INTERNATIONAL STANDARD

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Second edition
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Information technology — Unique identifiers —

Part 1: Unique identifiers for transport units

Technologies de l'information — Identificateurs uniques —

Partie 1: Identificateurs uniques pour les unités de transport

Reference number
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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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

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

ISO/IEC 15459-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This second edition cancels and replaces the first edition (ISO/IEC 15459-1:1999), which has been technically revised. It also incorporates Technical Corrigendum ISO/IEC 15459-1:1999/Cor.1:2004. Because the scope of ISO/IEC 15459 has been expanded beyond transport units, the term “license plate” in the first edition of ISO/IEC 15459 has been replaced by “unique identifier” in the second edition.

ISO/IEC 15459 consists of the following parts, under the general title *Information technology — Unique identifiers*:

— *Part 1: Unique identifiers for transport units*

— *Part 2: Registration procedures*

— *Part 3: Common rules for unique identifiers*

— *Part 4: Unique identifiers for supply chain management*

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Introduction

Unique identification can occur at many different levels in the supply chain, at the transport unit, at the item level, and elsewhere. Such distinct entities are often handled by several parties: the sender, the receiver, one or more carriers, customs authorities, etc. Each of these parties must be able to identify and trace the item so that reference can be made to associated information such as address, order number, contents of the item, weight, sender, batch or lot number, etc.

The information is often held on computer systems, and may be exchanged between parties involved via EDI (Electronic Data Interchange) and XML (eXtensible Markup Language) messages.

There are considerable benefits if the identity of the item is represented in bar code format or other AIDC (Automatic Identification and Data Capture) media and attached to or made a constituent part of that which is being uniquely identified so that

— it can be read electronically, thus minimising errors;

— one identifier can be used by all parties;

— each party can use the identifier to look up its computer files to find the data associated with the item;

— the identifier is unique within the class and cannot appear on any other item of the class during the lifetime of the item.

The unique identifier for transport units defined in this part of ISO/IEC 15459 and represented in a bar code label, two-dimensional symbol, radio-frequency identification tag, or other AIDC media attached to the item meets these needs.

All AIDC technologies have the potential to encode a unique identifier. It is expected that application standards for items, using various automatic identification technologies, will be developed based upon the unique identifier as a prime key. These application standards may be made available from the Issuing Agency.

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Information technology — Unique identifiers —

Part 1:
Unique identifiers for transport units

1 Scope

This part of ISO/IEC 15459 specifies a unique, non-significant string of characters for the identification of transport units. The character string is intended to be represented in a bar code label or other AIDC media attached to the item to meet item management needs. To address management needs, different classes of items are recognized in the various parts of ISO/IEC 15459, which allows different requirements to be met by the unique identifiers associated with each class. The rules for the unique identifier for transport units, to identify physical logistical transfers, with the identity relevant for the duration of one or more items in the load being held or transported as part of that load, are defined and supported by an example.

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.

ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*

ISO/IEC 15418, *Information technology — EAN/UCC Application Identifiers and Fact Data Identifiers and Maintenance* [1)]

ISO/IEC 15459-2, *Information technology — Unique identifiers — Part 2: Registration procedures*

ISO/IEC 15459-3, *Information technology — Unique identifiers — Part 3: Common rules for unique identifiers*

ISO/IEC 19762 (all parts), *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

ISO/IEC 9834-1, *Information technology — Open Systems Interconnection — Procedures for the operation of OSI Registration Authorities: General procedures and top arcs of the ASN.1 Object Identifier tree*

GS1 General Specifications, GS1

3 Terms, definitions, and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 (all parts) and ISO/IEC 15459-2 apply.

1) GS1 was formed in 2005 from the joining together of EAN International and the Uniform Code Council (UCC). Since 2005, “EAN/UCC Application Identifiers” have been re-branded “GS1 Application Identifiers”.

