



SLOVENSKI STANDARD

SIST EN 16157-7:2019

01-februar-2019

Nadomešča:

SIST-TS CEN/TS 16157-1:2011

Inteligentni transportni sistemi - Specifikacije za izmenjavo podatkov DATEX II pri upravljanju prometa in informiranju - 7. del: Skupni podatkovni elementi

Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 7: Common data elements

Intelligente Verkehrssysteme - DATEX II Datenaustauschspezifikation für Verkehrsmanagement und Verkehrsinformation - Teil 7: Gemeinsame Datenelemente

Systemes de transport intelligents - Specifications DATEX II d'échange de données pour la gestion du trafic et l'information routière - Partie 7: Éléments de données communs

Ta slovenski standard je istoveten z: EN 16157-7:2018

ICS:

35.240.60 Uporabniške rešitve IT v prometu IT applications in transport

SIST EN 16157-7:2019

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 16157-7:2019

<https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019>

EUROPEAN STANDARD

EN 16157-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 35.240.60

Supersedes CEN/TS 16157-1:2011

English Version

Intelligent transport systems - DATEX II data exchange specifications for traffic management and information - Part 7: Common data elements

Systèmes de transport intelligents - Spécifications DATEX II d'échange de données pour la gestion du trafic et l'information routière - Partie 7: Éléments de données communs

Intelligente Verkehrssysteme - DATEX II Datenaustauschspezifikation für Verkehrsmanagement und Verkehrsinformation - Teil 7: Gemeinsame Datenelemente

This European Standard was approved by CEN on 3 September 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	5
Introduction	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions	8
4 Symbols and abbreviations	9
5 Conformance.....	9
6 Predefined model elements	9
6.1 General.....	9
6.2 Top level model packages and classes.....	9
6.3 Basic datatypes	13
6.4 Enumerations	13
7 D2Package “Common::Classes”	13
7.1 The WeatherRelated package.....	13
7.1.1 Overview of the WeatherRelated package.....	13
7.1.2 Semantics of the WeatherRelated package.....	13
7.2 The DataValue package.....	19
7.2.1 Overview of the DataValue package.....	19
7.2.2 Semantics of the DataValue package.....	20
7.3 The Fault package.....	22
7.3.1 Overview of the Fault package.....	22
7.3.2 Semantics of the Fault package	22
7.4 The Validity package.....	22
7.4.1 Overview of Validity package	22
7.4.2 Semantics of the Validity package.....	23
7.5 The Vehicle package.....	25
7.5.1 Overview of the Vehicle package.....	25
7.5.2 Semantics of the Vehicle package.....	26
7.6 The VehicleCharacteristics package.....	27
7.6.1 Overview of the VehicleCharacteristics package.....	27
7.6.2 Semantics of the VehicleCharacteristics package	28
7.7 Other classes of the Common::Classes package	28
7.7.1 GlobalReference class.....	28
7.7.2 GroupOfVehiclesInvolved class.....	29
7.7.3 HazardousMaterials class	30
7.7.4 HeaderInformation class.....	31
7.7.5 Source class	31
7.7.6 UrlLink class.....	32
Annex A (normative) Data Dictionary	33
A.1 Overview	33
A.2 Data Dictionary for “Common”	34
A.2.1 “Classes” package	34
A.2.2 “DataValue” package.....	39

