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Perception du télépéage Architecture de systèmes pour le péage lié aux véhicules Partie 3: Dictionnaire de données (ISO/DIS 17573-3:2022)

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Data dictionary

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Partie 3: Dictionnaire de données

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oSIST prEN ISO 17573-3:2022

Contents

Page

Foreword ... **vi**
Introduction ... **vii**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **2**
4 Abbreviated terms ... **4**
5 EFC common data object definitions ... **5**
5.1 General ... 5
5.2 Subtypes of simple data types ... 5
5.2.1 AccountStatus ... 5
5.2.2 ActualNumberOfPassengers ... 5
5.2.3 Altitude ... 6
5.2.4 Axles ... 6
5.2.5 CabType ... 6
5.2.6 ChassisType ... 6
5.2.7 Co2EmissionClass ... 7
5.2.8 Co2EmissionValue ... 7
5.2.9 Co2EmissionValueLoad ... 8
5.2.10 Co2Scheme ... 8
5.2.11 ContractAuthenticator ... 8
5.2.12 ContractSerialNumber ... 8
5.2.13 CopValue ... 9
5.2.14 CountryCode ... 9
5.2.15 DetectionMode ... 9
5.2.16 DescriptiveCharacteristics ... 10
5.2.17 EmissionUnit ... 10
5.2.18 EngineCharacteristics ... 10
5.2.19 EquipmentIccId ... 12
5.2.20 EquipmentObuId ... 13
5.2.21 EquipmentStatus ... 13
5.2.22 EuroValue ... 13
5.2.23 DistanceUnit ... 14
5.2.24 IssuerIdentifier ... 14
5.2.25 Latitude ... 14
5.2.26 LocalVehicleClassId ... 15
5.2.27 LocationClassId ... 15
5.2.28 Longitude ... 15
5.2.29 PaymentSecurityData ... 15
5.2.30 PayUnit ... 15
5.2.31 PersonalAccountNumber ... 16
5.2.32 RearWheelsSteeringType ... 17
5.2.33 ReceiptAuthenticator ... 17
5.2.34 ReceiptDistance ... 18
5.2.35 ResultFin ... 18
5.2.36 ReceiptIccId ... 18
5.2.37 ReceiptObuId ... 19
5.2.38 ResultOp ... 19
5.2.39 ReceiptServiceSerialNumber ... 21
5.2.40 ReceiptText ... 21
5.2.41 StationType ... 21
5.2.42 SuspensionType ... 21
5.2.43 TariffClassId ... 22

iTeh Standards
(https://standards.iteh.ai)
Document Preview
oSIST prEN ISO 17573-3:2022
https://standards.iteh.ai/catalog/standards/sist/...-en-iso-17573-3-2022

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oSIST prEN ISO 17573-3:2022

5.2.44 Time ... 22
5.2.45 TimeClassId ... 22
5.2.46 TimeUnit ... 22
5.2.47 TrailerType ... 23
5.2.48 TyreConfiguration ... 23
5.2.49 UserClassId ... 23
5.2.50 VehicleAuthenticator ... 23
5.2.51 VehicleClass ... 24
5.2.52 VehicleCurrentMaxTrainWeight ... 24
5.2.53 VehicleTechnicalPermissibleMaxLadenMass ... 24
5.2.54 VehicleTotalDistance ... 24
5.2.55 VehicleWeightLaden ... 25
5.2.56 WeekDay ... 25
5.3 Single level data types ... 25
5.3.1 AbsolutePosition2d ... 25
5.3.2 AbsolutePosition3d ... 26
5.3.3 AxleWeightLimit ... 26
5.3.4 AxleWeightLimits ... 26
5.3.5 DateCompact ... 27
5.3.6 DieselEmissionValues ... 27
5.3.7 DriverCharacteristics ... 27
5.3.8 Distance ... 27
5.3.9 Duration ... 28
5.3.10 EngineDetails ... 28
5.3.11 EuVehicleGroup ... 28
5.3.12 ExhaustEmissionValues ... 28
5.3.13 FutureCharacteristics ... 29
5.3.14 NumberOfAxles ... 29
5.3.15 ObeId ... 29
5.3.16 Particulate ... 30
5.3.17 PassengerCapacity ... 30
5.3.18 PaymentFee ... 30
5.3.19 Period ... 30
5.3.20 Provider ... 31
5.3.21 RelativePosition3d ... 31
5.3.22 SessionClass ... 31
5.3.23 SessionLocation ... 32
5.3.24 SignedValue ... 32
5.3.25 SoundLevel ... 32
5.3.26 TariffClassDescription ... 32
5.3.27 TimeCompact ... 33
5.3.28 TrailerDetails ... 33
5.3.29 WheelsConfiguration ... 33
5.4 Two-level data types ... 33
5.4.1 AxlesWeightLimits ... 33
5.4.2 ChargeObjectId ... 34
5.4.3 ContractValidity ... 34
5.4.4 DateAndTime ... 34
5.4.5 EnvironmentalCharacteristics ... 34
5.4.6 InitialVehicleRegistrationDate ... 35
5.4.7 Lpn ... 35
5.4.8 PaymentMeans ... 36
5.4.9 PaymentMeansBalance ... 37
5.4.10 Point ... 37
5.4.11 PurseBalance ... 37
5.4.12 TrailerCharacteristics ... 37
5.4.13 ValidityOfContract ... 38
5.4.14 VehicleAxlesNumber ... 38

