



# SLOVENSKI STANDARD SIST-TS CEN/TS 16406:2013

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## Inteligentni transportni sistemi - Javni prevoz - Posredno polnjenje železniških kart

Intelligent transport systems - Public transport - Indirect Fulfilment for Rail

Intelligente Transportsysteme - Öffentlicher Verkehr - Indirekte Schienenverkehrserfüllung

Émission indirecte de titres de transport ferroviaire

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| 03.220.30 | Železniški transport                            | Transport by rail                      |
| 35.240.60 | Uporabniške rešitve IT v transportu in trgovini | IT applications in transport and trade |

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TECHNICAL SPECIFICATION  
SPÉCIFICATION TECHNIQUE  
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**CEN/TS 16406**

January 2013

ICS 03.220.30; 35.240.60

English Version

**Intelligent transport systems - Public transport - Indirect  
Fulfilment for Rail**

Émission indirecte de titres de transport ferroviaire

Intelligente Transportsysteme - Öffentlicher Verkehr -  
Indirekte Schienenverkehrserfüllung

This Technical Specification (CEN/TS) was approved by CEN on 13 August 2012 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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## Foreword

This document (CEN/TS 16406:2013) has been prepared by Technical Committee CEN/TC 278 “Road transport and traffic telematics”, the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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**CEN/TS 16406:2013 (E)****0 Introduction****0.1 General**

This document has been prepared as a Technical Specification (TS) because the subject of indirect fulfilment for rail is a volatile and fast-moving business and technical subject. Moreover, it is expected that a revision to the TS will be needed, specifically to make changes related to the indirect fulfilment of "Non-integrated reservation tickets" (NRT tickets"), and will take place no longer than two years after its bringing into force. At that time it is expected that the TS after having become an EN will have been referenced by the TAP-TSI and any variation will require to be approved not only by CEN/TC 278 but the European Rail Agency's Change Control Management process for changes to TSIs.

The purpose of the TAP-TSI is to introduce a statutory framework of requirements and obligations for railway operators, infrastructure managers and others that will ensure interoperability in rail transport ticketing and information provision. Within the 2011 version of the TAP-TSI text there are some open points related to indirect fulfilment and Security.

This document is intended to become a European standard contributing towards closing these open points relating to the subsystem 'Telematics applications for passenger services' of the trans-European rail system (TAP-TSI) as well as to the relevant technical documents listed in Annex III of the TAP-TSI (see Annex A).

**0.2 Indirect fulfilment open points**

The open points in the TAP-TSI cover indirect fulfilment used for international services and cross-border sales. In these cases, the TAP-TSI already has layout specifications for the RCT2 paper ticket used in direct fulfilment, based on UIC leaflet 918-2, and for the A4 print-at-home indirect fulfilment method, based on UIC leaflet 918-3.

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Fulfilment specifications are missing

- for ticket on departure (TOD - where the passenger is given a code at the time of sale, and uses the code or a payment card to collect the RCT2 paper ticket at the station), and
- for manifest-on-list (or e-ticket or paperless ticket – where there is no ticket at all, the ticket control staff having pre-loaded or over-the-air access to the reservation database, and the passenger proves they can travel by showing some ID).

To meet the indirect fulfilment needs of the open points, a set of specifications are needed for a generic indirect fulfilment request framework and for a security method for fulfilment requests. These specifications are given by this TS.

In order to ensure the compatibility between this TS and in particular between the future standard and the TAP-TSI, several changes to the TAP-TSI are needed after agreement by the ERA and the rail sector. The changes are in three main parts. The first is the change to the Basic Parameters in chapter 4 of the TAP-TSI where the obligations are defined. The second change is to the technical documents being annexes to the TAP-TSI (see Annex A) that specify the method by which timetable, fares, reservation and other data has to be exchanged. For indirect fulfilment, the Technical Document affected is B5, covering reservations. The third change is to the glossary, which defines what the terms used in the TAP-TSI mean.

The analysis later in this document demonstrates that, although security requirements are relevant for indirect fulfilment, no rail-specific requirements exist at this time and open standards for key distribution and management are sufficient. As a result, no specification is needed for the TAP-TSI to meet the Open Point.

## 1 Scope

This Technical Specification provides, in Clause 2, new and changed glossary items needed to define indirect fulfilment and its characteristics and to support the changes to the TAP-TSI and ERA Technical Document B5.

