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Entwurf

**Automatische Identifizierung von Fahrzeugen und Ausrüstungen –
Elektronische Identifizierung für die Registrierung (ERI) von
Fahrzeugen –
Teil 3: Fahrzeugdaten;
Englische Fassung prEN ISO 24534-3:2013**

Automatic vehicle and equipment identification –
Electronic Registration Identification (ERI) for vehicles –
Part 3: Vehicle data;
English version prEN ISO 24534-3:2013

Identification automatique des véhicules et des équipements –
Identification d'enregistrement électronique (ERI) pour les véhicules –
Partie 3: Données du véhicule;
Version anglaise prEN ISO 24534-3:2013

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Normenausschuss Automobiltechnik (NAAutomobil) im DIN

Nationales Vorwort

Dieses Dokument (prEN ISO 24534-3:2013) wurde vom technischen Komitee CEN/TC 278 „Straßentransport und Verkehrstelematik“ ausgearbeitet, dessen Sekretariat vom NEN (Niederlande) gehalten wird, in Verbindung mit dem technischen Komitee ISO/TC 204 „Intelligent Transport Systems“.

Das zuständige deutsche Normungsgremium ist der Gemeinschaftsarbeitsausschuss NA 052-02-71 GA „Straßenverkehrstelematik“ des Normenausschusses Automobiltechnik (NAAutomobil).

Das Präsidium des DIN hat mit seinem Beschluss 1/2004 festgelegt, dass von dem in den Regeln der europäischen Normungsarbeit von CEN/CENELEC verankerten Grundsatz, wonach Europäische Normen in den drei offiziellen Sprachen Deutsch, Englisch und Französisch veröffentlicht werden, in begründeten Ausnahmefällen abgewichen und auf die deutsche Sprachfassung verzichtet werden kann.

Für den Applikationsbereich Elektronische Gebührenerhebung schafft diese Normenreihe standardisierte Identifikationsmerkmale für die elektronische Registrierung von Fahrzeugen. Dieser Teil der Norm 'Fahrzeugdaten' beschreibt alle zur Identifikation der Registrierung relevanten Daten. Die Normenreihe unterstützt vor allem die Hersteller von Mautsystemen, die technische Entwicklung nicht mehr an den Lebenszyklus von Fahrzeugen anpassen müssen. Außerdem bietet es den Fahrzeugherstellern eine standardisierte Umsetzung der Identifikation über Landesgrenzen hinweg.

Änderungen

Gegenüber DIN EN ISO 24534-3:2011-10 wurden folgende Änderungen vorgenommen:

- a) Ergänzung von Begriffen im Abschnitt 3;
- b) Abschnitt 5.5.1.1: Ergänzungen der ERI Datentypen;
- c) die Abschnitte 5.5.1.8, 5.5.11 sowie 5.6 wurden eingefügt;
- d) Anhang A wurde überarbeitet, Parameter zur elektronischen Gebührenerhebung ergänzt;
- e) Anhang C wurde ergänzt;
- f) Ergänzungen in den Literaturhinweisen.

Nationaler Anhang NA (informativ)

Begriffe

Für die Anwendung dieses Dokuments gelten die folgenden Begriffe und Festlegungen.

3.1

zusätzliche Fahrzeugdaten

(en: additional vehicle data)

ERI-Daten zusätzlich zum Fahrzeugidentifizierer

3.2

Attribut

(en: attribute)

Typ mit einem zugeordneten Identifizierer

[auf Grundlage von ISO/IEC 8824-1:2008, Anhang G.2.15.1]

3.3

unterscheidender Identifizierer

(en: distinguishing identifier)

Information, die eindeutig eine Instanz unterscheidet

[ISO/IEC 9798-1, Definition 3.3.9]

3.4

elektronische Identifizierung einer Registrierung

ERI

(en: electronic registration identification)

Aktion oder Handlung einer Fahrzeugidentifikation auf elektronischem Wege nach der in diesem Teil der EN ISO 24534 definierten Zielsetzung im Anwendungsbereich

3.5

ERI-Daten

(en: ERI data)

Daten zur Identifizierung eines Fahrzeugs, die sich auf einen elektronischen Registrierungsanhänger beziehen (ERT)

ANMERKUNG ERI-Daten bestehen aus dem Fahrzeugidentifizierer und möglichen zusätzlichen Fahrzeugdaten.

3.6

elektronischer Registrierungsanhänger

ERT

(en: electronic registration tag)

im Fahrzeug befindliches ERI-Gerät, welches die ERI-Daten inklusive alle notwendigen Sicherheitsvorhaltungen beinhaltet und eine oder mehrere Schnittstelle(n) für den Datenzugriff hat

ANMERKUNG 1 Im Fall hoher Sicherheit ist das ERT ein sicheres Anwendungsmodul (SAM; en: secure application module).

