



# euos

EU Observatory for  
**ICT Standardisation**

Report of TWG  
Digital Product  
Passport:

# **Landscape of Digital Product Passport Standards**

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ICT Standardisation Observatory and Support Facility in Europe

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## 1 Foreword

Sustainability and digitization of industry and market are two major challenges in these times, driven in a variety of places. The upcoming Ecodesign for Sustainable Products Regulation (ESPR) addresses both. Regarding this, StandICT was asked by the European Commission to prepare a landscape of standards in view of the need of Digital Product Passports (DPP). So a Technical Working Group Digital Product Passport (TWG DPP) was established in September 2022, in which a couple of experts and representatives of standardization organizations compiled existing research and made inquiries. While the group worked conscientiously on input from further stakeholders, it should be noted that this could not represent the broad variety of expert and stakeholder groups in Europe.

The created list covers now more than 200 open standards of international standards development organisations, which are made available or will be made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process. In addition, the landscape of standards also includes initiatives on product circularity data, as harmonization and standardization facilitate the exchange and processing of information.

The EC's call is on creating a clear concept for the DPPs, defining a cross-sectoral product data model. The standards-based DPP will be aligned with the requirements of the ESPR, with an initial focus on the electronics, batteries, and textile sectors. The TWG DPP has specified their understanding of the seven areas of standardisation in more detail in the introduction (architectural overview of the DPP including an explanation).

For the reason that the group and the process could not deliver this, we would like to emphasize that neither the introduction nor the standards list claim to be complete nor should it represent an evaluation. With regard to the introduction, we would like to underline that there are several ways to describe, interpretate, highlight or present the issue. The introduction in this document just should help to read and understand the standards list.

In this sense, the following document and list are thought as a contribution to the current discussion and should help the development of the subject matter by the EU Commission, the existing initiatives, such as the CIRPASS or Battery Passport Project, as well as the later treatment in the European Standardization Organizations CEN, CENELEC and ETSI.

We are sure it will support a fruitful further development of the subject matter and thank the EU Commission and StandICT for the initiative.

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Standardization Council Industry 4.0



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## 2 Acknowledgements

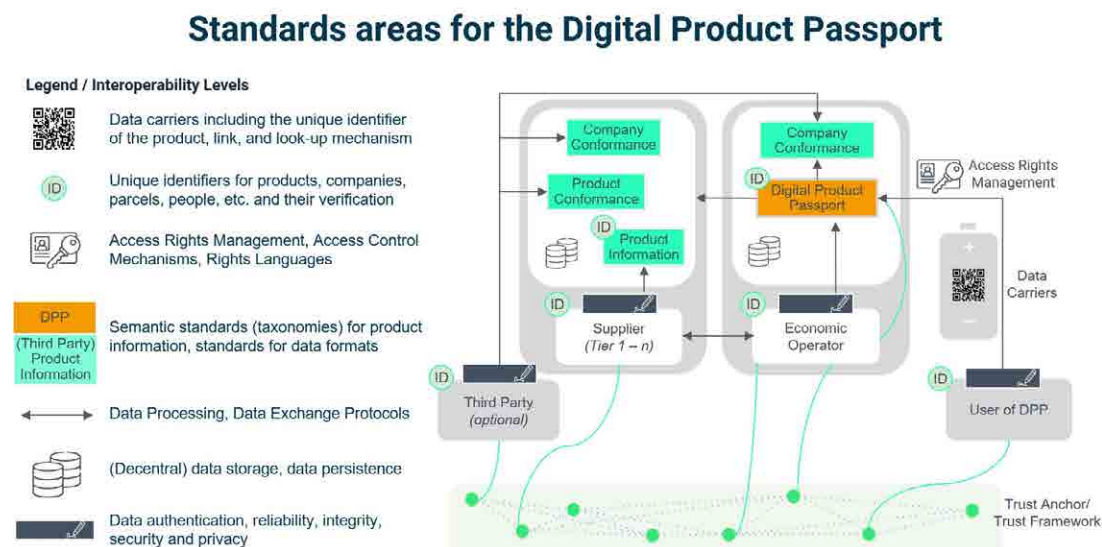
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## 3 Introduction

The successful implementation of a Digital Product Passport (DPP) requires interoperability on various areas. This includes different aspects of the DPP-system as well as the DPP-data. Figure 1 gives an architectural overview and shows the areas of standardization.

Figure 1 Architectural overview and areas of standardization for the DPP (Source: Dr. S.Guth-Orlowski)



To achieve interoperability, standards must be applied on all areas as shown in figure 1. The European Commission has predefined areas of standardization as a basis for the work on this report. The StandICT.eu Technical Working Group DPP has specified their understanding of those areas in more detail in this introduction. All areas of standardization are shown in the DPP architecture overview diagram above for a better overall readability of the document.

The report is structured according to the following areas of standardization need, which are based on a suggestion of the European Commission.

### 1. Data carriers

In this area of standardization, we are listing standards that specify data carriers.

Examples for data carrier areas are:

- 2D-Codes, such as QR-Codes and Data Matrix
- RFID technologies
- Print quality aspects
- Recognition/detection aspects using graphical symbols
- Principles and process for the adoption of new data carriers

### 2. Unique identifiers and their verification

In this area of standardization, we are listing standards that specify the globally unique identifier of companies, products, packaging, raw material, etc. The standards for the identifiers include aspects

such as methods to achieve global uniqueness, syntax and semantics.

Examples for identification areas

- Syntax-related standards
- Semantic-related standards
- Uniqueness related standards
- Standards for hierarchical and decentralized Identifiers

### 3. Link between physical product and digital representation, look-up mechanism

In this area of standardization, we are listing standards that specify how the link between the data carrier and the DPP can be established. The standards in this area include aspects such as look-up mechanisms.

Examples for standards and technologies that describe how the link between the data carrier and the DPP can be established are:

- URL/URI-based
- Combination of decentralized identifiers and universal resolvers.

### 4. Access rights management

In this area of standardization, we understand access rights management in the DPP context as access control measures to regulate the access to product passport information, i. e. who may access what information for which purpose and in which role.

Examples for standards in this area:

- Role based access control
- Rights expression languages
- Dataspace connectors
- Frameworks for access management

### 5. Interoperability (technical, semantic, organisation), including data exchange protocols and formats and data processing (introduction, modification, update)

In this area of standardization, this report lists mainly

- semantic standards to describe the product
- data exchange protocols including rules to exchange data between two or more parties
- processes to introduce and update product information
- data models and formats that are used in data exchange and representation
- calculation methods for DPP data elements, e. g. for CO2 footprint

### 6. Data storage

Here the report lists standards for decentralized data storage and data persistence. Persistence is required to make sure that product data will be available for a long time period (even when the economic actor who sold the product is no longer active or exists).

## 7. Data authentication, reliability, integrity, security and privacy

Here the report lists standards for the basic targets of IT-security and data protection targets.

These areas include:

- Authentication
- IT-certificates and signatures
- Reliability
- Integrity
- Trustworthiness
- Privacy
- Encryption

## Standards Landscape

The following overview of identified standards lists 186 international and European standards from recognized standardization bodies according to EC 1025/2012 directive and further 78 standards from other standards developing organizations. Some national standards are mentioned if there is a plan to introduce them at European or international level.

In addition to the basic information on the standards such as title and publication date, a first assessment of the relevance of the listed standards according to the areas described above was made by the StandICT.eu Technical Working Group DPP. However, this is first assessment and has no claim to be complete nor it is aligned with the respective groups who authored these standards.

# 4 Landscape of Standards

## EN IEC 61406-1

### Identification Link - Part 1: General requirements

[https://www.iec.ch/ords/f?p=103:38:401030832849310:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1452,23,104621](https://www.iec.ch/ords/f?p=103:38:401030832849310:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1452,23,104621)

**ABSTRACT:** IEC 61406-1:2022 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 standard 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.).

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-09-15 publication

## EN IEC 61406-2

### Identification Link - Part 2: Encoding of product types, lots, batches and characteristics

[https://www.iec.ch/dyn/www/f?p=103:38:708862666909766:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1452,23,112292](https://www.iec.ch/dyn/www/f?p=103:38:708862666909766:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1452,23,112292)

**ABSTRACT:** IEC 61406-2 complements IEC 61406-1 with specific rules for encoding characteristics of marked physical objects when relevant. This includes cases where the uniqueness of the Identification Link string is not limited to relating only to an individual item but may alternatively relate to a product type, lot or batch.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## EN IEC 63365 ED1

### Digital Nameplate - Digital Product Marking

<https://webstore.iec.ch/publication/67436>

**ABSTRACT:** IEC 63365:2022 applies to products used in the process measurement, control and automation industry. It establishes a concept and requirements for the digital nameplate and provides alternative electronically readable solutions (e.g. 2D codes, RFID or firmware) to current conventional plain text marking on the nameplate or packaging of products.

The digital nameplate information is contained in the electronically readable medium affixed to the product, the packaging or accompanying documents. The digital nameplate information is available offline without Internet connection. After electronic reading, all digital nameplate information is displayed in a human readable text format. The digital nameplate also includes the Identification Link String according to IEC 61406-1 which provides additional online information for the product.

This document does not specify the contents of the conventional nameplate, which are subject to regional or national regulations and standards.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-08-12

## EN IEC 63278-1 ED1

### Asset Administration Shell for industrial applications - Part 1: Asset Administration Shell structure

[https://www.iec.ch/dyn/www/f?p=103:38:607572709001913:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1250,23,103536](https://www.iec.ch/dyn/www/f?p=103:38:607572709001913:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1250,23,103536)

**ABSTRACT:** This document defines the structure of a standardized digital representation of an asset, called Asset Administration Shell. The Asset Administration Shell gives uniform access to information and services. The purpose of the Asset Administration Shell is to enable two or more software applications to exchange information and to mutually use the information that has been exchanged in a trusted and secure way. This document focusses on Asset Administration Shells representing assets of manufacturing enterprises including products produced by those enterprises and the full hierarchy of industrial equipment. It defines the related structures, information, and services. The Asset Administration Shell applies to: - any type of industrial process (discrete manufacturing, continuous process, batch process, hybrid production); - any industrial sector applying industrial-process measurement, control and automation; - the entire life cycle of assets from idea to end of life treatment; - assets which are physical, digital, or intangible entities.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## EN IEC 63278-2 ED1

### Asset Administration Shell for Industrial Applications – Part 2: Information meta model. 65/915/NP. 2022-07. 2022-07.

[https://www.iec.ch/dyn/www/f?p=103:38:607572709001913:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1250,23,109017](https://www.iec.ch/dyn/www/f?p=103:38:607572709001913:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1250,23,109017)

**ABSTRACT:** This document defines an information meta model for the Asset Administration Shell. This information meta model will enable the access of information describing an asset. This document focusses on Asset Administration Shells representing assets of manufacturing enterprises including produced products. The Asset Administration Shell covers the entire life cycle of assets from conception to disposal. This document focuses on the access of information of an Asset Administration Shell and its Submodels including SubmodelElements among two or more AAS user applications, potentially between different organizations including enterprises. It defines an information meta model, including references and handling of identifiers, in an unambiguous way which is neutral to specific technologies or implementations. The reference mechanisms will allow referencing entries (entities) in dictionaries and ontologies as well as asset related services.

The information meta model allows the association of asset services and asset related services to dedicated SubmodelElements. This document does not describe, how implementation will implement the storage (persistence) or optimized retrieval of information. This document does not describe technical interfaces (services) of the Administration Shell or other systems to exchange information, nor protocols or interaction patterns.

However, it is expected, that the principles of these technical interfaces (services), protocols or interaction patterns will follow the information meta-model of this document.

This document will allow to create data mappings to suitable technologies to be used in life cycle



phases of an asset: XML, JSON, RDF, AutomationML (IEC 62714) and OPC UA (IEC 62541).  
 This document will define the information meta-model entities, which are to be mapped to suitable technologies.  
 This document does not describe individual data mappings.  
 This document does not describe, how Submodel templates guide the creation of Submodels.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## EN IEC 63278-3 ED1

### Asset Administration Shell for Industrial Applications – Part 3: Security provisions for Asset Administration Shells.

[https://www.iec.ch/dyn/www/f?p=103:38:607572709001913:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1250,23,109075](https://www.iec.ch/dyn/www/f?p=103:38:607572709001913:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1250,23,109075)

**ABSTRACT:** This part 3 of the IEC 63278 series aims at the secure and interoperable exchange of information between stakeholders in value chains. This includes how integrity, authenticity, and confidentiality are realized within the AAS information model. It refines AAS security requirements from IEC 63278-1 affecting the structure of the information model as defined in IEC 63278-2 NP and defines the respective security information model complementary to IEC 63278-2.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## EN IEC 61360-1

### Standard data element types with associated classification scheme - Part 1: Definitions - Principles and methods

<https://webstore.iec.ch/publication/28560>

**ABSTRACT:** This part of IEC 61360 specifies principles for the definition of the properties and associated attributes and explains the methods for representing verbally defined concepts with appropriate data constructs available from IEC 61360-2. It also specifies principles for establishing a hierarchy of classification from a collection of classes, each of which represents a technical concept in the electrotechnical domain or a domain related to electrotechnology. The use of this document facilitates the exchange of technical data through a defined structure for the information to be exchanged in a computer-sensible form. Each property to be exchanged has an unambiguously defined meaning and consistent naming, where relevant a defined value list, a prescribed format and defined units of measure for all quantitative values. There is also provision for:

- control of changes to definitions of the properties through version and revision numbers;
- inclusion of notes and remarks to clarify and help in the application of the definitions;
- indication of the sources of definitions and value lists;
- associated figures and formulae.

NOTE IEC TCs and SCs, or other organizations can take this document as a basis for the development of their own dictionaries.

Out of scope of this document are subjects concerning the information technology infrastructure such as:

- ▷ security;
- ▷ database locking mechanisms;
- ▷ access rights management.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2017-07-27

## EN IEC 61360-2

### Standard data element types with associated classification scheme for electric components - Part 2: EXPRESS dictionary schema

<https://webstore.iec.ch/publication/5381>

**ABSTRACT:** This part of IEC 61360 series provides a formal model for data according to the scope as given in IEC 61360-1 and ISO 13584-42, and thus provides a means for the computer-sensible representation and exchange of such data. The intention is to provide a common information model for the work of IEC SC3D and ISO TC184/SC4, thus allowing for the implementation of dictionary systems dealing with data delivered according to either of the standards elaborated by both committees. The scope of this part of IEC 61360 is the common ISO/IEC dictionary schema based on the intersection of the scopes of the two base standards IEC 61360-1 and ISO 13584-42. The presented EXPRESS model represents a common formal model for the two standards and facilitates a harmonization of both. The IEC 61360-2 forms the master document. ISO 13584-42 contains a copy of the IEC 61360-2 EXPRESS model in an informative annex In a number of clauses, where the common EXPRESS model allows more freedom, IEC has defined more restrictions which are found in the methodology part of IEC 61360-1. Two schemas are provided in this part of IEC 61360 defining the two options that may be selected for an implementation. Each of these options is referred to as a conformance class.

- ▷ The ISO13584\_IEC61360\_dictionary\_schema2 provides for modelling and exchanging technical data element types with associated classification scheme used in the data element type definitions. It constitutes conformance class 1 of this part of IEC 61360.
- ▷ The ISO13584\_IEC61360\_language\_resource\_schema provides resources for permitting strings in various languages. It has been extracted from the dictionary schema, since it could be used in other schemata. It is largely based on the support\_resource\_schema from ISO 10303-41:2000, and can be seen as an extension to that. It allows for the usage of one specific language throughout an exchange context (physical file) without the overhead introduced when multiple languages are used. When used together with ISO 10303-21, each schema defines one single exchange format. The exchange format defined by conformance class 1 is fully compatible with the ISO 13584 series.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2012-10-02

## EN IEC 61360-4

### Standard data element types with associated classification scheme for electric components - Part 4: IEC reference collection of standard data element types and component classes

<https://cdd.iec.ch/cdd/iec61360/iec61360.nsf>

**ABSTRACT:** Database Standard

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2005-03-02

## EN IEC 61360-5

### Standard data element types with associated classification scheme for electric components - Part 5: Extensions to the EXPRESS dictionary schema

<https://cdd.iec.ch/cdd/iec61360/iec61360.nsf>

**ABSTRACT:** Database Standard

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2004-04-15

## EN IEC 61360-6

### Standard data element types with associated classification scheme for electric components - Part 6: IEC Common Data Dictionary (IEC CDD) quality guidelines

<https://cdd.iec.ch/cdd/iec61360/iec61360.nsf>

**ABSTRACT:** Database Standard

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2016-10-01

## EN IEC 61360-7 DB

### Data dictionary of cross-domain concepts

<https://cdd.iec.ch/cdd/iec61360/iec61360.nsf>

**ABSTRACT:** Database Standard

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## EN IEC 63372

### Quantification and communication of Carbon FootPRINT and GHG emission reductions/avoided emissions from electric and electronic products and systems – Principles, methodologies, requirements and guidance

[https://www.iec.ch/ords/f?p=103:38:607572709001913:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1314,23,104597](https://www.iec.ch/ords/f?p=103:38:607572709001913:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1314,23,104597)

**ABSTRACT:** This document of IEC 63372 describes principles and methodologies, specifies requirements and provides guidance on quantification and communication of Carbon footprint (sum of GHG emissions and removals), emission reductions and avoided emissions from Electric and Electronic (EE) products and systems. This document is applicable to EE products and systems as a horizontal standard.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## EN IEC 62683-1

### Low-voltage switchgear and controlgear - Product data and properties for information exchange - Part 1: Catalogue data

<https://webstore.iec.ch/publication/26847>

**ABSTRACT:** This document establishes the reference dictionary of the general description of low-voltage switchgear and controlgear classes based on defined properties.

This dictionary is used to facilitate the exchange in electronic format of data describing low-voltage switchgear and controlgear. This document provides clear and unambiguous definitions of a limited number of properties and classes which are mainly used for presentation, selection and identification of products particularly in electronic catalogues. Each property has an unambiguously defined meaning and naming, and, where relevant, a defined value list, a defined format and a defined unit.

The intention is not to cover manufacturer-specific features.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: 2017-10

## EN IEC 62443-4-1

### Security for industrial automation and control systems - Part 4-1: Secure product development lifecycle requirements (IEC 62443-4-1:2018); German version EN IEC 62443-4-1:2018

<https://webstore.iec.ch/publication/33615>

**ABSTRACT:** Specifies process requirements for the secure development of products used in industry automation and control systems. It defines a secure development life-cycle (SDL) including security requirements definition, secure design, secure implementation (including coding guidelines), verification and validation, defect management, patch management and product end-of-life. These requirements can be applied to new or existing processes for developing, maintaining and retiring hardware, software or firmware for new or existing products. These requirements apply to the developer and maintainer of the product, but not to the user of the product.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-10-01

## EN 50693

### Product category rules for life cycle assessment of electrical and electronic products and systems

<https://www.nen.nl/en/nen-en-50693-2019-en-263043>

**ABSTRACT:** This European Standard EN 50693 specifies the process and requirements on how to conduct life cycle assessment in the context of environmental declarations for electronic and electrical products and systems (EEPS). In the context it defines rules for product categories (PCR) and provides guidance on how to develop corresponding product specific rules (PSR) in Technical Committees.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-08-00

## CLC/TR 50489

### Smart tracker chips - Feasibility study on the inclusion of RFID in Electrical and Electronic Equipment for WEEE management

<https://www.beuth.de/de/norm/pd-clc-tr-50489/238585328>

**ABSTRACT:** This Technical Report investigates in the light of the implementation of the WEEE Directive (2002/96/EC) the feasibility of deploying machine readable product identification technologies (e.g. smart tracker chips) to fulfil the marking requirement for the purpose of implementing producer responsibility. The product recognition shall provide information for waste stream management (sorting, reporting and cost allocation). Machine readable product identification technologies can be utilized during every phase of the product life cycle of an EEE. The WEEE management is the last phase. This Technical Report focuses on this phase only.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2006-11-01

## IEC 82474-1

### Material declaration - Part 1: General requirements

[https://www.iec.ch/ords/f?p=103:38:607572709001913:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:1314,23,104667](https://www.iec.ch/ords/f?p=103:38:607572709001913:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:1314,23,104667)

**ABSTRACT:** This document specifies the requirements and guidance for the content, format and exchange relating to material declarations for products and accessories of organizations operating in and supplying to industries within the ISO and IEC scope.

The main intended use of this document is to provide data up and down the supply chain that:

- ▶ allows organizations to assess products against material and substance requirements,
- ▶ allows organizations to use this information in their activities related to environmentally conscious design process and across all product life cycle phases, including material efficiency and product circularity considerations, as well as considerations linked to end-of-life stages such as waste management and use of reusable parts and recycled content.

This document specifies mandatory declaration requirements and also provides optional declaration requirements. This document does not suggest any specific method or process to capture material declaration data in the supply chain. However, it provides a data format used to transfer information within the supply chain. Organizations may determine the most appropriate method to capture material declaration data without compromising data utility and quality. This document is intended to allow reporting based on engineering judgement, supplier material declarations, and/or sampling and testing.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## IEC/TR 62837

### Energy efficiency through automation systems

<https://webstore.iec.ch/publication/7446>

**ABSTRACT:** IEC/TR 62837:2013(E) provides to the technical committees a framework for the development and adaptation of documents in order to improve energy efficiency in manufacturing, process control and industrial facility management.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2013-09-01

## CEN/CLC TR 14060

### Medical device traceability enabled by unique device identification (UDI)

🔗 <https://standards.iteh.ai/catalog/standards/cen/06e00193-c552-49d6-b1cf-c50319c53fa7/cen-clc-tr-14060-2014>

**ABSTRACT:** This Technical Report describes the current situation for medical device traceability in Europe and identifies key elements to establish a comprehensive European traceability system that would provide full traceability to the individual patient level.

This Technical Report applies to medical devices, active implantable medical devices and in vitro diagnostic medical devices, including their accessories. Other devices which are custom-made or intended for clinical investigations and those in vitro diagnostic medical devices which are manufactured in health institutions and for performance evaluation are out of the scope of this document.

