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Original

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Structured (data model) description of passenger traffic data

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Contents

Summary	1
1 - Introduction	2
1.1 - Purpose	2
1.2 - Methodology	2
1.3 - Preliminary remarks	2
1.3.1 - Codes	2
1.3.2 - Description of entities, relations and attributes	2
2 - Bulk Exchange of Time Table Data (TITAN)	4
2.1 - General	4
2.1.1 - Scope	4
2.1.2 - Design decisions	4
2.1.3 - Basic Data vs. Additional Data	5
2.2 - Entity Relationship Diagram	6
2.2.1 - Time table information	7
2.2.2 - Location information	8
2.2.3 - Inheritance	9
2.3 - Description of entities, relations and attributes	10
2.3.1 - Charge unit	10
2.3.2 - Connection	10
2.3.3 - Country	10
2.3.4 - Facility	11
2.3.5 - Frequency	11
2.3.6 - Location	11
2.3.7 - Local connection	12
2.3.8 - Location details	12
2.3.9 - Local facilities	13
2.3.10 - Local service	13
2.3.11 - Official language	14
2.3.12 - Opening	14
2.3.13 - Party	14
2.3.14 - Product	15
2.3.15 - Product OD	15

2.3.16 - Rate type.....	15
2.3.17 - Sales information	16
2.3.18 - Service	16
2.3.19 - Service brand.....	16
2.3.20 - Special day	17
2.3.21 - Stop.....	17
2.3.22 - Traffic	18
2.3.23 - Traffic restriction	18
2.3.24 - Transport facility.....	18
2.3.25 - Transport service	19
List of abbreviations	20
Bibliography	21

Summary

This leaflet gives a general and structured overview of passenger traffic data to be included in UIC standard messages for data exchange between UIC Railways or between UIC Railways and third parties.

1 - Introduction

1.1 - Purpose

The purpose of this document is to obtain a general and structured overview of the passenger traffic data to be included in UIC standard messages for data exchange between UIC railways or between UIC railways and third parties.

1.2 - Methodology

The data model has been drafted in line with the entity relation ship methodology. It contains:

- a graphical representation of the data entities and relations,
- a commented catalogue of the entities, attributes and relations

In the graphical ER model the "crow's foot" notation is used (introduced by G.C. Everest). Mandatory attributes are printed in bold letters. Key values are marked with "PK".

1.3 - Preliminary remarks

1.3.1 - Codes

In order to reduce language problems, codes should be used in data exchange instead of text. Text might be used, if it transfers information relevant for a human user only and if the content is changing too frequently to be defined in code lists (i.e. if used for printing and information displays only).

International codes (ISO codes) ([see List of abbreviations - page 20](#)) should be applied if possible.