ANMERKUNG 2 Der ERT darf ein separates Gerät sein oder darf in ein im Fahrzeug befindliches Gerät integriert sein, dass weitere Ressourcen hat (z. B. DSRC Kommunikation).

3.7**periodische Motorfahrzeugprüfung**

(en: periodic motor vehicle test)

vorgeschriebene periodische (z. B. jährliche) Prüfung der Fahrtüchtigkeit eines Motorfahrzeuges, welches über einem bestimmten Alter liegt, oder ein Zertifikat wenn eine solche Prüfung bestanden wurde

BEISPIEL Ein Beispiel ist die MOT-Prüfung in Großbritannien.

3.8**Vertraulichkeit**

(en: privacy)

Rechte Einzelner zur Steuerung oder Einflussnahme welche Informationen über Sie gesammelt und gespeichert werden-, und von wem und an wen diese Informationen aufgedeckt werden dürfen

[ISO 7498-2, Definition 3.3.43]

ANMERKUNG Da dieser Begriff sich auf die Rechte Einzelner bezieht, kann dieser nicht sehr präzise sein und somit sollte dessen Nutzung vermieden werden mit Ausnahme als Motivation zur Anforderung von Sicherheit.

3.9**Registrierungsbehörde**

(en: registration authority)

<für Fahrzeuge> Behörde, die für die Registrierung und Pflege von Fahrzeugaufzeichnungen verantwortlich ist

ANMERKUNG Die Behörde darf Fahrzeugaufzeichnungen an akkreditierte Organisationen geben.

3.10**Registrierungsbehörde**

(en: registration authority)

<für ERI-Daten> Behörde, die dafür verantwortlich ist, ERI-Daten und Sicherheitsdaten nach den örtlichen Rechtsvorschriften aufzuzeichnen

ANMERKUNG Die Registrierungsbehörde für ERI-Daten darf dieselbe sein wie die Registrierungsbehörde für Fahrzeuge. Dieser Internationale Standard legt dies jedoch nicht fest.

3.11**Registrierungszertifikat**

(en: registration certificate)

von einer Registrierungsbehörde ausgestelltes Fahrzeugregistrierungsdokument (Papier oder Smart-Card) für Fahrzeuge, in denen das Fahrzeug und sein Besitzer oder Mieter registriert ist

3.12**Typ**

(en: type)

benannte Menge von Werten

[ISO/IEC 8824-1]

Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles — Vehicle data (ISO/DIS 24534-3:2013) (ISO 24534:2013)

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Identification automatique des véhicules et des équipements — Identification d'enregistrement électronique (ERI) pour les véhicules — Données du véhicule (ISO/DIS 24534-3:2013) (ISO 24534:2013)

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Foreword

This document (prEN ISO 24534-3:2013) has been prepared by Technical Committee ISO/TC 204 “Intelligent Transport Systems” in collaboration with Technical Committee CEN/TC 278 “Road Transport and Traffic Telematics” the secretariat of which is held by NEN.

This document is currently submitted to the parallel Enquiry.

This document will supersede EN ISO 24534-3:2010.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

Endorsement notice

The text of ISO/DIS 24534-3:2013 has been approved by CEN as prEN ISO 24534-3:2013 without any modification.

Introduction

A quickly emerging need has been identified within administrations to improve the unique identification of vehicles for a variety of services. Situations are already occurring where manufacturers intend to fit lifetime tags to vehicles. Various governments are considering the needs and benefits of ERI, such as legal proof of vehicle identity with potential mandatory usages. There is a commercial and economic justification both in respect of tags and infrastructure that a standard enables an interoperable solution.

Electronic Registration Identification (ERI) is a means of uniquely identifying road vehicles. The application of ERI will offer significant benefits over existing techniques for vehicle identification. It will be an enabling technology for the future management and administration of traffic and transport, including applications in free-flow, multi-lane, traffic conditions with the capability to support mobile transactions. ERI addresses the need of authorities and other users for a trusted electronic identification, including roaming vehicles.

This part of EN ISO 24534 specifies the vehicle-related data that can be exchanged between an onboard Electronic Registration Tag (ERT) and an ERI reader/writer inside or outside the vehicle. The vehicle-related data consist of the vehicle identifier and may also include additional vehicle data as typically included in a vehicle registration certificate.

This part of EN ISO 24534 does not provide any accurate definitions for additional vehicle data items. This is left to the local registration authorities and/or local legislation. This part of EN ISO 24534 only provides the means for an unambiguous exchange of vehicle parameters registered by local registration authorities.