📄 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Published

📅 PUBLICATION DATE: 2014-01-01

## CEN/CLC/TS XXXX JT019002

### Decentralised Identity Management Model based on Blockchain and other Distributed Ledgers Technologies - Part 1: Generic Reference Framework

🔗 <https://www.din.de/de/mitwirken/normenausschuesse/nia/projekte/wdc-proj:din21:357279480>

**ABSTRACT:** The proposed standard will specify a reference architecture for decentralised identity management, optionally enabled by distributed ledger technology (DLT) and blockchain systems. The reference architecture aims to natural persons and legal entities and addresses concepts, cross-cutting aspects, architectural considerations, and architecture views, including functional components, roles, activities, and their relationships with blockchain and DLT. Technical specifications of the legal identity itself and specifically those of official identity documents issued by competent authorities are outside the scope of this standard, since they are regulated based on its own legislation and technical standards. Likewise, this standard does not aim to define specifications that are within the scope of REGULATION (EU) No 910/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC, currently in force, but to support the Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulation (EU) No 910/2014 as regards establishing a framework for a European Digital Identity (COM/2021/281 final, eIDAS 2 Proposal), which includes the provision by Member States of EU Digital Identity Wallets as an enabler for personal identification and qualified trust services, including the issuance of qualified electronic attestations of identity attributes. The standard does not aim to impose any device identification procedure before third parties, without prejudice of any wallet authentication capability required by the eIDAS 2 Proposal. The standard will meet at least the following criteria: - it is technologically neutral; - it is compatible with other relevant international standards on digital identity, such as ISO/IEC 24760, - it is applicable to identity attributes of natural persons, legal entities and things, - the application of this standard allows compliance with current privacy and personal data protection regulation, when appropriate, - it is aligned with the relevant provisions of the eIDAS 2 Regulation proposal, - it enables the deployment of practical, usable, flexible and cost-efficient decentralised identity management systems, - it takes into account the specific needs of small and medium-sized enterprises (SMEs); and, - it is suitable for use in business-to-business relationships with individuals and legal entities.

📄 DOCUMENT TYPE: Technical Specification

📅 STATUS: Under development

📅 PUBLICATION DATE:

## ISO/IEC TR 24729-2

### Information technology - Radio frequency identification for item management - Implementation guidelines - Part 2: Recycling and RFID tags

🔗 <https://www.iso.org/standard/41882.html>

**ABSTRACT:** ISO/IEC TR 24729-2:2008 describes the potential for use of radio-frequency identification (RFID) as a significant enabler in the recycling of various types of products; notably home appliances and electronics. It identifies various recycling streams that are challenged by the possibility of RF tags being attached to recycled material, notably glass and steel.

📄 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Published

📅 PUBLICATION DATE: 2008-04-01

## ISO/IEC 29142-3

### Information technology - Print cartridge characterization - Part 3: Environment

🔗 <https://www.iso.org/standard/51951.html>

**ABSTRACT:** ISO/IEC 29142-3:2013 describes the principles and framework for environmental assessment of ink and toner cartridges used in printing devices that have a digital input printing path, including multi-function devices, including:

- a) the goals and definitions related to environmental responsibility;
- b) guidance to determine the relative benefits of reuse, recycling, recovery, and reduction techniques;
- c) identification and prioritization of environmental attributes according to each phase of the cartridge life-cycle;
- d) criteria for establishing environmentally sustainable practices.

ISO/IEC 29142-3:2013 establishes foundational terms, definitions, attributes, and test methods for cartridge environmental standards, environmental labels, and green procurement criteria.

ISO/IEC 29142-3:2013 standardizes treatment of environmental interactions and impacts throughout the cartridge life-cycle, and promotes harmonization of environmental standards, environmental labels, and green procurement criteria pertaining to ink and toner cartridges, thereby reducing impact on the environment and informing and benefiting the cartridge customer. ISO/IEC 29142-3:2013 establishes environmental terms, definitions, attributes and test methods in accordance with the terms, symbols, notations and framework of ISO/IEC 29142-1 and ISO Guide 64.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2013-03-01

## ISO/IEC 30146

### Information technology - Smart city ICT indicators

🔗 <https://www.iso.org/standard/70302.html>

**ABSTRACT:** This document defines a comprehensive set of evaluation indicators specially related to information and communication technologies (ICT) adoption and usage in smart cities. Firstly, it establishes an overall framework for all the indicators. Then, it specifies the name, description,



classification and measurement method for each indicator.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-10-01

## ISO/IEC 6523

### Information technology – Structure for the identification of organizations and organization parts

<https://www.iso.org/standard/25773.html>

**ABSTRACT:** 1.1 This part of ISO/IEC 6523 specifies a structure for globally and unambiguously identifying organizations, and parts thereof, for the purpose of information interchange. This part of ISO/IEC 6523 also makes recommendations regarding cases where prior agreements may be concluded between interchange partners.

1.2 This part of ISO/IEC 6523 does not specify file organization techniques, storage media, languages, etc. to be used in its implementation.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO/IEC 24791-5

### Information technology - Radio frequency identification (RFID) for item management - Software system infrastructure - Part 5: Device interface

<https://www.iso.org/standard/72237.html>

**ABSTRACT:** This document provides an overview of ISO 10303. ISO 10303 provides a representation of product information along with the necessary mechanisms and definitions to enable product data to be exchanged. The exchange is among different computer systems and environments associated with the complete product lifecycle, including product design, manufacture, use, maintenance, and final disposition of the product. This document defines the basic principles of product information representation and exchange used in ISO 10303. It specifies the characteristics of the various series of parts of ISO 10303 and the relationships among them.

The following are within the scope of this document:

- ▷ scope statement for ISO 10303 as a whole;
- ▷ overview of ISO 10303;
- ▷ architectures of ISO 10303;
- ▷ structure of ISO 10303;
- ▷ terms and definitions used throughout ISO 10303;
- ▷ overview of data specification methods used in ISO 10303;

NOTE This includes the EXPRESS data specification language and graphical presentation of product information models.

- ▷ introduction to the series of parts of ISO 10303;
- ▷ integrated resources;
- ▷ application interpreted constructs;
- ▷ application modules;
- ▷ business object models;
- ▷ application protocols;

▷ implementation methods;

▷ usage guides;

▷ conformance testing methodology and framework;

▷ abstract test suites;

▷ scheme for identification of schemas and other information objects defined within parts of ISO 10303.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2012-01-01

## ISO/IEC 24791-2

### Information technology - Radio frequency identification (RFID) for item management - Software system infrastructure - Part 2: Data management

<https://www.iso.org/standard/46138.html>

**ABSTRACT:** ISO/IEC 24791-2:2011 defines the interface(s) that provide operations on radio frequency identification (RFID) tag data including, but not limited to, reading, writing, collection, filtering, grouping, and event subscription and notification within the Software System Infrastructure (SSI). Specifically, the interface(s) defined by ISO/IEC 24791-2:2011 provide the following features: full support for the commands and responses for air protocols supported by ISO/IEC 24791-2:2011 at an abstraction level appropriate for Data Management's position in the SSI architecture defined in ISO/IEC 24791-1; an abstract definition of commands and operations that can be applied to different network bindings and encoding mechanisms; support for the encoding mechanisms defined in ISO/IEC 15962; volume reduction, format or structure modification, data analysis, and data access appropriate for Data Management's position in the SSI architecture defined in ISO/IEC 24791-1; reporting of data to support application or data managing in formats controlled by the client, either inside or outside of SSI. ISO/IEC 24791-2:2011 is composed of the EPCglobal Application Level Events Standard, in its entirety, with extensions to further support operation with ISO/IEC 15962 and the air protocols defined by ISO/IEC 18000.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2011-01-01

## ISO/IEC 24791-3

### Information technology -- Radio frequency identification (RFID) for item management -- Software system infrastructure -- Part 3: Device management

<https://www.iso.org/standard/80578.html>

**ABSTRACT:** This document defines interfaces for device management of RFID systems. Interfaces are defined that provide for discovery, configuration, initialization and monitoring of RFID systems within the software system infrastructure (SSI).

This document only deals with devices that provide RFID related services. It does not distinguish the form factor of such RFID devices.

This document provides two distinct interface sets, one based on the GSI EPCglobal DCI standard and the IETF SNMP RFCs and the other based on the Organization for the Advancement of Structured Information Standards (OASIS) DPWS standard. The definition of the Device Profile for RFID is referred to in this document as the RFID Device Management Profile, or RDMP.

Each interface option set provides interface definitions that provide ISO/IEC 24791-3 Client Endpoints and Services Endpoints with the mechanisms for:

- ▷ the discovery of the RFID devices and services on a local or remote subnet;



- ▷ a firmware upgrade service;
- ▷ a management service that implements configuration related functions;
- ▷ a monitoring service for reporting alerts, diagnostics, and performance information.

The two interface set definitions provided by this document allow for clients and services endpoints to implement and provide the services based on the specific characteristics of the RFID system to be implemented. Subclause 1.2 defines the Conformance requirements for systems that implement components of one or both of the interface sets.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2014-01-01

## ISO/IEC TR 10032

### Information technology - Reference Model of Data Management

🔗 <https://www.iso.org/standard/38607.html>

**ABSTRACT:** ISO/IEC TR 10032:2003 defines the ISO Reference Model of Data Management. It establishes a framework for coordinating the development of existing and future standards for the management of persistent data in information systems.

ISO/IEC TR 10032:2003 defines common terminology and concepts pertinent to all data held within information systems. Such concepts are used to define more specifically the services provided by particular data management components, such as database management systems or data dictionary systems. The definition of such related services identifies interfaces which may be the subject of future standardization. ISO/IEC TR 10032:2003 does not specify services and protocols for data management. ISO/IEC TR 10032:2003 is neither an implementation specification for systems, nor a basis for appraising the conformance of implementations. The scope of ISO/IEC TR 10032:2003 includes processes which are concerned with handling persistent data and their interaction with processes particular to the requirements of a specific information system. This includes common data management services such as those required to define, store, retrieve, update, maintain, backup, restore and communicate applications and dictionary data. The scope of ISO/IEC TR 10032:2003 includes consideration of standards for the management of data located on one or more computer systems, including services for distributed database management. ISO/IEC TR 10032:2003 does not include within its scope common services normally provided by an operating system including those processes which are concerned with specific types of physical storage devices, specific techniques for storing data, and specific details of communications and human computer interfaces.

🔗 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Published

📅 PUBLICATION DATE: 2003-12-01

## ISO/IEC TR 19583-1

### Information technology - Top-level ontologies (TLO) - Part 1: Requirements

🔗 <https://www.iso.org/standard/67365.html>

**ABSTRACT:** This document describes the basic concept of metadata, and its relationship to both data and metamodels.

🔗 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Published

📅 PUBLICATION DATE: 2019-07-01

## ISO/IEC 21838-1

### Information technology - Concepts and usage of metadata - Part 1: Metadata concepts

🔗 <https://www.iso.org/standard/71954.html>

**ABSTRACT:** This document specifies required characteristics of a domain-neutral top-level ontology (TLO) that can be used in tandem with domain ontologies at lower levels to support data exchange, retrieval, discovery, integration and analysis.

If an ontology is to provide the overarching ontology content that will promote interoperability of domain ontologies and thereby support the design and use of purpose-built ontology suites, then it needs to satisfy certain requirements. This document specifies these requirements. It also supports a variety of other goals related to the achievement of semantic interoperability, for example, as concerns legacy ontologies developed using heterogeneous upper-level categories, where a coherently designed TLO can provide a target for coordinated re-engineering

This document specifies the characteristics an ontology needs to possess to support the goals of exchange, retrieval, discovery, integration and analysis of data by computer systems.

The following are within the scope of this document

- ▷ - Specification of the requirements an ontology needs to satisfy if it is to serve as a top-level hub ontology.
- ▷ Specification of the relations between a top-level ontology and domain ontologies.
- ▷ Specification of the role played by the terms in a top-level ontology in the formulation of definitions and axioms in ontologies at lower levels.

The following are outside the scope of this document:

- ▷ Specification of ontology languages, including the languages OWL 2 and CL, used in ontology development with standard model-theoretic semantics.
- ▷ Specification of methods for reasoning with ontologies.
- ▷ Specification of translators between notations of ontologies developed in different ontology languages.
- ▷ Specification of rules governing the use of IRIs as permanent identifiers for ontology terms.
- ▷ Specification of the principles of ontology maintenance and versioning.
- ▷ Specification of how ontologies can be used in the tagging or annotation of data.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2021-08-01

## ISO/IEC 11179-1

### Information technology - Metadata registries (MDR) - Part 1: Framework

🔗 <https://www.iso.org/standard/61932.html>

**ABSTRACT:** ISO/IEC 11179-1:2015 provides the means for understanding and associating the individual parts of ISO/IEC 11179 and is the foundation for a conceptual understanding of metadata and metadata registries.

ISO/IEC 11179-1:2015 is applicable to the formulation of data representations, concepts, meanings and relationships to be shared among people and machines, independent of the organization that produces the data. It is not applicable to the physical representation of data as bits and bytes at the machine level.

In this part of ISO/IEC 11179-1:2015 (and all other parts), metadata refers to descriptions of data. It does not contain a general treatment of metadata.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2015-12-01

## ISO/IEC TR 20943-1

### Information technology - Procedures for achieving metadata registry (MDR) content consistency - Part 1: Data elements

<https://www.iso.org/standard/34343.html>

**ABSTRACT:** An ISO/IEC 11179-based metadata registry (MDR) (hereafter referred to as a “registry”) is a tool for the management of shareable data; a comprehensive, authoritative source of reference information about data. It supports the standardization and harmonization processes by recording and disseminating data standards, which facilitates data sharing among organizations and users. It provides links to documents that refer to data elements and to information systems where data elements are used. When used in conjunction with an information database, the registry enables users to better understand the information obtained.

A registry does not contain data itself. It contains the metadata that is necessary to clearly describe, inventory, analyze, and classify data. It provides an understanding of the meaning, representation, and identification of units of data. The standard identifies the information elements that need to be available for determining the meaning of a data element (DE) to be shared between systems.

The purpose of ISO/IEC TR 20943-1:2003 is to describe a set of procedures for the consistent registration of data elements and their attributes in a registry. ISO/IEC TR 20943-1:2003 is not a data entry manual, but a user's guide for conceptualizing a data element and its associated metadata items for the purpose of consistently establishing good quality data elements. An organization may adapt and/or add to these procedures as necessary.

The scope of ISO/IEC TR 20943-1:2003 is limited to the associated items of a data element: the data element identifier, names and definitions in particular contexts, and examples; data element concept; conceptual domain with its value meanings; and value domain with its permissible values.

There is a choice when registering code sets and other value domains in an ISO/IEC 11179 metadata registry. Some Registration Authorities treat these sets as value domains, and others treat them as data elements. For the purposes of ISO/IEC TR 20943-1:2003, the choice will always be to treat the sets as data elements unless explicitly stated. This choice is made to help illustrate the way to register many different kinds of data elements, including examples for registering standard code sets as data elements.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2003-08-01

## ISO/IEC TR 20943-3

### Information technology - Procedures for achieving metadata registry content consistency - Part 3: Value domains

<https://www.iso.org/standard/35339.html>

**ABSTRACT:** The purpose of this technical report is to describe a set of procedures for the consistent registration of value domains and their attributes in a registry. This technical report is not a data entry manual, but a user's guide for conceptualizing a value domain and its components for the purpose of consistently establishing good quality metadata. An organization may adapt and/or add to these procedures as necessary.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2004-03-01

## ISO/IEC TR 20943-5

### Information technology - Procedures for achieving metadata registry content consistency - Part 5: Metadata mapping procedure

<https://www.iso.org/standard/55026.html>

**ABSTRACT:** The purpose of ISO/IEC TR 20943-5:2013 is to describe a procedure for establishing metadata crosswalks based on the ISO/IEC 11179 series, subsequently improving mapping quality between metadata.

Therefore, ISO/IEC TR 20943-5:2013 describes a metadata mapping procedure (MMP), which can maximize the interoperability among ISO/IEC 11179-based registries through achieving metadata registry content consistency.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2013-11-01

## ISO/IEC TR 20943-6

### Information technology - Procedures for achieving metadata registry content consistency - Part 6: Framework for generating ontologies

<https://www.iso.org/standard/56030.html>

**ABSTRACT:** ISO/IEC TR 20943-6:2013 covers the framework for generating ontologies based on ISO/IEC 11179-3, and provides the procedure and mapping model for generating ontologies.

ISO/IEC TR 20943-6:2013 describes a method to generate ontologies for a context using concepts in ISO/IEC 11179-3. Most ontologies are basically composed of classes (concepts), properties, relations between classes, and instances (objects or individuals). ISO/IEC TR 20943-6:2013 considers the generation of ontology consisting of a subset of ontology components required for defining ontologies at the conceptual level which is called “FGO\_Ontology”. ISO/IEC TR 20943-6:2013 uses the prefix “FGO\_” to avoid confusion from homonym and to clearly identify each term. For example, “Property” is specified in ISO/IEC 11179-3 as well as in ISO/IEC TR 20943-6:2013, but the meaning is slightly different. ISO/IEC TR 20943-6:2013 defines FGO\_Class, FGO\_Property, and FGO\_Relation to distinguish between components of FGO\_Ontology and components of ISO/IEC 11179-3.

ISO/IEC TR 20943-6:2013 specifies the method to generate ontologies using registered concepts in ISO/IEC 11179-3 Concepts metamodel region and Data description metamodel region. ISO/IEC TR 20943-6:2013 specifies a procedure and method for generating ontologies due to an application domain reusing concepts registered in a metadata registry.

ISO/IEC TR 20943-6:2013 does not include a way to describe in a specific ontology description language, such as Resource Description Framework (RDF), RDF Schema (RDFS), Web Ontology Language (OWL), Topic Map, and Knowledge Interchange Format (KIF).

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2013-11-01

## ISO/IEC 20944-1

### Information technology - Metadata Registries Interoperability and Bindings (MDR-IB) - Part 1: Framework, common vocabulary, and common provisions for conformance

<https://www.iso.org/standard/51914.html>

**ABSTRACT:** The ISO/IEC 20944 series of International Standards provides the bindings and their interoperability for metadata registries, such as those specified in the ISO/IEC 11179 series of International Standards. ISO/IEC 20944-1:2013 contains an overview, framework, common vocabulary, and common provisions for conformance for the ISO/IEC 20944 series of International Standards.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO/IEC 20944-2

### Information technology - Metadata Registries Interoperability and Bindings (MDR-IB) - Part 2: Coding bindings

<https://www.iso.org/standard/51915.html>

**ABSTRACT:** The ISO/IEC 20944 series of International Standards provides the bindings and their interoperability for metadata registries, such as those specified in the ISO/IEC 11179 series of International Standards. ISO/IEC 20944-2:2013 contains provisions that are common to coding bindings and the coding bindings themselves. The coding bindings have commonality in their conceptualization of data instances and their internal structures. Common features include:

- ▶ using datatypes to characterize the nature and operations upon data;
- ▶ using ISO/IEC 11404 to define and declare datatypes;
- ▶ using common aggregate structures, such as array and record, to describe sets of data;
- ▶ using common navigation descriptions to reference components within a set of data.

The individual coding bindings each incorporate a mapping of common data semantics to their individual binding requirements. XML and DVP (dotted identifier value pair) bindings are provided.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO/IEC 20944-3

### Information technology - Metadata Registries Interoperability and Bindings (MDR-IB) - Part 3: API bindings

<https://www.iso.org/standard/51916.html>

**ABSTRACT:** The ISO/IEC 20944 series of International Standards provides the bindings and their interoperability for metadata registries, such as those specified in the ISO/IEC 11179 series of International Standards. ISO/IEC 20944-3:2013 contains provisions that are common to application programming interface (API) bindings and the API bindings themselves. The API bindings have commonality in their conceptualization of the services provided. Common features include:

- ▶ using a session paradigm to access data;
- ▶ using a parameterized security framework to support a variety of security techniques;
- ▶ using a hierarchical navigation for data access.

Bindings for C, Java, and ECMAScript programming languages are provided.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO/IEC 20944-4

### Information technology - Metadata Registries Interoperability and Bindings (MDR-IB) - Part 4: Protocol bindings

<https://www.iso.org/standard/41765.html>

**ABSTRACT:** The ISO/IEC 20944 series of International Standards provides the bindings and their interoperability for metadata registries, such as those specified in the ISO/IEC 11179 series of International Standards. ISO/IEC 20944-4:2013 contains provisions that are common to protocol bindings and the protocol bindings themselves. The protocol bindings have commonality in their conceptualization of the services provided. Common features include:

- ▶ common data transfer semantics;
  - ▶ harmonized session services for connection-oriented and connection-less protocols.
- Bindings for HTTP and WebDAV protocols are provided.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO/IEC 20944-5

### Information technology - Metadata Registries Interoperability and Bindings (MDR-IB) - Part 5: Profiles

<https://www.iso.org/standard/41766.html>

**ABSTRACT:** The ISO/IEC 20944 series of International Standards provides the bindings and their interoperability for metadata registries, such as those specified in the ISO/IEC 11179 series of International Standards. ISO/IEC 20944-5:2013 contains provisions that are common to the profiles, and the profiles themselves. A profile of ISO/IEC 11179-3:2003 is included, which maps ISO/IEC 11179 metadata attributes to standardized identifiers for navigation and access of ISO/IEC 11179 metadata.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO/IEC 16022

### Information technology. Automatic identification and data capture techniques. Data Matrix bar code symbology specification

<https://www.iso.org/standard/44230.html>

**ABSTRACT:** ISO/IEC 16022:2006 defines the requirements for the symbology known as Data Matrix. It specifies the Data Matrix symbology characteristics, data character encodation, symbol formats, dimensions and print quality requirements, error correction rules, decoding algorithm, and user-selectable application parameters.

It applies to all Data Matrix symbols produced by any printing or marking technology.

Data Matrix is a two-dimensional matrix symbology which is made up of nominally square modules arranged within a perimeter finder pattern. Though primarily shown and described in ISO/IEC 16022:2006 as a dark symbol on light background, Data Matrix symbols can also be printed to appear as light on dark.

Manufacturers of bar code equipment and users of the technology require publicly available standard symbology specifications to which they can refer when developing equipment and application standards. The publication of standardized symbology specifications is designed to achieve this.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2006-10-01

## ISO/IEC 29161

### Information technology - Data structure - Unique identification for the Internet of Things

<https://www.iso.org/standard/45240.html>

**ABSTRACT:** ISO/IEC 29161:2016 establishes a unique identification scheme for the Internet of Things (IoT), based on existing and evolving data structures. This International Standard specifies the common rules applicable for unique identification that are required to ensure full compatibility across different identities. The unique identification is a universal construct for any physical object, virtual object, or person. It is used in IoT information systems that need to track or otherwise refer to entities. It is intended for use with any IoT media.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO/IEC 27040

### Information technology - Security techniques - Storage security

<https://www.iso.org/standard/44404.html>

**ABSTRACT:** This document provides detailed technical requirements and guidance on how organizations can achieve an appropriate level of risk mitigation by employing a well-proven and consistent approach to the planning, design, documentation, and implementation of data storage security. Storage security applies to the protection of data both while stored in information and communications technology (ICT) systems and while in transit across the communication links associated with storage. Storage security includes the security of devices and media, management activities related to the devices and media, applications and services, and controlling or monitoring user activities during the lifetime of devices and media and after end of use or end of life.

