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Inteligentni transportni sistemi - Specifikacije za izmenjavo podatkov DATEX II pri upravljanju prometa in informiranju - 6. del: Objave parkirišč

Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 6: Parking Publications

Intelligente Verkehrssysteme - Datex II Datenaustausch Spezifikation für Verkehrsmanagement und Information - Teil 6: Öffentliches Parken

Systèmes de transport intelligents - Spécifications DATEX II d'échange de données pour la gestion du trafic et l'information routière - Partie 6: Publication de parking

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Systèmes de transport intelligents - Spécifications DATEX II d'échange de données pour la gestion du trafic et l'information routière - Partie 6: Publication de parking

Intelligente Verkehrssysteme - Datex II Datenaustauschspezifikationen für Verkehrsmanagement und Verkehrsinformationen - Teil 6: Publikation von Parkinformationen

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European foreword

This document (CEN/TS 16157-6:2015) has been prepared by Technical Committee CEN/TC 278 "Intelligent transport systems", 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.

CEN/TS 16157 consists of the following parts, under the general title "Intelligent transport systems — DATEX II data exchange specifications for traffic management and information":

- Part 1: Context and framework

- Part 2: Location referencing

- Part 3: Situation publication

The following parts are under development:

- Part 4: Variable message Sign publication

- Part 5: Measured & elaborated data publication

- Part 6: Parking publications

- Part 7: Traffic view publication

As a user of this Technical Specification, attention is drawn to the resources of www.datex2.eu. This web site contains related software tools and software resources that aid the implementation of CEN/TS 16157 DATEX II.

Other parts may be developed in the future.

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

Introduction

This Technical Specification defines a common set of data exchange specifications to support the vision of a seamless interoperable exchange of traffic and travel information across boundaries, including national, urban, interurban, road administrations, infrastructure providers and service providers. Standardisation in this context is a vital constituent to ensure that interoperability, reduction of risk, reduction of the cost base and promotion of open marketplace objectives are achieved that will lead to many social, economic and community benefits as a result of more informed travellers, network managers and transport operators.

Delivering European Transport Policy in line with the White Paper issued by the European Commission requires co-ordination of traffic management and the development of seamless pan European services. With the aim to support sustainable mobility in Europe, the European Commission has been supporting the development of information exchange mainly between the actors of the road traffic management domain for a number of years. In the road sector, DATEX II has been long in fruition, with the European Commission being fundamental to its development through an initial contract and subsequent co-funding through the Euro-Regional projects. With this standardisation of DATEX II there is a real basis for common exchange between the actors of the traffic and travel information sector.

This Technical Specification includes the framework and context for exchanges, the modelling approach, data content, data structure and relationships and communications specification. Part one of this Technical Specification defines a methodology which is extensible.

The sixth part of the CEN/TS 16157- EN 16157 series (this Technical Specification) deals with the publication of parking information. It specifies the structures and definitions of information that may be exchanged to convey urban parking information or Truck Parking information.

A DATEX II profile for Truck Parking is specified in the normative Annex A, which is in accordance with [1] (further here within called "EU Truck Parking regulation"). The DATEX II profile for Truck Parking provided in this Technical Specification can be used to collect and provide the data required in Article 4 of the EU Truck Parking regulation. The informative Annex B shows how to do this.

Informative Annex C gives additional explanation to the Truck Parking profile for DATEX II, informative Annexes D and E present a comprehensive and a lean version of an urban parking profile.

Informative Annex F gives an overview about the Parking Publications model and its profiles.

In normative Annex G, the data dictionary for the Parking Publications is specified.

XML-Schemes to the Parking Publications model and the DATEX II Truck parking profile are provided in these annexes:

- normative Annex H: Referenced XML schema for Parking Publications model
- normative Annex I: Referenced XML schema for the Truck Parking profile

XML encoding examples can be found in informative Annex J.

The European Committee for Standardisation (CEN) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning procedures, methods and/or formats given in this document.

