The Global Network for B2B Integration in High Tech industries

EDIFICE
License Plate Guideline for Transport Units

Issue 6

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EDIFICE
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Abstract:	This document defines and describes the rules for the EDIFICE License Plate, which is a numbering scheme for unique identification of transport units based on ISO/IEC 15459.
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References	ISO/IEC 15418 - Information Technology - GS1 Application Identifiers and ASC MH 10 Data Identifiers and Maintenance EN 1573 Multi Industry Transport Label (MITL) ISO/IEC 15394 Packaging-Bar code and 2-D symbols for shipping, transport and receiving labels ISO/IEC 19762 Information technology - Automatic identification and data capture (AIDC) techniques - Harmonized vocabulary - Part 1: General terms relating to AIDC ISO/IEC 15459-1 Information technology - Unique identifiers - Part 1: Unique identifiers for transport units ISO/IEC 15459-2 Information technology - Unique identifier – Part 2: Registration procedures ANSI MH 10.8.2 Data Identifier and Application Identifier Standard GS1 General Specifications EDIFICE Guideline for Web and keyboard compatible encoding with ASC Data Identifiers

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Comparison to previous issue

Changes made in Issue 6:
The 1 July 2020 version includes a technical change, namely the introduction of a bar code flag character that indicates the use of ASC MH 10 Data Identifiers with the encoded data.
Other changes are the replacement of the Code 39 by a Code 128 example for a bar coded License Plate, the addition of an example with a 2D Data Matrix encoded License Plate, the addition of a License Plate example with a GS1 Serial Shipping Container Code and a few editorial changes to the text for consistency and improvement of wording.

Changes made in Issue 5:
The 30 November 2018 version contains an adjustment on the assignment fees for non-members.

The original document 5.0 was endorsed on 31 May 2006.
Version 5.1 includes minor changes related to web site references.

The changes applied in Issue 5 compared to Issue 4 were due to the new release of the ISO/IEC 15459. The document has been slightly restructured to make reading somewhat easier.

No real changes to the license plate concept have been made to the present document.

The main amendment is that according to the new ISO/IEC 15459 release, individual companies can in principle no longer be accepted as individual issuing agencies.

Changes made in Issue 4:
Inclusion of an additional description of the Company Identification Number (CIN) structure – Annex 1.

Changes made in Issue 3:
Reference to ANSI/FACT Data identifiers have been replaced by reference to ANSI MH10.8.2 Data identifiers.

Changes made in issue 2:
Annex 2 References and contact addresses have been replaced by the Reference section in the Publication Summary.

7.1 Data Identifiers (ANSI MH10.8.2 – EN 1571) for License Plate
The recommended usage of ASC MH10 Data Identifiers (ANSI MH10.8.2) for License plate has changed according to the members needs and according to the EIA and ISO recommendations:
- EIA Draft Standard PN 3925 to be issued as EIA-556-B Outer Shipping container Bar code Label standard
- ISO/DIS 15394 (Draft) Bar Code and Two-dimensional Symbols for Shipping, Transport, and Receiving Labels

The '3J' and '4J' data identifiers have been replaced by 'J', '1J' and '2J'.

1. Introduction

This guideline is based on International Standard **ISO/IEC 15459**, which has been created to allow for unique identification of transport units, independent of the industrial sector for which the unit is transported. In this system each transport unit is assigned a number (called License Plate) which distinguishes it unambiguously from all other transport units that follow the same rules.

All transport units may be handled by several, different parties in the supply chain – shipper, consignee and one or more carriers, customs etc… Each of these parties should be able to uniquely identify the unit so that reference can be made to associated information such as address, shipment number, weight, etc…

The moment a transport unit has left the shipper's location, it usually gets blended with other transport units from unpredictable sources, that just happen to travel the same route and use the same vehicle. At the receiver's site, transport units from all his suppliers may arrive completely mixed. In order to identify a specific transport unit and link it with the related data, a license plate assigned to a transport unit, must be world wide unique.

License plate numbers can be assigned for units at different levels of aggregation, beginning with the lowest level of packaging (product package level) up to pallet level.

Information about shipments is normally held on computer systems, and may be exchanged between the parties involved electronically, e.g. via EDI.

2. Scope

This document shows how the License Plate (LP) numbers are defined according to ISO/IEC 15459 and specifies how a License Plate number should be created and used according to EDIFICE rules to ensure efficient and integrated cross-industry supply chain management.

