SLOVENSKI STANDARD
SIST EN 18219:2026

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Digitalni potni list izdelka - Enoznačni identifikatorji

Digital product passport - Unique identifiers

Digitaler Produktpass - Eindeutige Kennungen

Passeport numérique des produits - Identifiants uniques

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Digital product passport - Unique identifiers

Passeport numérique des produits - Identifiants uniques

Digitaler Produktpass - Eindeutige Kennungen

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Contents

Page

European foreword

This document (EN 18219:2026) has been prepared by Technical Committee CEN/CLC/JTC 24 “Digital product passport – Framework and system”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2026, and conflicting national standards shall be withdrawn at the latest by November 2026.

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

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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Introduction

0.1 Background

A digital product passport (DPP) is a key enabling mechanism to make product information traceable and accessible across value chains – supporting economic operators, manufacturers, distributors, repairers, recyclers and consumers to make informed decisions and to support a circular economy. The implementation of digital product passports will be carried out progressively. Sector-specific initiatives will determine the precise DPP content and requirements for individual product groups.

To support the implementation of DPPs, 8 standards have been developed so far:

— EN 18219:2026 – Digital product passport – Unique identifiers (this document)

— EN 18220:2026 – Digital product passport – Data carriers

— EN 18216:2026 – Digital product passport – Data exchange protocols

— EN 18222: 2026 – Digital Product Passport – Application Programming Interfaces (APIs) for the product passport lifecycle management and searchability

— EN 18223:2026 – Digital Product Passport – System interoperability

— EN 18221:2026 – Digital product passport – data storage, archiving, and data persistence

— EN 18239:—[1] – Digital Product Passport – access rights management, information system security, and business confidentiality

— EN 18246:—[2] – Digital Product Passport – Data authentication, reliability and integrity

0.2 Overview

This document provides the foundation for the identification of products, economic operators, and facilities to be used for digital product passports.

Clause 4 sets out the principles, requirements, and guidelines that apply across all identification use cases. These are structured around six key areas: global uniqueness, persistence, syntax, granularity, interoperability, and openness.

— *Principles:* Provide the intent and purpose for each area.

— *Requirements:* Define what shall be fulfilled when implementing identifiers, serving as the foundation for assessment and compliance.

— *Guidelines:* Offer optional recommendations that can support or enhance implementation but are not mandatory.

Clause 5 specifies the permitted identification schemes for creating a unique product identifier. Five different schemes are described, each of which may be used to meet the requirements established in Clause 4, provided that both the rules of the chosen scheme and the requirements of Clause 4 are fully satisfied.

Clause 6 specifies the permitted identification schemes for creating a unique economic operator identifier and unique facility identifier. Four schemes are described, each of which may be used

[1] Under preparation. Stage at the time of publication: prEN 18239:2025.
[2] Under preparation. Stage at the time of publication: prEN 18246:2025.

to meet the requirements established in Clause 4, provided that both the rules of the chosen scheme and the requirements of Clause 4 are fully satisfied.

In addition, the document includes informative annexes to support practical understanding and implementation:

— *Annex A*: Selecting identification granularity levels for products;

— *Annex B*: Overview of identification schemes for products;

— *Annex C*: Overview of identification schemes for economic operators and facilities;

— *Annex ZA:* Relationship between this European Standard and the essential requirements of 2024/1781.

1 Scope

This document defines the principles and specifies the requirements and guidelines for unique product identifiers, unique economic operator identifiers, and unique facility identifiers used in digital product passports. It covers the following areas:

a) global uniqueness;

b) persistence;

c) syntax;

d) granularity;

e) interoperability;

f) openness.

This document accommodates unique product identifiers at three granularity levels of specificity: model, batch, or individual item, to support various operational needs.

This document describes identification (ID) schemes that use issuing agencies, self-issuing systems, or a combination of both.

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.

ISO/IEC 646:1991, *Information technology — ISO 7-bit coded character set for information interchange*

ISO/IEC 6523-1:2023, *Information technology — Structure for the identification of organizations and organization parts — Part 1: Identification of organization identification schemes*

ISO/IEC 6523-2:2025, *Information technology — Structure for the identification of organizations and organization parts — Part 2: Registration of organization identification schemes*

ISO/IEC 10646:2020, *Information technology — Universal coded character set (UCS)*

ISO/IEC 15418:2016, *Information technology — Automatic identification and data capture techniques — GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance*

ISO/IEC 15434:2025, *Information technology — Automatic identification and data capture techniques — Syntax for high-capacity ADC media*

ISO/IEC 15459-2:2015, *Information technology — Automatic identification and data capture techniques — Unique identification — Part 2: Registration procedures*

ISO/IEC 15459-3:2014, *Information technology — Automatic identification and data capture techniques — Unique identification — Part 3: Common rules*

ISO/IEC 15459-4:2014, *Information technology — Automatic identification and data capture techniques — Unique identification — Part 4: Individual products and product packages*