Clause 3 defines the layout formats used for international rail services fulfilled using the ticket on departure and print-at-home ticket methods.

Clause 4 provides the changes to ERA Technical Document B5 that are required to provide the generic indirect fulfilment framework, covering ticket on departure, print-at-home and e-ticket fulfilment methods, although the main use of the specification is expected to be for ticket on departure.

Clause 5 provides the analysis of the security requirements of indirect fulfilment, and the conclusion that no rail-specific specifications are needed.

## 2 Terms and definitions

For the purposes of this document, the terms and definitions given in TAP-TSI and the following apply.

### 2.1 Additional terms for the TAP-TSI Glossary

#### 2.1.1

##### **indirect fulfilment**

the process of fulfilment where the customer purchases a ticket other than at a station or face to face at a ticket vendor

Note 1 to entry: Indirect fulfilment methods are conventional ticket on departure, print-at-home ticket, e-ticket and smart ticket on departure.

#### 2.1.2

##### **indirect fulfilment message framework**

a set of computer-to-computer messages between involved parties including carriers, issuers, retailers, distributors, attributors, station managers and TCOs that allow for the indirect fulfilment of all types of tickets excluding a conventional ticket

#### 2.1.3

##### **indirect fulfilment security framework**

the set of equipment, processes and messages that ensures the security of the indirect fulfilment and ticket control of all forms of tickets

#### 2.1.4

##### **product owner**

the product owner is responsible for his products

- Functions of Ownership: Specifying pricing, usage rules and commercial rules.
- Functions of Clearing: Trip reconstruction, product aggregation based on received usage data using product definition rules, linking of aggregated usage data with acquisition data, preparation of apportionment data based on product specification rules.
- Functions of Reporting: Detailed acquisition data with no link to usage data within the reporting period, usage data with no link to acquisition data within the reporting period, linked aggregated product data within the reporting period

Note 1 to entry: This term is required as ticketing equipment is not always defined by carrier(s), as it could be defined by an organisation owned wholly or partly by Transport Authorities.

[SOURCE: ISO 24014-1:2007, 5.1]

**CEN/TS 16406:2013 (E)****2.1.5****conventional ticket**

a ticket for a product printed as specified by the carrier(s) on paper or paper-derived card and optionally with machine-readable magnetic stripe and/or optically readable product data which the TCO(s) for the transport service are equipped to read

Note 1 to entry: A conventional ticket provides autonomous and independent title to the transport contract and does not require further information such as from a sales or reservation database.

Note 2 to entry: Each RU as carrier maintains its own specifications for conventional tickets and is eligible to participate in the maintenance of the specification for conventional tickets used for international rail passenger services.

**2.1.6****conventional ticket on departure**

a conventional ticket that is printed on the demand of the passenger subsequently to the conclusion of the sale of the product using instructions supplied by the carrier(s) and as advised to the passenger by the retailer

**2.1.7****print-at-home ticket**

a ticket for a product printed by the passenger as specified by the carrier(s) on plain paper or a mobile phone display with optional security devices in the design and with optional optically readable product data which the TCO(s) for the transport service are equipped to read

Note 1 to entry: A print-at-home ticket provides autonomous and independent title to the transport contract and does not require further information such as from a sales or reservation database.

Note 2 to entry: Each RU as carrier maintains its own specifications for print-at-home tickets and is eligible to participate in the maintenance of the specification for print-at-home tickets used for international rail passenger services.

**2.1.8****smart ticket**

a ticket for a product stored as specified by the carrier(s) in an application on media that is machine-readable using the iso/iec 14443 standard which the retailer is able to store and which the TCO for the transport service is equipped to read

Note 1 to entry: Such media is commonly known as a chipcard or smartcard but also an emulation of a chipcard or smartcard on an NFC mobile or a secure device as defined by global platform specifications.

Note 2 to entry: A smart ticket provides autonomous and independent title to the transport contract and does not require further information such as from a sales or reservation database.

Note 3 to entry: Each RU as carrier maintains its own specifications for smart tickets. There is currently no expectation that a specification for smart tickets to be used for international rail passenger services will be developed.

**2.1.9****smart ticket on departure**

a smart ticket that is stored on the demand of the passenger subsequently to the conclusion of the sale of the product using instructions supplied by the carrier(s) and as advised to the passenger by the retailer

Note 1 to entry: The equipment used to fulfil the smart ticket on departure has to be as specified by the carrier(s).