This part of EN ISO 24534 makes use of the basic automatic vehicle identification (AVI) definitions in ISO 14816.

1 Scope

This part of EN ISO 24534 provides the requirements for an Electronic Registration Identification (ERI) that is based on an identifier assigned to a vehicle (e.g. for recognition by national authorities), suitable to be used for:

- electronic identification of local and foreign vehicles by national authorities,
- vehicle manufacturing, in-life-maintenance and end-of-life identification (vehicle life cycle management),
- adaptation of vehicle data, e.g. in case of international re-sales,
- safety-related purposes,
- crime reduction,
- commercial services, and
- adhering to privacy and data protection regulations.

This part of EN ISO 24534 defines the vehicle identification data. This data is called the ERI data and includes:

- the vehicle identifier, and
- possible additional vehicle-related information (as typically included in a vehicle registration certificate).

All additional vehicle data elements are defined as optional. It is left to local legislation and/or the discretion of a registration authority to use or not to use a particular data element. If used, the value is assumed to be the one registered by the registration authority in accordance with local legislation. This part of EN ISO 24534 only provides the syntax for all these data elements.

NOTE The secure application layer interfaces for the exchange of ERI data with an ERI reader or writer are specified in Part 4 of EN ISO 24534 and in ISO 24534-5.

2 Normative references

The following referenced documents are indispensable for the application 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 ISO 24534-4, *Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles — Part 4: Secure communications using asymmetrical techniques*

ISO 24534-5, *Automatic vehicle and equipment identification — Electronic Registration Identification (ERI) for vehicles — Part 5: Secure communications using symmetrical techniques*

ISO 612:1978, *Road vehicles — Dimensions of motor vehicles and towed vehicles — Terms and definitions*

ISO 1176:1990, *Road vehicles — Masses — Vocabulary and codes*

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

ISO 3780, *Road vehicles — World manufacturer identifier (WMI) code*

ISO 3833, *Road vehicles — Types — Terms and definitions*

ISO/IEC 7498-2, *Information processing systems — Open Systems Interconnection — Basic Reference Model — Part 2: Security Architecture*

ISO/IEC 8824 (all parts), *Information technology — Abstract Syntax Notation One (ASN.1)*

ISO/IEC 8825-2, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER) — Part 2*

ISO/IEC 9798-1, *Information technology — Security techniques — Entity authentication — Part 1: General*

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 following terms and definitions apply.

3.1

additional vehicle data

ERI data in addition to the vehicle identifier

3.2

attribute

type with an associated identifier

[based on ISO/IEC 8824-1:2008, Annex G.2.15.1]

3.3

distinguishing identifier

information which unambiguously distinguishes an entity

[ISO/IEC 9798-1, definition 3.3.9]

3.4

electronic registration identification

ERI

action or act of identifying a vehicle with electronic means for purposes as mentioned in the scope of this part of EN ISO 24534

3.5

ERI data

vehicle identifying data which can be obtained from an **ERT**

NOTE ERI data consist of the vehicle identifier and possible additional vehicle data.

3.6

electronic registration tag

ERT

onboard ERI device that contains the ERI data including relevant security provisions and one or more interfaces to access that data

NOTE 1 In case of high security, the ERT is a SAM (secure application module).

NOTE 2 The ERT may be a separate device or may be integrated into an onboard device that also provides other capabilities (e.g. DSRC communications).

3.7

periodic motor vehicle test

compulsory periodic (e.g. annual) test of the roadworthiness of a motor vehicle of above a specified age, or a certificate of passing such a test

EXAMPLE The MOT test in the United Kingdom is an example.

3.8

privacy

right of individuals to control or influence what information related to them may be collected and stored and by whom and to whom that information may be disclosed

[ISO 7498-2, definition 3.3.43]

NOTE Because this term relates to the right of individuals, it cannot be very precise and its use should be avoided except as a motivation for requiring security.

3.9

registration authority

<for vehicles> authority responsible for the registration and maintenance of vehicle records

NOTE The authority may provide vehicle records to accredited organizations.

3.10

registration authority

<for ERI data> organization responsible for writing **ERI data** and security data according to local legislation

NOTE The registration authority for ERI data may be the same as the registration authority for vehicles. This International Standard, however, does not require this.

3.11

registration certificate

vehicle registration document (paper or smart card) issued by the registration authority for vehicles in which the vehicle and its owner or lessee are registered

3.12

type

named set of values

[ISO/IEC 8824-1]

4 Abbreviations

AEI	Automatic Equipment Identification
ASN.1	Abstract Syntax Notation One [as defined in ISO 8824 (all parts)]
AVI	Automatic Vehicle Identification
EEA	European Economic Area
EFC	Electronic Fee Collection
EN	Europäische Norm (German), English: European Standard
ENV	Europäische Norm Vorauskabe (German), English: European Pre-Standard
ERI	Electronic Registration Identification
ERT	Electronic Registration Tag
EU	European Union
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
VIN	Vehicle Identification Number

5 Requirements

5.1 Vehicle identification data

5.1 is informative only.