iTeh Standards
(https://standards.iteh.ai)
Document Preview
SIST EN ISO 17573-3:2023
https://standards.iteh.ai/catalog/standards/sist/a2c24730-0d1e-4626-b617-3e3dfb14981e/sist-en-iso-17573-3-2023

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oSIST prEN ISO 17573-3:2022

5.4.15 VehicleDimensions 38
5.4.16 VehicleIdentificationNumber 38
5.4.17 VehicleWeightLimits 39
5.5 Three-level data types 39
5.5.1 EfcContextMark 39
5.5.2 ReceiptContract 39
5.5.3 ReceiptData 40
5.5.4 ReceiptFinancialPart 41
5.5.5 ReceiptServicePart 41
5.5.6 UserId 42
5.5.7 VehicleAxles 42
5.5.8 VehicleSpecificCharacteristics 42
5.6 Complex data types 43
5.6.1 AggregatedSingleTariffClassSession 43
5.6.2 DetectedChargeObject 43
5.6.3 VehicleDescription 44
Annex A (normative) **EFC common data type definitions** **46**
Bibliography **47**

iTeh Standards
(https://standards.iteh.ai)
Document Preview

SIST EN ISO 17573-3:2023
https://standards.iteh.ai/catalog/standards/sist/a2c24730-0d1e-4626-b617-3e3dfb14981c/sist-en-iso-17573-3-2023

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This version cancels and replaces ISO/TS 17573-3, which has been technically revised. The main changes are as follows:

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https://standards.iteh.ai/catalog/standards/sist/e2e24730-0d1e-4626-b617-3e3dfb14981e/sist-en-iso-17573-3-2023

- addition of the CO_2 emission class data types to underpin the revised Directive 1999/62/EC[19] (i.e. Eurovignette directive regarding the charging of vehicles for the use of certain infrastructure) updated by Directive (EU) 2022/362[24];
- addition of a second level of version identifier (i.e. minor version) of the abstract syntax notation one (ASN.1) module to provide enhanced support to standards that import data types from this document.

A list of all parts in the ISO 17573 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

This document is a part of the ISO 17573 series that defines the system architecture for vehicle-related tolling. ISO 17573-1 gives a reference model for the system architecture. ISO/TS 17573-2 provides a collection of terms and definitions within the field of electronic fee collection (EFC) and road user charging that are used in the different documents published in ISO and CEN under the general title, *Electronic fee collection*.

This document (ISO 17573-3) provides a data dictionary that contains the definitions of ASN.1 (data) types and the associated semantics.

The document is intended to be used as a reference by editors of ISO and CEN documents in EFC and in related areas of standardization (such as Intelligent Transport Systems, ITS).

It is foreseen that the library of ASN.1 (data) types contained in this document will be augmented with additional definitions as these become available.

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https://standards.iteh.ai/catalog/standards/sist/a2c24730-0d1e-4626-b617-3e3dfb14981c/sist-en-iso-17573-3-2023

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SIST EN ISO 17573-3:2023
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Electronic fee collection — System architecture for vehicle related tolling —

Part 3: Data dictionary

1 Scope

This document specifies the syntax and semantics of data objects in the field of electronic fee collection (EFC). The definitions of data types and assignment of semantics are provided in accordance with the abstract syntax notation one (ASN.1) technique, as specified in ISO/IEC 8824-1. This document defines:

— ASN.1 (data) types within the fields of EFC;

— ASN.1 (data) types of a more general use that are used more specifically in standards related to EFC.

This document does not seek to define ASN.1 (data) types that are primarily related to other fields that operate in conjunction with EFC, such as cooperative intelligent transport systems (C-ITS), the financial sector, etc.

2 Normative references

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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.