A.2.3	“Fault” package	44
A.2.4	“Validity” package	45
A.2.5	“Vehicle” package	50
A.2.6	“VehicleCharacteristics” package	53
A.2.7	“WeatherRelated” package	57
A.3	Data Dictionary of <<D2Datatype>> for “Common”	62
A.3.1	General	62
A.3.2	The <<D2Datatype>> “AngleInDegrees”	62
A.3.3	The <<D2Datatype>> “AxlesPerHour”	62
A.3.4	The <<D2Datatype>> “Base64Binary”	62
A.3.5	The <<D2Datatype>> “Boolean”	62
A.3.6	The <<D2Datatype>> “ConcentrationKilogramsPerCubicMetre”	62
A.3.7	The <<D2Datatype>> “ConcentrationMicrogramsPerCubicMetre”	62
A.3.8	The <<D2Datatype>> “CountryCode”	62
A.3.9	The <<D2Datatype>> “CubicMetres”	62
A.3.10	The <<D2Datatype>> “Date”	62
A.3.11	The <<D2Datatype>> “DateTime”	62
A.3.12	The <<D2Datatype>> “Decimal”	62
A.3.13	The <<D2Datatype>> “Double”	63
A.3.14	The <<D2Datatype>> “Float”	63
A.3.15	The <<D2Datatype>> “Hectopascal”	63
A.3.16	The <<D2Datatype>> “Integer”	63
A.3.17	The <<D2Datatype>> “IntensityKilogramsPerSquareMetre”	63
A.3.18	The <<D2Datatype>> “IntensityMillimetresPerHour”	63
A.3.19	The <<D2Datatype>> “KilometresPerHour”	63
A.3.20	The <<D2Datatype>> “Language”	63
A.3.21	The <<D2Datatype>> “LongString”	63
A.3.22	The <<D2Datatype>> “MetresAsFloat”	63
A.3.23	The <<D2Datatype>> “MetresAsNonNegativeInteger”	63
A.3.24	The <<D2Datatype>> “MetresPerSecond”	63
A.3.25	The <<D2Datatype>> “MultilingualString”	63
A.3.26	The <<D2Datatype>> “NonNegativeInteger”	63
A.3.27	The <<D2Datatype>> “Percentage”	64
A.3.28	The <<D2Datatype>> “Reference”	64
A.3.29	The <<D2Datatype>> “Seconds”	64
A.3.30	The <<D2Datatype>> “String”	64
A.3.31	The <<D2Datatype>> “TemperatureCelsius”	64
A.3.32	The <<D2Datatype>> “Time”	64
A.3.33	The <<D2Datatype>> “Tonnes”	64
A.3.34	The <<D2Datatype>> “Url”	64
A.3.35	The <<D2Datatype>> “VehiclesPerHour”	64
A.3.36	The <<D2Datatype>> “VersionedReference”	64
A.3.37	The <<D2Datatype>> “Year”	64
A.4	Data Dictionary of <<D2Enumeration>> for “Common”	64
A.4.1	General	64
A.4.2	The <<D2Enumeration>> “CalendarWeekWithinMonthEnum”	65
A.4.3	The <<D2Enumeration>> “ComparisonOperatorEnum”	65
A.4.4	The <<D2Enumeration>> “ComputationMethodEnum”	66
A.4.5	The <<D2Enumeration>> “ConfidentialityValueEnum”	66
A.4.6	The <<D2Enumeration>> “DangerousGoodsRegulationsEnum”	67
A.4.7	The <<D2Enumeration>> “DayEnum”	67
A.4.8	The <<D2Enumeration>> “DirectionCompassEnum”	68
A.4.9	The <<D2Enumeration>> “EmissionClassificationEuroEnum”	69

EN 16157-7:2018 (E)