This document covers the following aspects of the LP:

- LP definition & format
- Flag Character and Data Identifiers for use in machine readable formats
- Company Identification Numbers (CIN)
- Rules on requests of an EDIFICE CIN

Please note that the following aspects are not covered in this document:

- RFID Representation of License Plate numbers
- Packing and casing rules for the different levels of packaging
- Processes for the physical handling of pieces
- Specification of electronic messages

3. Benefits

There are multiple benefits of using License Plate numbers for identification of transport units. The most significant ones are:

- one identification number can be used by all parties
- each party can use the License Plate to look up its computer files to find the data associated with the unit
- the License Plate is worldwide unique and cannot appear on any other item during the lifetime of the unit
– Enables accurate tracking and tracing
- The License Plate ISO/IEC standard is a global standard
- Enables standardized infrastructure, simplified processes, supply chain integration
- Reduces the complexity of interfaces
- Reduces relabeling cost by using one and the same License Plate

4. The License Plate

4.1 Definition

The license plate is defined in ISO/IEC 15459-1. It is a unique identifier for transport units and has a certain structure. This unique number, regardless of use, shall be specified and assigned by the label issuer and applied to a transport unit and may be used as a key to access traceability data regardless of content and destination. This number shall be valid for the lifetime of the transport unit it is applied to.

4.2 Structure

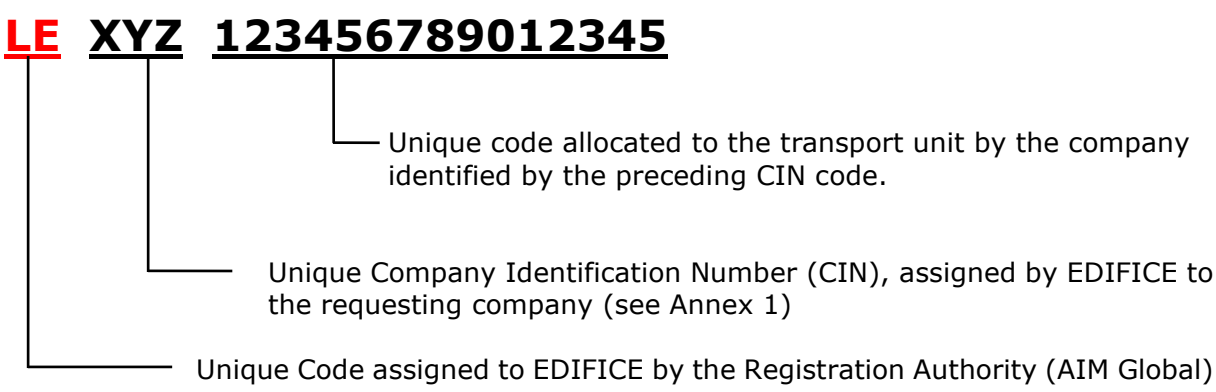
The License Plate shall:

– begin with a string of characters - the Issuing Agency Code (IAC) - assigned by the Registration Authority (RA),
– conform to a format specified by the Issuing Agency (IA),
– only be re-used after a sufficiently long time period. No issuer shall re-issue a number until a sufficient period of time has passed so that the first number has ceased to be of significance to any user of this particular License Plate. EDIFICE recommends that the same License Plate should not be re-issued **within at least one year.**
– identify one unit/piece and must remain visible on each unit/piece.

Since 1997, EDIFICE is accredited Issuing Agency for Unique Company Identification Codes (CIN) according to ISO/IEC 15459-2. The Issuing Agency Code (IAC) of EDIFICE is 'LE'.

Since 2016, the maintenance of the ISO/IEC 15459 standard is with AIM Global (http://www.aimglobal.org/)

Details of the (EDIFICE) License Plate structure are shown below:



The License Plate shall contain only numeric and upper case alphabetic characters, not including lower case characters or punctuation marks. It shall not contain more than 35 characters. It is recommended that wherever possible a shorter number is used, but any data processing system must be able to process unique identifiers of 35 characters.

For use in bar codes, EDIFICE recommends that the total number of characters (excluding the flag character and data identifier, see below) should not exceed 20.

Other Issuing Agencies License Plate structures do not collide with the EDIFICE License Plate provided that they comply with ISO/IEC 15459.

5. Machine Readable Presentation of License Plates

Considerable benefits can be achieved if the identity of the transport unit is represented in bar code or 2D code on a label and attached to the unit, so that it is machine readable.