The secure onboard environment in which the vehicle identification data is stored is called the Electronic Registration Tag (ERT).

This Clause 5 provides an abstract definition of the ERI data to be exchanged between the ERT and an ERI reader or writer. The abstract definitions are defined using Abstract Syntax Notation One (ASN.1) as defined in ISO 8824 (all parts).

The identifier used to identify a vehicle is called the vehicle identifier or vehicleId. The preferred vehicle identifier is the VIN that is assigned to the vehicle by its manufacturer in accordance with ISO 3779.

However, in order to make this part of EN ISO 24534 also applicable in countries where the VIN is not used, an alternative is also supported (see 5.2). The fundamental requirement is that the combination of a registration authority and a vehicle identifier should be globally distinguishing.

NOTE 1 As two vehicles built 30 years after each other may have the same VIN, the VIN is not 100 % unique.

NOTE 2 Empirical data has shown that a database of a registration authority may contain duplicate VIN numbers.

NOTE 3 In this part of EN ISO 24534, the combination of the almost unique vehicleId and a unique ERT number may be used as the unambiguous distinguishing identifier. The ERT number is a unique read-only identifier that is written into the ERT during ERT manufacturing time. See Part 4 of EN ISO 24534, and ISO 24534-5 for details.

Apart from the vehicle identifier, this part of EN ISO 24534 also supports the use of additional vehicle data as typically included in a vehicle registration certificate. This additional vehicle data may, e.g., be used as:

- additional identification information to improve the trust in a vehicle identifier, and
- certified vehicle information for other applications (e.g. for tolling to determine a tariff).

5.2 The vehicle identifier

The VehicleId type shall be used for the vehicle identifier according to local legislation and is defined as follows:

VehicleId ::= CHOICE {		
vin	VIN,	-- preferred choice
raSpecificVehicleId	RaSpecificVehicleId,	
...		
}		
VIN ::= CS5		

NOTE 1 The '...' at the end of the definition designates that the type VehicleId may be extended with additional components at the end of the type definition in new versions of this part of EN ISO 24534, e.g. to cope with a new VIN standard.

The VehicleId should be a globally distinguishing identifier.

NOTE 2 When identifying a vehicle, the ERT always delivers the vehicleId in combination with the identifier of the registration authority and the ERT number. The identifier of the registration authority may be used to obtain additional information about the vehicle. The ERT number is an extra unique identifier from another source that may be used to resolve potential disputes about the VIN of a vehicle.

NOTE 3 The choice of which alternative is used is outside the scope of this part of EN ISO 24534. It may e.g. depend on local legislation.

The vin alternative, if used, shall be of type VIN and is the preferred vehicle identifier. The type VIN is identical to the type CS5 as defined in ISO 14816. The value of the vin alternative shall be the value of the VIN as assigned conforming to ISO 3779 by a manufacturer or a registration authority.

The raSpecificVehicleId alternative, if used, shall contain a globally distinguishing identifier for the vehicle and shall be of type RaSpecificVehicleId as defined below:

RaSpecificVehicleId ::= SEQUENCE {	
wmi	PrintableString (SIZE(3)),
nonIsoStandardId	PrintableString (SIZE (1..20))
}	

The wmi component shall contain the World Manufacturer Identifier (WMI) code of the organization that assigned the nonIsoStandardId value, and the WMI code shall be assigned to this organization according to ISO 3780.

The nonIsoStandardId component shall be of type PrintableString with a maximum length of 20 characters.

NOTE Any additional meaning conveyed in the value of a nonIsoStandardId component is outside the scope of this part of EN ISO 24534.

5.3 The ERI data type

The EriData type shall be used for the ERI data and is defined as follows:

EriData ::= SEQUENCE {	
vehicleId	VehicleId,
additionalEriData	AdditionalEriData OPTIONAL
}	

The vehicleId component shall contain the vehicle's identifier as defined in 5.2.

The AdditionalEriData component, if present, shall contain the additional ERI data.

5.4 The additional ERI data type

The type AdditionalEriData is used for the additional ERI data and is defined as follows:

AdditionalEriData ::= CHOICE {	
additionalEriRegistrationData	AdditionalEriRegistrationData, -- preferred choice
...	
raSpecificAdditionalEriData	OCTET STRING (SIZE (0..1024))
	-- only to be used if AdditionalEriRegistrationData is not supported
}	

The additionalEriRegistrationData alternative is the preferred alternative and shall be chosen whenever a value of the type AdditionalEriRegistrationData can be used.