A.4.10	The <<D2Enumeration>> “FaultSeverityEnum”	69
A.4.11	The <<D2Enumeration>> “FaultUrgencyEnum”	70
A.4.12	The <<D2Enumeration>> “FuelTypeEnum”	71
A.4.13	The <<D2Enumeration>> “InformationDeliveryServicesEnum”	72
A.4.14	The <<D2Enumeration>> “InformationStatusEnum”	72
A.4.15	The <<D2Enumeration>> “InstanceOfDayEnum”	73
A.4.16	The <<D2Enumeration>> “LoadTypeEnum”	73
A.4.17	The <<D2Enumeration>> “LowEmissionLevelEnum”	75
A.4.18	The <<D2Enumeration>> “MonthOfYearEnum”	75
A.4.19	The <<D2Enumeration>> “PollutantTypeEnum”	76
A.4.20	The <<D2Enumeration>> “PrecipitationIntensityEnum”	77
A.4.21	The <<D2Enumeration>> “PrecipitationTypeEnum”	77
A.4.22	The <<D2Enumeration>> “PublicEventTypeEnum”	78
A.4.23	The <<D2Enumeration>> “SourceTypeEnum”	81
A.4.24	The <<D2Enumeration>> “SpecialDayTypeEnum”	83
A.4.25	The <<D2Enumeration>> “TimePrecisionEnum”	84
A.4.26	The <<D2Enumeration>> “TrafficTrendTypeEnum”	84
A.4.27	The <<D2Enumeration>> “UrlLinkTypeEnum”	85
A.4.28	The <<D2Enumeration>> “ValidityStatusEnum”	85
A.4.29	The <<D2Enumeration>> “VehicleEquipmentEnum”	86
A.4.30	The <<D2Enumeration>> “VehicleStatusEnum”	86
A.4.31	The <<D2Enumeration>> “VehicleTypeEnum”	87
A.4.32	The <<D2Enumeration>> “VehicleUsageEnum”	90
A.4.33	The <<D2Enumeration>> “WeatherRelatedRoadConditionTypeEnum”	91
A.4.34	The <<D2Enumeration>> “WeightTypeEnum”	93
A.4.35	The <<D2Enumeration>> “WinterEquipmentManagementTypeEnum”	93
Annex B (normative)	Referenced XML Schema for “Common”	94
B.1	Overview https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019	94
B.2	DATEX_3_D2Payload.xsd 9e154c9f9840/sist-en-16157-7-2019	94
B.3	DATEX_3_Common.xsd	94
Bibliography		160

European foreword

This document (EN 16157-7:2018) 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 June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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.

Together with EN 16157-1, this document will supersede CEN/TS 16157-1:2011.

EN 16157-7 is part of a multi-part standard under the general title *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information*.

It covers the pre-defined model elements in the 'Common' namespace.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

[SIST EN 16157-7:2019](https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019)

<https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019>

EN 16157-7:2018 (E)**Introduction**

This European Standard 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. Standardization in this context is a vital constituent to ensure interoperability, reduction of risk, reduction of the cost base, promotion of open marketplaces and many social, economic and community benefits to be gained from 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 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 standardization of DATEX II there is a real basis for common exchange between the actors of the traffic and travel information sector.

This European Standard includes the framework and context for exchanges, the modelling approach, data content, data structure and relationships, communications specification.

This European Standard supports a methodology that is extensible.

This part of EN 16157 is targeted to deal with the common data elements that are used in more than one publication. It specifies reused structures and definitions of information that may be exchanged to convey information described in the other parts of this EN. The elements described in this document have their own namespace "Common".

SIST EN 16157-7:2019

<https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019>

1 Scope

This document specifies and defines component facets required to support 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 data content, data structure and relationships, communications specification.

This document is applicable to:

- traffic and travel information which is of relevance to road networks (non-urban and urban),
- public transport information that is of direct relevance to the use of a road network (e.g. road link via train or ferry service),
- traffic and travel information in the case of Cooperative intelligent transport systems (C-ITS).

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

- Traffic Information Centres (TICs),
- Traffic Control Centres (TCCs),
- Service Providers (SPs),

Use of this document can be applicable for use by other actors.

This document covers, at least, the following types of informational content:

- road traffic event information – planned and unplanned occurrences both on the road network and in the surrounding environment,
- information about operator initiated actions – including both advisory and mandatory measures,
- road traffic measurement data, status data, and travel time data,
- travel information relevant to road users, including weather and environmental information,
- road traffic management information and information and advice relating to use of the road network.

This part of EN 16157 specifies common informational structures, relationships, roles, attributes and associated data types required for publishing information within the DATEX II framework. This is specified as a DATEX II sub-model which is part of the DATEX II platform independent model, but this part only covers common elements that are used by more than one publication. It excludes those elements that relate to location information which are specified in FprEN 16157-2.

