TECHNICAL SPECIFICATION

ISO/TS 14816

First edition
2000-06-01

Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure

Télématique de la circulation et du transport routier — Identification automatique des véhicules et équipements — Codification et structure des données

Reference number
ISO/TS 14816:2000(E)

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 734 10 79
E-mail copyright@iso.ch
Web www.iso.ch

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

1. an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

2. an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed every three years with a view to deciding whether it can be transformed into an International Standard.

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

ISO/TS 14816 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 204, *Transport information and control systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "...this European pre-Standard..." to mean "...this Technical Specification...".

Annexes A and B form a normative part of this Technical Specification. Annex C is for information only.

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FOREWORD

This European Prestandard has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics ", the secretariat of which is held by NNI**,** in collaboration with Technical Committee ISO/TC 204 "Transport information and control systems".

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

INTRODUCTION

This Standard specifies a data structure that enables upwards integration and expansion from the simplest low cost AVI/AEI system to more complex functions. The structure is designed to be flexible and enabling rather than prescriptive.

This Standard has been designed to provide for the differing requirements of AVI and AEI by the use of separate application specific . By retaining these differing requirements within one supervisory document the interoperability is maximised, particularly in the case where both AVI and AEI are required at the same time in the Road Environment.

In order to support systems using both active and passive OBEs, the basic data structures have been minimised. This enables any manufacturer/operator with an OBE with a user addressable memory of only 56 bits to be able to conform a full core identification according to this Standard.

Abstract Syntax Notation One (ASN.1) is widely applied. Its usage provides maximum interoperability and conformance to existing Standards, and meets the specifically defined requirements for a generic Standard model for RTTT in that it:

- Uses existing standard Syntax Notation and Encoding Rules
- Is adaptable and expandable
- Does not include unnecessary information for a specific system
- Incurs a minimum of overhead in storage and transmission.

Readers who are unfamiliar with ASN.1 are advised to read ANNEX C before reading the main body of this preStandard. Readers are also advised to read ISO/IEC 8824:1998, ISO/IEC 8825-1:1998, ISO/IEC 8825-2:1998 and ISO/IEC DIS 8825-3:1992 and other published work on ASN.1 before reading the main body of this preStandard.

ENV 12314-1 provides a Reference Architecture Model for AVI/AEI systems.

Sections 4.1 - 4.6 of ENV ISO 14816 provide a standardised yet flexible and interoperable framework for Numbering Schemes. A structure for AVI/AEI unambiguous identification and several Numbering Schemes associated with AVI/AEI systems are determined in this preStandard.

The core AVI/AEI Numbering Scheme, central to the effective use of many of the constructs, is a structure to provide unambiguous identification. Section 4.7 of this preStandard provides a data element coding for Automatic Vehicle and Equipment Identification (AVI/AEI) in RTTT applications. This coding provides a structure with the possibility of 2^{56} (in excess of 72 million billions) unique identifiers, provided within a 56 bit code structure when ISO/IEC 8825-2 (PER) is used, i.e. no overhead is incurred.

1. SCOPE

1.1 OVERALL NUMBERING SCHEME

This Standard establishes a common framework data structure for unambiguous identification in RTTT/TICS systems. The Standard excludes any physical aspects such as interfaces. It is neither frequency nor air interface protocol specific.

Data elements that form part of transmission or storage protocols such as headers, frame markers and checksums are thus excluded.

The specifications for protecting against changes, classifying and qualifying security aspects of the data structure elements are not included within this Standard.

The principles of data element structure and description determined in ISO/IEC 8824:1998, ISO/IEC 8825-1:1998, ISO/IEC 8825-2:1998 and ISO/IEC DIS 8825-3:1992 have been adopted to provide an interoperable architecture within a Standard framework according to guidelines from CEN TC278 as well as ISO TC204.

This Standard defines data structures based on the ISO/IEC 8824-1 ASN.1 `UNIVERSAL CLASS` types that may be directly `IMPORTED` to other application standards that would need only subsets of the full `APPLICATION CLASS` types. These `UNIVERSAL CLASS` and `APPLICATION CLASS` types are uniquely defined as an ASN.1 module in Annex B. This module may be directly linked into an application data definition.

This Standard defines default encoding for simple AVI/AEI applications where no other relevant application standard exists. This definition forms Section 4.

1.2 AVI/AEI NUMBERING SCHEME

The principal registered schemes for AVI/AEI are determined in 4.7 and 4.8 of this preStandard. Other relevant and interoperable schemes are detailed in the subsequent Sections.

The structures defined in this Standard provide interoperability, not only between simple AVI/AEI and more complex RTTT/TICS functions, but also with pre-existing Standards (e.g. ISO 10374 Freight containers - Coding, identification and marking)

There will be one Central Registration Authority that will administer the AVI Numbering Scheme according to the rules of CEN and ISO (See Annex A (normative):).

The issuer may choose to operate its structure, amongst others :

- for simple identification, in which case the separate identities may be openly available, at the discretion of the issuer or nation state,
- on an alias basis, in which case the “identities” will be known, but secured under provisions of data protection to maintain privacy and therefore not available,
- as dynamically encrypted identities in an anonymous system.

2. NORMATIVE REFERENCES

This Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ENV12314-1	Road Transport and Traffic Telematics – Automatic Vehicle and Equipment Identification – Part 1: Reference Architectures and Terminology
ISO 3166	Codes for the representation of names of countries and their subdivisions
ISO 3779 :1983	Road vehicles - Vehicle identification number (VIN)- Content and structure
ISO 3780 :1983	Road vehicles - World manufacturer identifier (WMI) code
ISO 6346 :1997	Freight containers - Coding, identification and marking
ISO/IEC 8824-1:1998	Information technology - Abstract Syntax Notation One (ASN.1) - Part 1: Specification of the basic notation
ISO/IEC 8824-2:1998	Information technology - Abstract Syntax Notation One (ASN.1) - Part 2: Information object specification
ISO/IEC 8824-3:1998	Information technology - Abstract Syntax Notation One (ASN.1) - Part 3: Constraint Specification
ISO/IEC 8824-4:1998	Information technology - Abstract Syntax Notation One (ASN.1) - Part 4: Parameterization of the ASN.1 specifications
ISO/IEC 8825-1:1998	Information technology - ASN.1 encoding rules - Part 1: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)
ISO/IEC 8825-2:1998	Information technology - ASN.1 encoding rules - Part 2: Specification of Packed Encoding Rules (PER)
ISO/IEC DIS 8825-3:1992	Information technology - ASN.1 encoding rules – Part 3: Distinguished canonical encoding rules
ISO 8859-1:1987	Information - 8- bit single-byte coded graphic character sets - Part 1: Latin alphabet No.1
ISO 8859-2:1987	Information - 8- bit single-byte coded graphic character sets - Part 2: Latin alphabet No. 2
ISO 8859-3:1987	Information - 8- bit single-byte coded graphic character sets - Part 3: Latin alphabet No. 3
ISO 8859-4:1987	Information - 8- bit single-byte coded graphic character sets - Part 4: Latin alphabet No. 4
ISO 8859-5:1987	Information - 8- bit single-byte coded graphic character sets - Part 5: Latin/Cyrillic alphabet
ISO 8859-6:1987	Information - 8- bit single-byte coded graphic character sets - Part 6: Latin/Arabic alphabet
ISO 8859-7:1987	Information - 8- bit single-byte coded graphic character sets - Part 7: Latin/Greek alphabet
ISO 8859-8:1987	Information - 8- bit single-byte coded graphic character sets - Part 8: Latin/Hebrew alphabet