ISO 612, *Road vehicles — Dimensions of motor vehicles and towed vehicles — Terms and definitions*

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

SIST EN ISO 17573-3:2022
https://standards.iteh.ai/catalog/standards/sist/a2c24730-0d1e-4626-b617-3e3dfb14981c/sist-en-iso-17573-3-2023

ISO 3779, *Road vehicles — Vehicle identification number (VIN) — Content and structure*

ISO 4217, *Codes for the representation of currencies*

ISO 1176, *Road vehicles — Masses — Vocabulary and codes*

ISO/IEC 7812-1, *Identification cards — Identification of issuers — Part 1: Numbering system*

ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of basic notation*

ISO/IEC 8859-1, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

ISO/IEC 8859-2, *Information technology — 8-bit single-byte coded graphic character sets — Part 2: Latin alphabet No. 2*

ISO/IEC 8859-3, *Information technology — 8-bit single-byte coded graphic character sets — Part 3: Latin alphabet No. 3*

ISO/IEC 8859-4, *Information technology — 8-bit single-byte coded graphic character sets — Part 4: Latin alphabet No. 4*

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ISO/IEC 8859-5, *Information technology — 8-bit single-byte coded graphic character sets — Part 5: Latin/Cyrillic alphabet*

ISO/IEC 8859-6, *Information technology — 8-bit single-byte coded graphic character sets — Part 6: Latin/Arabic alphabet*

ISO/IEC 8859-7, *Information technology — 8-bit single-byte coded graphic character sets — Part 7: Latin/Greek alphabet*

ISO/IEC 8859-8, *Information technology — 8-bit single-byte coded graphic character sets — Part 8: Latin/Hebrew alphabet*

ISO/IEC 8859-9, *Information technology — 8-bit single-byte coded graphic character sets — Part 9: Latin alphabet No. 5*

ISO/IEC 8859-10, *Information technology — 8-bit single-byte coded graphic character sets — Part 10: Latin alphabet No. 6*

ISO 14816, *Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TS 17573-2 and the following apply.

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

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

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

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3.1
BITSTRING type
simple type (3.14) whose distinguished values are an ordered sequence of zero, one or more bits

[SOURCE: ISO/IEC 8824-1:2021, 3.8.7]

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3.2
CHOICE type
type defined by referencing a list of distinct types; each value of the choice type is derived from the value of one of the *component types* (3.4)

Note 1 to entry: Each value of the choice type is derived from the value of one of the component types.

[SOURCE: ISO/IEC 8824-1:2021, 3.8.14 — modified, Note 1 to entry added.]

3.3
complex data type
one type that has more than *three levels* (3.17)

3.4
component type
one of the types referenced when defining a *CHOICE* (3.2), *SET* (3.12), *SEQUENCE* (3.10), *SET OF* (3.13), or *SEQUENCE OF* (3.11).

[SOURCE: ISO/IEC 8824-1:2021, 3.8.15]

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3.5
data type
categorization of an abstract set of possible values, characteristics, and set of operations for an attribute

[SOURCE: ISO/IEC 25012:2008, 4.7 — modified, NOTE removed.]

3.6
INTEGER type
simple type (3.14) with distinguished values which are the positive and negative whole numbers, including zero (as a single value)

[SOURCE: ISO/IEC 8824-1:2021, 3.8.48]

3.7
object
well-defined piece of information, definition, or specification which requires a name in order to identify its use in an instance of communication

[SOURCE: ISO/IEC 8824-1:2021, 3.8.52]

3.8
OCTET STRING type
simple type (3.14) whose distinguished values are an ordered sequence of zero, one or more octets, each octet being an ordered sequence of eight bits

[SOURCE: ISO/IEC 8824-1:2021, 3.8.55]

3.9
parent type
type that is being constrained when defining a *subtype* (3.16), and which governs the subtype notation

[SOURCE: ISO/IEC 8824-1:2021, 3.8.58]

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3.10
SEQUENCE type
type defined by referencing a fixed, ordered list of types (some of which can be declared to be optional)

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3.13
SET-OF type
types defined by referencing a single *component type* (3.4); each value in the set-of type is an unordered list of zero, one or more values of the component type.

[SOURCE: ISO/IEC 8824-1:2021, 3.8.73]

3.14
simple type
type defined by directly specifying the set of their values

[SOURCE: ISO/IEC 8824-1:2021, 3.8.74]

3.15
single-level data type
data type (3.5) which is a *sequence* (3.10) or *sequence-of type* (3.11) defined by referencing a *simple type* (3.14) or a *subtype* (3.16) of a simple type

3.16
subtype (of a parent type)
type whose values are a subset (or the complete set) of the values of some other type *(*the *parent type)* (3.9)

[SOURCE: ISO/IEC 8824-1:2021, 3.8.76]

3.17
three-level data type
data type (3.5) which is a *choice* (3.2), *sequence* (3.10) or *sequence-of type* (3.11) defined by referencing a *two-level data type* (3.18)

3.18
two-level data type
data type (3.5) which is a *choice* (3.2), *sequence* (3.10) or *sequence-of type* (3.11) defined by referencing *a single-level data type* (3.15)

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4 Abbreviated terms

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ASN.1	abstract syntax notation one
BCD	binary coded decimal
CO	carbon monoxide
CO_2	carbon dioxide
EFC	electronic fee collection
GNSS	global navigation satellite system
HC	hydrocarbon
ICC	integrated circuit(s) card
LAC	localisation augmentation communication
NO_X	nitrogen oxides
OBU	On-board unit
VAT	value-added tax

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