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4 Class identification of transport units

Each transport unit shall be unambiguously identified by a code as defined in Clause 5. So that items of this class can be distinguished from other classes, the unique identifier may be combined with a class identifier determined by the Issuing Agency. The class of the unique identifier of a transport unit may be identified by one of the following identifiers as defined in ISO/IEC 15418 or ISO/IEC 9384-1:

- The GS1 Application Identifier **00**
- One of the ASC MH 10 Data Identifiers from ANS MH10.8.2 Category 10, in the general range **J** to **6J**, which starts with an Issuing Agency Code

  NOTE If this class identification method is used each Issuing Agency or unique identifier issuer if authorized by it's Issuing Agency shall select only one DI from Category 10 to identify the sub-class representing the class of the unique identifier. This should be the most appropriate DI for its application, taking into account the existing use and potential benefits of individual DIs specified in Category 10 of the ASC MH 10 data dictionary.

- When employing an ISO/IEC compliant RFID data carrier an additional option is the object identifiers:

  — 1 0 15459 1: for a transport unit identifier defined by the IAC. This is defined independent of, and unlike the structures below, does not support mapping to GS1 Application Identifiers and ASC MH 10 Data Identifiers.

  — 1 0 15459 1 1: for a transport unit identifier equivalent to GS1 Application Identifier **00**

  — 1 0 15459 1 2: for a transport unit identifier equivalent to ASC MH10 Data Identifier **J**

  — 1 0 15459 1 3: for a transport unit identifier equivalent to ASC MH10 Data Identifier **1J**

  — 1 0 15459 1 4: for a transport unit identifier equivalent to ASC MH10 Data Identifier **2J**

  — 1 0 15459 1 5: for a transport unit identifier equivalent to ASC MH10 Data Identifier **3J**

  — 1 0 15459 1 6: for a transport unit identifier equivalent to ASC MH10 Data Identifier **4J**

  — 1 0 15459 1 7: for a transport unit identifier equivalent to ASC MH10 Data Identifier **5J**

  — 1 0 15459 1 8: for a transport unit identifier equivalent to ASC MH10 Data Identifier **6J**

5 Unique identifier for transport units

5.1 Introduction

A unique identifier is assigned to an individual transport unit by a unique identifier issuer. This shall be done in accordance with the rules established by an authorised Issuing Agency as defined in ISO/IEC 15459-2 and ISO/IEC 15459-3.

5.2 Maximum number of characters permissible in a unique identifier for transport units

The unique identifier for transport units shall not contain more than 35 characters.

For efficient use within bar code and other AIDC data carrier systems, it is recommended that wherever possible the number of characters be maximum 20. However, any data processing system shall be capable of processing unique identifiers for transport units of 35 characters (i.e. the maximum allowable in EDIFACT).

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5.3 Permissible character sets in a unique identifier for transport units

The unique identifier shall only contain uppercase alphabetic characters and numeric digits from the invariant character set of ISO/IEC 646.

An Issuing Agency may put additional restrictions on the repertoire for unique identifiers for transport units using its IAC.

Any data processing system shall be capable of processing the full repertoire of characters permitted for unique identifiers for transport units.

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Annex A
(informative)

Unique identifiers for transport units

A.1 Role of the Issuing Agency in providing application guidance for transport units

In addition to the requirements of an Issuing Agency, outlined elsewhere in this International Standard, each Issuing Agency is expected to provide guidelines if transport units are relevant to its IAC domain.

A.2 GS1 unique identifier for transport units

The example below shows a GS1 unique identifier (SSCC) for transport units

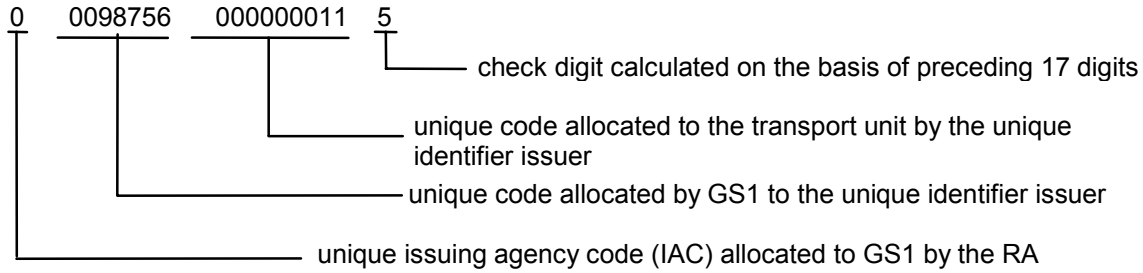


Figure A.1 — Unique identifier

NOTE GS1 uses the term Company Prefix for the unique code allocated by GS1 to the unique identifier issuer.

