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BSI Standards Publication

# Public transport — Interoperable fare management system

## Part 2: Business practices

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**National foreword**

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# Foreword

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**Endorsement notice**

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# Introduction

ISO 24014-1 defines the reference functional model of an Interoperable Fare Management System (hereafter IFM functional model). The scope of ISO 24014-1 excludes irrelevant aspects related to interoperability, particularly organizational and physical implementation.

Among the matters that are outside the scope and not clearly or concretely described in ISO 24014-1, this Technical Report provides a conceptual framework to guide the integration of such business practices, which is important when constructing an IFMS compliant with ISO 24014-1

For this purpose, this Technical Report provides a conceptual framework that is described below.

ISO 24014-1 states that a full IFMS is described by its functional model of IFMS and its Set of Rules. Therefore, Set of Rules is one of the necessary components to understand the full or whole IFMS environment. However, ISO 24014-1:2007 is limited in description, only addressing Set of Rules in addition to some security and identification rules specifically stated as "… regulations achieving IFM policies expressed as technical, commercial, security and legal requirements and standards relevant to only IFMS."

The objective of this Technical Report then is to aid readers in their understanding of the whole structure of Set of Rules by concretely clarifying the relationship with IFM functional model.

In the introduction of ISO 24014-1, it is noted that there may be cases where multiple existing IFMSs work together collaboratively while distributing their functions across the different IFMSs. Specifically, these cases that consider integrating/distributing functions between existing IFMSs are one of the most effective ways of implementing and expanding the interoperability of existing IFMSs. However, there are no concrete descriptions about the interoperability of multiple existing IFMSs, because, from the viewpoint of ISO 24014-1, multiple existing IFMSs that achieve interoperability are functionally considered as a single IFMS.

This Technical Report clarifies how interoperability that is realized among multiple existing IFMSs or expanded to them can be understood from both IFM functional model and Set of Rules viewpoints. Further, this Technical Report explains how cases of collaboration, in which IFM functional model and functional model of non public transport applications are involved, can be interpreted from the viewpoint of IFM functional model.


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# Public transport — Interoperable fare management system —

# Part 2: Business practices

## 1 Scope

This Technical Report introduces a generic conceptual framework that can be applied to all Interoperable Fare Management Systems (hereafter IFMS) compliant with ISO 24014-1, as the basis for business practices relating to the conceptual framework for an IFMS, which is described in ISO 24014-1.

This generic conceptual framework comprises three parts:

a) structure of Set of Rules;

b) collaboration of functional models;

c) integration of Set of Rules.

A "Structure of Set of Rules" is applied to Set of Rules covering the whole domain of IFMS functionality in all aspects of a system including

— a structure based upon IFM-roles in the domain of IFM functional model,

— a structure based upon roles, abstract objects performing a set of functions, in all IFM domains, and

— a structure based upon business entities in all IFM domains.

These structures provide a method to easily understand the Structure of Set of Rules as a whole.

Collaboration of functional models is applied when different functional models that collaborate exist, such as might be defined by the coexistence of applications on a medium, between functional models of existing IFMS, or between IFM functional model and functional model of a non-PT system. Such relationships are best explained and understood from the viewpoint of a three-dimensional model as defined in Clause 6.

"Integration of Set of Rules" is applied to clarify the extent of interoperability that may exist between existing IFMSs which are collaborating by quantifying the integration of Set of Rules based upon "Structure of Set of Rules".

This Technical Report is used as a tool for business practices. Any organizational references and concrete descriptions in examples within this Technical Report are purely informative.

## 2 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.

ISO 24014-1, *Public transport — Interoperable fare management system — Part 1: Architecture*

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