

STN	Identifikačný odkaz Časť 1: Všeobecné požiadavky	STN EN IEC 61406-1 36 9724
------------	---	--

Identification Link - Part 1: General requirements

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/23

Obsahuje: EN IEC 61406-1:2022, IEC 61406-1:2022

136433



EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 61406-1

December 2022

ICS 35.240.15

English Version

Identification Link - Part 1: General requirements (IEC 61406-1:2022)

Lien d'identification - Partie 1 : Exigences générales
(IEC 61406-1:2022)

Identifizierungslink - Teil 1: Allgemeine Anforderungen
(IEC 61406-1:2022)

This European Standard was approved by CENELEC on 2022-10-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61406-1:2022 (E)

European foreword

The text of document 65E/845/CDV, future edition 1 of IEC 61406-1, prepared by SC 65E "Devices and integration in enterprise systems" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61406-1:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2023-07-20 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2025-10-20 document have to be withdrawn

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61406-1:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60079-14	NOTE	Harmonized as EN 60079-14
IEC 60529	NOTE	Harmonized as EN 60529
IEC 60721 (series)	NOTE	Harmonized as EN 60721 (series)
IEC 62507-1:2010	NOTE	Harmonized as EN 62507-1:2011 (not modified)
ISO 3166-1	NOTE	Harmonized as EN ISO 3166-1

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-351	-	International Electrotechnical Vocabulary - Part 351: Control technology	-	-
ISO/IEC 8859-1	-	Information technology - 8-bit single-byte coded graphic character sets - Part-1: Latin alphabet No. 1	-	-
ISO/IEC 14443-1	-	Cards and security devices for personal identification - Contactless proximity objects - Part 1: Physical characteristics	-	-
ISO/IEC 14443-2	-	Identification cards - Contactless integrated circuit cards - Proximity cards - Part 2: Radio frequency power and signal interface	-	-
ISO/IEC 14443-3	-	Cards and security devices for personal identification - Contactless proximity objects - Part 3: Initialization and anticollision	-	-
ISO/IEC 14443-4	-	Cards and security devices for personal identification - Contactless proximity objects - Part 4: Transmission protocol	-	-
ISO/IEC 15415	-	Information technology - Automatic identification and data capture techniques - Bar code symbol print quality test specification - Two-dimensional symbols	-	-
ISO/IEC 15693-1	-	Cards and security devices for personal identification - Contactless vicinity objects - Part 1: Physical characteristics	-	-
ISO/IEC 15693-2	-	Cards and security devices for personal identification - Contactless vicinity objects - Part 2: Air interface and initialization	-	-
ISO/IEC 15693-3	-	Cards and security devices for personal identification - Contactless vicinity objects - Part 3: Anticollision and transmission protocol	-	-

EN IEC 61406-1:2022 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO/IEC 16022	-	Information technology - Automatic identification and data capture techniques - Data Matrix bar code symbology specification	-	-
ISO/IEC 19762	-	Information technology - Automatic identification and data capture (AIDC) techniques - Harmonized vocabulary	-	-
ISO/IEC 18004	-	Information technology - Automatic identification and data capture techniques - QR Code bar code symbology specification	-	-
ISO/IEC 29158	-	Information technology - Automatic identification and data capture techniques - Direct Part Mark (DPM) Quality Guideline	-	-
ISO/IEC 29160	-	Information technology - Radio frequency identification for item management - RFID Emblem	EN 16656	-
ISO 13849-1	-	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	-
IETF RFC 3986	2005	Uniform Resource Identifier (URI): Generic Syntax	-	-



IEC 61406-1

Edition 1.0 2022-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Identification link –
Part 1 : General requirements**

**Lien d'identification –
Partie 1 : Exigences générales**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2022 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -

webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.



IEC 61406-1

Edition 1.0 2022-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Identification link –
Part 1 : General requirements**

**Lien d'identification –
Partie 1 : Exigences générales**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 35.240.15