ISO 8859-9:1987	Information - 8- bit single-byte coded graphic character sets - Part 9: Latin alphabet No. 5
ISO 8859-10:1987	Information - 8- bit single-byte coded graphic character sets - Part 10: Latin alphabet No. 6
ISO 10374:1991	Freight containers - Automatic identification
ISO 14813-3	Transport information and control systems – Reference model architecture(s) for the TICS sector – Part 3: Example elaboration
ITU-T Rec. S.1:1993	International Telegraph Alphabet No. 2
ISO 10646-1:1993	Information Technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane.

3. DEFINITIONS

For the purpose of this Standard the definitions in ENV 12314-1 apply. The term **Issuer** applies to any of the coding schemes CS1, CS2 and CS8 .

Numerical notations are represented as follows:

- Decimal ("normal") notation will have no subscript
  Example: 127
- Hexadecimal numbers will be noted by subscript 16
  Example: $7F_{16}$
- Binary numbers will be noted by subscript 2
  Example: 01111111_{2}

Characters are represented as follows :

- Characters will have no subscript or quotes
  Example: ABC5EFD

4. REQUIREMENTS

4.1 OVERALL CODING STRUCTURE

The AVI/AEI Coding Structure determined in this Standard:

- is unambiguous and flexible enough to include relevant transport related Numbering Schemes
- follows relevant Standards, available at the time of writing
- provides an exact coding of the data elements
- is extendible to enable future expansion
- is able to accommodate private structures.

4.2 GENERAL REQUIREMENTS

The coding structure determined in this preStandard is an "enabling" structure. It is designed to accommodate, within its framework, coding structures for a variety of RTTT/TICS systems from simple AVI/AEI to more complex transactions with a wide variety of uses, and to allow combinations of data elements to be used in a composite data construct. It is designed to allow as much interoperability of the data elements within an EDI/EDT environment as is possible, and provide capability for a significant expansion of the number of RTTT/TICS applications in the future.

This preStandard takes cognisance of, and accommodates, the operation of systems of different capability. It will enable, within its structure, the interoperability of one On Board Equipment in any country so long as there is a common air interface and protocol, even though the operator systems themselves may be significantly different. Even where information has to be collected by a separate interrogator because air interface compatibility does not exist, the data, once collected, is in a commonly interoperable format, and may thus be used accurately and effectively within an EDI/EDT environment.

The data structures defined in this Standard enable "tree and branch" or "cascade" structures with the ability to build complex data element constructs.

The preStandard has been optimised for ISO/IEC 8825-2 as recommended by ISO 14813-3.

The preStandard uses ISO/IEC 8824-1 in all its syntax descriptions.

By adopting the ISO/IEC 8824:1998, ISO/IEC 8825-1:1998, ISO/IEC 8825-2:1998 and ISO/IEC DIS 8825-3:1992 Abstract Syntax Notation (ASN.1), the flexibility is provided for data elements of any length and combination to be supported. Also this data structure prStandard is itself given a migration path so that, as technological developments allow further capabilities, subsequent Standards may provide additional data fields for use in all, or some, sector specific applications, whilst maintaining the upwards compatibility from and to this preStandard.

The ASN.1 Encoding Rules enable the chaining of multiple data elements from different application sectors to build complex data element constructs. (See examples in.Annex C)

4.3 DATA STRUCTURE

The data structuring requirements as defined in ISO/IEC 8824:1998, ISO/IEC 8825-1:1998, ISO/IEC 8825-2:1998 and ISO/IEC DIS 8825-3:1992 apply and in particular ISO 14813-3.

4.4 RESIDENCY OF DATA

The data construct is designed to be free standing and independent of the media. It will therefore normally reside in the On Board Equipment.

In specific cases, such as the standardised European DSRC 5.8 GHz link, where part of the message is already known because of L7 services, the use of ASN.1 PER proposed within this Standard enables only the unknown part of the message to be transferred, thus minimum redundancy is achieved.

The examples given in the remainder of this document assume the use of ASN.1 Packed Encoding Rules (PER). Where Basic Encoding Rules are used, there will be additional overhead as defined in ISO/IEC 8825-1. See Annex C for implementation examples.

4.5 TABLE OF CODING STRUCTURE IDENTIFIERS

Table 4-1: Coding structure identifiers

Coding Structure Identifier (CSI) Number	RTTT/TICS Coding Structure
0	Reserved for CEN/ISO
1	AVI/AEI for use in RTTT applications
2	RTTT Manufacturer Serial Number
3	RTTT Validity Limitation (Time and Place)
4	Licence Plate
5	Vehicle (VIN) Chassis Number
6	Reserved for CEN/ISO
7	Freight Container Numbering
8	Tax Authority Code
9	Reserved for CEN/ISO
...	...
30	Reserved for CEN/ISO
31	Reserved for CEN/ISO (Extension)

4.6 CODING STRUCTURE DATA ELEMENTS (AVI/AEI APPLICATIONS)

Table 4-2shows the seven defined CS in a short form table detailing the primitive elements (`UNIVERSAL TYPES`). The definitions are made in 4.7 and Annex C.

Note: The overhead of each coding structure data field is excluded from the table. The numbers of bits in the data fields are only indications when using PER as the coding rules.