**2.1.10****e-ticket**

a ticket for a product stored on a sales or reservation database and not printed or stored on any other media. the passenger may be supplied with a receipt that appears to be another form of ticket, but the receipt is not an e-ticket

Note 1 to entry: The passenger demonstrates his/her right to use the transport service defined by the product by providing such identification and in such a manner as specified by the carrier(s) and as advised to the passenger by the retailer. One such manner is manifest on list.



Note 2 to entry: The e-ticket receipt does not provide autonomous and independent title to the transport contract and depends on further information such as from a sales or reservation database.

Note 3 to entry: Each RU as carrier maintains its own specifications for e-tickets and is eligible to participate in the maintenance of the specification for e-tickets used for international rail passenger services.

## 2.2 Changed terms in the TAP-TSI Glossary needed to support indirect fulfilment

### 2.2.1

#### **attributing (allocating) system**

an electronic system hosting the catalogue of transport services for which a transport service provider authorises retailers to issue and fulfil travel documents

### 2.2.2

#### **attributor**

a company managing an attributing system

Note 1 to entry: This may be a carrier.

### 2.2.3

#### **decryption**

the converting of encrypted data back into its original form

### 2.2.4

#### **distributor**

an undertaking providing equipment and services to issuers and retailers to sell rail products

Note 1 to entry: This may be a carrier.

### 2.2.5

#### **encryption**

the encoding of data to keep it secret

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### 2.2.6

#### **fulfilment**

the process which delivers the product to the customer after his/her purchase

### 2.2.7

#### **issuer**

an undertaking selling the ticket and receiving payment, which is the carrier

Note 1 to entry: the issuer is the undertaking indicated on the ticket with its code and possibly its logo.

### 2.2.8

#### **manifest on list**

indirect fulfilment e-ticket method where the customer receives only a confirmation, usually with a reference code

Note 1 to entry: The undertaking performing this kind of sale provides to the TCO a list of all customers and reference codes. The customer proves their identity for the TCO before/after departure in order to embark/be accepted on the train. The TCO controls whether the Customer is admitted to embark/stay on the train.

### 2.2.9

#### **product**

the unique combination of some or all of origin, destination, route, specific trains, date and time, tariff type, and discount category that uniquely defines what transport service can be/has been purchased by the customer

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Note 1 to entry: Product in the transport sense is identical to the use of the word in the retail industry, being the unambiguous description of things that can be bought.

Note 2 to entry: See also Attributing System.

**2.2.10****reservation system**

a computerised system used to store and retrieve information about the availability and price of seats, sleeping compartments and similar assets on trains, and conduct transactions related to the use of those assets

Note 1 to entry: A reservation system is capable to keep the inventory correct in real or near-real time.

**2.2.11****retailer**

an undertaking which sells to the customer a ticket without or with a reservation for a rail service

Note 1 to entry: A retailer can be an Issuer or a Ticket Vendor licensed by an Issuer.

**2.2.12****technical document**

any technical document published by the European Railway Agency according to Article 5.8 of Directive 2008/57

**2.2.13****ticket on departure****TOD**

a ticket that is printed on the demand of the passenger subsequently to the conclusion of the sale of the product using instructions supplied by the carrier(s) and as advised to the passenger by the retailer

**3 Indirect fulfilment formats for international rail services****3.1 Ticket on departure method**

Where a ticket for an international rail service is fulfilled indirectly using the ticket on departure method, then the ticket shall be printed using the format defined in ERA Technical Document B6 – Electronic Seat/Berth Reservation and Electronic Production of Transport Documents (RCT2 Standards).

Where the ticket is not for an international rail service then the product owner is free to specify the fulfilment format(s) that may be offered by the retailer to the customer.

**3.2 Print-at-home ticket method**

Where a ticket for an international rail service is fulfilled indirectly using the print-at-home ticket method, then the ticket shall be printed using the format defined in ERA Technical Document B7 – International Rail Ticket for Home Printing.

Where the ticket is not for an international rail service then the product owner is free to specify the fulfilment format(s) that may be offered by the retailer to the customer.

**3.3 E-tickets**

Where a ticket for an international rail service is fulfilled indirectly using the e-ticket method, then there is no physical ticket issued and therefore no requirement for a standardised fulfilment format.