ISO/IEC 15459-6:2014, *Information technology — Automatic identification and data capture techniques — Unique identification — Part 6: Groupings*

ISO/IEC 15961-1:2021, *Information technology — Data protocol for radio frequency identification (RFID) for item management — Part 1: Application interface*

ISO/IEC 17360:2023, *Automatic identification and data capture techniques — Supply chain applications of RFID — Product tagging, product packaging, transport units, returnable transport units and returnable packaging items*

ISO/IEC 18975:2024, *Information technology — Automatic identification and data capture techniques — Encoding and resolving identifiers over HTTP*

ISO/IEC 19762:2025, *Information technology — Automatic identification and data capture (AIDC) techniques — Vocabulary*

ISO 26324:2025, *Information and documentation — Digital object identifier system*

EN 18220:2026, *Digital product passport - Data carriers*

EN IEC 61406-1:2022, *Identification Link - Part 1: General requirements*

EN IEC 61406-2:2024, *Identification link - Part 2: Types/models, lots/batches, items and characteristics*

DIN 16598:2022, *Syntax keyboard and Web compatible encoding of data elements in machine readable symbols applied with ASC Data Identifiers*

GS1, Digital Link Standard: Syntax U.R.I. Version 1.6.0:2022, https://www.gs1.org/standards/gs1-digital-link

GS1. EPC Tag Data Standard (TDS), Version 2.3:2025, https://www.gs1.org/standards/epc-tag-data-standard

GS1, General Specifications Standard, Version 25.0:2025, https://ref.gs1.org/standards/genspecs/

IETF. RFC 3986:2005, https://www.rfc-editor.org/rfc/rfc3986

W3C, Decentralized Identifier Resolution (DID Resolution) v0.3:2025, https://www.w3.org/TR/did-resolution/

W3C, Decentralized Identifiers (DIDs) v1.0:2022, https://www.w3.org/TR/did-1.0/

W3C, Verifiable Credentials Data Model v2:2025, https://www.w3.org/TR/vc-data-model/

3 Terms, definitions and abbreviations

For the purposes of this document, the terms and definitions given in ISO/IEC 19762:2025 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms and definitions

3.1.1
batch
subset of a *model* (3.1.11) that is grouped by an economic operator based on common characteristics

3.1.2
consumer
individual member of the general public purchasing or using goods, property or services for private purposes

[SOURCE: EN ISO 14025:2010, 3.16]

3.1.3
digital product passport
DPP
digital record of product characteristics throughout its life cycle that is accessible via electronic means through a data carrier

Note 1 to entry: Example characteristics include environmental sustainability, environmental impact, and recyclability.

3.1.4
domain
specified area of knowledge, application, or activity within which a unique identifier is used

3.1.5
economic operator
manufacturer, authorized representative, importer, distributor, dealer or fulfilment service provider that places the product on the market

3.1.6
identification scheme
ID scheme
system for allocating identifiers to objects

[SOURCE: ISO/IEC 6523-1:2023, 3.6, modified — "registered" removed]

3.1.7
interoperability
ability of two or more systems or applications to exchange information and to mutually use the information that has been exchanged

[SOURCE: ISO/IEC 22123-1:2023, 3.6.1]

3.1.8
issuing agency
organisation entrusted by a Registration Authority (RA) to manage unique identification schemes

3.1.9
item
single unit of a *model* (3.1.11)

3.1.10
life cycle
consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal

[SOURCE: ISO 14040:2006, 3.1]

3.1.11
model
version of a product of which all units share the same technical characteristics and the same model identifier

3.1.12
object
entity to which specified requirements apply

EXAMPLE Product, process, service, system, installation, project, data, design, material, claim, person, body or organization, or any combination thereof.

[SOURCE: ISO/IEC 17000:2020, 4.2, modified — the synonym "object of conformity assessment" has been deleted and Note 1 to entry has been deleted]

3.1.13
persistence
process to keep a unique identifier associated with an identified object throughout its life cycle

3.1.14
placed on the market
first making available of a product

3.1.15
preservation
activity of ensuring that a unique identifier and its denotation remain stable, valid, and retrievable for as long as required

3.1.16
product
any physical good that is *placed on the market* (3.1.14) or *put into service* (3.1.17)

3.1.17
put into service
first use, for its intended purpose, of a product

3.1.18
resolution
process in which an identifier is translated or mapped to another identifier, associated information or metadata about the object it represents

3.1.19
resolver
system or service that performs *resolution* (3.1.18)

3.1.20
self-issuing system
decentralized identification scheme

system or mechanism that an organization uses to generate and assign unique identifiers to its objects without the intervention or oversight of an external authority

3.1.21
state-of-the-art
developed stage of technical capability at a given time as regards products, processes and services, based on the relevant consolidated findings of science, technology and experience

[SOURCE: ISO/IEC Guide 2:2004, 1.4]

3.1.22
unique economic operator identifier
unique string of characters for the identification of an actors involved in a product's value chain

3.1.23
unique facility identifier
unique string of characters for the identification of location or building involved in a product's value chain or used by actors involved in a product's value chain

3.1.24
unique identifier
string of characters that is required to be unique among all identifiers used for all objects for a specific purpose

Note 1 to entry: A unique identifier refers to *unique product identifier* (3.1.25), *unique economic operator identifier* (3.1.22), and *unique facility identifier* (3.1.23).