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 16157-1:2018, *Intelligent transport systems — DATEX II data exchange specifications for traffic management and information — Part 1: Context and framework*

EN 16157-7:2018 (E)

EN ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes (ISO 3166-1)*

ISO 639-1, *Codes for the representation of names of languages — Part 1: Alpha-2 code*

ISO 8601:2004, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO/IEC 10646, *Information technology — Universal Coded Character Set (UCS)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16157-1 and the following 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**Data value**

value of something that can be measured or calculated

3.2**Extension**

data model content that is not part of the DATEX II Level A model and that is added in the container package “Extension” (e.g. for project specific purposes)

iTech STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019>

3.3**Fault**

information about a malfunction relating to a specific piece of equipment or process

3.4**Generic publication**

DATEX II publication without predefined content used to make extensions at the publication level

3.5**Payload publication**

traffic related information or associated management information created at a specific point in time that can be exchanged via a DATEX II interface

Note 1 to entry The “PayloadPublication” class is the top level root class for DATEX II Level A.

3.6**Validity**

time period specification for which the exchanged DATEX II information is valid

3.7**Weather data**

collection of information related to measured or derived (usually transport related) weather conditions at a specified location

3.8

Vehicle characteristics

collection of parameters that characterize a vehicle

4 Symbols and abbreviations

GUID – Globally Unique Identifier

UML – Unified Modelling Language

XML – eXtensible Markup Language

XSD – XML Schema Definition

5 Conformance

The DATEX II platform independent data model of which the common data sub-model is a part, corresponds to the Level A model as defined in EN 16157-1.

Conformance with this part shall require platform independent models from which platform specific models are generated to comply with the UML modelling rules defined in EN 16157-1 and with the following requirements of this sub-model which 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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 16157-7:2019
<https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019>

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.

It is in principle possible to create models in accordance to EN 16157-1:2018, Clauses 6 and 7 (general and platform independent model related clauses) – even including the mapping to XML Schema Definition described in EN 16157-1:2018, A.3 – that do not comply with Clause 6 'Predefined model elements' of this document. Nevertheless, note that such a model cannot claim full compliance with this European Standard and thus shall not work with tools requiring full compliance.

6 Predefined model elements

6.1 General

Besides regulations for the use of UML constructors and a UML profile providing additional meta information via tagged values and stereotypes, the DATEX II modelling methodology furthermore stipulates a certain top-level model structure for all compliant UML models. These clauses are mainly motivated by the need to create a well-defined structure for DATEX II tools aiming at supporting users.

The types of attributes and the enumerations specific to this part are defined in the normative Annex A.

The XML subschema corresponding to this part of EN 16157 is provided in the normative Annex B.

6.2 Top level model packages and classes

The following rules apply for top level model packages and classes:

EN 16157-7:2018 (E)

- a) DATEX II compliant UML models shall have one single top-level UML package named “D2Payload” of stereotype “D2Namespace”.
- b) The DATEX II top level package “D2Payload” shall have four sub-packages with the following names:
- “Common” of stereotype “D2Namespace”;
 - “Extension” of stereotype “D2Namespace”;
 - “LocationReferencing” of stereotype “D2Namespace”;
 - “PayloadPublication” of stereotype “D2Package”.
- c) The “PayloadPublication” package may contain several sub-packages of stereotype “D2Namespace”. EN 16157-3 specifies the sub-package “Situation” and its content. The standardization of further sub-packages may follow in the future.
- d) The usage of the “Extension” package for creating customized DATEX extensions is specified in EN 16157-1.
- e) The “Common” package shall have three sub-packages with the following names:
- “Classes” of stereotype “D2Package” – see Clause 7;
 - “DataTypes” of stereotype “D2Package” – see 6.3;
 - “Enumerations” of stereotype “D2Package” – see 6.4;
- The further content of these packages is specified in the further chapters of this document.
- f) The “Common::Classes” package shall contain one abstract UML Class named “PayloadPublication” of stereotype “D2ModelRoot”. It may contain further packages and classes.
- g) The tagged value “rootElement” of the DATEX II class “PayloadPublication” shall be set to “payload”.
- h) The tagged value “modelBaseVersion” of the DATEX II class “PayloadPublication” shall be set to “3” which is current DATEX II model version identifier. The tagged value “version” of the DATEX II class “PayloadPublication” shall be set to “3.n” where “n” is the minor version number.

