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Public transport - Reference data model - Part 6: Passenger information

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NATIONAL FOREWORD

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See Eesti standard EVS-EN 12896-6:2019 sisaldab Euroopa standardi EN 12896-6:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 12896-6:2019 consists of the English text of the European standard EN 12896-6:2019.
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Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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Transports publics - Modèle de données de référence - Partie 6 : Information des usagers

Öffentlicher Verkehr - Referenzdatenmodell - Teil 6: Information an Reisende

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European foreword

This document (EN 12896-6:2019) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

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

The series composed of the following documents:

— *Public transport – Reference data model – Part 1: Common concepts*;

— *Public transport – Reference data model – Part 2: Public transport network*;

— *Public transport – Reference data model – Part 3: Timing information and vehicle scheduling*;

— *Public transport – Reference data model – Part 4: Operations monitoring and control*;

— *Public transport – Reference data model – Part 5: Fare management*;

— *Public transport – Reference data model – Part 6: Passenger information*;

— *Public transport – Reference data model – Part 7: Driver management*

— *Public transport – Reference data model – Part 8: Management information & statistics*; and

— *Public transport – Reference data model – Part 9: Informative documentation* [CEN/TR].

Together these create version 6 of the European Standard EN 12896, known as “Transmodel”, and thus replace EN 12896:2006, known as “Transmodel v5.1”.

In comparison with EN 12896:2006, the technical modifications made are presented in the Technical CEN/TR 12896-9, *Public transport – Reference data model – Part 9: Informative documentation*.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

Part 1 of this European Standard presents the following items:

— Rationale for the Transmodel Standard;

— Use of the Transmodel Standard;

— Applicability of the Transmodel Standard;

— Conformance Statement;

— Transmodel Origins;

— Reference to the Previous Version and Other Documents.

The data structures represented in Part 1 are generic patterns that are referenced by different other parts.

Part 2 of this European Standard presents space-related data structures.

Part 3 presents time-related data structures and replaces the sections of EN 12896:2006 referring to the time-related Tactical Planning Components and to Vehicle Scheduling.

Part 4 presents data referring to daily operations (i.e. to operational days), different from those planned for day types (space-related data structures and tactical planning components) and including operational raw data referring to operations follow-up.

Part 5 presents fares structures including sales, validation and control.

Part 6 (this part) presents Passenger Information (planned and real-time).

Part 7 presents Driver Management including Driver Scheduling (day-type related driver schedules), Rostering (ordering of driver duties into sequences according to some chosen methods) and Driving Personnel Disposition (assignment of logical drivers to physical drivers and recording of driver performance).

Part 8 presents Management Information and Statistics.

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1 Scope

1.1 General Scope of the Standard

The main objective of the present standard is to present the Reference Data Model for Public Transport, based on:

— the Reference Data Model, EN 12896, known as Transmodel V5.1;

— EN 28701:2012, *Intelligent transport systems – Public transport – Identification of Fixed Objects in Public Transport (IFOPT)*, although note that this particular standard has been withdrawn as it is now included within Parts 1 and 2 of this standard (EN 12896-1:2016 and EN 12896-2:2016) following their successful publication,

incorporating the requirements of:

— EN 15531-1 to -3 and CEN/TS 15531-4 and -5: *Public transport – Service interface for real-time information relating to public transport operations (SIRI)*;

— CEN/TS 16614-1 and -2: *Public transport – Network and Timetable Exchange (NeTEx)*, in particular the specific needs for long distance train operation.

Particular attention is drawn to the data model structure and methodology:

— the data model is described in a modular form in order to facilitate the understanding and the use of the model;

— the data model is entirely described in UML.

The following functional domains are considered:

— Network Description: routes, lines, journey patterns, timing patterns, service patterns, scheduled stop points and stop places;

— Timing Information and Vehicle Scheduling (runtimes, vehicle journeys, day type-related vehicle schedules);

— Passenger Information (planned and real-time);

— Fare Management (fare structure, sales, validation, control);

— Operations Monitoring and Control: operating day-related data, vehicle follow-up, control actions;

— Driver Management:

  — Driver Scheduling (day-type related driver schedules),

  — Rostering (ordering of driver duties into sequences according to some chosen methods),

  — Driving Personnel Disposition (assignment of logical drivers to physical drivers and recording of driver performance);

— Management Information and Statistics (including data dedicated to service performance indicators).

The data modules dedicated to cover most functions of the above domains will be specified.

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Several concepts are shared by the different functional domains. This data domain is called “Common Concepts”.

1.2 Functional Domain Description

The different functional domains (enumerated above) taken into account in the present standard, and of which the data have been represented as the reference model, are described in EN 12896-1:2016, *Public transport – Reference data model – Part 1: Common concepts*.

1.3 Particular Scope of this Document

The present document entitled *Public transport – Reference data model – Part 6: Passenger information*, incorporates the following main data packages:

— Trip Description;

— Passenger Queries.

This document itself is composed of the following parts:

— Main document (normative) representing the data model for the concepts shared by the different fare domains covered by Transmodel;

— Annex A (normative), containing the data dictionary, i.e. the list of all the concepts and attribute tables present in the main document together with the definitions;

— Annex B (normative), providing a complement to EN 12896-1:2016, particularly useful for parts 4 to 8 of the Public Transport Reference Data Model;

— Annex C (informative), indicating the data model evolutions;

— Annex D (informative), indicating the high-level equivalences of the example passenger information functional requests to the capabilities of other standards;

— Annex E (informative), providing an example set of commonly found passenger information functional requests and data dictionary for the elements used in the examples.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 12896-1:2016, *Public transport – Reference data model – Part 1: Common concepts*

EN 12896-2:2016, *Public transport – Reference data model – Part 2: Public transport network*

EN 12896-3:2016, *Public transport – Reference data model – Part 3: Timing information and vehicle scheduling*

EN 12896-5:2019, *Public transport – Reference data model – Part 5: Fare management* (“Transmodel v6”)

EN 12896-8:2019, *Public transport – Reference data model – Part 8: Management information & statistics* (“Transmodel v6”)

EN 15531-1, *Public transport – Service interface for real-time information relating to public transport operations – Part 1: Context and framework*

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EN 15531-2, *Public transport – Service interface for real-time information relating to public transport operations – Part 2: Communications*

EN 15531-3, *Public transport – Service interface for real-time information relating to public transport operations – Part 3: Functional service interfaces*

CEN/TS 15531-4, *Public transport – Service interface for real-time information relating to public transport operations – Part 4: Functional service interfaces: Facility Monitoring*

CEN/TS 15531-5, *Public transport – Service interface for real-time information relating to public transport operations – Part 5: Functional service interfaces situation exchange: Situation Exchange*

CEN/TS 17118, *Intelligent transport systems – Public transport – Open API for distributed journey planning*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1 General terms and definitions:

NOTE The following generic terms and definitions are used.

3.1.1
attribute
property of an entity

3.1.2
conceptual data model
description of a real-world domain in terms of entities, relationships and attributes in an implementation independent manner in order to provide a structure on which the rest of the development of an application system can be based

3.1.3
conceptual level
conceptual data model in the context of data modelling

3.1.4
database
collection of data

Note 1 to entry: Often used in the sense of the physical implementation of a data model.

3.1.5
data domain
data structure (in this European Standard, part of the Reference Data Model for Public Transport) made up of data related to each other, through the fact that there is a functional area or group of functions using this data set as a whole

3.1.6
data model
description of a real-world domain in terms of data and relationships

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