Table 4-2: Minimum size of data elements

CSI	Length	Coding Structure Data Field			
1	7 Octets / 56 bits	Country Code	Issuer Identifier	Service Number	
		10	14	32	
2	6 Octets / 48 bits	Manufacturer Identifier		Service Number	
		16		32	
3	22 Octets / 176 bits	Start Time	Stop Time	Geographic Limit	Application Limit
		80	80	8	8
4	Variable	Country Code	Alphabet Indicator	Licence Plate Number	
		10	8	Not defined	

5	17 Octets / 136 bits	Vehicle Identification (Chassis) Number	
		136	
6	Variable	Reserved for CEN/ISO	
		Not defined	
7	93 bits	Freight Container Numbering	
		93	
8	Variable	Country Code	Tax Code
		10	Not defined

Note: Where in this Standard, the term “Service Number” is used it indicates both “Service Code” and “Unique Number”.

4.7 CS1- AVI/AEI NUMBERING SCHEME

4.7.1 GENERAL REQUIREMENTS

This AVI/AEI Numbering Scheme provides an unambiguous identification element of 56 bits (PER encoding) to be held on the On-Board Equipment. This data structure is designed to be used for simple AVI/AEI, and may also be used to form the AVI/AEI element of RTTT messages where AVI/AEI is a component.

Registration procedures including the structures that are with National Issuing Authorities are mandatory for this structure. Provisions for registration can be found in Annex A (normative):.

4.7.2 DATA STRUCTURE

4.7.2.1 Data Structure Elements

The format provides a "read only" On Board Equipment Permanent Code Mandatory Field providing specific adaptation to the requirements for AVI/AEI in the RTTT environment.

Operators who wish to provide additional data fields, of read only, or a read/write nature, can do so by adding additional ASN.1 identifier sets as described in an example of Annex C**.**

4.7.2.2 ASN.1 Data Type definitions

4.7.2.2.1 CS1 definition

```
CS1 ::= SEQUENCE {
        countryCode             CountryCode,
        issuerIdentifier        IssuerIdentifier,
        serviceNumber           ServiceNumber
        }
```

4.7.2.2.2 Country Code definition

```
CountryCode ::= BIT STRING(Size(10))

-- Value assignment is done in accordance with ISO 3166 and by using
-- the ITA.2 alphabet. For value assignment, please refer to

-- http://www.nni.nl/cen278/14816_NRAI_register_by_country.html
```

4.7.2.2.3 Issuer Identifier definition

```
IssuerIdentifier ::= INTEGER(0 .. 16383)

-- See Annex A for registration.
```

4.7.2.2.4 Service Number definition

```
ServiceNumber ::= BIT STRING(Size(32))
```

4.8 CS2-MANUFACTURERS NUMBERING

4.8.1 GENERAL REQUIREMENTS

Manufacturers Numbering enables manufacturers to provide, if they so choose, a numbering system that is independent of a particular country. It is expected that this Numbering Scheme will primarily be used as an electronic serial number in systems requiring direct knowledge of manufacturer and equipment versions (e.g. for QA/QC purposes). This number may also be used as a cryptographic hidden identity in systems with a combination of anonymity and strong security requirements.

The following structure details the content of the manufacturers numbering data 'primitive' and is to be read in conjunction with the notes shown below the structure.

Registration procedures are similar to the procedures of CS1, with the exception that the structures are not registered with any National Issuing Authority. Provisions for registration can be found in Annex A (normative):.

4.8.2 DATA STRUCTURE

4.8.2.1 Data Structure Elements

Operators who wish to provide additional data fields, of read only, or a read/write nature, can do so by adding additional ASN.1 identifier sets as described in the examples given in.Annex C

4.8.2.2 Detailed Data Structure

The Numbering Scheme views the ID as a data element, and the common basic data structure is only a data identifier code.

The framework of this data structure, into which the manufacturers numbering data field fits, follows the principles defined in CS1 (AVI/AEI Numbering Scheme), and is applied in this structure as follows:

4.8.2.2.1 CS2 definition

```
CS2 ::= SEQUENCE {
              issuerIdentifier     ManufacturerIdentifier,
              serviceNumber ServiceNumber
       }
```

4.8.2.2.2 Manufacturer Identifier definition

```
ManufacturerIdentifier ::= INTEGER(0 .. 65535)
```

4.8.2.2.3 Service Number definition

`ServiceNumber` is defined in 4.7.2.2.4.

4.9 CS3 - VALIDITY LIMITATION

4.9.1 GENERAL REQUIREMENTS

The Validity Limitation Structure is a Data Element Structure that specifies value(s) to provide limits, either in time, geographically or application.

The time limitation provides a starting or issuing date/time group formatted according to a UNIVERSAL ASN.1 TYPE, and an expiration date/time group formatted the same way. This type is referenced to universal coordinated time (UTC, Z).

The geographical limitation restricting the use of the referenced number to the issuer area, district, country or continent. It shall use the bit field described in 4.9.2.2.4.

Application or service limitation is to restrict the type of service for which this Validity Limitation number is issued: Post-payment, Pre-payment, Access control, Fleet Control, etc. The use of this parameter is valid for issuers providing more than one service, and for users that want to avoid responsibility for a certain set of these services. It shall use the bit field described in 4.9.2.2.5.

Registration procedures are not applicable in this case.

4.9.2 DATA STRUCTURE

4.9.2.1 Data Structure Elements

Operators who wish to provide additional data fields, of read only, or a read/write nature can do so by adding additional ASN.1 identifier sets as described in an example of Annex C.

4.9.2.2 Detailed Data Structure

4.9.2.2.1 CS3 definition

```
CS3 ::= SEQUENCE {
              startTime            StartTime,
              stopTime             StopTime,
              geographLimit        GeoGraphicalLimit,
              serviceAppLimit      ServiceApplicationLimit
       }
```

4.9.2.2.2 StartTime definition

```
StartTime ::= UTCtime
--Recommended format is YYMMDDhhmmZ
```

Note: Due care should be taken when implementing the applications to avoid the Year 2000 problems. As the century component (CC) is not transferred, its value is inferred from the value of the year component (YY) by e.g. the following rules:

- if 80 <= YY <= 99 then CC = 19
- if 00 <= YY <= 50 then CC = 20

4.9.2.2.3 StopTime definition

```
StopTime ::= UTCtime
-- Recommended format is YYMMDDhhmmZ
```

4.9.2.2.4 GeoGraphicalLimit definition

```
GeoGraphicalLimit ::= BIT STRING {
       globalRestriction           (0),
       regionalRestriction         (1),
       nationalRestriction         (2),
       district                    (3),
       issuerCoverageRestriction   (4),
       reservedForCEN/ISO1         (5),
       reservedForCEN/ISO2         (6),
       issuerSpecificRestriction   (7)
       }
```

```
--The restriction shall be active if bit position is set to 1₂. If all
bits are 0₂, then there is no restriction geographically.
```