NOTE The model base version “3” denotes the third iteration of the second generation of DATEX specifications, denoted “DATEX II”. The Arabic version number “3” is not to be mixed up with the Roman “II” used to give this generation a name that distinguishes it from the EDIFACT-based “DATEX” standard developed in the 1990ies, finally resulting in the meanwhile withdrawn ENV 13106:2000 and ENV 13777:2000.

- i) The tagged values “extensionName” and “extensionVersion” of the DATEX II class “Payload Publication” shall contain the name of the extension(s) contained in the model and a corresponding version identifier in the case that the “Extension” package is non-empty. These values shall be provided by the creator of the model (see also Figure 1).

The tagged values “profileName” and “profileVersion” of the DATEX II class “Payload Publication” shall contain the name of the profile (sub-model) and a corresponding version identifier in the case a profile is derived from the model. These values shall be provided by the creator of the model - see also Figure 1.

These rules provide a well-defined entry structure into a DATEX II XML publication, which always starts at top level with one concrete instance of a class specialized from “PayloadPublication”.

Tag	Value
definition	A payload publication of traffic related information or associated management information created at a specific point in time that can be exchanged via a DATEX II interface.
extensionName	
extensionVersion	
modelBaseVersion	3
profileName	
profileVersion	
regulatoryContext	
rootElement	payload
version	3.0 (minor version is exemplary only)

Figure 1 — Tagged Values of top level class “PayloadPublication”
(standards.iteh.ai)

- j) The class “PayloadPublication” shall have the following structure:

[SIST EN 16157-7:2019](https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019)

<https://standards.iteh.ai/catalog/standards/sist/87dbad5b-b315-42f2-9607-9e154c9f9840/sist-en-16157-7-2019>