This document provides an overview of storage security concepts and related definitions. It includes requirements and guidance on the threats, design, and control aspects associated with typical storage scenarios and storage technology areas. In addition, it provides references to other International Standards and technical reports that address existing practices and techniques that can be applied to storage security.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE:

## ISO/IEC 27566

### Information security, cybersecurity and privacy protection - Age assurance systems - Framework

<https://www.iso.org/standard/80399.html>

**ABSTRACT:** This document establishes core principles, including privacy, for the purpose of enabling age-related eligibility decisions, by setting out a framework for indicators of confidence about age or an age range of a natural person.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO/IEC 29146

### Information technology - Security techniques - A framework for access management

<https://www.iso.org/standard/45169.html>

**ABSTRACT:** ISO/IEC 29146:2016 defines and establishes a framework for access management (AM) and the secure management of the process to access information and Information and Communications Technologies (ICT) resources, associated with the accountability of a subject within some context. This International Standard provides concepts, terms and definitions applicable to distributed access management techniques in network environments. This International Standard also provides explanations about related architecture, components and management functions.

The subjects involved in access management might be uniquely recognized to access information systems, as defined in ISO/IEC 24760. The nature and qualities of physical access control involved in access management systems are outside the scope of this International Standard.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO/IEC 24760-1

### IT Security and Privacy - A framework for identity management - Part 1: Terminology and concepts

<https://www.iso.org/standard/77582.html>

**ABSTRACT:** This document defines terms for identity management, and specifies core concepts of identity and identity management and their relationships.

It is applicable to any information system that processes identity information.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO/IEC 24760-2

### IT Security and Privacy - A framework for identity management - Part 2: Reference architecture and requirements

<https://www.iso.org/standard/57915.html>

**ABSTRACT:** ISO/IEC 24760-2:2015

provides guidelines for the implementation of systems for the management of identity information, and specifies requirements for the implementation and operation of a framework for identity management.

ISO/IEC 24760-2:2015 is applicable to any information system where information relating to identity is processed or stored.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE:



## ISO/IEC 24760-3

### Information technology - Security techniques - A framework for identity management - Part 3: Practice

<https://www.iso.org/standard/57916.html>

**ABSTRACT:** ISO/IEC 24760-3:2016 provides guidance for the management of identity information and for ensuring that an identity management system conforms to ISO/IEC 24760-1 and ISO/IEC 24760-2.

ISO/IEC 24760-3:2016 is applicable to an identity management system where identifiers or PII relating to entities are acquired, processed, stored, transferred or used for the purposes of identifying or authenticating entities and/or for the purpose of decision making using attributes of entities. Practices for identity management can also be addressed in other standards.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO/IEC 24760-4

### IT Security and Privacy - A framework for identity management - Part 4: Authenticators, Credentials and Authentication

<https://www.iso.org/cms/%20render/live/en/sites/isoorg/contents/data/standard/08/50/85009.html?browse=tc>

**ABSTRACT:** This international standard provides guidance on implementing user authentication and the use of credentials therein, in particular it:

- describes complementary models for implementing authentication with different operational aspects.
- specifies formal descriptions of authentication methods.
- specifies requirements for authenticators as credentials
- managing the lifecycle,
- binding to a principal,
- use in a federated context.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO/IEC 24761

### Information technology - Security techniques - Authentication context for biometrics

<https://www.iso.org/standard/71163.html>

**ABSTRACT:** This document defines the structure and the data elements of Authentication Context for Biometrics (ACBio), which is used for checking the validity of the result of a biometric enrolment and verification process executed at a remote site. This document allows any ACBio instance to accompany any biometric processes related to enrolment and verification. The specification of ACBio is applicable not only to single modal biometric enrolment and verification but also to multimodal fusion. The real-time information of presentation attack detection is not provided in this document. Only the assurance information of presentation attack detection (PAD) mechanism can be contained in the BPU report.

Biometric identification is out of the scope of this document.

This document specifies the cryptographic syntax of an ACBio instance. The cryptographic syntax of an ACBio instance is defined in this document applying a data structure specified in Cryptographic

Message Syntax (CMS) schema whose concrete values can be represented using a compact binary encoding. This document does not define protocols to be used between entities such as BPUs, claimant, and validator. Its concern is entirely with the content and encoding of the ACBio instances for the various processing activities.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO/IEC TS 29003

### Information technology - Security techniques - Identity proofing

<https://www.iso.org/standard/62290.html>

**ABSTRACT:** ISO/IEC TS 29003:2018:

gives guidelines for the identity proofing of a person;

specifies levels of identity proofing, and requirements to achieve these levels.

ISO/IEC TS 29003:2018 is applicable to identity management systems.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE:

## ISO/IEC 29115

### Information technology - Security techniques - Entity authentication assurance framework

<https://www.iso.org/standard/45138.html>

**ABSTRACT:** Provides a framework for managing entity authentication assurance in a given context.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-04-01

## ISO/IEC 19790

### Information technology - Security techniques - Security requirements for cryptographic modules

<https://www.iso.org/standard/52906.html>

**ABSTRACT:** A European standard to declare the security level of cryptographic modules.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2012-08-01



## ISO/IEC TS 30168 ED1

### Internet of Things (IoT) - Generic Trust Anchor Application Programming Interface for Industrial IoT Devices

[https://www.iec.ch/ords/f?p=103:38:713940704818376:::FSP\\_ORG\\_ID,FSP\\_APEX\\_PAGE,FSP\\_PROJECT\\_ID:20486,23,104067](https://www.iec.ch/ords/f?p=103:38:713940704818376:::FSP_ORG_ID,FSP_APEX_PAGE,FSP_PROJECT_ID:20486,23,104067)

**ABSTRACT:** ISO/IEC TS 30168:2021 specifies a generic programming interface for the integration of secure elements within Industrial IoT devices. This includes requirements from industrial usage scenarios and applications. This document also provides guidance for implementation, testing, and conformity validation.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO/IEC JTC 1/SC 31

### ISO/IEC 24458

#### Information technology – Automatic identification and data capture techniques – Bar code printer and bar code reader performance testing specification

<https://www.iso.org/standard/78819.html>

**ABSTRACT:** This document specifies the performance evaluation specifications of thermal transfer type printers (hereinafter referred to as bar code printers), consumables, and bar code readers (regardless of the reading method) used in bar code systems. The rank of performance is also defined by the evaluation items.

This document can be applied to the following evaluation tests by combining ISO/IEC 15416 and ISO/IEC 15415, which define the print qualities of bar code symbols.

NOTE This document is not prevented from being cited in the evaluation of thermal printers using thermal paper and printers using “plain or exclusive paper” (commercial printing, ink jet printers, electrophotographic printers, etc.).

- a) Print performance of bar code printers (including consumables)
- b) Brightness and smoothness of “reception paper or label”, and adhesion of the label
- c) Strength of reception paper or label on which the bar code is printed
- d) Reading performance of bar code readers
- e) Electrical, mechanical and environmental characteristics of bar code printers and bar code readers

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-05-01

### ISO/IEC TR 24244

#### Automatic identification and data capture techniques - Bar code print quality test specification - Evolution of the grading and measurement of linear symbols in ISO/IEC 15416

<https://www.iso.org/standard/78172.html>

**ABSTRACT:** This document explains the changes incorporated in ISO/IEC 15416:2016 compared to ISO/IEC 15416:2000 and highlights the impact of these changes for the users' benefit.

DOCUMENT TYPE: Technical Report

STATUS: Published

PUBLICATION DATE: 2022-05-01

### ISO/IEC 23941

#### Information technology - Automatic identification and data capture techniques - Rectangular Micro QR Code (rMQR) bar code symbology specification

<https://www.iso.org/standard/77404.html>

**ABSTRACT:** This document defines the requirements for the symbology known as rMQR. It specifies the rMQR symbology characteristics, data character encoding methods, symbol formats, dimensional characteristics, error correction rules, reference decoding algorithm, printing quality requirements and user-selectable application parameters.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-05-01

## ISO/IEC 23634

### Information technology - Automatic identification and data capture techniques - JAB Code polychrome bar code symbology specification

<https://www.iso.org/standard/76478.html>

**ABSTRACT:** This document defines the requirements for the symbology known as JAB Code. It specifies the JAB Code symbology characteristics, symbol structure, symbol dimensions, symbol cascading rules, data character encodation, error correction rules, user-selectable application parameters, print quality requirements and a reference decode algorithm.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-04-01

## ISO/IEC 22603-1

### Information technology - Digital representation of product information - Part 1: General requirements

<https://www.iso.org/standard/73561.html>

**ABSTRACT:** This document establishes the general requirements for Electronic Product Labelling which would be applicable to all types of product regardless of industry.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-09-01

## ISO/IEC 22603-2

### Information technology - Digital representation of product information - Part 2: Requirements for electronic devices with integral display

<https://www.iso.org/standard/82070.html>

**ABSTRACT:** The scope of this standard (Part 2) addresses the specific requirements which are applicable to all types of electronic devices with an integral display such as cell phones, computer tablets, desktop and laptop computers, monitors and printers.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-10-01

## ISO/IEC 21471

### Information technology - Automatic identification and data capture techniques - Extended rectangular data matrix (DMRE) bar code symbology specification

<https://www.iso.org/standard/70947.html>

**ABSTRACT:** This document defines the requirements for the symbology known as extended rectangular data matrix (DMRE). It specifies the DMRE code symbology characteristics, data character encodation, symbol formats, dimensions and print quality requirements, error correction rules, decoding algorithm, and user-selectable application parameters.

It applies to all DMRE code symbols produced by any printing or marking technology.

Original data matrix code sizes are not covered by this document but defined in ISO/IEC 16022 using the same matrix placement, decoding and error correction algorithm.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-02-01

## ISO/IEC 20248

### Information technology - Automatic identification and data capture techniques - Digital signature data structure schema

<https://www.iso.org/standard/81314.html>

**ABSTRACT:** This document is an ISO/IEC 9594-8 (public key infrastructure (PKI) digital signatures and certificates) application specification for automated identification services. It specifies a method whereby data stored within a barcode and/or RFID tag are structured, encoded and digitally signed. ISO/IEC 9594-8 is used to provide a standard method for key and data description management and distribution. It is worth noting that the data capacity and/or data transfer capacity of automated identification data carriers are restricted. This restricts the normal use of a digital signature as specified in ISO/IEC 9594-8 within automated identification services.

The purpose of this document is to provide an open and interoperable method, between automated identification services and data carriers, to read data, verify data originality and data integrity in an offline use case...

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-06-01

## ISO/IEC 19762

### Information technology - Automatic identification and data capture (AIDC) techniques - Harmonized vocabulary

<https://www.iso.org/standard/61301.html>

**ABSTRACT:** This International Standard provides general terms and definitions in the area of automatic identification and data capture techniques on which are based further specialized sections in various technical fields, as well as the essential terms to be used by non-specialist users in communication with specialists in automatic identification and data capture techniques.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: 2016-02-01

## ISO/IEC NP 18975

### Encoding and resolving identifiers over HTTP

<https://www.iso.org/standard/85540.html>

**ABSTRACT:** This standard defines an approach for using HTTP URIs as identifiers in AIDC systems and

a basic common API for querying online services for information about identified items. It cites IEC 61406, ISO/IEC standards 15418 and 15459, and the concepts of Linked Data as foundational but does not define a new identifier system nor a new URI scheme.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE: -

## ISO/IEC 18004

### Information technology - Automatic identification and data capture techniques - QR Code bar code symbology specification

<https://www.iso.org/standard/62021.html>

**ABSTRACT:** This document defines the requirements for the symbology known as QR Code. It specifies the QR Code symbology characteristics, data character encoding methods, symbol formats, dimensional characteristics, error correction rules, reference decoding algorithm, production quality requirements, and user-selectable application parameters.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2015-02-01

## ISO/IEC 16480

### Information technology - Automatic identification and data capture techniques - Reading and display of ORM by mobile devices

<https://www.iso.org/standard/56829.html>

**ABSTRACT:** This International Standard specifies a method to assess the symbol quality rendered on electronic displays (i.e. the symbol produces its own light) when the reading device is a two-dimensional bar code imager.

In addition, this international standard specifies a method to assess the quality of symbols that are intended to be read with general-purpose cameras in ambient lighting conditions.

Further, this international standard describes modifications, which are to be considered in conjunction with the symbol quality methodology when applied to a particular symbology specification as defined in ISO/IEC 15415 and ISO/IEC 15416. It defines alternative illumination conditions, display pixel conditions and the reporting of the grading results. This document also describes appropriate ranges of symbol X-dimensions.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2015-08-01

## ISO/IEC 16022

### Information technology - Automatic identification and data capture techniques - Data Matrix bar code symbology specification

<https://www.iso.org/standard/44230.html>

**ABSTRACT:** This International Standard defines the requirements for the symbology known as Data Matrix. It specifies the Data Matrix symbology characteristics, data character encodation, symbol formats, dimensions and print quality requirements, error correction rules, decoding algorithm, and user-selectable application parameters.

It applies to all Data Matrix symbols produced by any printing or marking technology.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2006-09-01

## ISO/IEC 15459-4

### Information technology - Automatic identification and data capture techniques - Unique identification - Part 4: Individual products and product packages

<https://www.iso.org/standard/54782.html>

**ABSTRACT:** This part of ISO/IEC 15459 specifies a unique string of characters for the identification of individual products and product packages. The character string is intended to be represented in a linear bar code symbol or two-dimensional symbol or other AIDC media attached to the entity to meet management needs. To address management needs different classes of identities are recognized in the various parts of ISO/IEC 15459, which allows different requirements to be met by the identities associated with each class.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2014-11-01

## ISO/IEC 15459-6

### Information technology - Automatic identification and data capture techniques - Unique identification - Part 6: Groupings

<https://www.iso.org/standard/54786.html>

**ABSTRACT:** This part of ISO/IEC 15459 specifies a unique string of characters for the identification of groupings of products, product packages, transport units and items. The character string is intended to be represented in a linear bar code symbol and two-dimensional symbol or other AIDC media attached to the entity to meet management needs and/or regulatory needs (e.g. customs clearance). To address these needs different types of identifiers are recognized in the various parts of ISO/IEC 15459, which allows different requirements to be met by the unique identifiers associated within the context of the specific parts of ISO/IEC 15459.

The unique identifiers for grouping or products, product packages, transport units and items enables grouping by e.g. type, characteristics, order, manufacturing, quality, location, movement, etc. to be uniquely identified. It is possible to use with other unique individual identifiers defined in other parts of ISO/IEC 15459. Encoding these unique identifiers in a data carrier enables information about the item processing to be clearly identified.

The identity for groupings is intended for "look-up" purposes, and cannot be directly used as an entity identity in the strictest sense of the definition as used, for example, in ISO/IEC 15459-1, ISO/IEC 15459-4, and ISO/IEC 15459-5.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2014-11-01

## ISO/IEC 15434

### Information technology - Automatic identification and data capture techniques - Syntax for high-capacity ADC media

<https://www.iso.org/standard/72372.html>

**ABSTRACT:** This document specifies a transfer structure, syntax, and coding of messages and data formats when using high-capacity ADC media between trading partners (specifically between suppliers and recipients) and, where applicable, in support of carrier applications, such as bills of lading, and carrier sortation and tracking.

The data encoded according to this document include:

- ▶ data which can be used in the shipping, receiving and inventory of transport units;
- ▶ data which can be contained within supporting documentation, in paper or electronic form, related to unit loads or transport packages;
- ▶ data which can be used in the sortation and tracking of transport units.

This document describes the ISO/IEC 646 characters used for automatic data capture; it is not the controlling specification for data structures (e.g. CII) referenced in this International Standard.

This document does not supersede or replace any applicable safety or other marking or labelling requirements. It is intended to be applied in addition to any other mandated labelling requirements.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2019-02-01

## ISO/IEC 15426-2

### Information technology - Automatic identification and data capture techniques - Bar code verifier conformance specification - Part 2: Two-dimensional symbols

🔗 <https://www.iso.org/standard/57022.html>

**ABSTRACT:** This part of ISO/IEC 15426 defines test methods and minimum accuracy criteria applicable to verifiers using the methodologies of ISO/IEC 15415 for multi-row bar code symbols and two-dimensional matrix symbologies, and specifies reference calibration standards against which these should be tested. This part of ISO/IEC 15426 provides for testing of representative samples of the equipment.

NOTE Part 1 of ISO/IEC 15426 applies to verifiers for linear bar code symbols.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2015-08-01

## ISO/IEC 15424

### Information technology - Automatic identification and data capture techniques - Data Carrier Identifiers (including Symbology Identifiers)

🔗 <https://www.iso.org/standard/46144.html>

**ABSTRACT:** This International Standard applies to automatic identification device communication conventions and standardizes the reporting of data carriers from bar code readers and other automatic identification equipment. It specifies a preamble message generated by the reader and interpretable by the receiving system, which indicates the bar code symbology or other origin of transmitted data, together with details of certain specified optional processing features associated with the data message.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2008-07-01

## ISO/IEC 15418

### Information technology - Automatic identification and data capture techniques - GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance

🔗 <https://www.iso.org/standard/67405.html>

**ABSTRACT:** This International standard:

- ▶ specifies sets of Data Identifiers and Application Identifiers for the purpose of identifying encoded data;
- ▶ identifies the organisations responsible for their maintenance.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2016-03-01

## ISO/IEC 15415

### Information technology - Automatic identification and data capture techniques - Bar code symbol print quality test specification - Two-dimensional symbols

🔗 <https://www.iso.org/standard/54716.html>

**ABSTRACT:** This document

¾ specifies two methodologies for the measurement of specific attributes of two-dimensional bar code symbols, one of these being applicable to multi-row bar code symbologies and the other to two-dimensional matrix symbologies;

¾ defines methods for evaluating and grading these measurements and deriving an overall assessment of symbol quality;

¾ gives information on possible causes of deviation from optimum grades to assist users in taking appropriate corrective action.

This document applies to those two-dimensional symbologies for which a reference decode algorithm has been defined, but its methodologies can be applied partially or wholly to other similar symbologies.

Note While this document may be applied to direct part marks, it is possible that better correlation between measurement results and scanning performance will be obtained with ISO/IEC 29158 in combination with this document.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2011-12-01

### ISO/IEC 20924

#### Information technology - Internet of Things (IoT) - Vocabulary

<https://www.iso.org/standard/82771.html>

**ABSTRACT:** This International Standard provides a definition of Internet of Things along with a set of terms and definitions. This International Standard is a terminology foundation for the Internet of Things.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-03-01

### ISO/IEC 21823-1

#### Internet of things (IoT) - Interoperability for IoT systems - Part 1: Framework

<https://www.iso.org/standard/71885.html>

**ABSTRACT:** This part of standards presents an overview of interoperable IoT systems and framework for interoperability to ensure information exchanges in such that the information is understood and can be efficiently processed to support peer-to-peer interoperability of IoT systems and seamless communication among IoT system entities.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-02-01

### ISO/IEC 21823-2

#### Internet of things (IoT) - Interoperability for IoT systems - Part 2: Transport interoperability

<https://www.iso.org/standard/80986.html>

**ABSTRACT:** This document presents a conceptual model for network connection interoperability and requirements for interoperable IoT systems to enable information exchange, peer-to-peer connectivity and seamless communication both between different IoT systems and also between entities within an IoT system.

Interoperability in communication can be achieved at various levels of abstraction, from custom integration to plug-and-play interfaces. This document describes:

- ▷ Network connection framework, interfaces and requirements between IoT systems;
- ▷ Network connection framework, interfaces and requirements within an IoT system

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-04-01

### ISO/IEC 21823-3

#### Internet of things (IoT) - Interoperability for IoT systems - Part 3: Semantic interoperability

<https://www.iso.org/standard/83752.html>

**ABSTRACT:** This document provides the basic concepts for IoT systems semantic interoperability, as described in the facet model of ISO/IEC 21823 -1, including:

- ▷ requirements of the core ontologies for semantic interoperability;
- ▷ best practices and guidance on how to use ontologies and to develop domain-specific applications, including the need to allow for extensibility and connection to external ontologies;
- ▷ cross-domain specification and formalization of ontologies to provide harmonized utilization of existing ontologies;
- ▷ relevant IoT ontologies along with comparative study of the characteristics and approaches in terms of modularity, extensibility, reusability, scalability, interoperability with upper ontologies, and so on, and;
- ▷ use cases and service scenarios that exhibit necessities and requirements of semantic interoperability.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-09-01

### ISO/IEC 21823-4

#### Internet of things (IoT) - Interoperability for IoT systems - Part 4: Syntactic interoperability

<https://www.iso.org/standard/84773.html>

**ABSTRACT:** This part of standard specifies the IoT interoperability from a syntactic point of view. In ISO/IEC 21823-1: Framework [2], five facets are described for IoT interoperability, i.e. transport, semantic, syntactic, behavioural and policy. In this document, the following specifications for IoT interoperability from a syntactic viewpoint are included;

- ▷ A principle of how to achieve syntactic interoperability among IoT systems which include IoT devices
- ▷ Requirements on information related to IoT devices for syntactic interoperability
- ▷ A framework for processes on developing information exchange rules related to IoT devices from the syntactic viewpoint

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-03-01

### ISO/IEC 30141

#### Internet of Things (IoT) - Reference Architecture

<https://www.iso.org/standard/82272.html>

**ABSTRACT:** This document specifies a general Internet of Things (IoT) Reference Architecture.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-08-01



## ISO/IEC 30147

### Information technology - Internet of things - Methodology for trustworthiness of IoT system/service

<https://www.iso.org/standard/53267.html>

**ABSTRACT:** This document provides system life cycle processes to implement and maintain trustworthiness in an IoT system or service by applying and supplementing ISO/IEC/IEEE 15288:2015. The system life cycle processes are applicable to IoT systems and services common to a wide range of application areas.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-05-01

## ISO/IEC 30161

### Internet of Things (IoT) - Requirements of IoT data exchange platform for various IoT services

<https://www.iso.org/standard/53281.html>

**ABSTRACT:** This document specifies requirements for an Internet of Things (IoT) data exchange platform for various services in the technology areas of: the middleware components of communication networks allowing the co-existence of IoT services with legacy services; the end-points performance across the communication networks among the IoT and legacy services; the IoT specific functions and functionalities allowing the efficient deployment of IoT services; the IoT service communication networks' framework and infrastructure; and the IoT service implementation guideline for the IoT data exchange platform.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-11-01

## ISO/IEC 30162

### Internet of Things (IoT) - Compatibility requirements and model for devices within industrial IoT systems

<https://www.iso.org/standard/53282.html>

**ABSTRACT:** This document specifies network models for IIoT connectivity and general compatibility requirements for devices and networks within IIoT systems in terms of:

- ▶ data transmission protocols interaction;
- ▶ distributed data interoperability & management;
- ▶ connectivity framework;
- ▶ connectivity transport;
- ▶ connectivity network;
- ▶ best practices and guidance to use in IIoT area

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-02-01

## ISO/IEC 30169

### Internet of Things (IoT) - IoT applications for electronic label system (ELS)

<https://www.iso.org/standard/53289.html>

**ABSTRACT:** This document specifies the system framework, IoT application model and overall technical requirements for ELS.

