents will complete the standard series of railway timetabling. All parts together form a specific and comprehensive guidance for railway timetabling. [Figure 2](#) shows a roadmap of the target of our working group. It involves important elements of railway timetabling to be standardized in the future.

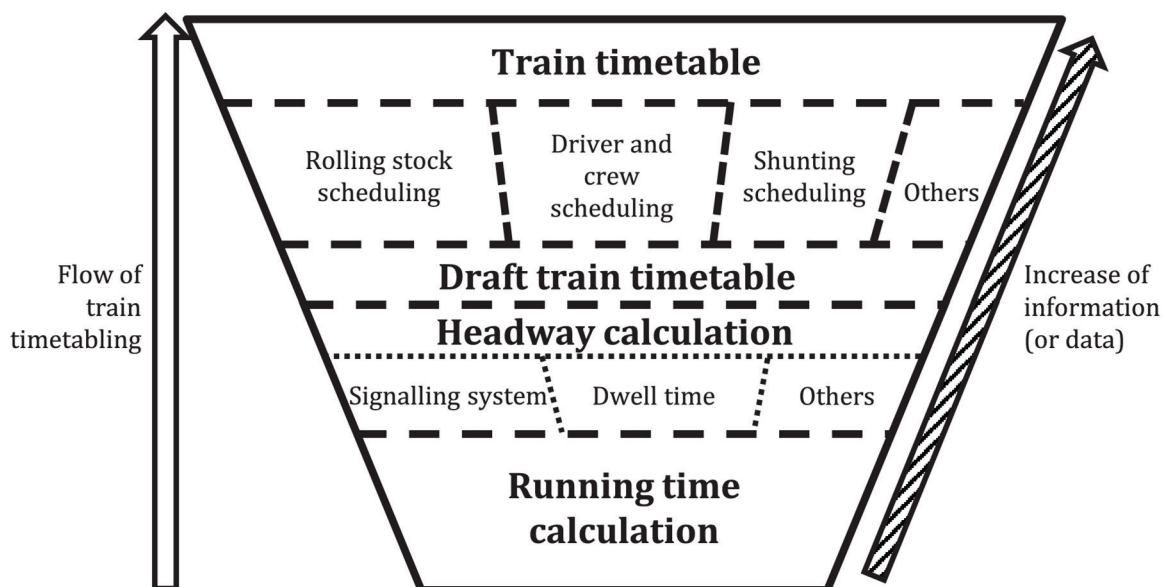


Figure 2 — Roadmap of our working group

Railway Applications — Running time calculation for timetabling —

Part 2: Distance-speed diagrams and speed curves

1 Scope

In order to create punctual timetables, it is necessary to accurately calculate and plan out running time between stopping or passing points, headway between trains, train scheduling, rolling stock scheduling, driver and crew scheduling, operation scheduling in stations and depots and line / infrastructure capacity.

Among these values, shortest running time between stopping or passing points must be calculated first, as this is the basis of timetabling.

This document describes a practical procedure to create and verify distance-speed diagrams and speed curves using the parameters specified in ISO 24675-1. Shortest running time is obtained by numerically integrating the speed curves.

This enables railway infrastructure managers, railway operators and related organizations to calculate accurate running time at the stage of setting up feasible and punctual daily timetables, seasonal timetables, annual timetables, strategic timetables for long-term perspective, and other timetables of a railway system.

This document excludes running time calculation used for purposes other than timetabling.

2 Normative references

The following document is referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 24675-1, *Railway Applications — Running time calculation for timetabling — Part 1: Requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 24675-1, ISO 24478, IEC 60050-811, and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 General

3.1.1

position

distance from a specific reference point on a defined path on the infrastructure

[SOURCE: ISO 24675-1, 3.1.3]