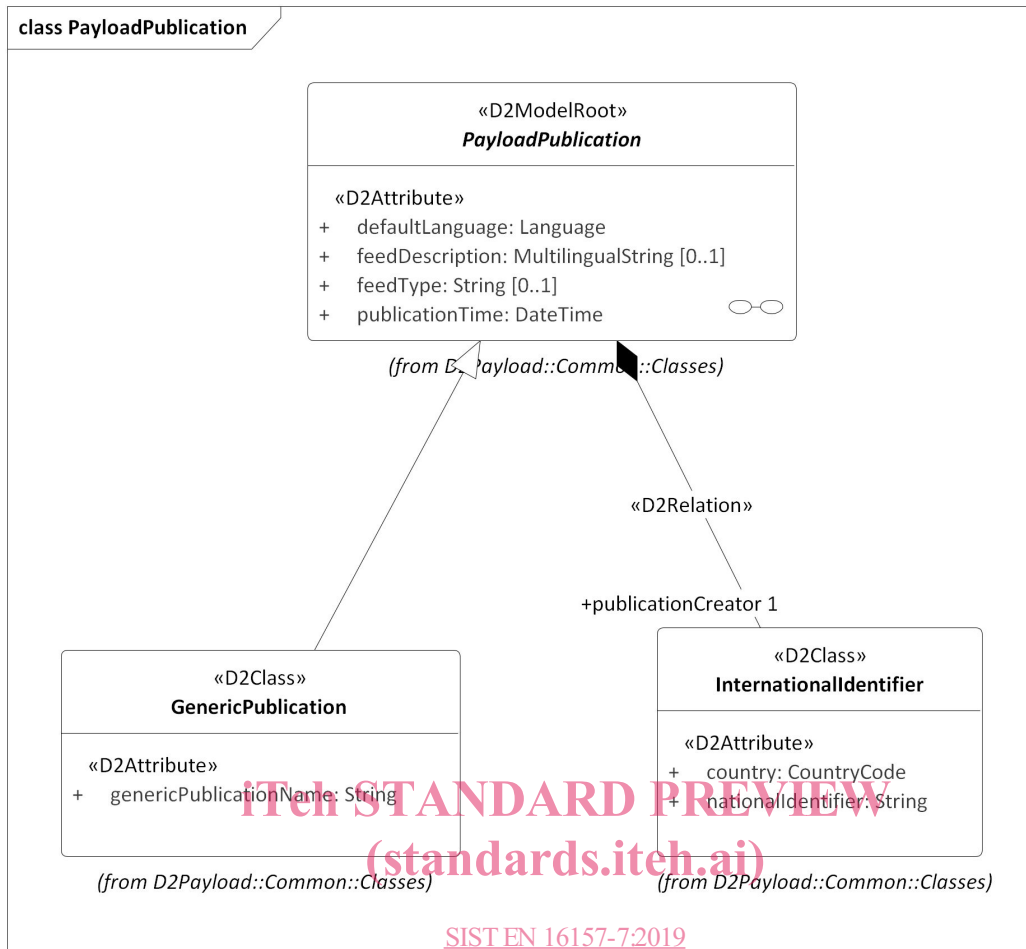


Figure 2 — Top level class “PayloadPublication”

The class “PayloadPublication” shall have a “D2Relation” composition to the “InternationalIdentifier” class.

The “GenericPublication” class (see Figure 2) is a specific realizable case of a “PayloadPublication” and used to make level B extensions at the publication level. Its attribute “genericPublicationName” is used to specify a name for any level B extended publication.

The “InternationalIdentifier” class (see Figure 2) shall provide an identifier/name whose range is specific to the particular country.

NOTE The possible upper-case two-letter codes related to the “country” attribute of class “InternationalIdentifier” are specified in EN ISO 3166-1 and can be obtained from the Online Browsing Platform of ISO¹.

- k) The “DataTypes” package shall have two sub-packages named “Generic” and “Specific” of stereotype “D2Package”.

¹ <https://www.iso.org/obp/ui/#search/code/>.

6.3 Basic datatypes

The “DataTypes::Generic” package (as defined in 6.2 k)) shall contain the following classes of stereotype “D2Datatype”:

- “Base64Binary”, “Boolean”, “Date”, “DateTime”, “Decimal”, “Double”, “Float”, “Integer”, “Language”, “LongString”, “MultilanguageString”, “NonNegativeInteger”, “Reference”, “String”, “Time”, “Url”, “VersionedReference”.

According definitions and XML Schema Definition mappings for these datatypes are described in A.3.

The “DataTypes::Specific” package (as defined in 6.2 k)) shall contain the following classes of stereotype “D2Datatype”:

- “AngleInDegrees”, “AxlesPerHour”, “ConcentrationKilogramsPerCubicMetre”, “ConcentrationMicrogramsPerCubicMetre”, “CountryCode”, “CubicMetres”, “Hectopascal”, “IntensityKilogramsPerSquareMetre”, “IntensityMillimetresPerHour”, “KilometresPerHour”, “MetresAsFloat”, “MetresAsNonNegativeInteger”, “Percentage”, “Seconds”, “TemperatureCelsius”, “Tonnes”, “VehiclesPerHour”, “Year”.

According definitions and XML Schema Definition mappings for these datatypes are described in A.3.

The datatype “MultilingualString” shall represent text that can be defined in more than one language. For this reason, it shall be defined as an unbounded sequence of pairs of “value” and “lang”, with “value” representing a string of max. length 1 024 characters and “lang” representing a language. The corresponding XML Schema definition mapping can be found in B.3 (see in “Common.xsd” the complex types “MultilingualString”, “MultilingualStringValue” and “MultilingualStringValueType”).

If text within a “MultilingualString” is specified in more than one language, the usage of the “lang” attribute shall be mandatory.

6.4 Enumerations

The “Enumerations” package shall contain the “D2Enumeration” stereotyped elements with according definitions and XML Schema Definition mappings as described in A.4.

7 D2Package “Common::Classes”

7.1 The WeatherRelated package

7.1.1 Overview of the WeatherRelated package

The package “WeatherRelated” shall comprise a collection of classes used to specify road weather related measurements.

7.1.2 Semantics of the WeatherRelated package

7.1.2.1 WeatherRelated package semantics – General

The aspects of weather or pollution measurements modelled in this package relate to humidity, temperature, visibility, wind, pollution, precipitation and road surface conditions.

7.1.2.2 Humidity class

The “Humidity” class shall allow relative humidity measurements to be specified (see Figure 3).