Bar Code Flag Character
Data elements encoded in a machine-readable symbol that use Data Identifiers according to ANS MH10.8.2 should use a 'flag character' in the very first position of the encoded character string. This flag character is the character ' . ' (dot, or full stop). See also "EDIFICE Guideline for Web and keyboard compatible encoding with ASC Data Identifiers".
This character shall not be shown in the human readable interpretation of the machine-readable symbol.
If the scanning application detects the flag character, it can be certain that the next character(s) is/are an ASC MH10 Data Identifier.

NOTE: Legacy applications of machine readable License Plates may come without the flag character. This should be considered by the data parsing logic.

5.1 Data Identifiers

ISO/IEC standards require that data encoded in a machine readable symbol such as a bar code must be preceded by identifiers which conform to published standards (see

References). For this purpose, EDIFICE Guidelines use the ASC MH 10 Data Identifiers defined in ANSI MH10.8.2.

A Data Identifier is a specified character, or string of characters, that denotes the intended use of the data that follows. The Data Identifier immediately precedes the data in the bar code. It is an uppercase alphabetic character that may be preceded by 0 to 3 digits. See section 5.3 for examples.

The Data Identifier is positioned immediately after the flag character in the character string encoded in the machine readable symbol, as shown below:

XX LE XYZ 1234567890

Data Identifier used with linear bar or 2-D code as defined in ANSI MH10.8.2

Important:
Data Identifiers are not part of the License Plate number. They do not have to be considered when determining the length of the License Plate.
The Data Identifier must be printed on the transport label and be included in the barcode in order to correctly identify and process the License Plate value after decoding.

Data Identifiers denote the intended use of a specific character string of data in much the same way as UN/EDIFACT defines data elements in electronic messages between trading partners. The Data Identifiers described below are the ones recommended.

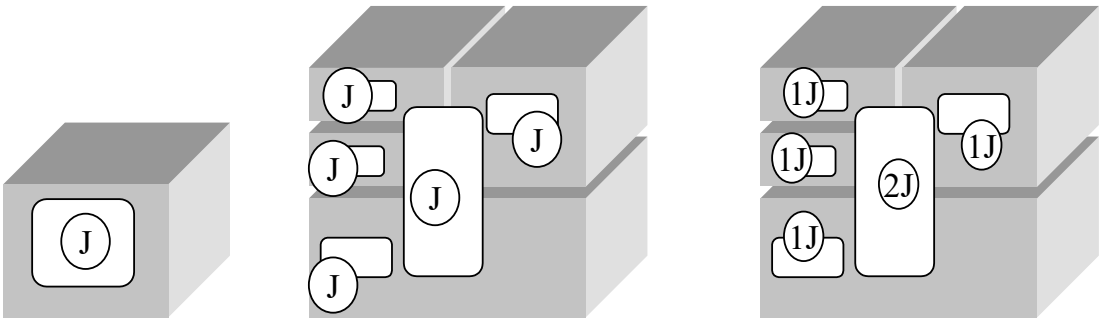
5.2 Data Identifiers for the different levels of a transport unit

License Plates of units in different levels of packaging may or may not be distinguished by use of certain Data Identifiers. See figure 1 for an illustration. The EDIFICE recommended subset of ASC MH 10 Data Identifiers for that purpose is :

J - precedes the unique License Plate (generic use)
1J - precedes the unique License Plate assigned to a transport unit which is the lowest level of packaging, the unbreakable unit
2J - precedes the unique License Plate assigned to a transport unit which contains multiple packages

EDIFICE recommends to use the single 'J' Data Identifier. However company applications should be enabled to process '1J' and '2J' Data Identifiers. EDIFICE recommends that EDI associated data is sent.

Please also refer to the Edifice Shipment Label Guideline for further details
http://www.edifice.org/guidelines/adc



Relationship '1J' and '2J' Data Identifiers (ANS MH10.8.2)

Figure 1

5.3 Examples of Bar Coded License Plates

Figure 2 below shows an example of a bar coded License Plate number.

Please refer to the EDIFICE shipment label guide for rules on the presentation of the bar code titles, the human readable interpretation and the bar code symbologies to be used.

Figure 2 - License Plate Number encoded in a Code 128 symbol

Figure 3 – License Plate Number encoded in a Data Matrix symbol

Below table shows the data string that is passed from the scanner to the computer system after reading the License Plate bar code of the example of figure 2, represented in Code128 and figure 3 encoded in a 2D DataMatrix:

Symbology Identifier	Flag Character	ANS MH10.8.2 Data Identifier	License Plate Number
]C0	.	J	LEXYZ1234567890
]d1	.	J	LEABC1234567890

6. Implementation

It is probable that the widespread implementation of these bar coding standards will be gradual, if only because of the time needed to change labelling procedures and complete the computer system modifications. During the transition period, trading partners are encouraged to plan for the use of the features described in this guideline, and to implement them bilaterally, step by step.

7. How to request a Company Identification Number (CIN)

An essential part of the License Plate under EDIFICE rules as well as the series of worldwide unique numbers, that are defined in ISO/IEC 15418 respectively ANS MH10.8.2, is the Company Identification Number (CIN).

This is a code assigned to an organisation by EDIFICE. It uniquely identifies the originator respectively the issuer of a License Plate or any other unique number which uses the IAC and CIN.

All EDIFICE assigned CINs can be looked up by anyone through the following web site: http://wp1.edifice.org/iso-15459-license-plate-2/list-of-license-plate-codes-assigned-by-edifice/

Please note that according to the new ISO/IEC 15459 release, individual companies are principally no longer accepted as individual issuing agencies.

To guarantee uniqueness, CINs issued by EDIFICE conform to the following rules:

- a CIN consists of 3 characters fixed length
- the CIN's characters are alphanumeric
- renounced CINs will not be re-assigned for a period of 5 years

- Companies can apply for as many CINs as they wish, for example to identify individual subsidiaries or departments. Whenever possible consecutive CINs will be allocated to the same company.
  CIN REQUEST FORM: http://wp1.edifice.org/iso-15459-license-plate-2/request-your-cin-here/

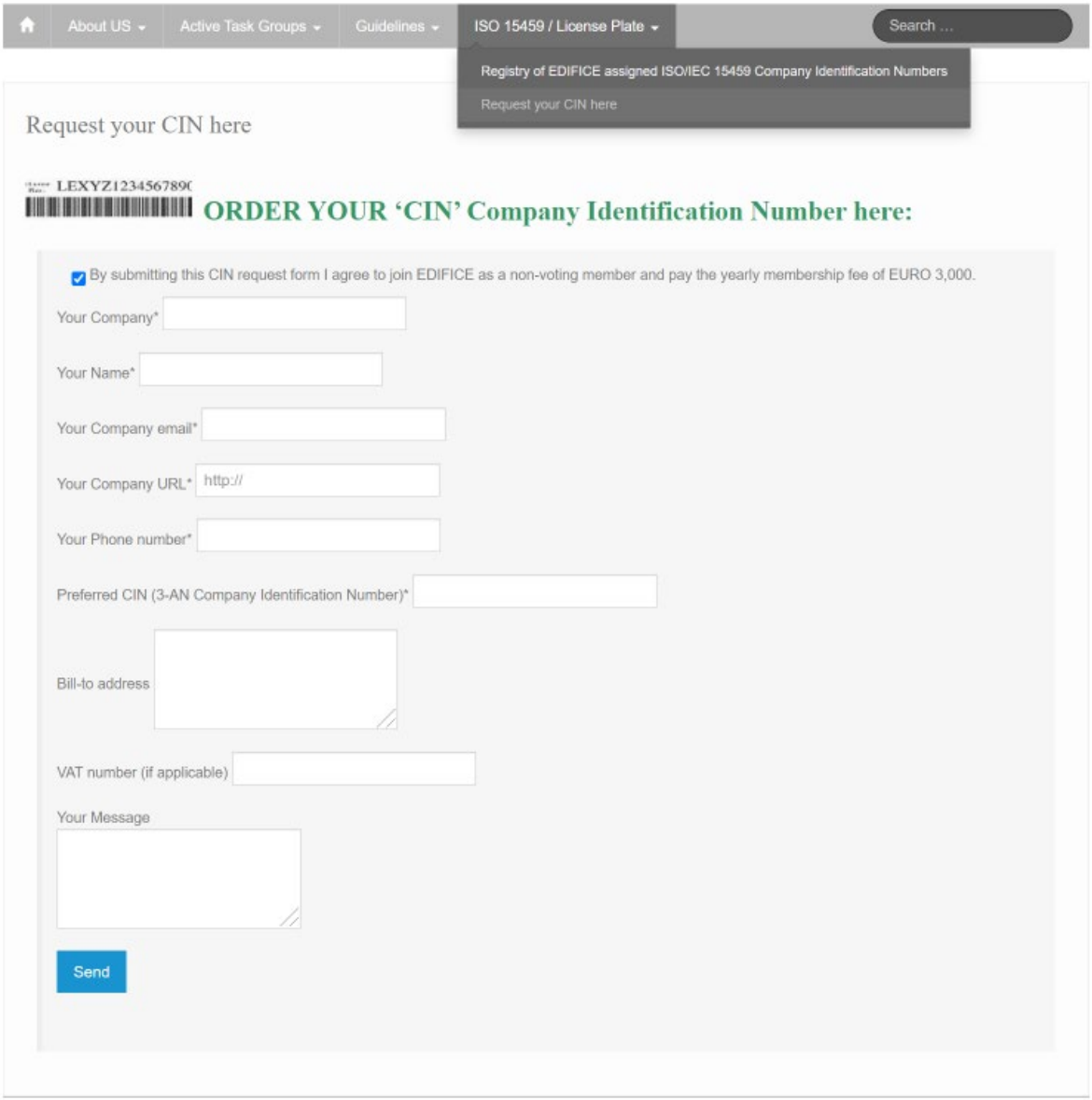
- Although primarily intended for the Electronics Industry and its partners, EDIFICE issued CINs can also be assigned to companies from other industries. EDIFICE however reserves the right to refuse the request for a CIN.