The raSpecificAdditionalEriData alternative is of type OCTET STRING with a maximum length of 1024 octets and shall only be used if a value of the type additionalEriRegistrationData cannot be used.

NOTE The '...' in the definition designates that the type AdditionalEriData may be extended with additional alternatives at the end of the type definition in new versions of this part of EN ISO 24534, e.g. to cope with a new version of the alternative eriRegistrationData.

5.5 Additional ERI registration data

5.5.1 The Additional ERI registration data type

5.5.1.1 The definition of the Additional ERI registration data type

The AdditionalEriRegistrationData type contains the vehicle related data typically found in a vehicle registration certificate and is defined as follows:

```
AdditionalEriRegistrationData ::= SEQUENCE {
    -- Administrative data
    registrationAuthority      RegistrationAuthority OPTIONAL,
    vehicleIdStatus            VehicleIdStatus OPTIONAL,
    dateOfFirstRegistration    DateOfFirstRegistration OPTIONAL,
    dateOfRegistration         DateOfRegistration OPTIONAL,
    validThru                  ValidThru OPTIONAL,
    chassisNumber              ChassisNumber (SIZE (1..23)) OPTIONAL,
    registrationNumber          RegistrationNumber OPTIONAL,

    -- Vehicle type
    vehicleMake                 VehicleMake OPTIONAL,
    vehicleType                 VehicleType OPTIONAL,
    vehicleTypeStatus           VehicleTypeStatus OPTIONAL,
    commercialDescription       CommercialDescription OPTIONAL,
    typeApprovalNumber          TypeApprovalNumber OPTIONAL,
    vehicleCategory             VehicleCategory OPTIONAL,
    vehicleTaxCategory          VehicleTaxCategory OPTIONAL,
    euVehicleCategoryCode       EuVehicleCategoryCode OPTIONAL,
    raSpecificVehicleClass1     RaSpecificVehicleClass1 OPTIONAL,
    raSpecificVehicleClass2     RaSpecificVehicleClass2 OPTIONAL,
    raSpecificVehicleClass3     RaSpecificVehicleClass3 OPTIONAL,
    vehicleUse                   VehicleUse OPTIONAL,
    privateUse                   PrivateUse OPTIONAL,
    colour                       VehicleColour OPTIONAL,

    -- Vehicle shape
    length                       VehicleLength OPTIONAL,
    width                        VehicleWidth OPTIONAL,
    height                       VehicleHeight OPTIONAL,
    wheelbase                     Wheelbase OPTIONAL,
    bodyShape                     VehicleBodyShape OPTIONAL,
    euBodyWorkType               EuBodyWorkType OPTIONAL,
    iso3833VehicleType           Iso3833VehicleType OPTIONAL,

    -- Vehicle number of passengers, axles, and mass
    numberOfSeats                NumberOfSeats OPTIONAL, -- including the driver seat
    numberOfStandingPlaces        NumberOfStandingPlaces OPTIONAL,
    maxNumberOfPassengers          MaxNumberOfPassengers OPTIONAL, -- including the driver
    unladenWeight                  UnladenWeight OPTIONAL,
    maxDesignLadenMass             MaxDesignLadenMass OPTIONAL,
    maxAuthorizedLadenMass          MaxAuthorizedLadenMass OPTIONAL,
    maxAuthorizedTrainMass          MaxAuthorizedTrainMass OPTIONAL,
    maxAuthorizedPayload            MaxAuthorizedPayload OPTIONAL,

    numberOfAxles                  NumberOfAxles OPTIONAL,
    authorizedAxleLadenMass          AuthorizedAxleLadenMass OPTIONAL, -- from front to rear axle
    maxTowableMassBrakedTrailer    MaxTowableMassBrakedTrailer OPTIONAL,
    maxTowableMassUnbrakedTrailer  MaxTowableMassUnbrakedTrailer OPTIONAL,
```

```
-- Vehicle engine and power source
engineId          EngineId (SIZE (1..60)) OPTIONAL,
primeEngineType   PrimeEngineType OPTIONAL,
enginePowerSources EnginePowerSources OPTIONAL,
primePowerSource  PrimePowerSource OPTIONAL,
engineMaxNetPower EngineMaxNetPower OPTIONAL,
engineDisplacement EngineDisplacement OPTIONAL,
ratedEngineSpeed  RatedEngineSpeed OPTIONAL,
powerWeightRatio  PowerWeightRatio OPTIONAL,
maxSpeed          MaxSpeed OPTIONAL,
fuelTanksCapacity FuelTanksCapacity OPTIONAL,

-- Environmental characteristics
stationarySoundLevel StationarySoundLevel OPTIONAL,
engineSpeed          EngineSpeed OPTIONAL,
driveBySoundLevel    DriveBySoundLevel OPTIONAL,
emissionCO           EmissionCO OPTIONAL,
emissionHC           EmissionHC OPTIONAL,
emissionNOx          EmissionNOx OPTIONAL,
emissionHCandNOx     EmissionHCandNOx OPTIONAL,
particulatesForDiesel ParticulatesForDiesel OPTIONAL,
correctedAbsorptionCoefficient CorrectedAbsorptionCoefficient OPTIONAL,
emissionCO2          EmissionCO2 OPTIONAL,
combinedFuelConsumption CombinedFuelConsumption OPTIONAL,
environmentalCategory EnvironmentalCategory OPTIONAL,
euroType            EuroType OPTIONAL,

-- Others
lastOfficialTestData OfficialVehicleTestData OPTIONAL,
...,
raSpecificData       RaSpecificData OPTIONAL
axlesPerAxleGroup    AxlesPerAxleGroup OPTIONAL,
-- from front to rear axle group
authorizedAxleGroupLadenMass AuthorizedAxleGroupsLadenMass OPTIONAL,
-- from front to rear axle group

-- ERI data used for EFC (types imported from ElectronicRegistrationIdentificationEfcVehicleData
efcVehicleDimensions VehicleDimensions,
efcPassengerCapacity PassengerCapacity,
efcVehicleWeightLimits VehicleWeightLimits,
efcAxleWeightLimits AxleWeightLimits,
efcVehicleSpecificCharacteristics VehicleSpecificCharacteristics,
efcTrailerCharacteristics TrailerCharacteristics,
efcEngine            Engine,
efcSoundLevel        SoundLevel,
efcCO2EmissionValue CO2EmissionValue,
efcExhaustEmissionValues ExhaustEmissionValues,
efcDieselEmissionValues DieselEmissionValue
}
```