This unique identifier can be contained in a GS1-128 bar code symbol with the GS1 Application Identifier “00”. The bar code symbol will be as in Figure A.3 and, when scanned, can be expected to pass the following data string to the computer system:

Table A.1 — Data stream — GS1

]C1	**00**	**000987560000000115**
symbology identifier	GS1 Application Identifier	unique identifier

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A.3 ASC MH10 unique identifier for transport units

The example below shows an ASC MH 10 unique identifier (Data Identifier “J”) for transport units

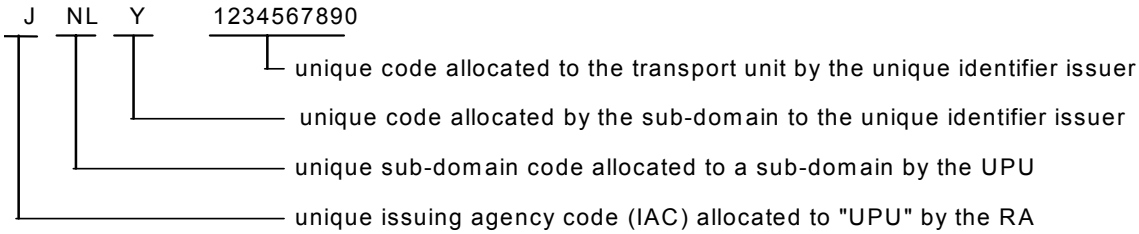


Figure A.2 — Unique identifier

This unique identifier can be contained in a Code 128 bar code symbol with the ASC MH10 Data Identifier “J”. The bar code symbol will be as in Figure B.2 and, when scanned, would be expected to pass the following data string to the computer system:

Table A.2 — Data stream — Data Identifier

]C0	J	JNLY1234567890
symbology identifier	ASC MH10 Data Identifier	unique identifier

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Annex B
(informative)

Examples of unique identifiers for transport units

To illustrate the usage of a unique identifier, assume that two Issuing Agencies (IAs) are recognised by the Registration Authority (RA), say GS1 and the Universal Postal Union (UPU).

The rules of GS1 require that the unique identifier for transport units consists of 18 numeric characters where the first character (0, 1, 2...9) is allocated by the RA, the next characters are allocated by GS1 to the issuer of the unique identifier and the following characters assigned by the issuer of the unique identifier. The last character is a check digit calculated on the basis of the preceding 17 digits. See Figure B.1.

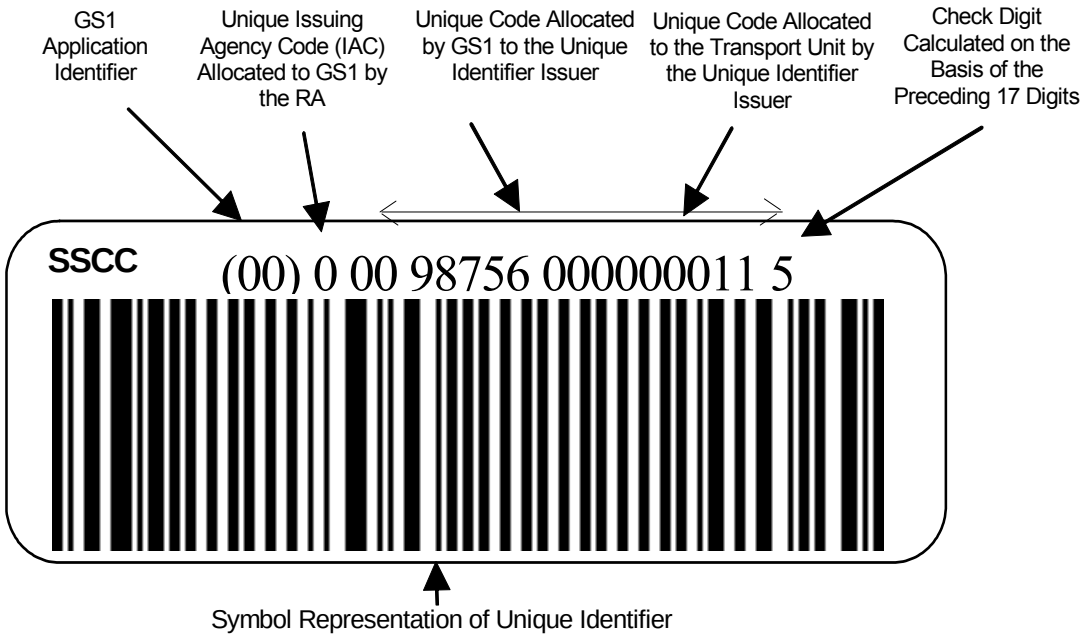
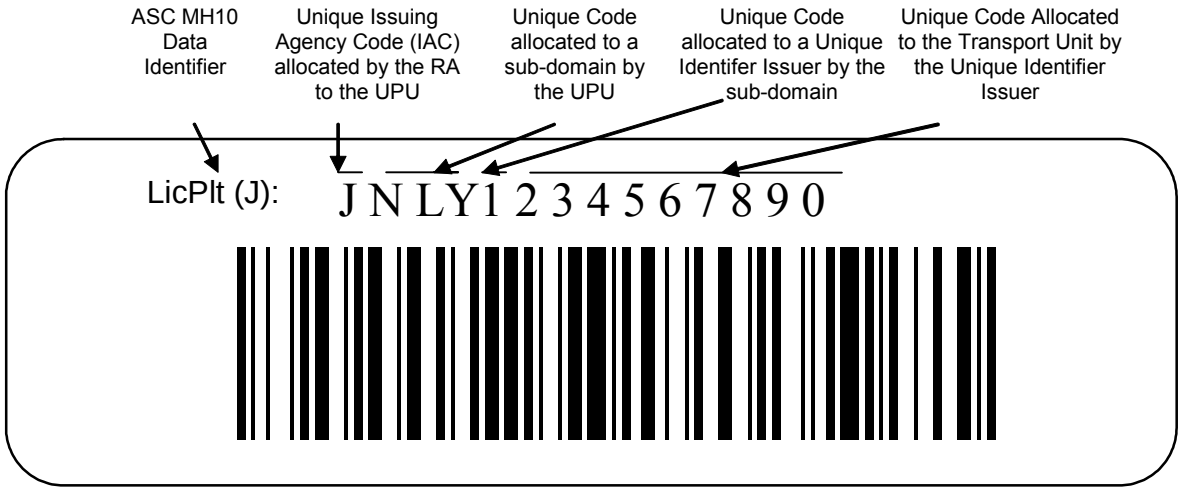


Figure B.1 — Representation of a GS1 unique identifier for transport units in a GS1-128 bar code symbol

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The rules of the UPU are that the unique identifier consists of no more than 35 alpha-numeric characters, where the first character is the Issuing Agency Code “J” allocated by the Registration Authority to the UPU. The next characters are allocated by the UPU to create and identify a sub-domain. A number of different structures are defined in the relevant UPU Standards. One of these utilises two-character ISO 3166 Country Codes to create sub-domains for the National Postal Administration in each country. This “Postal Administration Identifier” is followed by a free format zone in which each Postal Administration may define their own structure as long as the structure is in compliance with the framework of this Standard. See Figure B.2.



Symbol Representation of Unique Identifier

Figure B.2 — Representation of an UPU unique identifier for transport units in a Code 128 bar code symbol

Thus the unique identifier for a transport unit established by the issuer can not be the same as the unique identifier for a transport unit established by another issuer. Moreover, ISO/IEC 15459-2 ensures that all unique identifiers for transport units are unambiguous within their class.

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Bibliography

[1] ISO/IEC Directives, Part 2: *Rules for the structure and drafting of International Standards*, 2004

[2] ISO 15394, *Packaging — Bar code and two-dimensional symbols for shipping transport and receiving labels*

[3] ISO/IEC 15459-4, *Information technology — Unique identifiers — Part 4: Unique identifiers for supply chain management*

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