ISBN 978-2-8322-5605-3

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	6
INTRODUCTION.....	8
1 Scope.....	10
2 Normative references	10
3 Terms, abbreviated terms and definitions	11
4 Identification Link string.....	12
4.1 ILS-1: Global uniqueness	12
4.1.1 Requirement.....	12
4.1.2 Rationale and supplemental guidance.....	12
4.2 ILS-2: Link to additional information.....	13
4.2.1 Requirement.....	13
4.2.2 Rationale and supplemental guidance.....	13
4.3 ILS-3: No reuse.....	13
4.3.1 Requirement.....	13
4.3.2 Rationale and supplemental guidance.....	14
4.4 ILS-4: No altering.....	14
4.4.1 Requirement.....	14
4.4.2 Rationale and supplemental guidance.....	14
4.5 ILS-5: String length.....	14
4.5.1 Requirement.....	14
4.5.2 Rationale and supplemental guidance.....	14
4.6 ILS-6: URL syntax.....	14
4.6.1 Requirement.....	14
4.6.2 Rationale and supplemental guidance.....	14
4.7 ILS-7: Allowed characters	15
4.7.1 Requirement.....	15
4.7.2 Rationale and supplemental guidance.....	15
4.8 ILS-8: Uppercase and lowercase characters	15
4.8.1 Requirement.....	15
4.8.2 Rationale and supplemental guidance.....	15
4.9 ILS-9: No character-combinations with special functions	16
4.9.1 Requirement.....	16
4.9.2 Rationale and supplemental guidance.....	16
5 Identification Link with 2D symbol.....	16
5.1 2D-1: When marking with 2D symbol.....	16
5.1.1 Requirement.....	16
5.1.2 Rationale and supplemental guidance.....	16
5.2 2D-2: 2D symbol content.....	17
5.2.1 Requirement.....	17
5.2.2 Rationale and supplemental guidance.....	17
5.3 2D-3: Symbology	17
5.3.1 Requirement.....	17
5.3.2 Rationale and supplemental guidance.....	17
5.4 2D-4: Module size.....	17
5.4.1 Requirement.....	17
5.4.2 Rationale and supplemental guidance.....	17

5.5	2D-5: Quiet zone.....	17
5.5.1	Requirement.....	17
5.5.2	Rationale and supplemental guidance.....	18
5.6	2D-6: Error correction.....	18
5.6.1	Requirement.....	18
5.6.2	Rationale and supplemental guidance.....	18
5.7	2D-7: Label print quality.....	18
5.7.1	Requirement.....	18
5.7.2	Rationale and supplemental guidance.....	18
5.8	2D-8: Direct part marking print quality.....	18
5.8.1	Requirement.....	18
5.8.2	Rationale and supplemental guidance.....	19
5.9	2D-9: Durability of the 2D marking.....	19
5.9.1	Requirement.....	19
5.9.2	Rationale and supplemental guidance.....	19
5.10	2D-10: Frame.....	19
5.10.1	Requirement.....	19
5.10.2	Rationale and supplemental guidance.....	19
5.11	2D-11: Positive image.....	20
5.11.1	Requirement.....	20
5.11.2	Rationale and supplemental guidance.....	20
5.12	2D-12: Location of the 2D symbol.....	21
5.12.1	Requirement.....	21
5.12.2	Rationale and supplemental guidance.....	21
6	Near Field Communication for the Identification Link.....	22
6.1	NFC-1: When marking with NFC.....	22
6.1.1	Requirement.....	22
6.1.2	Rationale and supplemental guidance.....	22
6.2	NFC-2: Air interface standards.....	22
6.2.1	Requirement.....	22
6.2.2	Rationale and supplemental guidance.....	22
6.3	NFC-3: Data format and content.....	23
6.3.1	Requirement.....	23
6.3.2	Rationale and supplemental guidance.....	23
6.4	NFC-4: Data consistency.....	23
6.4.1	Requirement.....	23
6.4.2	Rationale and supplemental guidance.....	23
6.5	NFC-5: Protection classes and approvals.....	23
6.5.1	Requirement.....	23
6.5.2	Rationale and supplemental guidance.....	23
6.6	NFC-6: Durability.....	24
6.6.1	Requirement.....	24
6.6.2	Rationale and supplemental guidance.....	24
6.7	NFC-7: Write protection.....	24
6.7.1	Requirement.....	24
6.7.2	Rationale and supplemental guidance.....	24
6.8	NFC-8: Tag location for use in installed state.....	24
6.8.1	Requirement.....	24
6.8.2	Rationale and supplemental guidance.....	24