This document applies to the design and development of the IoT applications for ELS.

The IoT applications for ELS specified in this document are mainly applicable to the retail industry, and can also provide reference for the design and development of the IoT applications for ELS in other industries

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-05-01

## ISO/IEC AWI 30149

### Internet of things (IoT) - Trustworthiness framework

<https://www.iso.org/standard/53269.html>

**ABSTRACT:** This document provides principles for IoT trustworthiness based on ISO/IEC 30141 – IoT Reference Architecture.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: 1999-10-01

## ISO/IEC AWI 30173

### Digital twin - Concepts and terminology

<https://www.iso.org/standard/81442.html>

**ABSTRACT:** This document establishes terminology for digital twin (DTw) and describes concepts in the field of digital twin, including the terms and definitions of digital twin, concepts of digital twin (e.g., digital twin ecosystem, life cycle process for digital twin, and classifications of digital twin), Functional view of digital twin and digital twin stakeholders.

This document can be used in the development of other standards and in support of communications among diverse, interested parties/stakeholders.

This document is applicable to all types of organizations (e.g., commercial enterprises, government agencies, not-for-profit organizations).

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: -

## ■ ISO/IEC and OASIS

### ISO/IEC 19845:2015

#### Universal Business Language (UBL) v2.1

<https://www.iso.org/standard/66370.html>

**ABSTRACT:** E-procurement and e-invoicing data standard w core and schema; identified by EU Commission (C 2014/771/EU).

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: 2015-12-01

## ■ ISO/IEC, ITU and IETF

### ISO/IEC 9834-8:2004 (and RFC 4122)

#### Procedures for... generation and registration of Universally Unique Identifiers (UUIDs)

<https://datatracker.ietf.org/doc/html/rfc4122>

**ABSTRACT:** Protocol for generating and provisioning globally-unique 128-bit digital identifiers to represent various assets.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2005-07

## ■ CEN

### EN 15941

#### Sustainability of construction works - Data quality for environmental assessment of products and construction works - Selection and use of data; German and English version prEN 15941:2021

<https://standards.iteh.ai/catalog/standards/cen/95f4bf84-5e4b-4136-b6f9-6fc4ca959886/pren-15941>

**ABSTRACT:** This document supports the data quality assessment and selection of data for product-level Environmental Product Declarations (EPD) according to the core product category rules of EN 15804 and for the environmental performance assessment of buildings according to prEN 15978-1 in a consistent way. It can also be used to assess and select data for the environmental assessment of civil engineering works. It defines data quality requirements with respect to temporal, technological and geographic representativeness for the data used to calculate the LCA based indicator results of the EPD and for construction works when applying EPD, life cycle inventory data or other LCA based information and generates a hierarchy to support the selection of the most appropriate data with regard to data quality. It also addresses the reporting of data quality at product and building level.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-07-01

### EN 15942

#### Sustainability of construction works - Environmental product declarations - Communication format business-to-business; German and English version prEN 15942:2020

<https://www.technormen.de/norm/dinen-15942-1.4.2022.html>

**ABSTRACT:** This European Standard is applicable to all construction products and services related to buildings. It specifies and describes the communication format for the information defined in EN 15804:2019 for business-to-business communication to ensure a common understanding through consistent communication of information. NOTE This European Standard does not deal with business to consumer communication and is not intended for that purpose. Business to consumer communication format is planned to be the subject of a future document.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-11-01

### CEN EN 16931-1, -3-2, -3-3

#### Electronic invoicing – Part 1 Semantic model of core elements, Part 2-3 UBL profile, Part 3-3 CII profile

<https://www.evs.ee/en/evs-en-16931-1-2017-a1-2019-consolidated>

**ABSTRACT:** Semantic data model for electronic invoices, with profiles for the two major EU invoice specifications (see UBL and CII below).

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-07-29

## e-Submission, e-Ordering

### Planned EN for mandatory e-Submission and elective e-Ordering transactions

<https://www.cencenelec.eu/areas-of-work/cen-cenelec-topics/public-procurement/cen-tc-440-electronic-public-procurement/>

**ABSTRACT:** Planned EN for procurement transactions, generally compatible with TC/434 data elements, to implement (EU) 2019/1780 (2019)

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE: N/A

## CEN/TR 15941

### Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data;

<https://standards.iteh.ai/catalog/standards/cen/a9ce09ad-3547-4076-8fd8-12927f64d91e/cen-tr-15941-2010>

**ABSTRACT:** This technical report describes the sources and methodology to be used when preparing generic data for environmental product declarations. The methodology complies with the requirements of ISO 14040. The report supports the development of the product category rules for environmental declarations of building products, processes and services addressing the use of generic data.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2010-11-01

## EN ISO

### EN ISO 22057

#### Sustainability in buildings and civil engineering works - Data templates for the use of environmental product declarations (EPDs) for construction products in building information modelling (BIM) (ISO 22057:2022)

<https://standards.iteh.ai/catalog/standards/cen/5a781ff2-7d5b-451e-8df7-2c0c4b284d79/pren-iso-22057>

**ABSTRACT:** This document provides the principles and requirements to enable environmental and technical data provided in EPDs for construction products and services, construction elements and integrated technical systems to be used in BIM to assist in the assessment of the environmental performance of a construction works over its life cycle. This document gives requirements on structuring EPD information using a data template according to ISO 23386 and ISO 23387, to make EPD data machine-interpretable and to enable their integration into information-driven design, construction, use and end-of-life stages. This document is applicable to structuring generic LCA data for use within a BIM environment, as these data are required in the absence of suitable EPD data to enable assessment of the environmental performance at the construction works level. The assessment of environmental performance at the construction works level is not covered by this document.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-09-00

### EN ISO 22057

#### Sustainability in buildings and civil engineering works - Data templates for the use of environmental product declarations (EPDs) for construction products in building information modelling (BIM) (ISO 22057:2022)

<https://standards.iteh.ai/catalog/standards/cen/5a781ff2-7d5b-451e-8df7-2c0c4b284d79/pren-iso-22057>

**ABSTRACT:** This document provides the principles and requirements to enable environmental and technical data provided in EPDs for construction products and services, construction elements and integrated technical systems to be used in BIM to assist in the assessment of the environmental performance of a construction works over its life cycle. This document gives requirements on structuring EPD information using a data template according to ISO 23386 and ISO 23387, to make EPD data machine-interpretable and to enable their integration into information-driven design, construction, use and end-of-life stages. This document is applicable to structuring generic LCA data for use within a BIM environment, as these data are required in the absence of suitable EPD data to enable assessment of the environmental performance at the construction works level. The assessment of environmental performance at the construction works level is not covered by this document.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-09-00

## EN ISO 29481-1

### Building information models - Information delivery manual - Part 1: Methodology and format (ISO 29481-1:2016)

<https://standards.iteh.ai/catalog/standards/cen/e14be41d-d697-451a-a063-c11c4a4ec4b8/en-iso-29481-1-2017>

**ABSTRACT:** ISO 29481-1:2016 specifies

- a methodology that links the business processes undertaken during the construction of built facilities with the specification of information that is required by these processes, and - a way to map and describe the information processes across the life cycle of construction works. ISO 29481-1:2016 is intended to facilitate interoperability between software applications used during all stages of the life cycle of construction works, including briefing, design, documentation, construction, operation and maintenance, and demolition. It promotes digital collaboration between actors in the construction process and provides a basis for accurate, reliable, repeatable and high-quality information exchange.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-01-00

## EN ISO 19650-1

### Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling- Part 1: Concepts and principles (ISO 19650-1:2018); Ger

<https://www.iso.org/standard/68078.html>

**ABSTRACT:** This document outlines the concepts and principles for information management at a stage of maturity described as "building information modelling (BIM) according to the ISO 19650 series". This document provides recommendations for a framework to manage information including exchanging, recording, versioning and organizing for all actors. This document is applicable to the whole life cycle of any built asset, including strategic planning, initial design, engineering, development, documentation and construction, day-to-day operation, maintenance, refurbishment, repair and end-of-life. This document can be adapted to assets or projects of any scale and complexity, so as not to hamper the flexibility and versatility that characterize the large range of potential procurement strategies and so as to address the cost of implementing this document.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-08-01

## EN ISO 14044

### Environmental management - Life cycle assessment - Requirements and guidelines (ISO 14044:2006 + Amd 1:2017 + Amd 2:2020); German version EN ISO 14044:2006 + A1:2018 + A2:2020

<https://www.iso.org/standard/38498.html>

**ABSTRACT:** This document specifies requirements and provides guidelines for life cycle assessment. It covers life cycle assessment studies and life cycle inventory studies.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-02-01

## EN ISO 14021

### Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)

<https://www.iso.org/standard/66652.html>

**ABSTRACT:** This International Standard specifies requirements for self-declared environmental claims, including statements, symbols and graphics, regarding products. It further describes selected terms commonly used in environmental claims and gives qualifications for their use. This International Standard also describes a general evaluation and verification methodology for self-declared environmental claims and specific evaluation and verification methods for the selected claims in this International Standard. This International Standard does not preclude, override, or in any way change, legally required environmental information, claims or labelling, or any other applicable legal requirements.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-10-00



## ISO 13315-8

### Environmental management for concrete and concrete structures - Part 8: Environmental labels and declarations

<https://www.iso.org/standard/66541.html>

**ABSTRACT:** This document provides a general principle, procedures and requirements for environmental labels and declarations for concrete and concrete structures. It is used for the environmental labels and declarations for concrete constituents, reinforcement, concrete, concrete products and concrete structures.

NOTE This document contains more specific requirements for environmental labels and declarations for concrete and concrete structures, based on ISO 14020, ISO 14024, ISO 14025 and ISO 21930.

This document includes the following phases of concrete and concrete structures:

- ▷ production phase of concrete constituents, concrete and concrete products;
- ▷ execution phase of concrete structures;
- ▷ use phase of concrete structures; and
- ▷ end-of-life phase.

This document applies to the partial life cycle (certain phases of the life cycle) or the entire life cycle of concrete and concrete structures. It applies to new concrete and concrete structures as well as to existing concrete and concrete structures.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-01-01

## ISO/TS 14048

### Environmental management - Life cycle assessment - Data documentation format

<https://www.iso.org/standard/29872.html>

**ABSTRACT:** This document specifies those terms, concepts and principles considered necessary to address stakeholder concerns and to carry out enterprise creation programmes as well as any incremental change projects required by the enterprise throughout the whole life of the enterprise. This document forms the basis by which enterprise architecture and modelling standards can be developed or aligned.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2002-04-01

## ISO 15704

### Enterprise modelling and architecture - Requirements for enterprise-referencing architectures and methodologies

<https://www.iso.org/standard/71890.html>

**ABSTRACT:** This document specifies a reference base of concepts and principles for enterprise architectures that enable enterprise development, enterprise integration, enterprise interoperability,

human understanding and computer processing. This document further specifies requirements for models and languages created for expressing such enterprise architectures.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-12-01

## ISO/TS 15926-4

### Industrial automation systems and integration - Integration of life-cycle data for process plants including oil and gas production facilities - Part 4: Initial reference data

<https://www.iso.org/standard/73830.html>

**ABSTRACT:** This document specifies the initial set of core reference data items which can be used to record information about process plants, including oil and gas production facilities.

The following are within the scope of this document:

- ▷ core classes for process plants, including oil and gas production facilities;

NOTE1 Reference data items can be core classes, de facto classes, commodity classes and manufactured product classes. Reference data items can also be standard classes or proprietary classes. The terms for the different types of class are defined in 3.1. A discussion about the different types of classes is contained in Annex D.

NOTE 2 A core class defined by this document can be used by ISO 15926-2, ISO/TS 15926-7, ISO/TS 15926-8, ISO/TS 15926-11, ISO/TS 15926-12, ISO 15926-13 and ISO 10303-221.

- ▷ the unique name for each reference data item;
- ▷ the definition of each reference data item;
- ▷ subclass and classification relationships between reference data items;
- ▷ the entity within ISO 15926-2 that can be used to record each reference data item.

NOTE 3 Each reference data item that is a class is directly or indirectly a subclass of an entity in ISO 15926-2.

The following are outside the scope of this document:

- ▷ data requirements for additional reference data items;
- ▷ the procedures to be followed for registration and maintenance of additional reference data items.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2019-10-01

## ISO 15926-10

### Industrial automation systems and integration - Integration of life cycle data for process plants including oil and gas production facilities - Part 10: Conformance testing

<https://www.iso.org/standard/68200.html>

**ABSTRACT:** This document defines the principles and methods for conformance testing of software implementations of ISO 15926.

It provides guidance for developing test cases and testing procedures that cover the requirements specified in the ISO 15926 series and in different industry usage contexts, e.g. data exchange, use of reference data libraries and interface services.

This document provides guidance in addition to the conformance in the parts.

NOTE 1 Guidance on conformance ISO 15926 testing of complex scenarios which represent integrated interoperability is outside the scope of this document.

NOTE 2 Guidance on the development of software that supports the way of file exchange in the simple scenario which represents unified interoperability is outside the scope of this document.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-12-01

## ISO/TS 15926-12

### Industrial automation systems and integration - Integration of life-cycle data for process plants including oil and gas production facilities - Part 12: Life-cycle integration ontology represented in Web Ontology Language (OWL)

<https://www.iso.org/standard/70695.html>

**ABSTRACT:** ISO/TS 15926-12:2018 specifies an ontology for the integration of industrial data throughout its life-cycle. The ontology is represented in Web Ontology Language (OWL).

The following are within the scope of ISO/TS 15926-12:2018:

- fundamental subclasses of an individual that exists in an actual or possible world, including physical object, activity and event;
- relationships between physical objects, activities and events, including the creation and destruction of physical objects;
- whole-part relationships between physical objects, including temporal part relationships that implement a 4-dimensional (4D) approach to change over time;
- points and periods in time;
- points and regions in space;
- the identification of points in time by text strings in the format defined by ISO 8601.

The following are outside the scope of ISO/TS 15926-12:2018:

- definitions of physical quantities and measurement scales;
- knowledge organization and document metadata specifications;
- approval and status;
- geometry and topology, including shape.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2018-07-01

## ISO 15926-13

### Industrial automation systems and integration - Integration of life-cycle data for process plants including oil and gas production facilities - Part 13: Integrated asset planning life-cycle

<https://www.iso.org/standard/70694.html>

**ABSTRACT:** ISO 15926-13:2018 specifies an ontology for asset planning for process plants, including oil and gas production facilities. In addition, it specifies an XML schema, derived from the ontology, for exchange of data used for asset planning.

The following are within the scope of ISO 15926-13:2018:

- portfolio, programme and project plans and schedules;
- operational modification and ongoing maintenance plans and schedules;
- calendars for plan execution;
- constraints on the temporal relationships between items within plans and schedules, including succession link, lag, free and total float;
- activity breakdown structures;
- locations of activities;

- resources required, including material, equipment and human resources, and their costs;
- interfaces to systems that process work orders and purchase orders;
- responsible organizations and people;
- progress tracking and resource usage;
- reference to standard classes of facility, activity and resource.

The following are outside the scope of ISO 15926-13:2018:

- standard classes of facility, activity and resource;
- production planning;
- plan simulation and optimization;
- hazard identification and risk analysis;
- manning and training of personnel;
- budgeting and cost allocation.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-08-01

## ISO 16759

### Graphic technology - Quantification and communication for calculating the carbon footprint of print media products

<https://www.iso.org/standard/57615.html>

**ABSTRACT:** ISO 16759:2013 specifies the requirements for quantifying the carbon footprint of those processes, materials and technologies required to produce print media products using any form of printing technology and that are within the user's knowledge and control. It is based on a Life Cycle Assessment (LCA) approach, using defined system boundaries and a specified functional unit as the basis for complete or partial carbon footprinting studies. This data can be referenced throughout supply chains for individual print media products.

ISO 16759:2013 defines standards of completeness to be followed when communicating the results of a carbon footprint study for print media products to business and consumers.

ISO 16759:2013 provides a framework for carbon calculators that organisations can follow, and that can be used as the structure for market or sector-specific carbon footprinting tools. Studies and tools constructed within this framework methodology provide carbon footprint quantifications of print media products that can be validated and verified.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-07-01

## ISO 17365

### Supply chain applications of RFID - Transport units

<https://www.iso.org/standard/55563.html>

**ABSTRACT:** ISO 17365:2013 defines the basic features of RFID for use in the supply chain when applied to transport units. In particular it

- a) provides specifications for the identification of the transport unit,
- b) makes recommendations about additional information on the RF tag,
- c) specifies the semantics and data syntax to be used,
- d) specifies the data protocol to be used to interface with business applications and the RFID system,
- e) specifies the minimum performance requirements,

- f) specifies the air interface standards between the RF interrogator and RF tag, and
- g) specifies the reuse and recyclability of the RF tag.

🔗 DOCUMENT TYPE: Standard

📖 STATUS: Published

📅 PUBLICATION DATE: 2013-03-01

## ISO 17366

### Supply chain applications of RFID - Product packaging

🔗 <https://www.iso.org/standard/55565.html>

**ABSTRACT:** ISO 17366:2013 defines the basic features of RFID for use in the supply chain when applied to product packaging. In particular it

- a) provides specifications for the identification of the product packaging,
- b) makes recommendations about additional information on the RF tag,
- c) specifies the semantics and data syntax to be used,
- d) specifies the data protocol to be used to interface with business applications and the RFID system,
- e) specifies the minimum performance requirements,
- f) specifies the air interface standards between the RF interrogator and RF tag, and
- g) specifies the reuse and recyclability of the RF tag.

🔗 DOCUMENT TYPE: Standard

📖 STATUS: Published

📅 PUBLICATION DATE: 2013-03-01

## ISO/IEC 17367

### Supply chain applications of RFID - Product tagging

🔗 <https://www.iso.org/standard/83586.html>

**ABSTRACT:** This document defines the basic features of RFID for use in the supply chain when applied to Product tagging, Product packaging, Transport units and Returnable transport items (RTIs) and Returnable packaging items (RPIs). This document:

- ▶ provides specifications for the identification of the items,
- ▶ makes recommendations about additional information on the RF tag,
- ▶ specifies the semantics and data syntax to be used,
- ▶ specifies the data protocol to be used to interface with business applications and the RFID system,
- ▶ specifies the minimum performance requirements,
- ▶ specifies the air interface standards between the RF interrogator and RF tag, and
- ▶ specifies the reuse and recyclability of the RF tag.

🔗 DOCUMENT TYPE: Standard

📖 STATUS: Published and under revision

📅 PUBLICATION DATE: 2021-03-01

## ISO/IEC 17592

### Information technology - 120 mm (4,7 Gbytes per side) and 80 mm (1,46 Gbytes per side) DVD rewritable disk (DVD-RAM)

🔗 <https://www.iso.org/standard/38411.html>

**ABSTRACT:** ISO/IEC 17592:2004 specifies the mechanical, physical and optical characteristics of an optical disk, identified as DVD Rewritable Disk (DVD-RAM), to enable interchange of such disks. It specifies the quality of the recorded signals, the format of the data and the recording method, thereby allowing for information interchange by means of such disks. The data can be written, read and overwritten many times using the phase change method. Two Types are specified that differ only by their diameter of 120 mm and 80 mm, and the resulting difference of capacity.

🔗 DOCUMENT TYPE: Standard

📖 STATUS: Published

📅 PUBLICATION DATE: 2004-07-01

## ISO 20140-1

### Automation systems and integration - Evaluating energy efficiency and other factors of manufacturing systems that influence the environment - Part 1: Overview and general principles

🔗 <https://www.iso.org/standard/69358.html>

**ABSTRACT:** This document provides the overview and general principles of a method for evaluating environmental performance, including energy efficiency and other factors, of a manufacturing system that influence the environment. This document is applicable to manufacturing systems for discrete, batch, and continuous manufacturing. This document is applicable to an entire manufacturing system and to a part of the manufacturing system.

Life cycle assessment of products manufactured by the manufacturing system is outside the scope of ISO 20140.

This document is applicable to manufacturing systems for discrete, batch, and continuous manufacturing. This document is applicable to an entire manufacturing system and to a part of the manufacturing system.

Life cycle assessment of products manufactured by the manufacturing system is outside the scope of ISO 20140.

🔗 DOCUMENT TYPE: Standard

📖 STATUS: Published

📅 PUBLICATION DATE: 2019-09-01

## ISO 20140-2

### Automation systems and integration - Evaluating energy efficiency and other factors of manufacturing systems that influence the environment - Part 2: Environmental performance evaluation process

🔗 <https://www.iso.org/standard/64673.html>

**ABSTRACT:** This document specifies a process for environmental performance evaluation of activities executed by a manufacturing system based on the general principles described in ISO 20140-1. The process uses environmental performance evaluation data based on ISO 20140-5. This document does not specify any evaluation process specific to particular implementations of manufacturing systems.

This document does not specify any evaluation process specific to particular implementations of manufacturing systems.

🔗 DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-08-01

## ISO 20140-3

### Automation systems and integration - Evaluating energy efficiency and other factors of manufacturing systems that influence the environment - Part 3: Environmental performance evaluation data aggregation process

<https://www.iso.org/standard/64674.html>

**ABSTRACT:** This document specifies an aggregation process that provides aggregated environmental performance evaluation data in accordance with a given environmental performance evaluation specification conforming to ISO 20140-2, by using a set of environmental performance evaluation data conforming to ISO 20140-5.

This document does not specify any aggregation processes specific to particular implementations of manufacturing systems.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-05-01

## ISO 20140-5

### Automation systems and integration - Evaluating energy efficiency and other factors of manufacturing systems that influence the environment - Part 5: Environmental performance evaluation data

<https://www.iso.org/standard/63171.html>

**ABSTRACT:** ISO 20140-5:2017 specifies the types of environmental performance evaluation (EPE) data, including their attributes, which can be used for evaluating the environmental performance of manufacturing systems based on the general principles described in ISO 20140-1. It also provides recommendations for mapping the EPE data on to information models specified by IEC 62264. ISO 20140-5:2017 applies to discrete, batch and continuous manufacturing. ISO 20140-5:2017 is applicable to entire manufacturing facilities and to parts of a manufacturing facility. ISO 20140-5:2017 specifically excludes from its scope the syntax of the data and information models, the protocols to exchange data models, the functions that can be enabled by data models, and the activities in Level 1 and Level 2. The scope of ISO 20140-5:2017 also includes indicating the differences among various data and information models and the differences among various representations of environmental performance by actual data. ISO 20140-5:2017 refers to the semantics of the structured data and information models used by communication protocols. The semantics explain the meaning of the attributes and of the context information.

The following are outside the scope of ISO 20140-5:2017:

- ▶ product life cycle assessment;
- ▶ EPE data that are specific to a particular industry sector, manufacturer or machinery;
- ▶ acquisition of data;
- ▶ the activity of data communication.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: 2017-04-01

## ISO 21930

### Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services

<https://www.iso.org/standard/61694.html>

**ABSTRACT:** ISO 21930:2017 provides the principles, specifications and requirements to develop an environmental product declaration (EPD) for construction products and services, construction elements and integrated technical systems used in any type of construction works.

ISO 21930:2017 complements ISO 14025 by providing specific requirements for the EPD of construction products and services.

ISO 21930:2017 establishes a core set of requirements to be considered as core product category rules (PCR) to develop an EPD for any construction product or service.

In addition, this document, as the core PCR document for construction products, construction elements and integrated technical systems:

- a) includes the rules for calculating the life cycle inventory analysis (LCI), the predetermined environmental indicators and the life cycle impact assessment (LCIA) results that are reported in the EPD;
- b) describes which life cycle stages are considered in a particular type of EPD, which processes are to be included in the life cycle stages and how the stages are subdivided into information modules;
- c) defines rules for the development of scenarios;
- d) includes the rules for reporting relevant environmental and technical information that are not covered by LCA;
- e) defines the core elements to be included in an EPD;
- f) establishes the structure of a project report;
- g) defines the conditions under which construction products can be compared, based on the information provided by an EPD;
- h) provides requirements and guidelines on PCR for sub-categories of construction products;
- i) includes mandatory and unalterable requirements for any PCR based on this document.

EPDs for construction products, as described in this document, are primarily intended for use in B2B communication, but their use in B2C communication under certain conditions is not precluded. For EPDs intended for B2C communication, refer to ISO 14025 (see 5.4).

The assessment of social and economic impacts at the product level is not covered by this document.

NOTE 1 In this document, unless otherwise designated, the term construction product is used for any good(s) or service(s) related to construction works.

NOTE 2 Construction assemblies, construction elements and integrated technical systems, incorporated within construction works, can be considered construction products.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2017-07-01

## ISO 21931-1

### Sustainability in buildings and civil engineering works - Framework for methods of assessment of the environmental, social and economic performance of construction works as a basis for sustainability assessment - Part 1: Buildings

<https://www.iso.org/standard/71183.html>

**ABSTRACT:** This document provides a general framework for improving the quality and comparability of methods for assessing the environmental, social and economic performance of construction works, and their combination as a basis for the sustainability assessment of buildings.

It identifies and describes issues to be taken into account in the development and use of methods of assessment of the environmental, social and economic characteristics, aspects and impacts of



new or existing buildings. These relate to the building's design, production of construction products, materials and components, construction, operation, maintenance and refurbishment and end-of-life processes.

This document is applicable to the assessment of the building (or part thereof) and the external works within its site (curtilage).

**NOTE** The assessment of environmental, social and economic aspects related to the location of the building, such as those resulting from transportation of the users, can extend beyond the area of the building site.

This document does not set benchmarks or levels of performance relative to environmental, social and economic impacts and aspects.

DOCUMENT TYPE: Standard

STATUS: Published and under revision

PUBLICATION DATE: 2010-06-01

## ISO 21931-2

### Sustainability in buildings and civil engineering works - Framework for methods of assessment of the environmental, social and economic performance of construction works as a basis for sustainability assessment - Part 2: Civil engineering works

<https://www.iso.org/standard/61696.html>

**ABSTRACT:** This document provides a general framework for improving the quality and comparability of methods for assessing the contribution of civil engineering works and their related external works to sustainable development based on a life cycle approach.

This document aims to bridge the gap between regional and national methods for the assessment of the sustainability performance of civil engineering works by providing a common framework for their expression.

This document identifies and describes issues to be taken into account in the development and use of methods for the assessment of the sustainability performance for all types of civil engineering works, both new and existing, and it is relevant for the assessment of the environmental, social and economic performance of both new and existing civil engineering works over their entire life cycle.

The object of assessment in this document is the civil engineering works itself and its area of influence.

**NOTE 1** For example, the assessment includes any local civil engineering works beyond the immediate area of the civil engineering works; the transportation of the users of the civil engineering works; and the use and exploitation of the civil engineering works itself.

Assessments can be undertaken either for the whole civil engineering works, for a part of the civil engineering works, or for a combination of several civil engineering works.

This document excludes environmental, social and economic risk assessment, but the results of a risk assessment can be taken into consideration.

This document is intended to be used in conjunction with, and following the principles set out in, ISO 15392 and the ISO 14000 family of International Standards.

The evaluation of technical and functional performance of the civil engineering works is outside the scope of this document, but the technical and functional characteristics are considered within this framework by reference to the functional equivalent. The functional equivalent takes into account the technical and functional requirements and forms the basis for comparisons of the results of the assessment.

Assessment methods that consider only one or two of the three dimensions of sustainability are outside the scope of this document.

This document does not set benchmarks or levels of performance relative to environmental, social and economic aspects and impacts.

**NOTE 2** Valuation methods, levels, classes or benchmarks can be prescribed in the requirements for environmental, social and economic performance in the client's brief, construction regulations, national standards, national codes of practice, civil engineering works assessment and certification schemes, etc.

The rules for methods of assessment to consider in the assessment of environmental, social and economic aspects of operation practices are included within this framework, and the consequences of decisions or actions that influence the environmental, social and economic performance of the object of assessment are identified so that they can be taken into account.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-05-01

## ISO/TS 23301

### STEP geometry visualization services

<https://www.iso.org/standard/75189.html>

**ABSTRACT:** This document defines a set of metadata to support the audit trail of the transformation of a geometry definition, while it is distributed and shared in supply-chains, to ensure the traceability of geometric model data. It also defines a set of web services based on the utilisation of these metadata.

The following are within the scope of this document:

- ▶ metadata definitions for geometry transformation audit trail;
- ▶ syntax for storing these metadata in geometry data sets in various formats;
- ▶ conformance level for implementers and business processes;
- ▶ definitions of web services to query the geometric model data set and its associated metadata.

The following are outside the scope of this document:

- ▶ service specifications for CAD operations;
- ▶ specifications of a cybersecurity infrastructure to enable web services;
- ▶ the technical implementation of a STEP geometry services client or server;
- ▶ any geometric model definition;
- ▶ any product and manufacturing information (PMI) definition;
- ▶ archiving.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2021-12-01

## ISO/DIS 37110

### Sustainable cities and communities - Management guidelines of open data for smart cities and communities - Part 1: Overview and general principles

<https://www.iso.org/standard/62069.html>

**ABSTRACT:** This document provides an overview and general principles, including requirements and recommendations, for open data management for sustainable cities and communities. It is intended to be used as a base document for open data management framework standards.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-04-01

## ISO 37180

### Smart community infrastructures - Guidance on smart transportation with QR code identification and authentication in transportation and its related or additional services

<https://www.iso.org/standard/69266.html>

**ABSTRACT:** This document provides guidance on transportation and its related or additional services using quick response (QR) codes for identification and authentication in data transfer, in order to make their services both convenient and advantageous for customers and service agents while protecting them from cheating and illegal action in data transfer.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-08-01

## ISO 14067

### Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification and communication

<https://www.iso.org/standard/71206.html>

**ABSTRACT:** This document specifies principles, requirements and guidelines for the quantification and reporting of the carbon footprint of a product (CFP), in a manner consistent with International Standards on life cycle assessment (LCA) (ISO 14040 and ISO 14044).

Requirements and guidelines for the quantification of a partial CFP are also specified.

This document is applicable to CFP studies, the results of which provide the basis for different applications (see Clause 4).

This document addresses only a single impact category: climate change. Carbon offsetting and communication of CFP or partial CFP information are outside the scope of this document.

This document does not assess any social or economic aspects or impacts, or any other environmental aspects and related impacts potentially arising from the life cycle of a product.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2014-01-22

## ISO/WD 59040

### Circular Economy - Product Circularity Data Sheet

<https://www.iso.org/standard/82339.html>

**ABSTRACT:** The document provides a general methodology for improving the accuracy and completeness of circular economy related information based on the usage of a Product Circularity Data Sheet when acquiring or supplying products.

This general methodology contains then a set of requirements that need to be established by an organization aiming to use the concerned data sheet when acquiring or supplying products, which also includes the trusted reporting and exchanging of circular economy related information.

The document also provides guidance for the definition and sharing of a Product Circularity Data Sheet, considering the type, content and format of information to be provided.

This guidance and these requirements are intended to be applicable to all organizations, regardless of type, size and nature.

These requirements implement a qualitative approach for business-to-business data exchange to be inclusive with small and medium businesses/enterprises and to protect confidential information.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO/AWI 59014

### Secondary materials - Principles, sustainability and traceability requirements

<https://www.iso.org/standard/80694.html>

**ABSTRACT:** This Standard under development is a follow up on IWA 19:2017 provides a global framework for the sustainable management of secondary metals. The framework includes sustainability and traceability requirements for metals recovered.

IWA 19:2017 guides economic operators of secondary metals value chains, including those engaged in the informal sector, in the efficient and credible implementation of improved recycling practices, in particular in emerging and developing economies.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO 22274

### Systems to manage terminology, knowledge and content - Concept-related aspects for developing and internationalizing classification systems

<https://www.iso.org/standard/36173.html>

**ABSTRACT:** ISO 22274:2013 establishes basic principles and requirements for ensuring that classification systems are suitable for worldwide application, considering such aspects as cultural and linguistic diversity as well as market requirements. By applying principles relating to terminology work, ISO 22274:2013 provides guidelines for creating, handling, and using classification systems for international environments. ISO 22274:2013 addresses the need in many domains for classification systems that are concept based to ensure that they are suitable for worldwide use and can be adapted to specific user communities. It provides information about the design, development, and use of classification systems that are fully enabled for diverse linguistic, cultural, and market-based environments. ISO 22274:2013 primarily specifies the factors that need to be considered when creating and populating a classification system for use in diverse linguistic environments. These factors include the specification of principles for incorporating internationalization aspects into classification systems, and maintaining and using those aspects for the structuring of activities, products, services, agents, and other entities of a company or organization. The following are within the scope of ISO 22274:2013: a) guidelines on information content to support internationalization of classification systems and their underlying concept systems; b) terminological principles applicable to classification systems; c) requirements for internationalization of classification systems; d) considerations on workflow and administration of classification system content to support worldwide use. The following are outside the scope of ISO 22274:2013: 1) providing formal data models for representing classification systems in machine-readable form; 2) prescribing classification system content for specific business domains or products; 3) harmonization of classification systems. ISO 22274:2013 is intended for those who develop content for classification systems. This includes terminologists and content managers who are called upon to apply the principles of terminology work to ensure that cultural and linguistic diversity are appropriately reflected in classification systems. It is also relevant for people who design and model appropriate IT tools.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO 9735

### Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules

<https://www.iso.org/standard/35032.html>

**ABSTRACT:** Scope of part 1: This part of ISO 9735 specifies common syntax rules for the formatting of batch and interactive messages to be interchanged between computer application systems. It includes the terms and definitions for all parts of ISO 9735.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2002-01-01

## ISO 22742

### Packaging - Linear bar code and two-dimensional symbols for product packaging

<https://www.iso.org/standard/53004.html>

**ABSTRACT:** ISO 22742:2010 specifies the minimum requirements for the design of labels containing a linear bar code and two-dimensional symbols on product packages to convey data between trading partners, provides guidance for the formatting on the label of data presented in a linear bar code, two-dimensional symbols or human-readable form, provides specific recommendations regarding the choice of linear bar code and 2D symbologies, and specifies quality requirements and classes of bar code density, provides specific recommendations regarding 2D symbologies, which allow a broad choice for general use of scanning hardware (e.g. area imagers, linear imagers, single-line laser scanners, and rastering laser scanners), and makes recommendations as to label placement, size and the inclusion of free text and any appropriate graphics.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2012-01-01

## ISO 28219

### Packaging - Labelling and direct product marking with linear bar code and two-dimensional symbols

<https://www.iso.org/standard/65014.html>

**ABSTRACT:** ISO 28219:2017

- ▷ defines minimum requirements for identifying items,
- ▷ provides guidelines for item marking with machine-readable symbols,
- ▷ covers both labels and direct marking of items,
- ▷ includes testing procedures for label adhesive characteristics and mark durability,
- ▷ provides guidance for the formatting on the label of data presented in linear bar code, two-dimensional symbol or human-readable form,
- ▷ is intended for applications which include, but are not limited to, support of systems that automate the control of items during the processes of:
  - ▷ production,
  - ▷ inventory,
  - ▷ distribution,
  - ▷ field service,
  - ▷ point of sale,
  - ▷ point of care,

- ▷ repair, and
- ▷ is intended to include, but it is not limited to, multiple industries including:
  - ▷ automotive,
  - ▷ aerospace,
  - ▷ chemical,
  - ▷ consumer items,
  - ▷ electronics,
  - ▷ health care,
  - ▷ marine,
  - ▷ rail,
  - ▷ telecommunications.

The location and application method of the marking are not defined (these will be reviewed and agreed upon by suppliers and manufacturers and their trading partners before implementing ISO 28219:2017).

ISO 28219:2017 does not supersede or replace any applicable safety or regulatory marking or labelling requirements. ISO 28219:2017 is meant to satisfy the minimum item marking requirements of numerous applications and industry groups and as such its applicability is to a wide range of industries, each of which may have specific implementation guidelines for it. ISO 28219:2017 is to be applied in addition to any other mandated labelling direct-marking requirements.

The labelling and direct marking requirement of ISO 28219:2017 and other standards can be combined into one label or marking area or appear as separate labels or marking areas.

ISO 28219:2017 uses the terms “part marking” and “item marking” interchangeably. Unless otherwise stated, ISO 28219:2017 will use the term “item marking” to describe both the labelling and direct part marking (DPM) of an item, where DPM includes, but is not limited to, altering (e.g. dot peen, laser etch, chemical etch), as well as additive type processes (e.g. ink jet, vacuum deposition).

The purpose of ISO 28219:2017 is to establish the machine-readable (linear, two-dimensional, and composite symbols) and human-readable content for direct marking and labelling of items, parts, and components.

ISO 28219:2017 provides a means for items, parts and components to be marked, and read in either fixtured or hand-held scanning environments at any manufacturer's facility and then read by customers purchasing items for subsequent manufacturing operations or for final end use. Intended applications include, but are not limited to, supply chain applications, e.g. inventory, distribution, manufacturing, quality control, acquisition, transportation, supply, repair, and disposal.

The figures are illustrative and not necessarily to scale or to the quality requirements specified in ISO 28219:2017.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2017-01-01

## ISO 17364

### Supply chain applications of RFID - Returnable transport items (RTIs) and returnable packaging items (RPis)

<https://www.iso.org/standard/55554.html>

**ABSTRACT:** This International Standard defines the basic features of RFID for use in the supply chain when applied to returnable transport items (RTIs). In particular it

- ▷ provides specifications for the identification of the RTI and the returnable packaging item (RPI),
- ▷ makes recommendations about additional information on the RF tag,
- ▷ specifies the semantics and data syntax to be used,
- ▷ specifies the data protocol to be used to interface with business applications and the RFID system,
- ▷ specifies the minimum performance requirements,

- ▷ specifies the air interface standards between the RF interrogator and RF tag, and
- ▷ specifies the reuse and recyclability of the RF tag.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-01-01

## ISO 13584-1

### Industrial automation systems and integration - Parts library - Part 1: Overview and fundamental principles

<https://www.iso.org/standard/25103.html>

**ABSTRACT:** This document provides guidance in addition to the conformance in the parts.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2001-04-01

## ISO 13584-20

### Industrial automation systems and integration - Parts library - Part 20: Logical resource; Logical model of expressions

<https://www.iso.org/standard/22328.html>

**ABSTRACT:** This part of ISO 13584 specifies:

- ▷ an EXPRESS schema for generic expressions;
- ▷ an EXPRESS schema for expressions, that models the subset of the allowed expressions in the EXPRESS language defined in ISO 10303-11 that corresponds to integer, real, Boolean and string data types. This schema uses the resources defined in the generic expression schema.

The following are within the scope of this part of ISO 13584:

- ▷ the exchange of expressions that involve both constants and variables;
- ▷ the function that checks whether or not a numeric expression should evaluate to an integer value;
- ▷ the constraints which ensure that an expression is semantically correct;
- ▷ the computation of the variables or functions used in an expression;
- ▷ the function that checks if an expression may be mapped on to the SQL query language. The following are outside the scope of this part of ISO 13584:
- ▷ the assignment of values to variables within some context;
- ▷ the triggering mechanism that computes the value of an expression in a given context.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 1998-07-01

## ISO 13584-24

### Industrial automation systems and integration - Parts library - Part 24: Logical resource; Logical model of supplier library

<https://www.iso.org/standard/34070.html>

**ABSTRACT:** ISO 13584-24:2003 provides generic EXPRESS resource constructs that support the description of different kinds of information about supplier libraries. It also contains a set of integrated

EXPRESS information models for representing supplier libraries for the purpose of exchange. These integrated information models integrate EXPRESS resource constructs from different parts of ISO 13584 and ISO 10303 into a single schema.

Three integrated EXPRESS information models are defined in ISO 13584-24:2003. They permit respectively the exchange of libraries which consist either of definitions of families of parts, representations of families of parts or definitions of new representation categories that may be provided for any family of parts.

These integrated EXPRESS information models contain provisions that permit a supplier library to reference external files. For each integrated EXPRESS information model, ISO 13584-24:2003 specifies which formats are allowed for these external files. Other external file formats are defined in the view exchange protocol series of parts of ISO 13584.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2003-11-01

## ISO 13584-25

### Industrial automation systems and integration - Parts library - Part 25: Logical resource; Logical model of supplier library with aggregate values and explicit content

<https://www.iso.org/standard/35361.html>

**ABSTRACT:** ISO 13584-25:2004 provides generic EXPRESS resource constructs that support the description of aggregate data types and values occurring in supplier libraries. It also contains an integrated EXPRESS information model for representing supplier libraries for the purpose of exchange. This integrated information model integrates the above resource constructs with other EXPRESS resource constructs from different parts of ISO 13584 and ISO 10303 into one single schema. Supplier libraries may consist of definitions and of representations of families of parts. They may also define new representation categories. Supplier libraries may consist only of dictionary elements with or without aggregate data types, or they may also contain explicit specifications of the sets of permitted instances.

When used together with view exchange protocols, this integrated information model also permits the exchange of one or several representation categories for the parts defined in a parts library.

The following are within the scope of ISO 13584-25:2004:

- ▷ generic resource constructs for representing aggregate data types. Aggregate data types and values are modelled according to the definition of aggregate data types of the EXPRESS language (ISO 10303-11);
- ▷ generic resource constructs for representing aggregate values;
- ▷ generic resource constructs for representing assembled parts that may contain an unlimited number of constituent components;
- ▷ a library integrated information model that provides for modelling and exchanging supplier libraries that contain properties whose values may be aggregate-structured, and whose possible class extensions are explicitly described as sets of instances.

The following are outside the scope of this part of ISO 13584-25:2004:

- ▷ representation of expressions and variables;
- ▷ implicit description of the set of permitted instances of a class by means of constraints;
- ▷ specification of a software system able to manage supplier libraries represented according to the information models defined in ISO 13584-25:2004.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2004-06-01



## ISO 13584-26

### Industrial automation systems and integration - Parts library - Part 26: Logical resource: Information supplier identification

<https://www.iso.org/standard/32856.html>

**ABSTRACT:** This part of ISO 13584 specifies a supplier code to identify the information suppliers of the contents of

a library and, when the content of this library was provided in a standard document, a code that identifies this standard document.

The following are within the scope of this part of ISO 13584:

- ▷ a code to identify the supplier of information contained in a parts library, and
- ▷ a code to identify a standard document when the content of a parts library are defined in a standard document.

The following is outside the scope of this part of ISO 13584:

- ▷ a code to identify the supplier of a part.

NOTE The supplier code enables the user of a library to trace the supplier of any information about a part that has an entry in the library and to trace the data given by a particular information supplier.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2000-02-01

## ISO 13584-31

### Industrial automation systems and integration - Parts library - Part 31: Implementation resources: Geometric programming interface

<https://www.iso.org/standard/32859.html>

**ABSTRACT:** This part of ISO 13584 specifies an application programming interface that enables an application program to generate geometric models that are independent of the target user system. The interface allows portability of programs that describe parametric shape representations of parts families held in an ISO13584 parts library.

The following are within the scope of this International Standard:

- ▷ programs to generate geometric representations within a modelling system that are independent of the target system,
- ▷ programs that specify geometric representations that are created through constraint-based geometric
- ▷ definitions,
- ▷ programs that structure geometric representations created independently of the target system,
- ▷ programs that specify presentation style attributes for symbolic visualisation of representations created,
- ▷ programs that support technical drawing standard conventions for shape representation, including a 2D hidden line mechanism.

The following are outside the scope of this International Standard:

- ▷ The precise control of the image to be displayed on the receiving system devices,
- ▷ The precise definition of the data that shall be created on the receiving system,
- ▷ The storage of a parametric model on the receiving system.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 1999-12-01

## ISO 13584-32

### Industrial automation systems and integration - Parts library - Part 32: Implementation resources: OntoML: Product ontology markup language

<https://www.iso.org/standard/50639.html>

**ABSTRACT:** ISO 13584-32:2010 specifies an XML-based exchange structure for ISO 13584 compliant data. This exchange structure is called OntoML.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2010-12-01

## ISO/TS 13584-35

### Industrial automation systems and integration - Parts library - Part 35: Implementation resources: Spreadsheet interface for parts library

<https://www.iso.org/standard/44972.html>

**ABSTRACT:** ISO/TS 13584-35:2010 defines the spreadsheet data structure for both dictionary and library, where CSV (comma separated values) format is used for ISO 13584 compliant dictionary and library exchange.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2010-07-01

## ISO 13584-42

### Industrial automation systems and integration - Parts library - Part 42: Description methodology: Methodology for structuring parts families

<https://www.iso.org/standard/43423.html>

**ABSTRACT:** ISO 13584-42:2010 specifies the principles to be used for defining characterization classes of parts and properties of parts which provide for characterizing a part independently of any particular supplier-defined identification.

ISO 13584-42:2010 specifies :

- ▷ the capability to model constraints on properties by restricting their domain of values;
- ▷ the capability to model and distinguish characterization classes and categorization classes;
- ▷ the capability to model aggregation and composition using a single resource mechanism;
- ▷ the capability to describe strings that carry external references;
- ▷ the capability to connect classes that belong to different class hierarchies.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2010-12-01

## ISO 13584-101

### Industrial automation systems and integration - Parts library - Part 101: Geometrical view exchange protocol by parametric program

<https://www.iso.org/standard/22333.html>

**ABSTRACT:** ISO 13584-101:2003 specifies a particular representation category, called basic\_geometry. This representation category captures the generic concept of the shape of a part. It may be associated with any of the items defined in a parts library.

ISO 13584-101:2003 also defines how representations that belong to this representation category may be exchanged within a library exchange context by means of FORTRAN programs compliant with ISO 13584-31:1999, or, by case of separate agreement between the sender and the receiver, by means of any other parametric formats.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2003-05-01

## ISO 13584-102

### Industrial automation systems and integration - Parts library - Part 102: View exchange protocol by ISO 10303 conforming specification

🌐 <https://www.iso.org/standard/43987.html>

**ABSTRACT:** ISO 13584-102:2006 specifies a representation category, called ISO10303\_rep. This representation category captures the generic concepts used to describe the representation of a product in ISO 10303 application protocols. ISO 13584-102:2006 also defines how representations that belong to this representation category can be associated with any of the items defined in a parts library, and can be exchanged within a library exchange context by means of ISO 10303 compliant data repositories.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2006-11-01

## ISO 13584-501

### Industrial automation systems and integration - Parts library - Part 501: Reference dictionary for measuring instruments - Registration procedure

🌐 <https://www.iso.org/standard/39753.html>

**ABSTRACT:** ISO 13584-501:2007 specifies the requirements for an ISO-registered reference dictionary for measuring instruments with their properties and domains of values. ISO 13584-501:2007 also establishes and specifies the behaviour of a registration authority whose role is to develop, maintain and update this ISO-registered reference dictionary for measuring instruments. These measuring instruments include environment measuring instruments and laboratory measuring instruments.

The reference dictionaries series of parts of ISO 13584 specifies ontologies for representing the entities of an application domain, together with their descriptive properties and domains of values. Each entity, property or domain of values constitutes an entry of a dictionary that constitutes the formal and computer sensible representation of the specified ontology. It is associated with a computer sensible and human readable definition and with a computer sensible identification.

The unique identification of a dictionary entry allows it to be referenced unambiguously from any application. Definitions and identifications of dictionary entries consist of instances of the EXPRESS entity data types defined in the common dictionary schema, or in its extensions defined in the logical series of parts of ISO 13584.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2007-02-01

## ISO 13584-511

### Industrial automation systems and integration - Parts library - Part 511: Mechanical systems and components for general use - Reference dictionary for fasteners

🌐 <https://www.iso.org/standard/38878.html>

**ABSTRACT:** ISO 13584-511:2006 specifies a reference dictionary for representing fasteners with their properties and domains of values, as they are described in the various ISO mechanical fastener standards. These fasteners include bolts, screws, nuts, rivets, pins, washers etc.

The reference dictionaries series of parts of ISO 13584 specify ontologies for representing the entities of an application domain, together with their descriptive properties and domains of values. Each entity, property or domain of values constitutes an entry of a dictionary that is the formal and computer sensible representation of the specified ontology. It is associated with a computer sensible and human readable definition, and with a computer sensible identification.

Identification of a dictionary entry allows for unambiguous reference from any application. Definitions and identifications of dictionary entries consist of instances of the EXPRESS entity data types defined in the common dictionary schema, or in its extensions defined in the logical series of parts of ISO 13584.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2006-12-01

## ISO/IEC CD 5212

### Information technology - Data usage - Guidance for data usage

🌐 <https://www.iso.org/standard/80999.html>

**ABSTRACT:** This standard delivers a guidance for data usage.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Under development

📅 PUBLICATION DATE:

## ISO 17442

### ISO 17442:2012 - Financial services - Legal Entity Identifier (LEI)

🌐 <https://www.iso.org/standard/59771.html>

**ABSTRACT:** A standard to define Identifiers for Legal Entities.

📄 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: 2012-06

## ISO/TR 23249

### Blockchain and distributed ledger technologies - Overview of existing DLT systems for identity management

🌐 <https://www.iso.org/standard/80805.html>

**ABSTRACT:** This document provides an overview of existing DLT systems for identity management, i.e. the mechanisms by which one or more entities can create, receive, modify, use and revoke a set of identity attributes.

This document covers the following topics:

- ▷ Managing identity for individuals, organizations, things (IoT & objects), functions and processes and other entities including within and across DLT systems.
- ▷ Description of the actors and their interactions and common interfaces.
- ▷ Architectures.
- ▷ Existing relevant standards and frameworks.

🔗 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Published

📅 PUBLICATION DATE: 2022-05

## ISO/TR 23244

### Blockchain and distributed ledger technologies - Privacy and personally identifiable information protection considerations

🔗 <https://www.iso.org/standard/75061.html>

**ABSTRACT:** This document provides an overview of privacy and personally identifiable information (PII) protection as applied to blockchain and distributed ledger technologies (DLT) systems.

🔗 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Published

📅 PUBLICATION DATE: 2020-05

## ISO/TR 6039

### Blockchain and distributed ledger technologies - Identifiers of subjects and objects for the design of blockchain systems

🔗 <https://www.iso.org/standard/81978.html>

**ABSTRACT:** This documents define Identifiers of subjects and objects for the design of blockchain systems via Blockchain and distributed ledger technologies.

🔗 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Under development

📅 PUBLICATION DATE:

## ISO/TR 16340

### Application of blockchain-based traceability platform for cold chain food

🔗 <https://www.iso.org/cms/%20render/live/en/sites/isoorg/contents/data/standard/08/45/84547.html>

**ABSTRACT:** This document defines Application of blockchain-based traceability platform for cold chain food.

🔗 DOCUMENT TYPE: Technical\_Report

📅 STATUS: Under development

📅 PUBLICATION DATE:

## ISO 7603

### Decentralized Identity standard for the identification of subjects and objects

🔗 <https://www.iso.org/standard/82842.html>

**ABSTRACT:** A standard for the design and use of decentralized and self-sovereign identification of subjects (legal entities and natural persons) and objects, assets within the design of Blockchain and DLT Systems, in conjunction with Verifiable Credentials (VCs). The standard will refer to available identification standards from ISO as well as other standardization bodies, such as W3C, GLEIF, IETF, ITU, IEEE, etc. and non-standardization global consortiums, such as DIF, TOIP, and the Kantara Initiative. Purpose is to support developers to deliver cost and time efficient development of high quality Blockchain and DLT systems for managing identity across a defined architectural stack. To create awareness of available standards of subjects (legal entities and natural persons) and objects and to give an overview of existing identifier standards.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Under development

📅 PUBLICATION DATE:

## ISO 9735-1

### Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4) - Part 1: Syntax rules common to all parts

🔗 <https://www.iso.org/standard/35032.html>

**ABSTRACT:** This part of ISO 9735 specifies common syntax rules for the formatting of batch and interactive messages to be interchanged between computer application systems. It includes the terms and definitions for all parts of ISO 9735.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE:

## ISO 9735-2

### Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 2: Syntax rules specific to batch EDI

🔗 <https://www.iso.org/standard/28134.html>

**ABSTRACT:** This part of ISO 9735 specifies syntax rules specifically for the formatting of batch messages to be interchanged between computer application systems. For the transfer of packages in a batch environment, see ISO 9735-8.

🔗 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE:

## ISO 9735-3

### Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 3: Syntax rules specific to interactive EDI

<https://www.iso.org/standard/35034.html>

**ABSTRACT:** This part of ISO 9735 specifies syntax rules specifically for the transfer of interactive messages to be interchanged between computer application systems. For the transfer of packages in an interactive environment, see ISO 9735-8.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-4

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 4: Syntax and service report message for batch EDI (message type - CONTRL)**

<https://www.iso.org/standard/35035.html>

**ABSTRACT:** This part of ISO 9735 defines the syntax and service report message for batch EDI, CONTRL.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-5

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 5: Security rules for batch EDI (authenticity, integrity and non-repudiation of o**

<https://www.iso.org/standard/28915.html>

**ABSTRACT:** This part of ISO 9735 specifies syntax rules for EDIFACT security. It provides a method to address message/package level, group level and interchange level security for authenticity, integrity and non-repudiation of origin, in accordance with established security mechanisms.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-6

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 6: Secure authentication and acknowledgement message (Message type: AUTACK)**

<https://www.iso.org/standard/35037.html>

**ABSTRACT:** This part of ISO 9735 for EDIFACT security defines the secure authentication and acknowledgement message AUTACK.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-7

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 7: Security rules for batch EDI (confidentiality)**

<https://www.iso.org/standard/35038.html>

**ABSTRACT:** This part of ISO 9735 for batch EDIFACT security addresses message/package level, group level and interchange level security for confidentiality in accordance with established security mechanisms.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-8

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 8: Associated data in EDI**

<https://www.iso.org/standard/28134.html>

**ABSTRACT:** This part of ISO 9735 specifies syntax rules for associated data in EDI to be interchanged between computer application systems. This provides a method to transfer data which cannot be carried by means of either a batch or interactive EDIFACT message. The data may be created by other applications (such as STEP, CAD, etc.), and is referred to in this part as associated data.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-9

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 9: Security key and certificate management message (message type: KEYMAN)**

<https://www.iso.org/standard/35040.html>

**ABSTRACT:** This part of ISO 9735 for batch EDIFACT security defines the security key and certificate management message KEYMAN.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 9735-10

**Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 2) - Part 10: Syntax service directories**

<https://www.iso.org/standard/61434.html>

**ABSTRACT:** ISO 9735-10:2014 specifies the syntax service directories of all parts of ISO 9735.

DOCUMENT TYPE: Standard



STATUS: Published

PUBLICATION DATE:

## ISO 14533-1

### Processes, data elements and documents in commerce, industry and administration - Long term signature profiles - Part 1: Long term signature profiles for CMS Advanced Electronic Signatures (CAAdES)

<https://www.iso.org/standard/81814.html>

**ABSTRACT:** This document specifies the elements, among those defined in CMS digital signatures and CAAdES digital signatures that enable verification of a digital signature over a long period of time. It does not give new technical specifications about the digital signature itself, nor new restrictions of usage of the technical specifications about the digital signatures which have already existed.

NOTE CAAdES digital signature is the extended specification of Cryptographic message syntax (CMS), used widely.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 14533-2

### Processes, data elements and documents in commerce, industry and administration - Long term signature - Part 2: profiles for XML Advanced Electronic Signatures (XAdES)

<https://www.iso.org/standard/79129.html>

**ABSTRACT:** This document specifies the elements, among those defined in XAdES digital signatures, that enable verification of a digital signature over a long period of time.

It does not give new technical specifications about the digital signature itself, nor new restrictions of usage of the technical specifications about the digital signatures which already exist.

NOTE XAdES digital signatures is the widely-used extended specification of "XML-Signature Syntax and Processing".

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 22378

### Guidelines for establishing interoperability among independently functioning product identification and related authentication systems

<https://www.iso.org/standard/81754.html>

**ABSTRACT:** This document establishes a framework for identification and authentication systems. It provides recommendations and best practice that include:

- ▶ management and verification of identifiers;
- ▶ physical representation of identifiers;
- ▶ participants' due diligence;
- ▶ vetting of all participants within the system;
- ▶ relationship between the unique identifier (UID) and possible authentication elements related to it;
- ▶ questions that deal with the identification of the inspector and any authorized access to privileged

information about the object;

▶ inspector access history (logs).

The model described in this document is intended to determine the common functions of different systems.

This document describes processes, functions and functional units of a generic model. It does not specify any specific technical solutions.

Object identification systems can incorporate other functions and features such as supply chain traceability, quality traceability, marketing activities and others, but these aspects are out of scope of this document.

NOTE This document does not refer to industry-specific requirements such as GS1 Global Trade Item Number (GTIN).

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-12

## ISO 14533-3

### Processes, data elements and documents in commerce, industry and administration - Long term signature profiles - Part 3: Long term signature profiles for PDF Advanced Electronic Signatures (PAdES)

<https://www.iso.org/standard/67937.html>

**ABSTRACT:** ISO 14533-3:2017 specifies the elements, among those defined in PDF Advanced Electronic Signatures (PAdES), that enable verification of a digital signature over a long period of time.

It does not give new technical specifications about the digital signature itself, nor new restrictions of usage of the technical specifications about the digital signatures which already exist.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 23354

### Business requirements for end-to-end visibility of logistics flow

<https://www.iso.org/standard/75307.html>

**ABSTRACT:** This document specifies three business requirements for the visibility of logistics traffic flow based on the use cases and gap analysis in Annex A. It includes

- 1) LISS network architecture requirements,
- 2) visibility data interchange requirements between LISSs, and
- 3) visibility data interface and process requirements for an LISS network.

These three business requirements are described further in Clause 6, Clause 7 and Clause 8 respectively. Furthermore, Clause 8 describes the requirement for a guideline for business participants and stakeholders in an LISS network such as logistics information service providers, single window/SSP operators, data providers and logistics data users.

This document does not include standardization

- 1) at the level of logistics devices (areas of standardisation covered by ISO/TC 104, ISO/TC 204),
- 2) for ships, navigation and marine technologies (areas of standardisation covered by ISO/TC 8), or
- 3) related to international data exchange such as standards developed, published and maintained by UN/CEFACT, GS1, WCO which are referenced as appropriate in this document.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 22381

### Guidelines for establishing interoperability of object identification and authentication systems

<https://www.iso.org/standard/73858.html>

**ABSTRACT:** This document gives guidelines for establishing interoperability among independently functioning product identification and related authentication systems, as described in ISO 16678. The permanent transfer of data from one system to another is out of the scope of this document.

It also gives guidance on how to specify an environment open to existing or new methods of identification and authentication of objects, and which is accessible for legacy systems that may need to remain active.

It is applicable to any industry, stakeholder or user group requiring object identification and authentication systems. It can be used on a global scale, or in limited environments. This document supports those involved in planning and establishing interoperation.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-09

## ISO 22383

### Guidelines for selection and performance evaluation of authentication solutions for material goods

<https://www.iso.org/standard/50285.html>

**ABSTRACT:** This document gives guidelines for performance criteria and an evaluation methodology for authentication solutions that aim to unambiguously establish material good authenticity and integrity throughout an entire material good's life cycle. It focuses on the authentication of a material good and, if appropriate, its components, parts and related data:

- ▶ covered by intellectual property rights;
- ▶ covered by relevant international, regional or national regulations;
- ▶ with counterfeiting-related implications;
- ▶ otherwise with a distinctive identity.

This document is applicable to all types and sizes of organizations that require the ability to validate the authenticity and integrity of material goods. It will help organizations to determine the categories of authentication elements they need in order to combat counterfeiting-related risks, and the criteria for selecting authentication elements, after having undertaken a counterfeiting risk assessment.

Authentication solutions can be used in areas such as anti-counterfeiting, prevention of product fraud and prevention of diversion.

This document does not specify economic criteria aiming to correlate performance and costs of the authentication solutions.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-09

## ISO 22385

### Guidelines for establishing a Framework for Trust and Interoperability

<https://www.iso.org/standard/50287.html>

**ABSTRACT:** This document establishes a framework for a trustworthy environment for information processing and communication that protects integrity along the supply chain of physical and related electronic documents, products, software and services life cycle to mitigate product fraud and counterfeit goods, by using object identification techniques.

This document gives guidelines to establish a framework for ensuring trust, interoperability and interoperation via secure and reliable electronically signed encoded data set (ESEDs) schemes for multi-actor applications which are even applicable in multi-sector environment.

This document does not interfere with existing traceability and identification and authentication systems but is able to support interoperations between them by introducing an ESEDs scheme.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2023-02

## ISO 22387

### Confirmation procedures for the application of artefact metrics

<https://www.iso.org/standard/80717.html>

**ABSTRACT:** This document specifies a process to qualify the suitability, reliability and effectiveness of artefact metrics as well as artefact metric recognition principles for identification and verification.

The artefact metric recognition described in this document can be used to identify or verify artefacts using one or more measurements of their characteristics, each of which is unique to an individual artefact and is supposedly impossible to reproduce. This document is applicable to artefact metrics throughout the life cycle processes of products. Measurement of the resilience of the system where the distinguishing characteristic is degraded is out of the scope of this document.

This document is applicable to performance testing of artefact metric systems and algorithms through analysis of the comparison scores and decisions output by the system, without requiring detailed knowledge of the system's algorithms or of the underlying distribution of characteristics in the objects of interest.

This document excludes performance testing where deliberate attacks undermine the artefact metric system.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-12

## ISO 22376

### Electronic Storage Specifications for use of Visible Digital Seal (VDS) for the authentication, verification and acquisition of data carried by a document or object

<https://www.iso.org/standard/50278.html>

**ABSTRACT:** This document specifies the Visible Digital Seal (VDS) data structure. The document also specifies possible forms of representation, generation and verification processes applicable to Visible Digital Seals. This document contains support for future types of data encoding. All formats and processes are irrespective of the documents or objects they relate to. This document does not establish the requirements to implement and deploy VDSs, nor the detailed Response Formatting Functions (RFF).

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO 22372

### Framework for establishing trustworthy supply chains

<https://www.iso.org/standard/50275.html>

**ABSTRACT:** This document will provide guidance for developing, implementing, monitoring and improving infrastructure resilience in order to help ensure the continuity and effective outcomes of critical services. It can be used by any level of government, institutions, donors, infrastructure regulators, investors and owners, designers and contractors, service providers and international organizations.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## ISO 23247-1

### Automation systems and integration - Digital twin framework for manufacturing - Part 1: Overview and general principles

<https://www.iso.org/standard/75066.html>

**ABSTRACT:** This document provides an overview and general principles of a digital twin framework for manufacturing including:

- terms and definitions;
- requirements of the digital twin framework for manufacturing.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-10

## ISO 23247-2

### Automation systems and integration - Digital twin framework for manufacturing - Part 2: Reference architecture

<https://www.iso.org/standard/78743.html>

**ABSTRACT:** This document provides a reference architecture for the digital twin in manufacturing including;

- reference model from domain and entity point of view;
- functional view specifying functional entities supported by the entity-based reference model.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-10

## ISO 23247-3

### Automation systems and integration - Digital twin framework for manufacturing - Part 3: Digital representation of manufacturing elements

<https://www.iso.org/standard/78744.html>

**ABSTRACT:** This document provides a list of basic information attributes for the OMEs:

- examples of information attributes are given;

standards that can define these information attributes are discussed in Annex A.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-10

## ISO 23247-4

### Automation systems and integration - Digital twin framework for manufacturing - Part 4: Information exchange

<https://www.iso.org/standard/78745.html>

**ABSTRACT:** This document identifies technical requirements for information exchange between entities within the reference architecture.

The requirements for information exchange in the following networks are within the scope of this document:

- user network that connects the user entity and the digital twin entity;
- service network that connects sub-entities within the digital twin entity;
- access network that connects the device communication entity to the digital twin entity and to the user entity;
- proximity network that connects the device communication entity to the observable manufacturing elements

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-10

## ISO 10303 series

### Industrial automation systems and integration - Product data representation and exchange

<https://www.iso.org>

**ABSTRACT:** ISO 10303 is an ISO standard for the computer-interpretable representation and exchange of product manufacturing information.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 8000 series

### Data quality

<https://www.iso.org/standard/81745.html>

**ABSTRACT:** ISO 8000 is the global standard for Data Quality and Enterprise Master Data. It describes the features and defines the requirements for standard exchange of Master Data among business partners. It establishes the concept of Portability as a requirement for Enterprise Master Data, and the concept that true Enterprise Master Data is unique to each organization. (Source: Wikipedia)

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO 10303-1

### Industrial automation systems and integration - Product data representation and exchange - Part 1: Overview and fundamental principles

<https://www.iso.org/obp/ui/#iso:std:iso:10303:-1:ed-2:v1:en>

**ABSTRACT:** This document provides an overview of ISO 10303.

ISO 10303 provides a representation of product information along with the necessary mechanisms and definitions to enable product data to be exchanged. The exchange is among different computer systems and environments associated with the complete product lifecycle, including product design, manufacture, use, maintenance, and final disposition of the product.

This document defines the basic principles of product information representation and exchange used in ISO 10303. It specifies the characteristics of the various series of parts of ISO 10303 and the relationships among them.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE:

## ISO and OASIS

### ISO 15000-2:2021

#### AS4 profile of ebXML Messaging v3

<https://www.iso.org/standard/79109.html>

**ABSTRACT:** Applicability Statement (AS) 4 profile of ebXML messaging service; identified by EU Commission (C 2014/771/EU and C 2022/5628),

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-02-01

## ETSI

### ETSI TS 103463-1 V 1.2.1

#### Access, Terminals, Transmission and Multiplexing (ATTM) - Sustainable Digital Multiservice Communities - Key Performance Indicators for Sustainable Digital Multiservice Areas - Part 1: Description of Key Performance Indicators

[https://portal.etsi.org/webapp/WorkProgram/Report\\_WorkItem.asp?WKI\\_ID=57748&curlItemNr=2&totalNrItems=3&optDisplay=10&qSORT=HIGHVERSION&qETSI\\_ALL=&SearchPage=TRUE&qETSI\\_NUMBER=103463&qINCLUDE\\_SUB\\_TB=True&qINCLUDE\\_MOVED\\_ON=&qSTOP\\_FLG=&qKEYWORD\\_BOOLEAN=&qCLU](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=57748&curlItemNr=2&totalNrItems=3&optDisplay=10&qSORT=HIGHVERSION&qETSI_ALL=&SearchPage=TRUE&qETSI_NUMBER=103463&qINCLUDE_SUB_TB=True&qINCLUDE_MOVED_ON=&qSTOP_FLG=&qKEYWORD_BOOLEAN=&qCLU)

**ABSTRACT:** The present document replaces TS 103463 and defines in greater detail a number of Key Performance Indicators (KPIs) for Smart Areas (both urban and rural) expressing sustainability performance in terms of People, Planet, Prosperity and Governance. Certain of the KPIs are grouped and presented as Global KPIs in TS 103 463-2.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2020-05-01

### ETSI TR 105178 V 1.1.1

#### Access, Terminals, Transmission and Multiplexing (ATTM) - Comparison of sustainability parameters between internal and external, including 'cloud-based', ICT hosting solutions

[https://portal.etsi.org/webapp/WorkProgram/Report\\_WorkItem.asp?WKI\\_ID=57852&curlItemNr=1&totalNrItems=1&optDisplay=10&qSORT=HIGHVERSION&qETSI\\_ALL=&SearchPage=TRUE&qETSI\\_NUMBER=105178&qINCLUDE\\_SUB\\_TB=True&qINCLUDE\\_MOVED\\_ON=&qSTOP\\_FLG=&qKEYWORD\\_BOOLEAN=&qCLU](https://portal.etsi.org/webapp/WorkProgram/Report_WorkItem.asp?WKI_ID=57852&curlItemNr=1&totalNrItems=1&optDisplay=10&qSORT=HIGHVERSION&qETSI_ALL=&SearchPage=TRUE&qETSI_NUMBER=105178&qINCLUDE_SUB_TB=True&qINCLUDE_MOVED_ON=&qSTOP_FLG=&qKEYWORD_BOOLEAN=&qCLU)

**ABSTRACT:** The present document will provide a comparison between both internal and external 'cloud-based' solutions with a life cycle analysis addressing: a)energy consumption; b)green-house gas (GHG) emission; c)water consumption; d)waste management from production to end-of-life management.

DOCUMENT TYPE: Technical Report

STATUS: Published

PUBLICATION DATE: 2020-05-01



## ITU-T X.1403

### SERIES X: DATA NETWORKS, OPEN SYSTEM COMMUNICATIONS AND SECURITY - Secure applications and services (2) – Distributed ledger technology security

[https://www.itu.int/rec/dologin\\_pub.asp?lang=e&id=T-REC-X.1403-202009-!!!PDF-E&type=items](https://www.itu.int/rec/dologin_pub.asp?lang=e&id=T-REC-X.1403-202009-!!!PDF-E&type=items)

**ABSTRACT:** Security guidelines for using distributed ledger technology for decentralized identity management

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-09-01

## ITU-T L Supplement 28

### Circular economy in information and communication technology; definition of approaches, concepts and metrics

<https://www.itu.int/ITU-T/recommendations/rec.aspx?id=13151&lang=en>

**ABSTRACT:** Supplement 28 to ITU-T L-series Recommendations investigates current approaches, concepts

and metrics of CE and RE and their applicability for ICT infrastructure goods.

This Supplement:

- 1) introduces CE and RE,
- 2) describes CE as used in the ICT industry,
- 3) describes existing CE and RE metrics and examples of their use.
- 4) proposes next steps in CE and RE standardization.

The scope of this Supplement includes the following aspects: upgradability, repairability, removability, durability, reusability, recyclability, recoverability, refurbishability and remanufactureability. The following additional parameters, indicators and metrics are included: recycled content, use of critical raw materials and proportion of re-used parts.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2016-10-01

## ITU-T L.1410

### Methodology for environmental life cycle assessments of information and communication technology goods, networks and services

<https://www.itu.int/rec/T-REC-L.1410>

**ABSTRACT:** Recommendation ITU-T L.1410 deals with environmental life cycle assessments (LCAs) of information and communication technology (ICT) goods, networks and services. It is organized in two parts:

- ▶ Part I: ICT life cycle assessment: framework and guidance
- ▶ Part II: "Comparative analysis between ICT and reference product system (Baseline scenario); framework and guidance".

Part I deals with the life cycle assessment (LCA) methodology applied to ICT goods, networks and services. Part II deals with comparative analysis based on LCA results of an ICT goods, networks and services product system, and a reference product system.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: 2014-12-01

## ■ ITU-T and OASIS

### ITU-T Rec X.1144 (XACML v3)

#### eXtensible Access Control Markup Language (XACML) 3.0

<https://www.itu.int/rec/T-REC-X.1144-201310-1>

**ABSTRACT:** XML-based access control tokens and language in widespread global industry use

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2013-10-14

### ITU-T Rec X.1141 (SAML v2)

#### Security Assertion Markup Language (SAML) 2.0

<https://www.itu.int/rec/T-REC-X.1141-200606-1/en>

**ABSTRACT:** XML-based authorization and authentication assertion tokens in widespread global industry use (e.g., by ISO in its portal)

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2007-04-1

## ■ UNECE-UN/CEFACT

CEFACT CII

#### Cross Industry Invoice version D16B

[https://unece.org/fileadmin/DAM/cefact/cf\\_plenary/2018\\_plenary/ECE\\_TRADE\\_C\\_CEFACT\\_2018\\_12E.pdf](https://unece.org/fileadmin/DAM/cefact/cf_plenary/2018_plenary/ECE_TRADE_C_CEFACT_2018_12E.pdf)

**ABSTRACT:** Generic electronic invoicing standard, containing of an executive guide, business requirements specification, requirements mapping and an XML schema.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2016-05-30

## ■ UNECE-UN/CEFACT

### UMM

#### UML Profile for UN/CEFACT's Modeling Methodology (UMM) Foundation Module Version 2.0 Technical Specification

[https://unece.org/DAM/cefact/umm/UMM\\_Foundation\\_Module\\_V2.0.pdf](https://unece.org/DAM/cefact/umm/UMM_Foundation_Module_V2.0.pdf)

**ABSTRACT:** The UMM, as described in this document, is the formal description technique for describing any Open-edition scenario as defined in ISO/IEC 14662 "Open-edition reference model"

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2022-04-01

### CCTS

#### Core Components Technical Specification – Part 8 of the ebXML Framework

[https://unece.org/DAM/cefact/codesfortrade/CCTS/CCTS\\_V2-01\\_Final.pdf](https://unece.org/DAM/cefact/codesfortrade/CCTS/CCTS_V2-01_Final.pdf)

**ABSTRACT:** The UN/CEFACT Core Components Technical Specification describes and specifies a new approach to the well-understood problem of the lack of information interoperability between applications in the e-business arena.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2003-11-15

### JSON-NDR

#### Application Programming Interface Technical Specification JSON schema naming and design rules

[https://unece.org/sites/default/files/2022-09/API-TECH-SPEC\\_JSON\\_Schema\\_NDR\\_version1p0.pdf](https://unece.org/sites/default/files/2022-09/API-TECH-SPEC_JSON_Schema_NDR_version1p0.pdf)

**ABSTRACT:** The JSON Schema Naming and Design Rules technical specification defines an architecture and a set of rules necessary to define, describe and use JSON to consistently express business information exchanges namely via APIs

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2022-09-13

## OpenAPISpecifications

### OpenApi Naming and design rules technical specification

[https://unece.org/sites/default/files/2022-09/API-TECH-SPEC\\_OpenAPI\\_NDR\\_version1p0.pdf](https://unece.org/sites/default/files/2022-09/API-TECH-SPEC_OpenAPI_NDR_version1p0.pdf)

**ABSTRACT:** The OpenAPI Naming and Design Rules technical specification defines an architecture and a set of rules necessary to specify, describe and implement APIs based on an OpenAPI specification to consistently express business information.

DOCUMENT TYPE: Technical\_Report

STATUS: Published

PUBLICATION DATE: 2022-09-13

## UNCCCL

### United Nations Core Component Library version 22A

<https://unece.org/sites/default/files/2022-06/CCL22A.zip>

**ABSTRACT:** The UN Core Component Library (CCL) is a library of business semantics in a data model which is harmonised, audited and published by UN/CEFACT. The CCL uses Core component Technical Specifications (CCTS) to ensure consistency and interoperability.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-06-05

## UNCL

### United Nations Code List

<https://service.unece.org/trade/untdid/d22a/d22a.zip>

**ABSTRACT:** A list of all code sets associated with coded data elements, see also UNECE Code List recommendations.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-06-30

## UNLOCODE

### United Nations Code for Trade and Transport Locations

[https://unece.org/cefact/codesfortrade/codes\\_index.html](https://unece.org/cefact/codesfortrade/codes_index.html)

**ABSTRACT:** The UN/LOCODE, in full: United Nations Code for Trade and Transport Locations, is an international five-letter code for places in countries around the world, which replaces the full place name. Currently, UN/LOCODE includes over 103034 locations in 249 countries and territories and it is widely used in the transport industry.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-09-18

## Circular product data exchange use case

### An extension to Business Requirement Specification part 2 of the Textile and Leather sector.

<https://uncefact.unece.org/display/uncefactpublic/EXTENSION+TEXTILE+AND+LEATH-ER+BRS+PART+2%3A+Use+case+and+C+CBDA+data+structure+supporting+product+circularity>

**ABSTRACT:** A use case for a data structure to support the reuse and recycle stages of the value chains through a digital representation and exchange of circular product data.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Sustainable Development and Circular Economy Reference Data Model

### XSD Schema

<https://uncefact.unece.org/display/uncefactpublic/Sustainable+Development+and+Circular+Economy+Reference+Data+Model>

**ABSTRACT:** A reference data model, being a subset of the Buy-Ship-Pay Reference Data Model (part of the UN Core Component Library) with a specific focus on sustainable development and circular economy.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Circular product data exchange structure

### XSD Schema

<https://uncefact.unece.org/display/uncefactpublic/EXTENSION+TEXTILE+AND+LEATH-ER+BRS+PART+2%3A+Use+case+and+CCBDA+data+structure+supporting+product+circularity>

**ABSTRACT:** An XML schema to support the reuse and recycle stages of the value chains through a digital representation and exchange of circular product data.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Product traceability data exchange structure (EPCIS)

### XSD Schema

[https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/Textile-Leather\\_UNECE/Traceability%20Event%20Message%20D22A/XSD/Schema.zip](https://service.unece.org/trade/uncefact/publication/Transport%20and%20Logistics/Textile-Leather_UNECE/Traceability%20Event%20Message%20D22A/XSD/Schema.zip)

**ABSTRACT:** An XML schema to support the product traceability of the value chains through a digital representation and exchange of traceability (what, where, when, why, who) related data.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-07-01

## Product transparency data exchange structure

### XSD Schema

[https://service.unece.org/trade/unecefact/publication/Transport%20and%20Logistics/Textile-Leather\\_UNECE/Product%20Transparency%20Message%20D22A/XSD/Schema.zip](https://service.unece.org/trade/unecefact/publication/Transport%20and%20Logistics/Textile-Leather_UNECE/Product%20Transparency%20Message%20D22A/XSD/Schema.zip)

**ABSTRACT:** An XML schema to support the product transparency of the value chains through a digital representation and exchange of certification related data.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-07-01

## Product traceability data exchange structure (EPCIS)

### JSON schema / JSON-LD

<https://unecefact.unece.org/display/unecefactpublic/JSON-LD+Web+Vocabulary>

**ABSTRACT:** A JSON schema / JSON-LD to support the product traceability of the value chains through a digital representation and exchange of traceability (what, where, when, why, who) related data.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Product transparency data exchange structure

### JSON schema / JSON-LD

<https://unecefact.unece.org/display/unecefactpublic/JSON-LD+Web+Vocabulary>

**ABSTRACT:** A JSON schema / JSON-LD to support the product transparency of the value chains through a digital representation and exchange of certification related data.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Circular product data exchange structure

### JSON schema / JSON-LD

<https://unecefact.unece.org/display/unecefactpublic/EXTENSION+TEXTILE+AND+LEATHER+BRS+PART+2%3A+Use+case+and+CCBDA+data+structure+supporting+product+circularity>

**ABSTRACT:** A JSON schema / JSON-LD to support the reuse and recycle stages of the value chains through a digital representation and exchange of circular product data.

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Sustainable Development and Circular Economy Reference Data Model

### JSON schema / JSON-LD

<https://unecefact.unece.org/display/unecefactpublic/JSON-LD+Web+Vocabulary>

**ABSTRACT:** A JSON Schema / JSON-LD reference data model, being a subset of the Buy-Ship-Pay Reference Data Model (part of the UN Core Component Library) with a specific focus on Sustainable Development and Circular Economy (SDCE).

DOCUMENT TYPE: Standard

STATUS: Under development

PUBLICATION DATE:

## Supply Chain Reference Data Model Business Requirement Specification

### Business Requirement Specification Supply Chain Reference Data Model

[https://unece.org/fileadmin/DAM/unecefact/BRS/BRS\\_SCRDM\\_v1.0.0.2.pdf](https://unece.org/fileadmin/DAM/unecefact/BRS/BRS_SCRDM_v1.0.0.2.pdf)

**ABSTRACT:** The Supply Chain Reference Data Model (SCRDM) Business Requirement Specification (SCRDM BRS), in combination with the UN/CEFACT business process International Supply Chain Reference Model (ISCRM) and the BRS for the Multi-Modal Transport Reference Data Model (MMT RDM-BRS), provides the framework for any cross-border transport-related business and government domains to specify their own specific information exchange requirements whilst complying with the overall process and data structures.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2016-12-15

## Exchange Header Envelope (XHE)

### XSD Schema

[http://www.unece.org/fileadmin/DAM/cefact/TechnicalSpecifications/ExchangeHeaderEnvelope-XHE\\_v1.pdf](http://www.unece.org/fileadmin/DAM/cefact/TechnicalSpecifications/ExchangeHeaderEnvelope-XHE_v1.pdf)

**ABSTRACT:** This specification defines a business-oriented artefact either referencing (as a header) or containing (as an envelope) a payload of one or more business documents or other artefacts with supplemental semantic information about the collection of payloads as a whole. This is distinct from any transport-layer infrastructure header or envelope.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-06-29



## ■ OpenID Foundation

### OpenIDConnect

#### OpenID Connect

<https://openid.net/connect/>

**ABSTRACT:** Alternative protocol to exchange verifiable credentials between supply chain actors.

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: 2014-11

### OID4VC

#### OpenID for Verifiable Credential Issuance

[https://openid.net/specs/openid-4-verifiable-credential-issuance-1\\_0.html](https://openid.net/specs/openid-4-verifiable-credential-issuance-1_0.html)

**ABSTRACT:** A technical specification that defines an API and corresponding OAuth 2.0-based authorization mechanisms for the issuance of W3C Verifiable Credentials.

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published and under revision

📅 PUBLICATION DATE: 2022-10-27

### OID4VP

#### OpenID Connect for Verifiable Presentations

[https://openid.net/specs/openid-connect-4-verifiable-presentations-1\\_0-07.html](https://openid.net/specs/openid-connect-4-verifiable-presentations-1_0-07.html)

**ABSTRACT:** A technical specification that defines an extension of OpenID Connect to allow presentation of claims in the form of W3C Verifiable Credentials as part of the protocol flow

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published and under revision

📅 PUBLICATION DATE: 2021-12-17

## ■ W3C

### DIDs

#### Decentralized Identifiers (DIDs) v1.0, Core architecture, data model, and representations

<https://www.w3.org/TR/did-core/>

**ABSTRACT:** Decentralised Identifiers are a mean to identify anything on the Internet. In the DPP case suitable to identify products, organisations, machines and also humans.

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: 2022-07-22

### VCs

#### Verifiable Credentials Data Model v1.1

<https://www.w3.org/TR/vc-data-model/>

**ABSTRACT:** VCs are often related to DIDs to describe an identifier (e.g. a product or organisation)

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: 2022-03-22

### DID Resolution

#### Decentralized Identifier Resolution (DID Resolution) v0.3

<https://w3c-ccg.github.io/did-resolution/>

**ABSTRACT:** A protocol to resolve any given DID. Resolving a DID leads to e.g. the Verifiable Credentials of a product or organisation.

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published and under revision

📅 PUBLICATION DATE: 2022-08-22

### VC Integrity

#### Verifiable Credential Data Integrity 1.0

<https://www.w3.org/TR/vc-data-integrity/>

**ABSTRACT:** A protocol to ensure the integrity of VC and can be used for Third Party Credentials or Product Information issued as VCs.

🔗 DOCUMENT TYPE: Technical Specification

📅 STATUS: Under development

📅 PUBLICATION DATE: 2022-11-10

## ODRL Model

### ODRL Information Model 2.2

<https://www.w3.org/TR/odrl/>

**ABSTRACT:** A rights language model to express access rights to e.g. product information, organisational credentials or services

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2018-02-15

## ODRL Vocabulary

### ODRL Vocabulary & Expression 2.2

<https://www.w3.org/TR/odrl-vocab/>

**ABSTRACT:** A rights language vocabulary to express access rights to e.g. product information, organisational credentials or services

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2018-02-15

## JSON-LD

### JSON-LD 1.1

<https://www.w3.org/TR/json-ld11/>

**ABSTRACT:** A JSON-based Serialization for Linked Data. A format that is often used to encode Verifiable Credentials.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2020-07-16

## ECLASS

### ECLASS

#### ECLASS

<https://eclass.eu/en/eclass-standard>

**ABSTRACT:** global reference data standard for the classification and unambiguous description of products and services

DOCUMENT TYPE: Other

STATUS: Published

## DIN

### DIN 77005-1

#### Lebenslaufakte für technische Anlagen - Teil 1: Strukturelle und inhaltliche Festlegungen

<https://www.beuth.de/de/norm/din-77005-1/290281150>

**ABSTRACT:** Diese Norm legt grundlegende Strukturierungsprinzipien für Lebenslaufakten fest und beschreibt ihre Anwendung für technische Anlagen der Verfahrenstechnik, Energietechnik, Versorgungstechnik und Produktionstechnik sowie deren räumlich und funktional zuordenbare Bauwerke.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-09

### DIN 77005-2

#### Lebenslaufakte für technische Anlagen - Teil 2: Digitale Lebenslaufakte

<https://www.beuth.de/de/norm-entwurf/din-77005-2/356931800>

**ABSTRACT:** Für diese Norm ist der Arbeitskreis NA 159-04-01-01 AK "Lebenslaufakte für technische Anlagen" im DIN-Normenausschuss Dienstleistungen (NADL) zuständig.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-08

## ■ DBCH

### DBCh Umwelt-produkt-deklaration \* DBC 211-IS-D-2015

#### Environmental product declarations for construction chemicals

🌐 <https://www.umweltbundesamt.de/en/topics/economics-consumption/products/building-products/environmental-product-declarations-for-construction#the-purpose-of-an-environmental-product-declaration-for-construction-products>

**ABSTRACT:** The purpose of an environmental product declaration for construction products Environmental Product Declarations (EPD) for construction products provide important information about products and their use. They help to choose materials for building and provide a basis for the documentation of the building materials used in a construction work (e.g. by means of the building certificate). They can be used for life cycle assessments of buildings to aid in ecological planning and construction of buildings. EPD for construction products are therefore part of the Federal Government's sustainable building concept. In addition to the Assessment System for Sustainable Building for Federal Buildings (BNB), a great number of other public and private activities refer to EPD.

📄 DOCUMENT TYPE: Other

📅 STATUS: Published

📅 PUBLICATION DATE: 2015-06-01

## ■ DGQ

### FQS-DGQ-Band 88-11

#### Vernetzung von Produktionssystem: Anwenderleitfaden zum automatisierten Monitoring von Ressourcenverbräuchen

🌐 <https://www.dgq.de/produkte/vernetzung-von-produktionssystemen-anwenderleitfaden-zum-automatisierten-monitoring-von-ressourcenverbraeuchen/>

**ABSTRACT:** Eine automatisierte, softwarebasierte Lösung zur Nutzung und Aufbereitung der bereits vorhandenen Daten erleichtert die ökologische Bewertung. Indem ökologische Kennzahlen bereitgestellt werden, lassen sich die Erfüllung der Kundenforderungen zu Umweltgesichtspunkten nachweisen und die Auswirkungen auf die Um-welt analysieren. Die Software kann außerdem Verbesserungsmöglichkeiten für die jeweils betrachteten Aspekte aufzeigen.

Die Software »ecoIN« ist ein Forschungsergebnis des Fraunhofer IPT in Zusammenarbeit mit seinen Projektpartnern.

»ecoIN« verknüpft Ihre Produktionssysteme (z.B. ERP, MES und Datenlogger) miteinander und befähigt Sie somit, Key Performance Indikatoren (KPI) bezüglich der Ressourcenverbräuche Ihrer Produktion auf Knopfdruck zu erheben. »ecoIN« macht dafür die ohnehin bereits vorhandenen Daten nutzbar und transformiert diese, sodass spezifische Aussagen über die Ressourceneffizienz des Unternehmens und seiner Produkte und Prozesse möglich werden.

📄 DOCUMENT TYPE: Other

📅 STATUS: Published

📅 PUBLICATION DATE: 2017-01-01

## ■ ASD-STAN

### ASD S2000M

#### International specification for Material Management; Issue No. 7.0

🌐 [http://www.s2000m.org/DataModel/S2000M\\_7\\_0/](http://www.s2000m.org/DataModel/S2000M_7_0/)

**ABSTRACT:** The specification S2000M defines the processes, procedures and provides the information for data exchange to be used for material management throughout the lifecycle of a Product. The specification standardizes the business relationship between two or more parties (eg, contractor and customer) by providing a well-defined process flow and associated relevant transactions for data exchange.