- EDIFICE members receive the first CIN free of charge. Consecutive requests or requests by non EDIFICE members will be charged. Contact the EDIFICE secretariat.

Annex 1 – Electronic EDIFICE CIN Request form

REQUEST YOUR CIN ON-LINE:

http://wp1.edifice.org/iso-15459-license-plate-2/request-your-cin-here/



Annex 2 – Serial Shipping Container Code (SSCC)

Besides the definition of a License Plate for transport units using Data Identifiers according to ANSI MH 10.8.2, ISO/IEC 15459 also defines license plate formats that use GS1 Application Identifiers. These are also shown in ANS MH 10.8.2 and reference the definitions in the 'GS1 General Specifications'.
To be able to use this kind of License Plate, the issuer must register and obtain a company code from GS1 for this purpose. Specific yearly license fees and conditions may apply. For further details see GS1 Global Specifications.

An example of an SSCC is shown below.

Annex 3 - Abbreviations

The following abbreviations are used in this guideline - please also refer to the glossary of terms in Annex 4 for explanations of the most important technical terms.

ANS	American National Standard
ASC	Accredited Standards Committee
CEN	Comité Européen de Normalisation - European Committee for Standardisation
CIN	Company Identification Number
EDI	Electronic Data Interchange
EN	European Norm
IA	Issuing Agency
IAC	Issuing Agency Code
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
MITL	Multi Industry Transport Label
RA	Registration Authority
SSCC	Serial Shipping Container Code
UN/EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport

Annex 4 - Glossary of Terms

BAR CODE	The predetermined pattern of bars and spaces which represents numeric or alphanumeric information in machine readable form. This term is also used to denote any types of 2-dimensional symbols such as Data Matrix or QR codes
COMPANY IDENTIFICATION NUMBER	A number assigned by the Issuing Agency uniquely identifying the requesting company. The number must conform to the format defined by the Issuing Agency - see Annex 1.
DATA IDENTIFIER	A character or string of characters used in a prefix position to uniquely identify the data that follows.
ISSUING AGENCY	Issuing Agencies shall authorize any organisation who wishes to allocate License Plates and shall define rules which ensure that all License Plate shall be unique and shall conform to the License Plate standard.
LICENSE PLATE	A unique number, regardless of its use, specified by the label issuer and applied to a transport unit to provide access to traceability data, regardless of content and destination and valid for its lifetime.
REGISTRATION AUTHORITY	A registration authority shall register Issuing Agencies and shall allocate to each of them a string of characters which are globally unique.
SYMBOLOGY	A standard means of representing data in bar coded form. Each symbology specification sets out its particular rules of composition or symbol architecture.
TRANSPORT UNIT	One or more transport packages or other items, held together by such means as pallet, slip sheet, strapping, interlocking, glue, shrink wrap, or net wrap, making them suitable for transport, handling and storage as a unit.
SERIAL SHIPPING CONTAINER CODE	Unique number applied to a transport unit as a key to provide access to traceability data associated to the transport unit, and which must follow the definitions of the GS1 General Specifications