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Implementation of a High-Speed Railway, emerging Phase

International Railway Solution to be classified in volumes of UIC

VI - Traction

Application:

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The International Railway Solution

The International Railway Solution (IRS) are structured in a General Part and in some eventual Application Parts.

The General Part is valid worldwide, while the Application Parts are valid for a specific railway application, based on a geographical or on a service implementation.

The eventual Application Parts may thus be added according to the current needs of the Railway Community.

Structure of the International Railway Solution:

IRS 60671: Implementation of a High Speed Railway, emerging phase

General part

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Foreword

An International Railway Solution (IRS) is a document drawn up by consensus and applied on a voluntary basis which aims to facilitate and harmonize railway operation. IRSs are gradually replacing UIC leaflets.

Members of the International Union of Railways (UIC) participate in the creation of IRSs, of which they benefit in full. Furthermore, marketing to railway stakeholders contributes to the sharing and harmonization of good practices, in accordance with UIC's primary goal.

While IRSs do not have the force of law, they are created and published in a professional manner and with technical approval on the basis of UIC procedures, and have full technical legitimacy in the railway sector.

The "General application" section constitutes the heart of the IRS and contains the working group's expertise applicable in the broadest manner. The addition of a "Specific application" aims to cover factors specific to a region, a type of service, etc.

While the application of this IRS is optional, some provisions shall be implemented in all cases to ensure correct application and maintain the system's cohesiveness. Certain operational circumstances require that specific provisions be systematically applied by all users of the document.

For the purposes of understanding, the user acknowledges that the expression of:

- obligation indicates requirements to be respected in order to comply with the expertise expressed in the document (usually "shall" in the present);
- recommendation indicates options that are favourable but not essential (usually "should" in the present);
- permission indicates options that are recognized but without consequence (usually "may", "need not" in the present);
- capacity indicates possibilities from a technical standpoint and not permissions or probabilities (usually "can" in the present).

Obligation, recommendation and capacity can be expressed in the negative to indicate prohibiting, non-recommendation and incapacity.

If applicable, notably for the purposes of compliance with a UIC approval, passages that are recommended or mandatory for the cohesiveness of the system will be accompanied by the letters "R" and "MCS" respectively.

This IRS reflects the following UIC working group expertise:

High-Speed IRS working group
Intercity & High-Speed Committee

It integrates in full or in part the following UIC leaflets:

Not applicable. (There are no UIC leaflets integrated in IRS 60671)

It complements the following standards:

Not applicable. (There are no standards complemented by IRS 60671)

The following IRSs constitute a complementary series:

IRS 60670 Implementation of a High-Speed Railway, Definition and Features
IRS 60672 Implementation of a High-Speed Railway, Feasibility Phase
IRS 60673 Implementation of a High-Speed Railway, Design Phase
IRS 60674 Implementation of a High-Speed Railway, Construction Phase
IRS 60675 Implementation of a High-Speed Railway, Operation Phase

Summary

IRS 60671 is the second part of the Implementation of a High-Speed Railway series, specifying the main requirements of the emerging and pre-feasibility study stages. Information required by potential investors is gathered during the emerging stage. The pre-feasibility study builds on the emerging stage with regard to technical, social and economic aspects of the proposed HSR project, with the aim of gaining support for the viability of the project.

Normative references

The following referenced documents are indispensable for the application 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.

1. International Railway Solution (IRS)

Internationale Union of Railways (UIC)

IRS 60670: Implementation of a High-Speed Railway. Definition and features, 1st edition

IRS 60672: Implementation of a High-Speed Railway. Feasibility phase, 1st edition

Terms and definitions

Emerging

Emerging refers to the beginning of a process of defining a HSR project, whereby the objective is to provide advice for investors on an investment opportunity. The corridors to be studied are defined during this stage on the basis of the development master plan or travel requirements, and a decision will be made on whether to proceed with studies.

Pre-feasibility study

Building on the emerging stage, the pre-feasibility study is a further study of the technical, social and economic aspects relating to the proposed HSR project. It is conducted to support decision-making regarding the viability of the project. The pre-feasibility study involves forecasting traffic flows, identifying potential corridors and developing initial cost estimates on the basis of socioeconomic data, current transport network status, and current supply and demand on all transport modes.

Implementation of a High-Speed Railway, emerging phase

General part

1 - Introduction

General

High Speed Railway (HSR) refers to any railway with commercial train services at speeds of 250 km/h or above.^a

Designing, constructing and operating a new HSR system is a complex task with many influences, stakeholders, requirements, challenges and objectives, all of which must be considered.

HSR systems must comply with rigorous technical requirements with respect to design, construction and operation.

HSR systems aim to:

- Support population and economic growth,
- Enable social and economic development in regional and urban areas,
- Relieve transport congestion on existing and future systems,
- Help support land use objectives designed to achieve sustainable ecological and environmental outcomes, given continued urbanisation, higher-density living and the growth of regional centres.

A HSR project implementation process has five phases, i.e. emerging phase, feasibility phase, design phase, construction phase and operation phase.

The IRSs for HSR implementation are as follows:

IRS 60670 Implementation of a high-speed railway, definition and features.

IRS 60671 Implementation of a high-speed railway, emerging phase.

IRS 60672 Implementation of a high-speed railway, feasibility phase.

IRS 60673 Implementation of a high-speed railway, design phase.

IRS 60674 Implementation of a high-speed railway, construction phase.

IRS 60675 Implementation of a high-speed railway, operation phase.

This IRS is focussed on the emerging phase.

This IRS provides recommended practices. However, in light of future technological development in different countries, the main design parameters mentioned in this IRS are for reference purposes only, and users of this IRS may adapt them according to their own particular circumstances.

a. The definition of HSR may vary between different countries.

Scope

This IRS outlines the objectives, key points, inputs, outputs, stakeholders involved, empowerment, risks and mitigating measures and financial aspects involved in the various phases of a HSR implementation project.

This IRS applies to the emerging and pre-feasibility study of a HSR project.