[SOURCE: ISO 29404:2015, 3.26, modified — Note 1 to entry removed and a new Note 1 to entry added]

3.1.25
unique product identifier
unique string of characters for the identification of a product that also enables a web link to the digital product passport

3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

Abbreviation	Meaning
AIDC	Automatic identification and data capture
AI	Application Identifier (GS1)
ASC	Accredited Standards Committee
DI	Data Identifier (ASC MH10.8.2)
DID	Decentralized Identifier
DOI	Digital Object Identifier
DPP	digital product passport
EPC	Electronic Product Code
EFTA	European Free Trade Association

ETSI	European Telecommunications Standards Institute
GLN	Global Location Number
GLEIF	Global Legal Entity Identifier Foundation
GTIN	Global Trade Item Number
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
IAC	Issuing Agency Code
ICD	International Code Designator
ID	Identifier / Identification
IEC	International Electrotechnical Commission
IL	Identification Link
ISO	International Organization for Standardization
LEI	Legal Entity Identifier
MH10	ANSI-Accredited Committee MH10 on Material Handling
RFID	Radio-frequency identification
SGTIN	Serialized Global Trade Item Number
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
VC	Verifiable Credential
W3C	World Wide Web Consortium

4 General principles, requirements and guidelines

4.1 Global uniqueness

4.1.1 Principle

The principle of global uniqueness ensures that each identifier is distinct, at least exclusive within its domain of use, and non-coexisting, enabling clear object differentiation and thus reducing the risk of misidentification. Products receive at least one globally unique product identifier at one of the three levels of granularity (model, batch, or individual item), and when not yet available, the economic operator or facility is assigned a globally unique economic operator identifier or a globally unique facility identifier. The uniqueness is ensured by applying mechanisms, specifications and rules as described in one of the identification schemes in this document when placing products on the market or putting them into service.

4.1.2 Requirements

A unique identifier shall be globally unique, by ensuring:

1) *No reassignment:* The same unique identifier shall not be used to identify different objects.

2) *Distinct:* A unique identifier shall be globally unique within its domain and unambiguous across all potential contexts in which it may be used.

3) *Non-coexistence:* A unique identifier, once issued, shall not coexist with or be reassigned to another object.

4) *Cross domain identification:* To ensure uniqueness across domains, the ID scheme for the unique identifier specified in this document shall be provided to registries.

4.2 Persistence

4.2.1 Principle

The principle of persistence ensures that the unique identifier remains associated with the same object at least throughout its life cycle. The purpose of a persistent identifier is to accurately represent an object for as long as it exists, regardless of changes in company status, ownership, location, including mergers, acquisitions, splits or spin-offs. The economic operator is responsible for recording, maintaining, and securely storing each identifier, either directly or through a DPP service provider, to ensure persistence.

4.2.2 Requirements

The unique identifier shall provide persistence, with responsibility assigned for:

1) *Consistency*: The unique identifier, once assigned, shall remain unchanged and consistently refer to the same object without ambiguity, throughout the life cycle of the object.

2) *Preservation:* The unique identifier shall be preserved, at least throughout its expected duration, or as long as required by applicable regulations.

3) *Permanence:* The unique identifier shall remain available, including in the event of insolvency, liquidation, or a cessation.

Note: For products placed on the European market, the EU DPP registry ensures a minimum level of preservation and permanence of identifiers.

4.3 Syntax

4.3.1 Principle

The principle of syntax establishes a clear, standardized structure for unique identifiers, ensuring consistent recognition and usage across systems, services, and platforms when needed. This structure supports interoperability and efficient processing, by enabling the mapping between different syntaxes. The unique identifiers maintain a distinguishable format to enhance identification, searchability and retrieval. The length is specified for optimized processing and storage, and the syntax structure enables accessibility and usability on smartphones, other similar consumer devices and common web browsers.

4.3.2 Requirements

The unique identifier shall follow a predefined syntax, by ensuring:

1) *Character set:* The unique identifier shall be a string of characters conforming to ISO/IEC 646:1991. If used as a URI, the string shall follow IETF, RFC 3986:2005 and keep unreserved characters as-is and percent-encode all other Unicode characters per ISO/IEC 10646:2020.

2) *Web use:* The unique product identifier shall either be provided in the form of a URL or derivable into a URL (e.g. resolvable URI to URL) through a specified conversion method according to the ID schemes specified in this document, thereby ensuring compatibility with web-based systems.