6.9	NFC-9: Tag position relative to existing marking for identification	25
6.9.1	Requirement.....	25
6.9.2	Rationale and supplemental guidance.....	25
6.10	NFC-10: Tag position relative to neighbouring tags	25
6.10.1	Requirement.....	25
6.10.2	Rationale and supplemental guidance.....	25
6.11	NFC-11: Generic RFID Emblem in frame.....	25
6.11.1	Requirement.....	25
6.11.2	Rationale and supplemental guidance.....	26
6.12	NFC-12: RFID Emblem visibility	26
6.12.1	Requirement.....	26
6.12.2	Rationale and supplemental guidance.....	26
6.13	NFC-13: RFID Emblem position relative to tag	26
6.13.1	Requirement.....	26
6.13.2	Rationale and supplemental guidance.....	27
Annex A	(normative) Overview of characters permitted for the IL string	28
Annex B	(informative) Examples of Identification Link strings.....	31
B.1	Examples: URL syntax according to IETF RFC 3986 with restrictions according to this document	31
B.2	Examples: Parameters with data identifiers according to ISO/IEC 15418.....	33
Annex C	(informative) 2D symbol examples and layout considerations	35
C.1	Choice of symbology.....	35
C.2	Square and rectangular symbols	35
C.3	Selection of corner for triangle when using QR Code	36
C.4	Symbols not centered in the frame	36
C.5	Layout example when space is not sufficient.....	37
Annex D	(informative) 2D symbols on curved surfaces.....	38
Annex E	(informative) Duplicates of the Identification Link	39
Annex F	(informative) Search Engine friendliness	40
Annex G	(informative) Cybersecurity aspects.....	41
Annex H	(informative) IL string as IRDI	42
Bibliography	43
Figure 1	– Example of an IL linking a physical object to information associated with it	13
Figure 2	– Frame around the 2D symbol	20
Figure 3	– Comparison of a 2D symbol as negative and normal positive image.....	20
Figure 4	– Representation of an IL on a dark background	21
Figure 5	– marking of an NFC tag as an IL.....	26
Figure C.1	– IL size may vary depending on the used symbology.....	35
Figure C.2	– IL with square and rectangular Data Matrix.....	36
Figure C.3	– IL with 2D symbols not centered in the frame.....	36
Figure C.4	– IL with 2D symbols quiet zone below 4 modules on 2 sides	37
Table A.1	– List of ASCII Code Characters permitted as this standard to create an IL.....	29
Table B.1	– Structure of example a).....	31
Table B.2	– Structure of example b).....	31

Table B.3 – Structure of example c)	31
Table B.4 – Structure of example d)	32
Table B.5 – Structure of example e)	32
Table B.6 – Structure of example f)	32
Table B.7 – Structure of example g)	33
Table B.8 – Structure of example h)	33
Table B.9 – Structure of example a)	34
Table B.10 – Structure of example b)	34
Table D.1 – Recommended maximum radii when using QR Codes	38

INTERNATIONAL ELECTROTECHNICAL COMMISSION

IDENTIFICATION LINK

Part 1: General requirements

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61406-1 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
65E/845/CDV	65E/905/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available

at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 61406 series, published under the general title *Identification link*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Every year, industry purchases hundreds of millions of items of technical equipment – referred to here as physical objects – for setting up new production facilities and maintaining existing ones. When applying this standard, these physical objects can be simply and unambiguously identified by using a standardized Identification Link (IL), attached for example on the nameplate. This means that all information relating to the physical object can be identified in various IT systems and then called up, edited and stored as necessary across all processes from storage and retrieval to assembly, maintenance, inspection, repair and disassembly. This is an invaluable advantage in all these processes. The manufacturer in turn can link all information such as drawings, operating instructions and spare part lists to this IL in its systems. Users, e.g. owners or operators, can do the same with their information in their systems. In communication between the manufacturer and user, this IL alone then suffices for both parties to find and exchange all the information they need about a physical object throughout its lifecycle. This IL is therefore a prerequisite for easy accessing and maintaining information in the physical object's digital twin.

Previous standards for machine-readable identification of physical objects essentially describe how the traditional identification features (manufacturer, product number, serial number) can be stored in a machine-readable way using standardized syntax (e.g. as per ISO/IEC 15434 [6]) and semantics (e.g. as per ISO/IEC 15418 [7]) so that the strings used for identification according to these standards can be analyzed (parsed) and processed across all manufacturers using suitable software. These regulations allow a great variety of identifiers and technologies to be used, some of which can be highly complex, depending on the chosen solution. This means that in the relationship between the manufacturer and the user, which parts of these regulations and which of the identification methods specified in them are to be used needs to be determined. A universally usable identification by the manufacturer is not possible without consulting the respective user. The identification options listed in these regulations also always require analysis of the character string and the information encoded in it using suitable software, which involves much greater requirements for further processing. Furthermore, for industrial applications such as in the process manufacturing industry, there are special requirements for the long-term legibility and reliability of markings in the harsh conditions of industrial environments.