The type of the components of the AdditionalEriRegistrationData type is defined in the subsections of section 5.5 below.

NOTE 1 The '...' at the end of the AdditionalEriRegistrationData definition designates that the AdditionalEriRegistrationData type may be still extended with additional components at the end of the type definition in new versions of this part of EN ISO 24534.

All components are optional. Whether or not an optional component is present or absent depends on local legislation and/or the discretion of the vehicle's registration authority.

The precise meaning of a value of a component, if present, shall be determined by local legislation and/or the vehicle's registration authority and shall always take precedence over a definition in this International Standard.

NOTE 2 This part of EN ISO 24534 only facilitates the exchange of ERI registration data values for the purpose of vehicle identification. Both the precise definition of terms and the assignment of values in a particular state or country are outside the scope of this part of EN ISO 24534.

NOTE 3 In order to maintain consistency with the vehicle's registration certificate, the value of a component, if present and applicable, should be equal to or at least as precise as the value of the corresponding data item on the vehicle's registration certificate.

5.5.1.2 Administrative data components

The registrationAuthority component, if present, shall identify the registration authority that registered the vehicle.

The VehicleIdStatus component, if present, shall specify the status of the vehicle identifier.

The VehicleIdStatus component shall not be present for a VIN-based vehicle identifier.

The dateOfFirstRegistration component, if present, shall specify the date of the first registration of the vehicle with its current registration authority.

The dateOfRegistration component, if present, shall specify the date of the registration to which this ERI data refers.

The validThru component, if present, shall specify the last day the ERI data is valid. If not present, the validity period may be assumed to be unlimited.

The chassisNumber component, if present, shall specify the chassis number of the vehicle.

The registrationNumber component, if present, shall specify the vehicle's registration number as assigned by the registration authority.

5.5.1.3 Vehicle type components

The vehicleMake component, if present, shall specify the make of the vehicle as assigned by the vehicle manufacturer.

The vehicleType component, if present, shall specify the variant, if applicable, and/or the version, if applicable, of the vehicle as assigned by the vehicle manufacturer.

The vehicleTypeStatus component, if present, shall specify the status of the vehicle type.

The commercialDescription component, if present, shall contain the commercial description(s) of the vehicle.

The typeApprovalNumber component, if present, shall specify the type-approval number.

The vehicleCategory component, if present, shall specify the vehicle category according to local legislation.

The vehicleTaxCategory component, if present, shall specify the vehicle tax category according to local legislation.

The euVehicleCategoryCode component, if present, shall specify the vehicle category according to the EU directives EU 2001/116, EU 2002/24 and UNECE 1999.