CEN takes no position concerning the evidence, validity and scope of patent rights.

1 Scope

CEN/TS 16157 specifies and defines component facets supporting the exchange and shared use of data and information in the field of traffic and travel. The component facets include the framework and context for exchanges, the modelling approach, the data content, the data structure and relationships and the communications specification.

Part 6 of this Technical Specification is applicable to:

— Parking information – static and dynamic information about urban or interurban parking sites including Truck Parking information

It establishes specifications for data exchange between any two instances of the following actors:

— Traffic Information Centres (TICs),

— Traffic Control Centres (TCCs),

— Service Providers (SPs),

— Parking Operators.

Use of this Technical Specification may be applicable for use by other actors.

This Part of the Technical Specification includes the following type of information content:

— Parking information including static content (description and attribution of parking areas, parking sites and single parking spaces) and dynamic content (occupancy and vehicle measurement information). It covers urban parking information as well as Truck Parking information. It also covers a publication for information about specific parking vehicles.

Thus, this Part of CEN/TS 16157 specifies the informational structures, relationships, roles, attributes and associated data types required for publishing parking information within the DATEX II framework. This is specified as a DATEX II Parking Publications sub-model, which is part of the DATEX II platform independent model, but this Part excludes those elements that relate to location information which are specified in CEN/TS 16157-2.

2 Conformance

The Parking Publications model is a Level-B extension of the DATEX II platform independent data model defined in CEN/TS 16157-1.

Conformance with Part 1 shall require platform independent models from which platform specific models are generated to comply with the UML modelling rules defined in CEN/TS 16157-1 and with the following requirements of this sub-model that are expressed in this Part:

— comply with all stipulated minimum and maximum multiplicity requirements for UML elements and relationships

— comply with all definitions, types and ordering

— employ optional elements as specified

— comply with all expressed constraints.

It should be noted that conformance of a publication service with all the structural requirements stated above does not necessarily ensure that the informational content of that service will be semantically comprehensible.

3 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CEN/TS 16157-1, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information – Part 1: Context and framework*

CEN/TS 16157-2, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information – Part 2: Location referencing*

CEN/TS 16157-3, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information – Part 3: Situation Publication*

ISO/IEC 19501:2005-04, *Information technology — Open Distributed Processing -— Unified Modeling Language (UML) Version 1.4.2*

ISO 639-2:1998, *Codes for the Representation of Names of Languages — Part 2: alpha-3 codes*

4 Terms and definitions

For the purposes of this document, the terms and definitions given in CEN/TS 16157-1 and in the following list apply.

4.1
dynamic part [of the parking publications model]
the Parking Status Publication model. Can also express the Parking Status Publication part of one of the profiles specified in this document

4.2
eu truck parking regulation
short form for the “COMMISSION DELEGATED REGULATION (EU) No 885/2013 of 15 May 2013 supplementing ITS Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of information services for safe and secure parking places for trucks and commercial vehicles” [1]

4.3
group of parking spaces
combines and encompasses a number of parking spaces that can be logically reported together

4.4
group of parking sites
combines and encompasses a number of parking sites that can be logically reported together

4.5
label
a project on truck parking service and security classification, see [2] and [3]

4.6
lean urban profile
a lean DATEX II profile on urban parking information as specified in informative Annex E

4.7
level b extension
a method to extend the DATEX II Level A data model with new elements, ensuring backwards compatibility

4.8
parking publications model
entirety of the Parking Table Publication model, the Parking Status Publication model and the Parking Vehicles Publication model

4.9
parking record
a parking site or a group of parking sites. It is a logical construct with dedicated properties

4.10
parking site
a building, structure or identifiable (geographically bounded) space that is used for parking

4.11
parking space
a single space for parking, usually designed for one vehicle

4.12
profile
a DATEX II profile, i.e. a DATEX II compliant sub model of the DATEX II Level A model, possibly including extensions. Here in this document, a profile is always a DATEX II compliant sub model of the Parking Publications model