Production systems, e.g. in the process manufacturing industry, usually consist of several thousand individual physical objects. Each of these physical objects must be uniquely identified during all steps and processes in its lifecycle by both the manufacturer and the user. On the part of the manufacturer, this identification starts during the production of the physical object, and continues during its packaging and shipping. On the part of user, this process continues with the receipt, storage and retrieval of the physical object, carries on through installation, commissioning, operation, inspection, maintenance, repair and disassembly, and finally ends when it is scrapped.

The manufacturer usually provides each physical object with an identifier that allows it to be uniquely identified. This identification of the physical object usually takes place using a nameplate.

The product type of the physical object can generally be clearly identified using the information on the nameplate. If it is a serialized physical object, which means a serial number is present on the nameplate, then it can also be identified as a single, distinguishable instance of a model.

However, in practice this identification of physical objects on a nameplate often cannot be read and used automatically. This is a serious drawback to optimizing and in particular automating identification in all work processes. The reason for this is that the characteristics of a nameplate such as the content, designation, layout and fonts vary greatly according to the physical object and the manufacturer. The same applies to the physical properties of the nameplate, such as the material and the process for producing the graphic content (e.g. printing, etching, engraving, laser marking etc.).

This document does not try to standardize nameplates or physical properties of nameplates, due to the widely differing requirements of manufacturers and users and the vast variety of objects.

Optimizing and automating the identification of a physical object merely requires a unique machine-readable ID attached to the object.

Linking to information on the internet with a URL in a 2D symbol or NFC tag on the physical object is more and more used.

This Identification Link covers in a simple, monomorphic and single solution both major use cases for machine readable product marking, the unique identification and the link to data on the internet.

IDENTIFICATION LINK

1 Scope

This part of IEC 61406 specifies minimum requirements for a globally unique identification of physical objects which also constitutes a link to its related digital information. This identification is designated hereinafter as "Identification Link" (IL), with the encoded data designated as IL string. The IL string has the data-format of a link (URL). The IL is machine-readable and is attached to the physical object in a 2D symbol or NFC tag.

The requirements in this document apply to physical objects

- that are provided by the manufacturer as an individual unit,
- and that have already been given a unique identity by the manufacturer.

This document does not specify any requirements on the content and the layout of nameplates/typeplates (e.g. spatial arrangement, content of the plain texts, approval symbols etc.).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60050-351, *International Electrotechnical Vocabulary (IEV) – Part 351: Control technology*

ISO/IEC 8859-1, *Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1*

ISO/IEC 14443-1, *Cards and security devices for personal identification – Contactless proximity objects – Part 1: Physical characteristics*

ISO/IEC 14443-2, *Cards and security devices for personal identification – Contactless proximity objects – Part 2: Radio frequency power and signal interface*

ISO/IEC 14443-3, *Cards and security devices for personal identification – Contactless proximity objects – Part 3: Initialization and anticollision*

ISO/IEC 14443-4, *Cards and security devices for personal identification – Contactless proximity objects – Part 4: Transmission protocol*

ISO/IEC 15415, *Information technology – Automatic identification and data capture techniques – Bar code symbol print quality test specification – Two-dimensional symbols*

ISO/IEC 15693-1, *Cards and security devices for personal identification – Contactless vicinity objects – Part 1: Physical characteristics*

ISO/IEC 15693-2, *Cards and security devices for personal identification – Contactless vicinity objects – Part 2: Air interface and initialization*

ISO/IEC 15693-3, *Cards and security devices for personal identification – Contactless vicinity objects – Part 3: Anticollision and transmission protocol*

ISO/IEC 16022, *Information technology – Automatic identification and data capture techniques – Data Matrix bar code symbology specification*

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

ISO/IEC 18004, *Information technology – Automatic identification and data capture techniques – QR Code bar code symbology specification*

ISO/IEC 29158, *Information technology – Automatic identification and data capture techniques – Direct Part Mark (DPM) Quality Guideline*

ISO/IEC 29160, *Information technology – Radio frequency identification for item management – RFID Emblem*

ISO 13849-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*

IETF RFC 3986:2005, *Uniform Resource Identifier (URI): Generic Syntax*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN