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Implementation of a high-speed railway, construction 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 Solutions (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 to 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 Operating Community.

Structure of the International Railway Solution:

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

General part

CONTENTS

Summary	3
Normative references	4
Terms and definitions	5
List of abbreviations	6

General Part

1 - Introduction	8
2 - Stage 10: construction planning	10
2.1 - Objectives of the stage	10
2.2 - Key points	10
2.3 - Inputs	12
2.4 - Outputs	12
2.5 - Stakeholders involved	13
2.6 - Empowerment	14
2.7 - Risks and mitigating measures	14
2.8 - Financial aspects of the stage	14
3 - Stage 11: Construction management	15
3.1 - Objectives of the stage	15
3.2 - Key points	15
3.3 - Inputs	21
3.4 - Outputs	21
3.5 - Stakeholders involved	21
3.6 - Empowerment	22
3.7 - Risks and mitigating measures	22
3.8 - Financial aspects of the stage	23
4 - Stage 12: Testing and commissioning	24
4.1 - Objectives of the stage	24
4.2 - Key points	24
4.3 - Inputs	28
4.4 - Outputs	28
4.5 - Stakeholders involved	29
4.6 - Empowerment	30
4.7 - Risks and mitigating measures	30
4.8 - Financial aspects of the stage	30

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 60674)

It complements the following standards:

Not applicable. (There are no standards complemented by IRS 60674)

The following IRSs constitute a complementary series:

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 60675 Implementation of a High-Speed Railway, Operation Phase

Summary

IRS 60674 is the fifth part of the Implementation of a High-Speed Railway series, and outlines the various stages involved in the construction of a high-speed railway. It describes the key elements of construction management to be considered throughout the process, including tender management, contract management, cost management, works supervision, safety management, environmental management and tests on completion, and outlines the main procedures and requirements for testing and commissioning for high-speed railway projects.

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)

International Union of Railways (UIC)

IRS 70001: Railway Application - High Speed - Dynamic Integration Tests and Trial Operation before Revenue Operation, (in course of preparation)

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

Terms and definitions

Construction planning

Construction planning is the activity of breaking down tasks, estimating works duration, preparing works schedule according to construction sequence and identifying critical path, so as to ensure that all stages in the construction process are under control and key deadlines are met.

Construction management

Construction management covers the whole process and all aspects of a construction project, including tender management, contract management, costs management, works supervision, safety management, environmental management, and tests on completion management.

Testing and commissioning

Testing and commissioning is to measure, verify, adjust and optimize the functions, performance and the interface matching relationship of the new railway system to ensure that, during construction and after completion, it functions properly and complies with safety requirements, and to enable the new line to be placed in service. Testing and commissioning includes acceptance of materials and components, static tests of sub-assembly or sub-system, static integration tests, dynamic integration tests and trial operation.

List of abbreviations

ACWP	Actual Cost for Work Performed
BCWP	Budgeted Cost for Work Performed
CPM	Critical Path Method
EOI	Expression of Interest
OCL	Overhead Contact Line
PERT	Program / Project Evaluation Review Technique

Implementation of a high-speed railway, construction phase

General Part