4.13
static part [of the parking publications model]
the Parking Table Publication model. Can also express the Parking Table Publication part of one of the profiles specified in this document

4.14
truck parking profile
the DATEX II profile for Truck Parking specified in normative Annex A

4.15
truck parking site
an urban or interurban parking site which is assigned to Truck Parking (but other vehicles might be allowed as well)

4.16
urban parking profile
a comprehensive DATEX II profile on urban parking information as specified in informative Annex D

5 Symbols and abbreviations

ETRS89 European Terrestrial Reference System 1989

EU	European Union
GUID	Globally Unique Identifier
HTML	Hyper text mark-up language
IP	Internet Protocol
ITS	Intelligent Transport Systems
ITP	Intelligent Truck Parking
LPG	Liquid Petroleum Gas
PDF	Portable document format created by Adobe
UML	Unified Modeling Language
URL	Uniform Resource Locator
VMS	Variable Message Sign

6 UML notation

The UML notation used in these Technical Specifications shall be as described in ISO/IEC 19501. A short summary explaining the notation used in this Technical Specification is provided in Annex A of Part 1 of CEN/TS 16157.

7 Integration of the Parking Publications model within DATEX II

7.1 Overview

The DATEX II top-level package “D2LogicalModel” defined in CEN/TS 16157-1 shall have a sub-package named “Extension”.

The package “Extension” shall have a sub-package named “Approved”.

The package “Approved” shall have a sub-package named “ParkingPublications”.

The Parking Publications model shall comprise the following packages, with the “ParkingPublications” package on top:

- ParkingTablePublication (see Clause 7.2)
- ParkingStatusPublication (see Clause 9)

- ParkingVehiclesPublication (see Clause 10)

As the DATEX II Level B mechanism shall be used for the integration of the Parking Publications model into the existing DATEX II Level A model, the following components shall have a tagged value "extension" - "levelb" and are therefore the entry points to Level B extensions:

- ParkingTablePublication
- ParkingStatusPublication
- ParkingVehiclesPublication
- PointExtended
- PeriodExtended
- AreaExtended
- VehicleCharacteristicsExtended

The data dictionary presented in normative Annex G specifies all of the elements of the Parking Publications model.

7.2 The "GenericPublication" package

7.2.1 Overview of the "GenericPublication" package

The "GenericPublication" package (see Figure 1) shall be a sub-package of the "PayloadPublication" package defined in CEN/TS 16157-1.

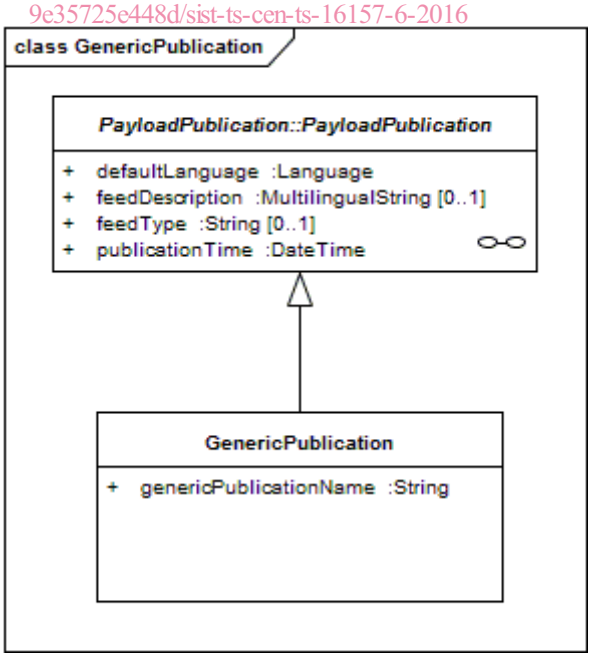

Figure 1 — The "GenericPublication" package class model