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Information technology — Unique identifiers —

Part 3: Common rules for unique identifiers

Technologies de l'information — Identificateurs uniques —

Partie 3: Règles communes pour les identificateurs uniques

Reference number
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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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 15459-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

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15459 has been expanded beyond transport units, the term “license plate” in the first edition of ISO/IEC 15459 has been replaced by “unique identifier” in the second edition.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 configuration, maintenance history, 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 identity can be used by all parties;

— each party can use the identity 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 common rules for unique identifiers for item management are defined in this part of ISO/IEC 15459.

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Information technology — Unique identifiers —

Part 3:
Common rules for unique identifiers

1 Scope

This part of ISO/IEC 15459 specifies the common rules that apply for unique identifiers for item management that are required to ensure full compatibility across classes of unique identifiers.

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 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 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 and definitions

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

4 Distinguishing between classes of unique identifier

This International Standard recognizes classes of unique identifiers, each class being used to identify items with a specific role. An organisation may adopt the usage of one or more classes of the unique identifier.

ISO/IEC 15459-2 requires Issuing Agencies to define rules that ensure that no unique identifier issuer can issue a duplicate unique identifier within a defined class. Organisations making use of the unique identifier should ensure that the unique identifiers for the different classes are treated as distinct references.

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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Mechanisms exist that distinguish between the classes. ISO/IEC 15418 and ISO/IEC 9834-1 address three methods that achieve this type of distinction by the use of a specified character (or string of characters) that defines the structure and meaning of the data that follows. The class identification methods are the GS1 Application Identifiers (AI), the ASC MH10 Data Identifiers (DI) and the ISO/IEC 9834-1 Object Identifiers (OID) that each define their own dictionary of identifiers. Specifically for ISO/IEC 15459 the applicable OID is 1 0 15459 n, where the value n is under the auspices of this international standard. The class of a unique identifier may be indicated by any of the class identification methods, as appropriate.

NOTE 1 Although unique identifiers are often used in combination with class identifiers (see the examples in the informative annexes of ISO/IEC 15459-1 and ISO/IEC 15459-4), the class identifier is not a part of the unique identifier.

NOTE 2 Class identifiers are important distinguishing features for data capture applications.

NOTE 3 Each part of ISO/IEC 15459 specifically references the GS1 Application Identifiers (AI), the ASC MH10 Data Identifiers (DI) and ISO/IEC 9834-1 Object Identifiers (OID) that may be used within the specific unique identifier class.

NOTE 4 The identification of a class can either be done by an identifier that identifies the class (OID “1 0 15459 1” identifies the class “transport units”) or by an identifier that identifies a specific sub-class within the class (the DI “6J” identifies transport units consisting of identical parts).

5 The unique identifier

A unique identifier is assigned to an individual item by a unique identifier issuer. This shall be done in accordance with the rules set up by ISO/IEC 15459-2 and the Issuing Agency that authorized the unique identifier issuer. Issuing Agencies are authorised and registered by the Registration Authority.

The following requirements apply for unique identifiers.

a) A unique identifier shall be associated with a class through at least one of the class identification methods identified above.

b) A unique identifier shall start with a string of characters, the Issuing Agency Code (IAC), assigned to the Issuing Agency by the Registration Authority.

c) A unique identifier shall conform to the format specified by ISO/IEC 15459-2 and the Issuing Agency for the class to which it applies.

d) A unique identifier shall be unambiguous in its class in the sense that no issuer re-issues the unique identifier in the class until a sufficient period time has passed so that the first number has ceased to be of significance to any user.

e) Each class of unique identifier shall require its own independent set of rules that enable the unique identifiers of the class to be held in a separate field on a data base or be defined as a separate data element in an EDI message. For each class the rules should minimally determine (1) the maximal length of unique identifiers of that class and (2) the repertoire of characters that may be used in unique identifiers of that class in the part following the IAC.

It is recommended that the Issuing Agency provide application guidance to individual issuers of unique identifiers (e.g. check-digit algorithms, selection of GS1 Application Identifier or ASC MH10 Data Identifier, etc).

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Bibliography

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

[2] ISO/IEC 15459-1, *Information technology — Unique identifiers — Part 1: Unique identifiers for transport units*

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

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