



SLOVENSKI STANDARD
oSIST prEN IEC 61406:2022
01-april-2022

Identifikacijska povezava - Nedvoumna edinstvena strojno berljiva identifikacija

Identification Link - Unambiguous biunique Machine-Readable Identification

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Ta slovenski standard je istoveten z: **prEN IEC 61406:2022**
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ICS:

35.240.15

Identifikacijske kartice. Čipne kartice. Biometrija
Identification cards. Chip cards. Biometrics

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65E/845/CDV

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OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING https://standards.iteh.ai/catalog/standards/sist/a81004d5-1522-4643-a10a-615340b2ceff/osist-pren-iec-61406-2022

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Identification Link

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

IDENTIFICATION LINK

FOREWORD

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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 <http://www.iec.ch/standardsdev/publications>.

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

- 209 • reconfirmed,
- 210 • withdrawn,
- 211 • replaced by a revised edition, or
- 212 • amended.
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INTRODUCTION

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

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

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

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

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

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

- 266 This standard does not try to standardize nameplates or physical properties of nameplates, due
267 to the widely differing requirements of manufacturers and users and the vast variety of objects.
- 268 Optimizing and automating the identification of a physical object merely requires a unique
269 machine-readable ID attached to the object.
- 270 Linking to information on the internet with a URL in a 2D symbol or NFC tag on the physical
271 object is more and more used.
- 272 This Identification Link covers in a simple, monomorphic and single solution both major use
273 cases for machine readable product marking, the unique identification and the link to data on
274 the internet.

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IDENTIFICATION LINK

278 **1 Scope**

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

284 The requirements in this standard apply to physical objects

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

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

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290 2 Normative references

291 The following standards are referred to in the text in such a way that some or all their content
292 constitutes requirements of this standard. For dated references, only the edition cited applies.
293 For undated references, the latest edition of the referenced standard (including any
294 amendments) applies.

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

296 IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

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

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

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

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

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

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

309 ISO/IEC 15418, *Information technology — Automatic identification and data capture techniques*
310 *— GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance*

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

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

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

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

319 ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC)*
320 *techniques — Harmonized vocabulary, parts 1, 3 and 6*

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

323 ISO/IEC 18092, *Information technology — Telecommunications and information exchange*
324 *between systems — Near Field Communication — Interface and Protocol (NFCIP-1)*

325 ISO/IEC 21481, *Information technology — Telecommunications and information exchange*
326 *between systems — Near Field Communication — Interface and Protocol (NFCIP-2)*