4.9.2.2.5 ServiceApplicationLimit definition

```
ServiceApplicationLimit ::= BIT STRING {
              notForPostpayment            (0),
              notForPrepayment             (1),
              notForVehicleaccess          (2),
              notForFleetcontrol           (3),
              issuerSpecificRestriction1   (4),
              issuerSpecificRestriction2   (5),
              issuerSpecificRestriction3   (6),
              issuerSpecificRestriction4   (7)
}
--The restriction shall be active if bit position is set to 1₂. If all
bits are 0₂, then there is no restriction.
--The lower order bits (0 - 3) are of a general nature and sets
restrictions outside the area of the issuer. The higher order bits (4
- 7) are for specific limitations inside the operator area.
```

Example: The following lines and show how the Validity Limitation value may be encoded :

Start/Issue Time : 93-01-01 (date), 12:00 (time)

Stop/Expire Time : 94-12-31 (date), 23:59 (time)

Geographical Limit : 01001011_2

Application Limit : 11111000_2

Note: The Z-indicator is not used

Table 4-3: Example of validity limitation encoding

Start//Issue Time	Stop//Expire Time	Geographic Limit	Application Limit
9301011200	**9412312359**	**01001011_2**	**11111000_2**

4.10 CS4 - VEHICLE LICENCE NUMBER CODING

4.10.1 GENERAL REQUIREMENTS

In some systems there is a requirement to represent the vehicle licence plate number electronically. This must be achieved unambiguously, and as the licence numbers in different nations/states/countries may be the same there is also a need to include a country identifier.

Because several nations/states/countries issue licence plates with non-Latin characters (such as Cyrillic or Greek) there is a need to identify which character set is used. These two requirements are combined in this CS4 Vehicle Licence Number Coding

4.10.2 DATA STRUCTURE

4.10.2.1 Data Structure Elements

Authorities who wish to provide additional data fields, of read only, or a read/write, nature can do so by adding additional ASN.1 identifier sets as described in an example of Annex C.

4.10.2.2 ASN.1 Data Type Specifications

4.10.2.2.1 CS4 definition

```
CS4 ::= SEQUENCE {
        countryCode             CountryCode,
        alphabetIndicator       AlphabetIndicator,
        licPlateNumber LicPlateNumber
}
```

4.10.2.2.2 CountryCode definition

CountryCode is defined in 4.7.2.2.2.

4.10.2.2.3 AlphabetIndicator definition

```
AlphabetIndicator ::= ENUMERATED {
latinAlphabetNo1            (1),
latinAlphabetNo2            (2),
latinAlphabetNo3            (3),
latinAlphabetNo4            (4),
latinCyrillicAlphabet       (5),
latinArabicAlphabet         (6),
latinGreecAlphabet          (7),
latinHebrewAlphabet         (8),
latinAlphabetNo5            (9),
latinAlphabetNo6            (10),
twoOctetBMP                 (62),
fourOctetCanonical   (63)
}
--ISO 8859 and ISO 10646-1 define the characters of the different
--alphabets included in the AlphabetIndicator type.
```

4.10.2.2.4 LicPlateNumber definition

```
LicPlateNumber ::= OCTET STRING
--LicPlateNumber is short form for License Plate Number
```


4.11 CS5 - VEHICLE IDENTIFICATION NUMBER

4.11.1 GENERAL REQUIREMENTS

The Vehicle Identification Number (VIN) defined in ISO 3779 / 3780 is a structured combination of characters assigned to a vehicle by its manufacturer for identification purposes. The manufacturer is responsible for the uniqueness of the VIN.

The VIN defined in ISO 3779 / 3780 shall consist of three sections: first, the World Manufacturer Identifier (WMI) section, second, the Vehicle Descriptor Section (VDS), and finally, the Vehicle Indicator Section (VIS).

4.11.2 DATA STRUCTURE

4.11.2.1 Data Structure Elements

Operators who wish to provide additional data fields, can do so by adding additional ASN.1 identifier sets as described in an example of Annex C.

4.11.2.2 ASN.1 Data Type Specifications

The Numbering Scheme views the ID as a data element, and the common basic data structure is only a data identifier code.

4.11.2.2.1 CS5 definition

```
CS5 ::= VISIBLE STRING
```

4.12 CS6 - RESERVED for CEN/ISO

4.13 CS7 - FREIGHT CONTAINER NUMBERING

4.13.1 GENERAL REQUIREMENTS

The freight container data shall be based on ISO 10374 and consist of the following:

- owner code, in accordance with ISO 6346;
- serial number, in accordance with ISO 6346;
- check digit, in accordance with ISO 6346;
- length (in centimetres);
- height (in centimetres);
- width (in centimetres);
- container type code, in accordance with ISO 6346;
- maximum gross mass (in hundreds of kilograms);
- tare mass (in hundreds of kilograms);

4.13.2 DATA STRUCTURE

4.13.2.1 Data Structure Elements

Operators who wish to provide additional data fields, can do so by adding additional ASN.1 identifier sets as described in an example of Annex C.

4.13.2.2 ASN.1 Data Type definitions

4.13.2.2.1 CS7 definition

```
CS7 ::= FreightContainerData
```

4.13.2.2.2 Freight Container Data definition

```
FreightContainerData ::= SEQUENCE {
        OwnerCode             BIT STRING(SIZE(19)),       --  19bits
        serialNumber          INTEGER(0 .. 1000000),      --  20bits
        checkDigit            INTEGER(0 .. 10),           --   4bits
        length                INTEGER(1 .. 2000),         --  11bits
        height                INTEGER(1 .. 500),          --   9bits
        width                 INTEGER(200 .. 300),        --   7bits
        containerTypeCode     INTEGER(0 .. 127),          --   7bits
        maximumGrossMass      INTEGER(19 .. 500),         --   9bits
        tareMass              INTEGER(0 .. 99)            --   7bits
}
```

4.14 CS8 - TAX AUTHORITY CODE

4.14.1 GENERAL REQUIREMENTS

Note: The Tax Authority Code will normally be used to determine an electronic vignette in licence, taxation and classification related applications. It will normally be used in combination with CS3.

4.14.2 DATA STRUCTURE

4.14.2.1 Data Structure Elements

Authorities who wish to provide additional data fields such as CS3 can do so by adding additional ASN.1 identifier sets as described in the examples given in Annex C.

4.14.2.2 ASN.1 Data Type Definitions

4.14.2.2.1 CS8 definition

```
CS8 ::= SEQUENCE {
        countryCode             CountryCode,
        taxCode                 TaxCode
}
```

4.14.2.2.2 Country Code definition

`CountryCode` is defined in 4.7.2.2.2.

4.14.2.2.3 Tax Code definition

```
TaxCode ::= OCTET STRING
```

Annex A (normative): Management & General Rules for the administration of CODING STRUCTURE CS 1, CS 2 AND CS8.

A.1 General rules

This Annex describes the administration procedure for numbers issued under the coding structure for **CS1, CS2 and CS8.**

In order to ensure interoperability it is essential that the coding structures defined in this Standard, which this Annex supports, be applied in a consistent manner. The structures of this Standard are so constructed that they may be administered at a local level without danger of ambiguity of number series. In general terms this allows the (political) principles of subsidiarity to be followed. However there is a requirement for central maintenance of Issuer Identifiers. It is up to Nation States to determine which issuers shall be authorised in respect of nationally determined schemes, and the role of the CRA shall be limited to registering such decisions.

Management procedures for the structures shall be minimised and shall be restricted to simple recording and registration of local systems.

TheCentral and all National Registration Authorities shall conform to all regional and national legislative requirements with respect to data protection and privacy within the domain of the scheme.

A.1.1 Registration hierarchy

Figure A-1 depicts the layout of the registration hierarchy.

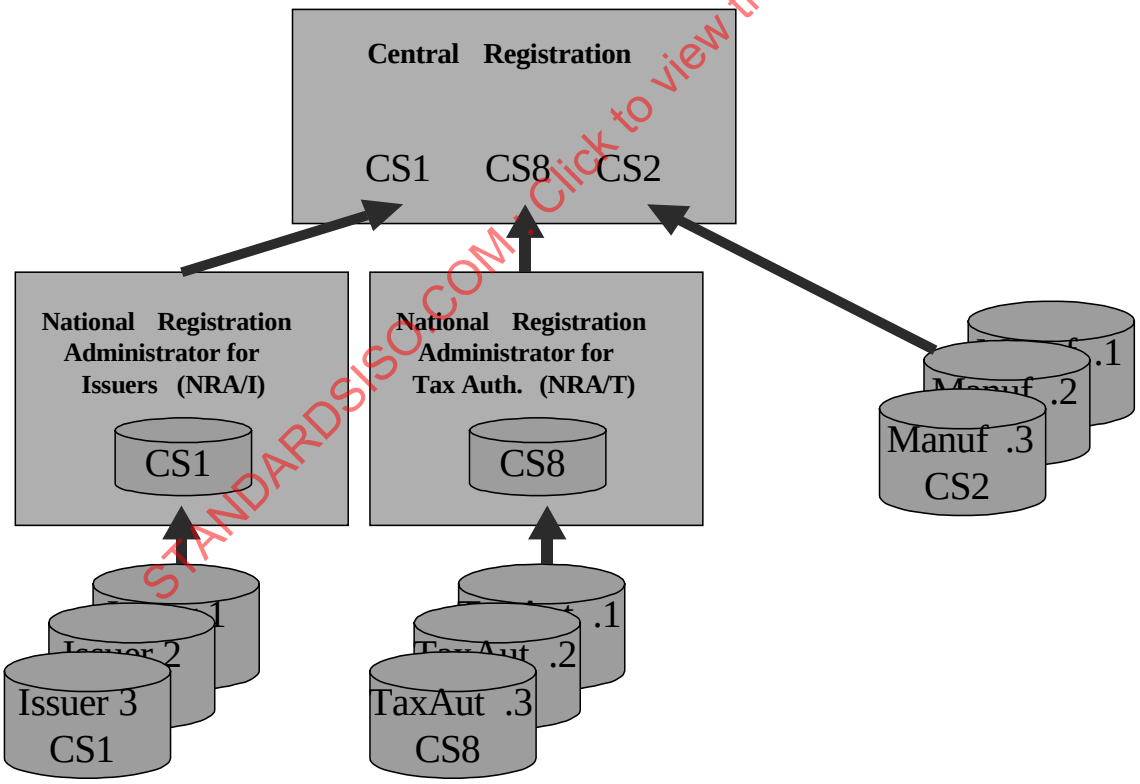

Figure A-1: Layout of the registration hierarchy

A.1.2 Definition of actors

A.1.2.1 Central Registration Administrator (CRA):

A body, which maintains the registers of **National Registration Administrators (NRA/I and NRA/T)**, and the register of **Manufacturers**. See A.1.3.

Note: At the date of publication of this Standard, the EN ISO 14816 CRA is:

Nederlands Normalisatie-instituut (NNI)
P.O. Box 5059
NL-2600 GB Delft
The Netherlands

A.1.2.2 National Registration Administrator for Issuers (NRA/I):

A body appointed by the Nation State to authorize CS1 issuers and to issue **CS1 Issuer Identifiers** at Nation State level. NRA/I is registered by the **CRA,** and it is expected that this will normally be the National Standardisation body or its appointee.

A.1.2.3 Issuer:

A body authorised by the **NRA/I** to issue a **CS1 Service Code/Unambiguous Number** and identified by a unique identifier (**Issuer Identifier**) within a country in accordance with this preStandard.

A.1.2.4 Issuer Register:

The **NRA/I** shall maintain a Register of all Issuers and structure details on a National level. The **NRA/I** shall provide a copy of their **Register of Issuers** at agreed intervals to the **CRA** who shall maintain and make available a copy of the full **Register of Issuers**. The Issuer register shall not contain any personal information.

A.1.2.5 National Registration Administration for Tax Codes (NRA/T)

A body appointed by the Nation State to register **Tax Authorities** and issue **CS8 Tax Authority Identifiers** at National/Federal level. NRA/T will be registered by the **CRA,** and it is expected that it will normally be the National Standardisation body or the National Tax Authority.

A.1.2.6 Tax Authority Register

The **NRA/T** shall maintain a Register of all issued **Tax Authorities** and their **Tax codes** on a National Level.

The NRA/T shall provide a copy of their Register of Tax Authorities at agreed intervals to the CRA that shall maintain and make available this Register.

A **Tax Authority** may request several **Tax Codes**, this may be granted by the **NRA/T**.

Note: It is recognised that the handling of taxation and its legislation is solely a Nation State responsibility. Section A.3 and data type CS8 are therefore intentionally kept more open than CS1 and CS2. NRA/T's are advised to adopt the parts of A.2 that applies in their case.

The terms may be understood as follows: A Tax Authority that together with the identification of (one of) its transport tax(es) is identified by a Tax Code. (The combination in one identifier is done to give maximal flexibility to Nation States) See also example under A.3.

A.1.3 Central Registration Administrator (CRA)

A.1.3.1 General

The Central Registration Administrator has been appointed in the first place by agreement of the plenary of the technical committees (ISO TC204 and CEN TC278) and any replacement shall be managed by the ISO Central Secretariat according to the ISO rules.

A.1.3.2 Responsibilities

The responsibilities of the CRA shall be:

1. to maintain a register of NRA/I's and NRA/T's.

2. to compile, collate and issue a Register of all NRA/I Registers and to circulate a copy of this register to all NRA/I's in an agreed format.
3. to compile collate and issue a Register of all NRA/T Registers and to circulate a copy of this register to all NRA/T's in an agreed format.
4. to maintain a register of Manufacturers according to the rules in A.4;
5. to keep CS1, CS2 and CS8 Registers on a Central level, and to make these registers available to the public. The preferred method would be free public Internet access.

   NOTE: the home page of the cra is:

   http://www.nni.nl/cen278/14816main.html

   At this web-site more information and application forms can be downloaded

A.2 Application and registration procedures FOR CS1: ISSUERS

A.2.1 Issuer

A.2.1.1 Application procedure for assignment of an Issuer Identifier.

The 'applicant' **Issuer** shall apply in writing to its **National Registration Administrator for Issuers (NRA/I)** for the assignment of an **Issuer Identifier**. The **NRA/I** shall satisfy itself of the status of the applicant and shall assign an unused **Issuer Identifier**.

In unforeseen cases an issuer may wish to appeal against the decision of its NRA/I. In this case the Issuer should lodge a written appeal with the CRA. The CRA will immediately notify ISO/TC 204 of any appeal lodged. In cases where the CRA cannot solve the issue, it may request guidance from CEN/TC 278 or ISO/TC 204.

An **Issuer** may request several **Issuer Identifiers**. This may be granted by the **NRA/I**. Each **Issuer Identifier** shall then be handled as belonging to a separate **Issuer.**

The reuse of issued **Identifiers** should be avoided, and in any case expired **Identifiers** shall not be reused until 3 years after its expiration period.

A.2.1.2 Criteria for approval of an application for a CS1 Issuer Identifier

Applications for an **Issuer Identifier** shall meet the criteria for approval below:

1. the applicant shall be a single entity with a legal status.
2. the applicant shall use the **Issuer Identifier** for an agreed use within the intended scope.
3. the applicant shall pay any fees required by the **NRA/I** based on the guidelines in A.5
4. the **Issuer Identifier** shall only be issued by the **NRA/I** when there is expected to be an immediate use, or when the **NRA/I** considers that such requirement is imminent.
5. the **NRA/I** may request a national Service code/ Unambiguous coding structure. The details that the **NRA/I** may request shall be the details of his local numbering sub structures within his Service Code/Unambiguous Number structure, but the Unambiguous identification codes shall not be revealed to the **NRA/I**.

Note: Multinational companies or similarly a group of mutually independent **Issuers** in several member countries may agree to form an alliance under a single entity to use a single **Issuer** Identification (CS1). Where such Companies already hold an **Issuer Identifier** in one country, they may apply for the issue of a similar number in another country, which may be issued out of sequence, so long as that number is not already in use. Where the number is already in use, the applicant may request a new number in the first country, which may be granted at the discretion of the **NRA/I**.

A.2.1.3 Responsibilities of the Issuer

1. To comply fully with the numbering system and the requirements of this Standard and its Annexes

Note: an **Issuer** may **NOT** issue a number that has not been formally allocated to it by the relevant **NRA/I**.

2. To retain the letter of authorisation of its **Issuer Identifier** by the **NRA/I**.
3. To issue **Service Codes/Unambiguous Numbers** using the **Issuer Identifier** number assigned to them by the **NRA/I**, and in accordance with the requirements of this Standard.
4. To communicate to the **Registration Administrator** any proposed changes that would alter material facts contained within the original registration,
5. To keep a register of issued **Service Codes/Unambiguous Numbers** within the limits of its intended use, and to maintain such records in a secure place and in accordance with the requirements for data protection in the country/countries of their sphere of operation.
6. Where the **issuer** is required to provide an anonymous mode, to maintain a service code/unambiguous coding structure that will enable this in an efficient manner.
7. To pay fees in accordance with agreements with the **NRA/I** based on the guidelines in A.5.
8. Where the **issuer** wants to terminate the issuing operation, to give 3 months notice to the **NRA/I**.

   Note: All privacy related materials shall be destructed in accordance with the requirements for data protection in the country/countries of their sphere of operation.

A.2.2 National Registration Administrator (NRA/I)

A.2.2.1 Eligibility to become a National Registration Administrator (NRA/I)

The **NRA/I** shall be a single entity designated in each country by the Nation State Authorities, usually the National Standards Authorities.

A.2.2.2 Resignation

If a **NRA/I,** which is not a standardisation member body, finds it necessary to resign, six month's notice in writing shall be given to the National Standards Authorities.

A.2.2.3 Non compliance

If the **CRA** has reasonable cause to believe that a **NRA/I** is not complying properly with the structure as defined in this Standard, it shall provide formal notice in writing to the **NRA/I** and National Authorities.

A.2.2.4 Responsibilities

The responsibilities of a **NRA/I** shall be:

1. To ensure that the application fully complies with the procedures for application for **Issuer** in this Standard;
2. To verify that the applicant's use and **Service Codes/Unambiguous Number** structures comply with the scope of this Standard;
3. To process, within 60 days of receipt of the applications, the applications for **Issuers** from within their areas of responsibility;
4. To send notification to the applicant in writing, within the same period of 60 days of receipt of the application, as to the disposition of their application ;
5. To assign a Unambiguous **Issuer Identifier** to each approved **Issuer** ;
6. To maintain a **Register** providing details of all registered '**Issuers'** together with their '**Issuer Identifier**' and summary of their structures.
7. To retain a copy of each application ;
8. To provide an annual report of activity to the **CRA**. The report shall include an up to date copy of their **Issuer Register**, and the number of applications for **Issuer**, together with the number granted in the period.
9. To respond to general enquiries covering this preStandard.

A.2.2.5 National Register of Issuers

A.2.2.5.1 Publication and availability

The **NRA/I** shall publish an **Issuer Register**. The **Register** shall be published in both *numerical* (**Issuer Identifier)** and *alphabetical* (Issuer Name) order.

Note: The final issue of Unambiguous Numbers shall remain private and shall not be declared to the NRA/I, and shall therefore not appear on any published Register whatsoever.

The **National Register of Issuers** shall be a publicly available document. The Register may be available at the cost of reproduction, or the NRA/I may choose to publish it on the Internet according to the provisions in A.5.

A.2.2.5.2 Contents

The **CS1 Issuer Register** shall contain the following information

- name of **Issuer**;
- address and communication address (e.g. tel., fax., E-mail) of **Issuer** and principal contacts within organisation as indicated in the application;
- **Issuer Identifier** number assigned to the **Issuer** by the **NRA/I;**
- date of issuing and date of end of issuing, if any.
- for each issuer a summary of its SC/UNs and substructures if applicable

A.3 APPLICATION AND REGISTRATION PROCEDURES FOR CS8: TAX CODES

A.3.1 National Registration Administrator for Tax Authorities (NRA/T)

A.3.1.1 Eligibility to become a National Registration Administrator for Tax Authorities (NRA/T)

The **NRA/T** shall be a single entity designated in each country by the Nation State Authorities.

Note: It is recognised that the handling of taxation and its legislation is solely a Nation State responsibility. Section A.3 and data type CS8 are therefore intentionally kept more open than CS1 and CS2. NRA/T's are advised to adopt the parts of A.2 that applies in their case.

The terms may be understood as follows: A Tax Authority that together with the identification of (one of) its transport tax(es) is identified by a Tax Code. (The combination in one identifier is done to give maximal flexibility to Nation States) See also example under A.3.

A.3.1.2 Resignation

If a **NRA/T** finds it necessary to resign, six month's notice in writing shall be given to the National Standards Authorities.

A.3.1.3 Responsibilities

The responsibilities of a **NRA/T** shall be:

1. To decide and **Register** the National TaxCode structure; i.e. the number of Tax Authorities in this Nation State, and the range of Tax Identities that each Tax Authority will use.
2. To assign a Unambiguous Tax Authority Identity to each relevant national Tax Authority in accordance with 1.
3. To maintain a **Register** providing details of all registered Tax Authorities.
4. To respond to general enquiries covering this Standard.

A.3.1.4 National Register of Tax Authorities

A.3.1.4.1 Publication and availability

The **NRA/T** shall publish a **Tax Authority Register**. The **Register** shall be published in both numerical (**Tax Code)** and alphabetical (Tax Authority Name) order. The National Register of **Tax Codes** shall be a publicly available document. The Register may be available at the cost of

reproduction, or the NRA/T may choose to publish it on the Internet according to the provisions in A.6.

A.3.1.4 Contents

The **Tax Authority Register** shall contain the following information

- name of the **tax Authority**;
- address and communication address (e.g. tel., fax., E-mail) of **tax Authority** and principal contacts within organisation as indicated in the application;
- Tax Code assigned to the **tax Authority** by the **NRA/T;**
- date of issuing and date of end of issuing, if any.

A.3.2 Tax Authorities

The Nation State Authorities designate the Tax Authorities. The Tax Authorities will issue Tax Identities to the individual Taxed objects according to the national rules laid out by the NRA/T.

A **Tax Authority** may request several **Tax Codes**. This may be granted by the **NRA/T**. Each **Tax Code** shall then be handled as belonging to a separate **Tax Authority**

The reuse of issued **Codes** should be avoided, and in any case expired **Codes** shall not be reused until 3 years after its expiration period.

Example: The described TaxCode structure applies mainly in situations where a Nation State has several Tax Authorities in e.g. different States.

In other situations the Tax Authorities and NRA/T may be one and the same entity. Their role would then be to issue electronic vignette codes to vehicles for national tax purposes. In this case the TaxCode data type would only contain individual Tax Identities. Please see that the Tax Code contains both the national Tax Authority identifier **and** any individual electronic vignette ID. This electronic vignette would then typically contain the following data:

```
TaxVignette ::= SEQUENCE {

CS8 ::= SEQUENCE {
     countryCode          CountryCode,   --ISO3166 2 char alpha
     taxCode              TaxCode        --Tax Authority
                                         --Identifier and
                                         --Individual vignette ID
}
CS3 ::= SEQUENCE {
     startTime            StartTime,           --YYMMDDhhmmZ
     stopTime             StopTime,            --YYMMDDhhmmZ
     geographLimit        GeoGraphicalLimit,
     serviceAppLimit      ServiceApplicationLimit
}}
```

A.4 APPLICATION AND REGISTRATION PROCEDURES FOR CS 2: MANUFACTURERS

A.4.1 Application procedure for assignment of a Manufacturer Identifier.

1. The 'applicant' Manufacturer shall apply in writing to the **CRA** for the assignment of a **Manufacturer Identifier**.
2. The **CRA** shall assign an unused **Manufacturer Identifier** to any company or organisation that fulfils the criteria in A.4.2.
3. In unforeseen cases there may be a need for a **Manufacturer** to consult the **TC** as an appeal procedure against the decision of the CRA. In this case the consulting party shall make a written request for clarification to the TC Chairman, with copy to the Secretariat. The TC Chairman may then delegate the resolution of this request to the relevant Working Group.
4. A **Manufacturer** may request several **Manufacturer Identifiers**. This may be granted by the **CRA**. Each **Manufacturer Identifier** shall then be handled as belonging to a separate **Manufacturer**
5. The reuse of issued **Manufacturer Identifiers** should be avoided, and in any case expired **Manufacturer Identifiers** shall not be reused until 3 years after their expiration period.

A.4.2 Criteria for approval of an application for an Manufacturer Identifier

Applications for a **Manufacturer Identifier** shall meet the criteria for approval below:

1. the applicant shall be a single entity with a legal status.
2. the applicant shall use the **Manufacturer Identifier** for an agreed use within the intended scope.
3. the applicant shall pay any fees required by the CRA according to the rules in A.5.

A.4.3 Responsibilities of the Manufacturer

1. To comply fully with the numbering system and the requirements of this Standard and its Annexes, an Manufacturer may **NOT** issue a number that has not been formally allocated to it by the CRA
2. To retain the letter of authorisation of its **Manufacturer Identifier** by the **CRA**.
3. To issue **Service Codes/Unambiguous Numbers** using the **Manufacturer Identifier** number assigned to them by the **CRA**, and in accordance with the requirements of the Standard which this Annex supports.
4. To communicate to the **Central Registration Administrator** any proposed changes that would alter material facts contained within the original registration,
5. To keep a register of issued **Service Codes/Unambiguous Numbers** within the limits of its intended use, and to maintain such records in a secure place and in accordance with the requirements for data protection in the country/countries where the register is maintained.
6. To pay fees in accordance with agreements with the CRA based on the guidelines in A.5.

A.4.4 Responsibilities CRA for Manufacturer Register

The responsibilities of a CRA shall be:

1. To ensure that the application fully complies with the procedures for application for **Manufacturer Identifier** in this Standard;
2. To verify that the applicant's use of Service Codes/Unambiguous Coding structures comply with the scope of this Standard;
3. To process, within 60 days of receipt of the applications, the applications for a **Manufacturer Identifier**
4. To send notification to the applicant in writing, within the same period of 60 days of receipt of the application, as to the disposition of their application ;

5. To assign a Unambiguous **Manufacturer Identifiers** to each approved Manufacturer ;
6. To maintain a **Register** providing details of all registered Manufacturers together with their '**Manufacturer Identifier**'.
7. To retain a copy of each application;
8. To respond to general enquiries covering this Standard.

A.4.5 Register of Manufacturers

A.4.5.1 Publication and availability

The CRA shall publish a Manufacturer **Register**. The **Register** shall be published in both numerical (**Manufacturer Identifier)** and alphabetical (Manufacturer Name) order.

Note: The final issue of Service Codes/ Unambiguous Numbers shall remain private and shall not be declared to the CRA and shall therefore not appear on any published Register whatsoever.

The **Register of Manufacturers** shall be a publicly available document. The Register may be available at the cost of reproduction, or the CRA may choose to publish it on the Internet according to the provisions in A.3.

A.4.5.2 Contents

The **Manufacturer Register** shall contain the following information

- name of Manufacturer ;
- address and communication address (e.g. tel., fax., E-mail) of Manufacturer and principal contacts within organisation
- **Manufacturer Identifier** assigned to the manufacturer by the CRA
- date of issuing and date of end of issuing, if any.

A.5 Costs aspects

The costs of the entire registration procedure will be recovered on the basis of nominal cost. An **Issuer** will pay a registration fee and an annual renewal fee to its **NRA (**or **CRA**, in case of **CS2)**. The **NRA** will pay a fee to the **CRA**. The fee structure to be determined locally. The registration fees may be set to cover a free public Internet access to the **NRA/CRA** registry. The charges for issuing of documents shall be at the cost recovery basis.

A.6 Disclaimer

The following declaration by the Registration Administrator should be used to protect its position against possible misuse of the coding structure by bodies outside their control.

A similar declaration replacing **Issuer** with **Manufacturer** or **Tax Authority** should be made for **CS2** and **CS8**

“IMPORTANT INFORMATION REGARDING YOUR NUMBER ASSIGNMENT”

This number is issued with the understanding that this **Issuer Identifier** will be used in accordance with the requirements in ENV 12314-1 and ENV ISO 14816. It should be understood that in assigning an **Issuer Identifier** in response to your application, the **National Registration Administrator** is designating the assigned number as identifying the organisation specified as an ‘**Issuer**’ as described in ENV ISO 14816.

The use of this number or any other number by a party that chooses not to comply with the provisions of this Standard with or without the knowledge of the **National Registration Administrator** is beyond the control of the **National Registration Administrator.** Therefore, the **National Registration Administrator** cannot guarantee the sole and unambiguous use of this identifier to your organisation.

The operation of the **National Registration Administrator** is a voluntary non-profit service to **Issuers** complying with ENV ISO 14816 and its success depends, in part, on the co-operation of **Issuers**. The **National Registration Administrator** will not be held financially liable for errors in the registration, reservation or assignment of **Issuer Identifier** or the publication of those identifiers and the names and addresses of the parties to which they are assigned.

Annex B (normative): A summary of CS definitions

According to advice from ISO/IEC 8824:1998, and in order to make the Coding Structures defined within this Standard valid for use in other RTTT application standards, the definitions below shall be their reference.

```
AVIAEINumberingAndDataStructures {iso(1) standard(0) iso14816(14816) }
AUTOMATIC TAGS DEFINITIONS ::= BEGIN

--EXPORTS everything;

        CS1 ::= SEQUENCE {
                CountryCode             CountryCode,
                issuerIdentifier        IssuerIdentifier,
                serviceNumber           ServiceNumber
        }

        CS2 ::= SEQUENCE {
                IssuerIdentifier        ManufacturerIdentifier,
                serviceNumber           ServiceNumber
        }

        CS3 ::= SEQUENCE {
                startTime               StartTime,              --YYMMDDhhmmZ
                stopTime                StopTime,               --YYMMDDhhmmZ
                geographLimit           GeoGraphicalLimit,
                serviceAppLimit         ServiceApplicationLimit
        }

        CS4 ::= SEQUENCE {
                countryCode             CountryCode,
                alphabetIndicator       AlphabetIndicator,
                licPlateNumber          LicPlateNumber
        }

        CS5 ::= VisibleString

        CS7 ::= FreightContainerData ::= SEQUENCE {
                ownerCode               BIT STRING(SIZE(19)),       --  19bits
                serialNumber            INTEGER(0 .. 1000000),      --  20bits
                checkDigit              INTEGER(0 .. 10),           --   4bits
                length                  INTEGER(1 .. 2000),         --  11bits
                height                  INTEGER(1 .. 500),          --   9bits
                width                   INTEGER(200 .. 300),        --   7bits
                containerTypeCode       INTEGER(0 .. 127),          --   7bits
                maximumGrossMass        INTEGER(19 .. 500),         --   9bits
```

```
        tareMass            INTEGER(0 .. 99)            --   7bits
    }

    CS8 ::= SEQUENCE {
        countryCode         CountryCode,
        taxCode             TaxCode
    }

    CountryCode ::= BIT STRING(SIZE(10))
-- Value assignment is done in accordance with ISO 3166 and by using
-- the ITA.2 alphabet. For value assignment, please refer to
-- http://www.nni.nl/cen278/14816_NRAI_register_by_country.html

    IssuerIdentifier ::= INTEGER(0 .. 16383)

    ManufacturerIdentifier ::= INTEGER(0 .. 65535)

    LicPlateNumber ::= OCTET STRING

    ServiceNumber ::= BIT STRING(SIZE(32))

    TaxCode ::= OCTET STRING

    AlphabetIndicator ::= ENUMERATED {
        latinAlphabetNo1            (1),
        latinAlphabetNo2            (2),
        latinAlphabetNo3            (3),
        latinAlphabetNo4            (4),
        latinCyrillicAlphabet       (5),
        latinArabicAlphabet         (6),
        latinGreecAlphabet          (7),
        latinHebrewAlphabet         (8),
        latinAlphabetNo5            (9),
        latinAlphabetNo6            (10),
        twoOctetBMP                 (62),
        fourOctetCanonical          (63)
    }       -- latinAlphabetNo1 recommended

    StartTime ::= UTCTime --Recommended format is YYMMDDhhmmZ

    StopTime ::= UTCTime  --Recommended format is YYMMDDhhmmZ
```