The raSpecificVehicleClass1 component, if present, shall contain a registration authority specific vehicle class, category or code.

The raSpecificVehicleClass2 component, if present, shall contain a registration authority specific vehicle class, category or code.

The raSpecificVehicleClass3 component, if present, shall contain a registration authority specific vehicle class, category or code.

The vehicleUse component, if present, shall specify the use of the vehicle.

The privateUse component, if present, shall specify whether the vehicle is for private or for commercial use.

The colour component, if present, shall specify the colour of the vehicle.

5.5.1.4 Vehicle shape components

The length component, if present, shall specify the length of the vehicle.

The width component, if present, shall specify the width of the vehicle.

The height component, if present, shall specify the height of the vehicle.

The wheelbase component, if present, shall specify the wheelbase of the vehicle.

The bodyShape component, if present, shall specify the shape of the body of the vehicle.

The euBodyWorkType component, if present, shall specify the type of body work of the vehicle according to EU 2001/116.

The iso3833VehicleType component, if present, shall specify the type of the vehicle according to ISO 3833.

5.5.1.5 Vehicle number of passengers, axles, and mass components

The numberOfSeats component, if present, shall specify the number of seats, including the driver seat.

The numberOfStandingPlaces component, if present, shall specify the number of standing places.

The maxNumberOfPassenger component, if present, shall specify the maximum permissible number of passengers (including the driver) that may use the vehicle.

The unladenWeight component, if present, shall specify the nominal unladen mass of the vehicle with bodywork.

The maxDesignLadenMass component, if present, shall specify the maximum technically permissible total mass of the vehicle including payload (but excluding the weight of trailers).

The maxAuthorizedLadenMass component, if present, shall specify the maximum permissible total mass of the vehicle including payload (but excluding the mass of trailers) when in service in the jurisdiction of the registration authority.

The maxAuthorizedTrainMass component, if present, shall specify the maximum permissible total mass in kilograms of the whole vehicle, including payload (and including trailers and the payload of trailers) when in service in the jurisdiction of the registration authority.

The maxAuthorizedPayload component, if present, shall specify the maximum permissible payload of the vehicle (but excluding the payload of trailers).

The numberOfAxles component, if present, shall specify the number of axles of the vehicle (including lifted axles).

The axlesPerAxleGroup component, if present, shall specify the number of axles of each axle group of the vehicle (including lifted axles).

The authorizedAxleLadenMass component, if present, shall specify the maximum laden mass on each axle in kilograms.

The authorizedAxleGroupLadenMass component, if present, shall specify the maximum laden mass on each axle group in kilograms

The maxTowableMassBrakedTrailer component, if present, shall specify the technically permissible maximum braked towable mass of the trailer.

The maxTowableMassUnbrakedTrailer component, if present, shall specify the technically permissible maximum unbraked towable mass of the trailer.

5.5.1.6 Vehicle engine and power source components

The engineId component, if present, shall specify the engine identification number.

The primeEngineType component, if present, shall specify type of the prime engine of the vehicle as assigned by the manufacturer.

The enginePowerSource component, if present, shall specify the power source(s) of the vehicle.

The primePowerSource component, if present, shall specify the power source of the prime engine.

The engineMaxNetPower component, if present, shall specify the nominal (maximum net) power of the engine.

The engineDisplacement component, if present, shall specify the displacement of the engine.

The ratedEngineSpeed component, if present, shall specify the rated speed.

The powerWeightRatio component, if present, shall specify the power/weight ratio of the vehicle.

The maxSpeed component, if present, shall specify the maximum speed of the vehicle.

The fuelTankCapacity component, if present, shall specify the capacity of the fuel tank(s).

5.5.1.7 Environmental characteristics components

The stationarySoundLevel component, if present, shall specify the stationary sound level of the vehicle.

The engineSpeed component, if present, shall specify the engine speed.

The driveBySoundLevel component, if present, shall specify the drive-by sound level of the vehicle.

The emissionCO component, if present, shall specify the CO exhaust emission.

The emissionHC component, if present, shall specify the HC exhaust emission.

The emissionNOx component, if present, shall specify the NO_x exhaust emission.

The emissionHCandNOx component, if present, shall specify the HC plus CO_x exhaust emission.

The particulatesForDiesel component, if present, shall specify the exhaust emission of particulates for diesel.

The correctedAbsorptionCoefficient component, if present, shall specify the corrected absorption coefficient for diesel.

The emissionCO2 component, if present, shall specify the CO₂ exhaust emission.

The combinedFuelConsumption component, if present, shall specify the combined fuel consumption of the vehicle.