1.3.2 - Description of entities, relations and attributes

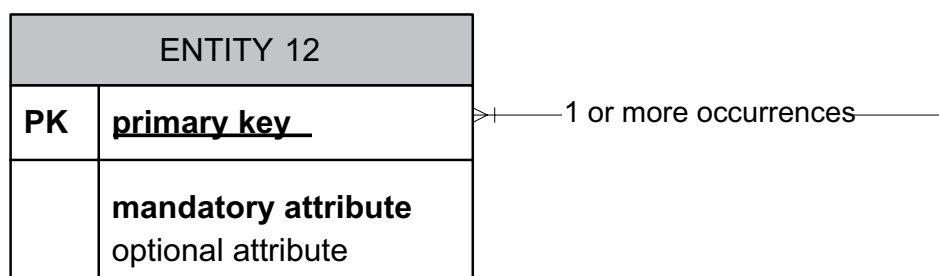
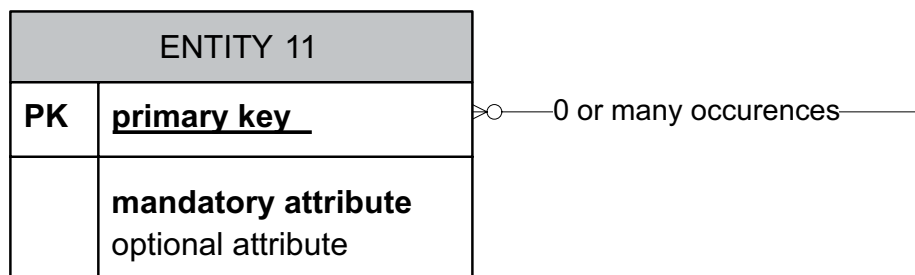
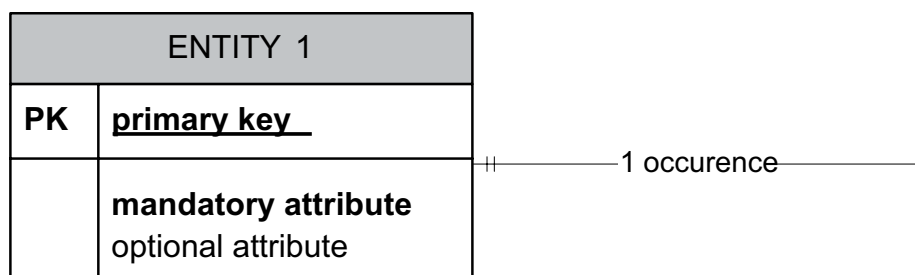
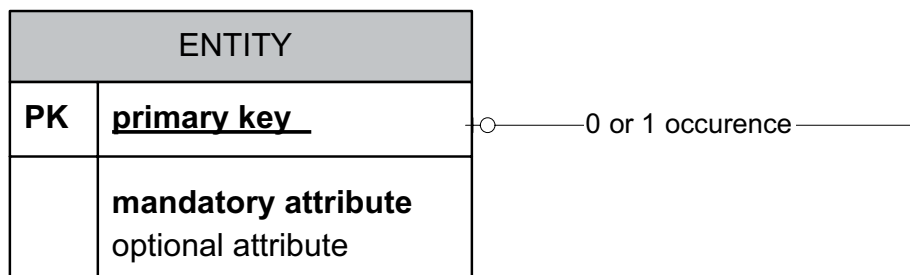
The Tag "id" at an attribute marks that this attribute is part of the primary key.

The Tag "rel" at an attribute marks that this attribute is part of a relation to another entity. Usually the attributes used to define a relation as a foreign key are not listed.

In many (most) cases an entity does not have a primary key defined by attributes. In this case a "technical" attribute "id" is noted.

The data models described in this document are logical data model to visualise the data and their relations. Therefore it tries to reduce redundant technical (so called "week") entities.

A technical data model based on this logical model might look completely different due to technical requirements on performance and / or data volume in message exchange.



2 - Bulk Exchange of Time Table Data (TITAN)

2.1 - General

2.1.1 - Scope

The data described in this part of the leaflet relates exclusively to commercial time tables to provide information to customers. Infrastructure data specific to traffic management and control is not included.

The data described here refer to the time table data exchange defined in *UIC Leaflet 916-1* (see [Bibliography - page 21](#)).

UIC Leaflet 916-1 defines the "Railway Use" of EDIFACT (see [List of abbreviations - page 20](#)) messages to exchange time table data. As the pure message format definitions are too poor to establish a data model and only for this "Railway Use" a detailed definition of the messages is available, the data model defined in this document is restricted to the "Railway Use" too.

2.1.2 - Design decisions

As *UIC Leaflet 916-1* defines messages for the data exchange only, the data structure defined in *UIC Leaflet 916-1* is a hierarchical data mode including many redundant structures to reduce data volume of the messages. Therefore the logical data model presented here must be structured differently.

Usually a message definition to exchange data should be based on a relational data model defined previously, but historically this was the case only in the beginning of the development of the messages. Due to this reason, the data model defined in this chapter has been gained by a reverse engineering approach from the message definition. Thereby the following rules have been obeyed:

- Naming

- The central entity "SERVICE" has been renamed in the message definition of *UIC Leaflet 916-1* (now "PRODUCT"). This reduces some confusion as the term "SERVICE" was also contained in the old message definitions as "additional service" or "extra" with a different meaning. The new name "PRODUCT" has been taken in this leaflet, but the old term "service" still occurs in some descriptions taken from *UIC Leaflet 916-1*.
- The naming of entities and attributes has been chosen to display their real content (i.e. If the implementation guide restricts a more general attribute, a name reflecting the restricted use has been taken).
- A new "descriptive" name has been used for an entity, if it previously contained a pure technical name (i.e. "SERVICE + PERIOD + LOCATION" became the entity "STOP").
- To support an easy comparison with the TITAN model, the tag numbers of the attributes have been added in the graphical ER model.