## 4 Indirect fulfilment framework

### 4.1 Actors involved in the indirect fulfilment framework

#### 4.1.1 General

Indirect fulfilment links together a wide range of actors in rail retail. Figure 1 summarises their roles, and the relationships between them.

NOTE 1 One organisation can perform several roles.

NOTE 2 Boxes in orange are organisations; boxes in blue are systems.

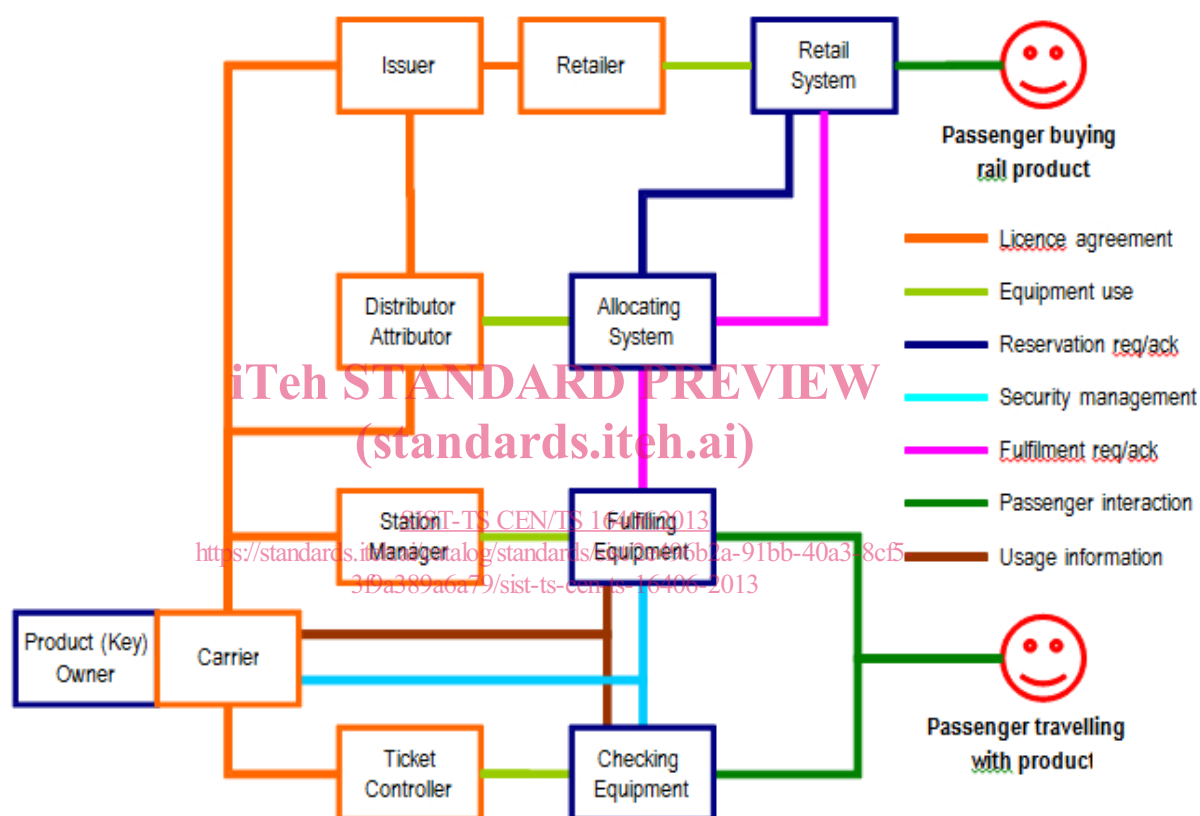


Figure 1 — Roles, and relationships of the actors involved in the indirect fulfilment framework

In the following, an outline description of the relationships is given.

#### 4.1.2 Commercial links

Organisations are linked together by licence or similar commercial agreements. Product owners, carriers, issuers and attributors are linked. The product owner and the carrier are usually the same organisation for conventional rail, although a public authority can be the product owner in cases of public service contracts. Product owners and carriers agree that Issuers and their retailers can sell their products, and jointly agree that distributors (or attributors) can manage the reservation and eventual fulfilment of the services offered by the product owners and carriers.

Issuers licence retailers to sell products; Issuers can also act as retailers. Retailers have the primary relationship with passengers, and are responsible for sale and after-sale transactions. The exception is during travel, where primary responsibility for passenger support lies with the carrier.