The environmentalCategory component, if present, shall be of type EnvironmentalCategory and shall specify the environmental category of the vehicle.

The euroType component, if present, shall reference for light duty vehicles to the environmental category Euro 1...6 according to EU directive 70/220/EEC and EU Regulation 715/2007 and for heavy duty vehicles to the category Euro I...VI according to EU Directive 1988/77, EU Directive 2005/55, and EU Regulation 595/2009.

5.5.1.8 Components used for EFC

The efcVehicleDimensions component, if present, shall specify the vehicle's overall length, height and width.

The efcPassengerCapacity component, if present, shall specify both the number of seats and the number standing places.

The efcVehicleWeightLimits component, if present, shall specify the maximum weight for the laden vehicle, the vehicle train and the unladen vehicle weight.

The efcAxleWeightLimits component, if present, shall specify the maximum laden weight on the vehicle's axles.

The efcVehicleSpecificCharacteristics component, if present, shall specify the vehicle's environmental characteristics, engine characteristics, descriptive characteristics, and future characteristics.

The efcTrailerCharacteristics component, if present, shall specify for a trailer its type, the number of axles, the maximum permissible total weight and the unladen weight.

The efcEngine component, if present, shall specify the engine's capacity and power.

The efcSoundLevel component, if present, shall specify the vehicle's stationary and drive-by soundlevels.

The efcCO2EmissionValue component, if present, shall specify the vehicle's emission of CO₂.

The efcExhaustEmissionValues component, if present, shall specify the vehicle's emission of CO, HC, NO_x and HC plus NO_x.

The efcDieselEmissionValues component, if present, shall specify the emission of diesel particles and the corrected absorption coefficient.

5.5.1.9 Other components

The lastOfficialTestData component, if present, shall specify the data observed during the last official vehicle test, e.g. a periodic motor vehicle test or an intermediate motor vehicle test.

The lastOfficialTestData component shall only be present if at least one of its components is present.

NOTE The value of the EriRegistrationData has to be signed and therefore needs a canonical representation.

The raSpecificVehicleData component, if present, may contain any additional registration authority-specific data.

5.5.2 Administrative types

RegistrationAuthority	::= EntityId
VehicleIdStatus	::= Text60
DateOfFirstRegistration	::= DATE
DateOfRegistration	::= DATE
ValidThru	::= DATE
ChassisNumber	::= PrintableString (SIZE (1..23)) -- incl. 3 WMI characters
RegistrationNumber	::= CS4

Unless specified otherwise, the definition and assignment of the values for the types defined in this subclause are at the discretion of the registration authority and/or local legislation (see 5.5.1).

The RegistrationAuthority type shall be used to identify a registration authority and shall be of type EntityId.

The VehicleIdStatus type shall be used to specify the status of a vehicle identifier.

The VehicleIdStatus type shall not be used for a VIN-based vehicle identifier.

EXAMPLE Possible values are e.g. ordinary, authority assigned, the identifier of the authority that assigned the vehicleId, etc.

The DateOfFirstRegistration type shall be used to specify the date of the first registration of a vehicle with its current registration authority.

The value of a DateOfFirstRegistration component shall at least contain the year and optionally the month and/or day.

The DateOfRegistration type shall be used to specify the date of the registration to which this ERI data refers.

The ValidThru type shall be used to specify the last day the ERI data is valid. If not present, the validity period may be assumed to be unlimited.

The ChassisNumber type shall be used to specify the chassis number of a vehicle.

The RegistrationNumber type shall be used to specify the vehicle's registration number as assigned by the registration authority.

5.5.3 The EU vehicle category code type

The EuVehicleCategoryCode type is defined as follows:

```
EuVehicleCategoryCode ::= CHOICE {
    euVehicleCategoryL      EuVehicleCategoryL, -- conforms to EU 2002/24 and UNECE 1999
    euVehicleCategoryM      EuVehicleCategoryM, -- conforms to EU 2001/116 and UNECE 1999
    euVehicleCategoryN      EuVehicleCategoryN, -- conforms to EU 2001/116 and UNECE 1999
    euVehicleCategoryO      EuVehicleCategoryO, -- conforms to EU 2001/116 and UNECE 1999
    euVehicleCategoryT      NULL, -- conforms to UNECE 1999
    euVehicleCategoryG      NULL -- conforms to EU 2001/116 and UNECE 1999
}
```

EuVehicleCategoryL ::= ENUMERATED {l1, l2, l3, l4, l5, l6, l7}

EuVehicleCategoryM ::= ENUMERATED {m1, m2, m3}

EuVehicleCategoryN ::= ENUMERATED {n1, n2, n3}

EuVehicleCategoryO ::= ENUMERATED {o1, o2, o3, o4}