📄 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: 2021-04-30

## ■ ASTM

### ASTM F2446-04(2018)

#### Standard Classification for Hierarchy of Equipment Identifiers and Boundaries for Reliability, Availability, and Maintainability (RAM) Performance Data Exchange

🌐 [https://www.technormen.de/norm/astm-f2446-04\\_2018-1.12.2018.html](https://www.technormen.de/norm/astm-f2446-04_2018-1.12.2018.html)

**ABSTRACT:** 1.1 This classification is to serve as an international standard for marine equipment nomenclature, taxonomy, hierarchical data structure, unique identifiers, and boundary definition for the consistent acquisition and exchange of equipment RAM performance data. The standard addresses the classification of mechanical and software products. 1.2 RAM is an acronym for Reliability, Availability, & Maintainability where: 1.2.1 Reliability is the probability that an item can perform a required function under given conditions for a given time interval (t1, t2). It is generally assumed that the item is in a state to perform this required function at the beginning of the time interval. 1.2.2 Availability is the probability that an item is in a state to perform a required function under given conditions at a given instant of time, assuming that the required external resources are provided. 1.2.3 Maintainability is the probability that a given active maintenance action, for an item under given conditions of use can be carried out within a stated time interval, when the maintenance is performed under stated conditions and using stated procedures and resources. 1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2004-01-01

## ■ Circular Fashion

### circularity.ID®

#### CIRCULARITY.ID® OPEN DATA STANDARD SCHEMA V 3.0

<https://circularity.id/open-data-standard.html>

**ABSTRACT:** The Circularity.ID® Open Data Standard contains immutable product data including material and chemical components and a mutable set of data that contains product information such as product images, description, sustainability consumer information and service offers.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2019-12-11

## ■ GreenBlue

### RMS

#### Recycled Material Standard

[https://www.rmscertified.com/wp-content/uploads/2021/05/Framework-052021\\_1159.pdf](https://www.rmscertified.com/wp-content/uploads/2021/05/Framework-052021_1159.pdf)

**ABSTRACT:** GreenBlue's Recycled Material Standard (RMS) is a voluntary, market-based framework that

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-05-06

## ■ EIA

### EIA 724

#### Product Life Cycle Data Model

[https://global.ihs.com/doc\\_detail.cfm?document\\_name=EIA%2D724&item\\_s\\_key=00258871](https://global.ihs.com/doc_detail.cfm?document_name=EIA%2D724&item_s_key=00258871)

**ABSTRACT:** This document defines a Product Life Cycle curve model for use by the electronics industry to standardize the terms and definitions used to describe the life cycle status of a product.. When required by the customer, a component or piece of equipment needs to be identified as to where it is in its life cycle. Such information can be useful when specifying parts for use in new systems or as replacements in existing systems. This information shall be classified by phases or stages on the Product Life Cycle curve. The same classification shall be used across the electronics industry. The time remaining in the phase or stage and the time until the end of the product's life are also required. The time must be expressed in years. This information should be reviewed by the EIA annually for data accuracy. All member suppliers shall be solicited for this information. Non-member information may be included through agreements with the EIA. The EIA is the owner of the published information

DOCUMENT TYPE: Other

STATUS: Published

PUBLICATION DATE: 1997-09-01

## ■ ENISA

### Security Framework

#### Security Framework

[https://www.enisa.europa.eu/publications/tsp1-framework/at\\_download/fullReport](https://www.enisa.europa.eu/publications/tsp1-framework/at_download/fullReport)

**ABSTRACT:** A European standard to declare the security level of cryptographic modules.

DOCUMENT TYPE: Other

STATUS: Published

PUBLICATION DATE: 2013-12



## ■ Enterprise Ethereum

### Baseline

#### Baseline Protocol

<https://github.com/eea-oasis/baseline-standard/blob/main/core/baseline-core-v1.0-psd01.md>

**ABSTRACT:** Standardized methods for state synchronization across different record systems, including but not limited to blockchains, databases, other distributed ledger technologies.

📄 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published and under revision

📅 PUBLICATION DATE: 2021/11/17

### EEA CIW

#### EEA Crosschain Security Guidelines Version 1.0

<https://entethalliance.org/wp-content/uploads/2021/11/crosschainsecurityguidelines.pdf>

**ABSTRACT:** Security considerations for transactions conducted across more than one blockchain

📄 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: 2021/09/24

## ■ EON

Circular Product Data Protocol

#### Circular Product Data Protocol™ V1.0

[https://7a5f6f52-74f4-4d72-92f5-680e4691a8ba.usrfiles.com/ugd/7a5f6f\\_5d1932a7e97a4d278ff3244dcbbb2a87.pdf](https://7a5f6f52-74f4-4d72-92f5-680e4691a8ba.usrfiles.com/ugd/7a5f6f_5d1932a7e97a4d278ff3244dcbbb2a87.pdf)

**ABSTRACT:** The Circular Product Data Protocol ensures essential product and material data is communicated in a consistent way across the industry, enabling products to be digitally identified for resale, reuse and recycling.

📄 DOCUMENT TYPE: Standard

📅 STATUS: Published

📅 PUBLICATION DATE: 2021-11-01

## ■ Ethereum Community

### ERC#1056

#### ERC: Lightweight Identity #1056

<https://github.com/ethereum/EIPs/issues/1056>

**ABSTRACT:** A protocol that in the DPP case is used to anchor DIDs and product information schemas.

📄 DOCUMENT TYPE: Technical Specification

📅 STATUS: Published

📅 PUBLICATION DATE: N/A

## ■ IDTA

### IDTA 02023

#### IDTA Submodel Template Carbon Footprint

<https://industrialdigitaltwin.org/en/content-hub/submodels>

**ABSTRACT:** Due to new regulations, carbon pricing and increasing requirements for the sustainability of manufactured products, the need for a way to determine the carbon footprint of manufactured products (PCF) as well as the provision of information about the carbon footprint over the entire supply chain is also increasing. The goal is to create a sub-model to enable sharing and low-effort retrieval of carbon footprint information per product across the entire supply chain. Existing standards are to be taken into account.

📄 DOCUMENT TYPE: Other

📅 STATUS: Under development

📅 PUBLICATION DATE:

## IEEE 1680.2

### IEEE Standard for Environmental Assessment of Imaging Equipment

<https://standards.ieee.org/ieee/1680.2/5158/>

**ABSTRACT:** New IEEE Standard - Active. A clear and consistent set of environmental performance criteria for the design of imaging equipment products is established, providing an opportunity to secure market recognition for efforts to reduce the environmental impact of electronic products. This standard is also intended to provide a tool for government, institutional, corporate, and consumer purchasers to identify products that demonstrate environmental leadership. The intent is that the standard will be updated and revised on a periodic basis to continue to set a higher performance standard for leadership products.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2012-01-01

## OAuth2

### OAuth 2.0

<https://oauth.net/2/>

**ABSTRACT:** OAuth 2.0 is the industry-standard protocol for authorization.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: N/A

## IETF RFC 3986

### Uniform Resource Identifier (URI): Generic Syntax

<https://www.rfc-editor.org/rfc/rfc3986>

**ABSTRACT:** A Uniform Resource Identifier (URI) is a compact sequence of characters that identifies an abstract or physical resource. This specification defines the generic URI syntax and a process for resolving URI references that might be in relative form, along with guidelines and security considerations for the use of URIs on the Internet. The URI syntax defines a grammar that is a superset of all valid URIs, allowing an implementation to parse the common components of a URI reference without knowing the scheme-specific requirements of every possible identifier. This specification does not define a generative grammar for URIs; that task is performed by the individual specifications of each URI scheme.

DOCUMENT TYPE: Other

STATUS: Published

PUBLICATION DATE: 2005-01-01

# Hyperledger Foundation

## Aries

### Aries Interop Profile

<https://wiki.hyperledger.org/display/ARIES/Hyperledger+Aries>

**ABSTRACT:** A protocol to exchange credentials between two wallets that anchor their DIDs on Hyperledger Indy. E.g. two companies in a value chain can exchange product or company credentials with this protocol.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: N/A

## Indy

### Hyperledger Indy

<https://wiki.hyperledger.org/display/INDY/Hyperledger+Indy>

**ABSTRACT:** A alternative protocol that in the DPP case is used to anchor DIDs and product information schemas.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: N/A

## GS1 Global Data Model Standard

### GS1 Global Data Model Standard, Release 2.2

<https://www.gs1.org/standards/gs1-global-data-model>

**ABSTRACT:** A harmonized subset of the GS1 Trade Item Modules Standard used in the GS1 Global Data Synchronization Network

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-01-01

## GS1 Attribute Definitions for Business

### GS1 Attribute Definitions for Business, Release 1.7

<https://www.gs1.org/standards/attribute-definitions-for-business>

**ABSTRACT:** Non-technical and business friendly definitions of all attributes in the GS1 Global Data Model Standard

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-01-01

## GS1 Global Data Model Attribute Implementation Guide

### GS1 Global Data Model Attribute Implementation Guide, Release 1.7

<https://www.gs1.org/standards/gs1-global-data-model-attribute-implementation-guideline/current-standard>

**ABSTRACT:** An implementation guide for the GS1 Attribute Definitions for Business Standard

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-01-01

## GS1 Digital Link Standard

### GS1 Digital Link Standard, Release 1.2.1

<https://www.gs1.org/standards/gs1-digital-link>

**ABSTRACT:** A standard that specifies how to encode GS1 identification keys and application identifiers into a web url. The standard further defines a resolver function enabling the management of linking to multiple sources using predefined link types.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-01-01

## GS1 General Specifications

### GS1 General Specifications, Release 22.0

<https://www.gs1.org/standards/barcodes-epcrfid-id-keys/gs1-general-specifications>

**ABSTRACT:** A GS1 standard that defines all GS1 Identification keys, all GS1 Application Identifiers and all GS1 adopted barcode (1D and 2D) standards.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2022-01-01

## GS1 Digital Link Implementation Guideline (Global Edition)

### GS1 Digital Link Implementation Guideline (Global Edition), Release 1.0.1

<https://www.gs1.org/standards/gs1-digital-link>

**ABSTRACT:** An implementation guide for the Digital Link Standard

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-01-01

## GS1Web Vocabulary

### GS1 Web Vocabulary, Release 1.5.1

<https://www.gs1.org/voc>

**ABSTRACT:** A vocabulary of GS1 defined terms used in web environments. The GS1 Web Vocabulary is an extension of Schema.org, managed by Google, Microsoft, Yahoo and Yandex.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2021-01-01

## GS1 Human Readable Interpretation (HRI) Implementation Guide

### GS1 Human Readable Interpretation (HRI) Implementation Guide, Release 1.2

[https://www.gs1.org/docs/barcodes/HRI\\_Implementation\\_Guide.pdf](https://www.gs1.org/docs/barcodes/HRI_Implementation_Guide.pdf)

**ABSTRACT:** An implementation guide on rules for human readable content next to optical data carriers 1D or 2D barcodes.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-01-01

## Consumer Product Variant in GDSN- Implementation Guide

### Consumer Product Variant - Implementation Guide

[https://www.gs1.org/docs/gdsn/3.1/CPV\\_GDSN\\_Implementation\\_Guide.pdf](https://www.gs1.org/docs/gdsn/3.1/CPV_GDSN_Implementation_Guide.pdf)

**ABSTRACT:** An implementation guide for the implementation of Consumer Product Variant identification in GDSN, identifying variation of a product not requiring change of product identifier (Global Trade Item Number)

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2018-01-01

## GS1 DataMatrix Guideline

### GS1 DataMatrix Guideline, Release 2.5

<https://www.gs1.org/standards/gs1-datamatrix-guideline/25>

**ABSTRACT:** An implementation guide for GS1 DataMatrix (2D barcode)

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2017-01-01

## Global Traceability Standard

### Global Traceability Standard, Release 2

<https://www.gs1.org/standards/gs1-global-traceability-standard/current-standard>

**ABSTRACT:** A process standard that specifies how Traceability events are identified and shared accompanied by the appropriate information

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2017-01-01

## EPC Information Services (EPCIS) Specification Conformance Requirements

### EPC Information Services (EPCIS) Specification Conformance Requirements

<https://www.gs1.org/standards/epcis>

**ABSTRACT:** A technical standard on how to share traceability event data

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2015-01-01

## GS1 SmartSearch implementation guideline

### GS1 SmartSearch implementation guideline

[https://www.gs1.org/docs/gs1-smartsearch/GS1\\_SmartSearch\\_Implementation\\_Guideline.pdf](https://www.gs1.org/docs/gs1-smartsearch/GS1_SmartSearch_Implementation_Guideline.pdf)

**ABSTRACT:** An implementation guide on how to implement GS1 Smart Search, which is the previous name for GS1 Web Vocabulary

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2015-01-01

## Vocabulary of GS1 SmartSearch

### Vocabulary of GS1 SmartSearch

<https://www.gs1.org/voc>

**ABSTRACT:** A predecessor of GS1 Web Vocabulary, specifically targeted at search optimization

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2015-01-01

## Ministry of the Economy of Luxembourg

## Product Circularity Data Sheet

### Product Circularity Data Sheet (PCDS) v3.2s

[https://pcds.lu/wp-content/uploads/2020/11/20200214\\_Light\\_PCDS\\_v3.2s\\_FORM.pdf](https://pcds.lu/wp-content/uploads/2020/11/20200214_Light_PCDS_v3.2s_FORM.pdf)

**ABSTRACT:** The Product Circularity Data Sheet (PCDS) is a basic source of verifiable data. It can be used to establish how circular a product is and inform about the circular path it was designed and manufactured for.

DOCUMENT TYPE: Standard

STATUS: Published

PUBLICATION DATE: 2020-02-14



## PEPPOL eDelivery

### eDelivery Network Specifications v.2.0.2

<http://peppol.eu/downloads/the-peppol-edelivery-network-specifications/>

**ABSTRACT:** <http://peppol.eu/downloads/the-peppol-edelivery-network-specifications/>

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: 2021-04-13

## DIF

### DIDComm2

#### DIDComm Messaging v2.0

<https://identity.foundation/didcomm-messaging/spec/v2.0/>

**ABSTRACT:** A protocol to exchange credentials between two identity wallets.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: N/A

### DID Registraion

#### DID Registration

<https://identity.foundation/did-registration/>

**ABSTRACT:** A protocol to register a DID at any given trusted ledger.

DOCUMENT TYPE: Technical Specification

STATUS: Under development

PUBLICATION DATE: N/A

### Presentation Exchange

#### Presentation Exchange 2.X.X

<https://identity.foundation/presentation-exchange/>

**ABSTRACT:** Base protocol to exchange verifiable credentials between two parties.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: N/A

## Credential Manifest

### Credential Manifest 0.0.1

<https://identity.foundation/credential-manifest/>

**ABSTRACT:** Credential Manifests are a resource format that defines preconditional requirements, Issuer style preferences, and other facets User Agents utilize to help articulate and select the inputs necessary for processing and issuance of a specified credential.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: N/A

## Sidetree

### Sidetree v1.0.0

<https://identity.foundation/sidetree/spec/>

**ABSTRACT:** Sidetree is an alternative protocol for anchoring DIDs, ie. creating scalable Decentralized Identifier networks that can run atop any existing decentralized anchoring system (e.g. Bitcoin, Ethereum, distributed ledgers, witness-based approaches) and be as open, public, and permissionless as the underlying anchoring systems they utilize.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: N/A

## Well Known

### Well Known DID Configuration

<https://identity.foundation/specs/did-configuration/>

**ABSTRACT:** A specification to connect DIDs with existing and established and trusted security mechanisms, e.g. to connect the DID controller with the X.509 cert controller of a domain.

DOCUMENT TYPE: Technical Specification

STATUS: Published

PUBLICATION DATE: N/A

## PeerDID

### Peer DID Method Specification

<https://identity.foundation/peer-did-method-spec/>

**ABSTRACT:** A specification to allow blockchain-independent W3C Decentralized Identifiers.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: N/A

## WACI PEX

### WACI-DIDComm Interop Profile

<https://identity.foundation/waci-didcomm/>

**ABSTRACT:** A DIDComm 2 Profile for supporting the Wallet and Credential Interaction (WACI) Protocols for both Issuance and Presentation Exchange.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: N/A

## VC-JSON

### Verifiable Credentials JSON Schema

<https://w3c-ccg.github.io/vc-json-schemas/>

**ABSTRACT:** This specification provides a mechanism for the use of JSON Schemas with Verifiable Credentials.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: 2022-11-08

## Decentralized Web Node

### Decentralized Web Node

<https://identity.foundation/decentralized-web-node/spec/>

**ABSTRACT:** A specification to define a data storage and message relay mechanism that entities can use to locate public or private permissioned data related to a given Decentralized Identifier (DID).

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: N/A

## Encrypted Data Vaults

### Encrypted Data Vaults v0.1

<https://identity.foundation/edv-spec/>

**ABSTRACT:** This specification describes a privacy-respecting mechanism for storing, indexing, and retrieving encrypted data at a storage provider. It is often useful when an individual or organization wants to protect data in a way that the storage provider cannot view, analyze, aggregate, or resell the data.

DOCUMENT TYPE: Technical Specification

STATUS: Published and under revision

PUBLICATION DATE: 2022-06-20



## VDI 2770

### Mindestanforderungen an digitale Herstellerinformationen für die Prozessindustrie - Grundlagen

<https://www.vdi.de/richtlinien/details/vdi-2770-blatt-1-betrieb-verfahrenstechnischer-anlagen-mindestanforderungen-an-digitale-herstellereininformationen-fuer-die-prozessindustrie-grundlagen>

**ABSTRACT:** Die Richtlinie beschreibt die standardisierte Beschaffenheit von Herstellerinformationen. Diese Herstellerunterlagen enthalten Informationen, die für die richtige Auslegung, Aufstellung, Inbetriebnahme, Ersatzteilbevorratung, Bedienung, Reinigung, Inspektion, Wartung und Instandsetzung erforderlich sind. Darüber hinaus gibt es gesetzliche Bestimmungen, die das Vorhandensein bestimmter Herstellerunterlagen, wie CE-Konformitätserklärungen, ATEX-Zertifikate oder Werkstoffzeugnisse, vorschreiben. Die Übertragung dieser Informationen in die IT-Systeme der Anlagenbetreiber wird durch die Anwendung der Richtlinie vereinheitlicht, um den Aufwand für Hersteller und Betreiber zu minimieren. Die Standardisierung der Beschaffenheit von digitalen Herstellerinformationen ist eine Basistechnologie, die eine vollautomatisierbare Übertragung der Informationen als Datenobjekt aus den IT-Systemen des Herstellers in die IT-Systeme des Anwenders ermöglicht. Durch diese Standardisierung kann zukünftig jede Einzelinformation eindeutig identifiziert und dadurch in allen IT-Systemen abgerufen werden. Dadurch entfällt das ressourcenintensive Suchen in der Herstellerdokumentation nahezu vollständig. Dies ermöglicht, bei gleichem Ressourceneinsatz - eine deutliche Intensivierung der Nutzung von technischen Informationen zur Verbesserung der Prozessabläufe in Produktionsanlagen. Die hierdurch erreichbaren Kosteneinsparungen sichern nachhaltig die Wettbewerbsfähigkeit des Industriestandorts Deutschland.

DOCUMENT TYPE: Other

STATUS: Published

PUBLICATION DATE: 2020-04

## ■ Appendix: Relevance to Selected Categories

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ASD										
ASD-STAN	ASD S2000M	International specification for Material Management; Issue No. 7.0				Significant relevance		Significant relevance		Some relevance
CEN										
CEN	CEN EN 16931-1, -3-2, -3-3	Electronic invoicing – Part 1 Semantic model of core elements, Part 2-3 UBL profile, Part 3-3 CII profile	No relevance	Significant relevance		No relevance	No relevance	High relevance	No relevance	Significant relevance
CEN	e-Submission, e-Ordering	Planned EN for mandatory e-Submission and elective e-Ordering transactions	No relevance	Significant relevance		No relevance	No relevance	Significant relevance	No relevance	Significant relevance
CEN	CEN/TR 15941	Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data;				High relevance				
CEN/CLC	CEN/CLC/TS XXXX JT019002	Decentralised Identity Management Model based on Blockchain and other Distributed Ledgers Technologies - Part 1: Generic Reference Framework		High relevance						High relevance
Circular Fashion	circularity.ID®	CIRCULARITY.ID® OPEN DATA STANDARD SCHEMA V 3.0	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
CLC										
CLC	EN 50693	Product category rules for life cycle assessment of electrical and electronic products and systems						High relevance		
CLC	CLC/TR 50489	Smart tracker chips - Feasibility study on the inclusion of RFID in Electrical and Electronic Equipment for WEEE management	Significant relevance	Some relevance		High relevance	Significant relevance	Some relevance	Significant relevance	
CLC IEC	EN IEC 61406-1	Identification Link - Part 1: General requirements	High relevance	High relevance		High relevance	No relevance	Some relevance	No relevance	Some relevance
CLC IEC	EN IEC 61406-2	Identification Link - Part 2: Encoding of product types, lots, batches and characteristics	Some relevance	High relevance		High relevance	No relevance	Some relevance	No relevance	Some relevance
CLC IEC	EN IEC 63365 ED1	Digital Nameplate - Digital Product Marking	Significant relevance	Significant relevance		Significant relevance	No relevance	Some relevance	No relevance	No relevance
CLC IEC	EN IEC 63278-1 ED1	Asset Administration Shell for industrial applications - Part 1: Asset Administration Shell structure	No relevance	Some relevance		Some relevance	Significant relevance	Significant relevance	Significant relevance	Significant relevance
CLC IEC	EN IEC 63278-2 ED1	Asset Administration Shell for Industrial Applications – Part 2: Information meta model. 65/915/NP. 2022-07. 2022-07.	No relevance	Some relevance		Some relevance	Some relevance	High relevance	High relevance	Some relevance
CLC IEC	EN IEC 63278-3 ED1	Asset Administration Shell for Industrial Applications – Part 3: Security provisions for Asset Administration Shells.	No relevance	Some relevance		Some relevance	High relevance	Significant relevance	Some relevance	High relevance



Source	Source_REF	Relevance to Selected Categories								
		Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
CLC IEC	EN IEC 61360-1	Standard data element types with associated classification scheme - Part 1: Definitions - Principles and methods	No relevance				High relevance	High relevance		
CLC IEC	EN IEC 61360-2	Standard data element types with associated classification scheme for electric components - Part 2: EXPRESS dictionary schema	No relevance				High relevance	High relevance		
CLC IEC	EN IEC 61360-4	Standard data element types with associated classification scheme for electric components - Part 4: IEC reference collection of standard data element types and component classes	No relevance					High relevance		
CLC IEC	EN IEC 61360-5	Standard data element types with associated classification scheme for electric components - Part 5: Extensions to the EXPRESS dictionary schema	No relevance					High relevance		
CLC IEC	EN IEC 61360-6	Standard data element types with associated classification scheme for electric components - Part 6: IEC Common Data Dictionary (IEC CDD) quality guidelines	No relevance					High relevance		

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
CLC IEC	EN IEC 61360-7 DB	Data dictionary of cross-domain concepts	No relevance					High relevance		
CLC IEC	EN IEC 63372	Quantification and communication of Carbon FootPRINT and GHG emission reductions/avoided emissions from electric and electronic products and systems – Principles, methodologies, requirements and guidance	No relevance					High relevance		
CLC IEC	EN IEC 62683-1	Low-voltage switchgear and controlgear - Product data and properties for information exchange - Part 1: Catalogue data	No relevance					High relevance		
CLC IEC	EN IEC 62443-4-1	Security for industrial automation and control systems - Part 4-1: Secure product development lifecycle requirements (IEC 62443-4-1:2018); German version EN IEC 62443-4-1:2018	No relevance				Significant relevance			High relevance
DBCH & DGQ										
DBCH	DBCh Umwelt-produkt-deklaration * DBC 211-IS-D-2015	Environmental product declarations for construction chemicals				High relevance				

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
DGQ	FQS-DGQ-Band 88-11	Vernetzung von Produktionssystem: Anwenderleitfaden zum automatisierten Monitoring von Ressourcenverbräuchen				High relevance		Significant relevance		
DIF & DIN										
DIF	DIDComm2	DIDComm Messaging v2.0	Some relevance	Some relevance		Some relevance	Some relevance	High relevance	Some relevance	Some relevance
DIF	DID Registraion	DID Registration	Some relevance	High relevance		High relevance	Some relevance	Some relevance	Some relevance	Some relevance
DIF	Presentation Exchange	Presentation Exchange 2.X.X	No relevance	No relevance		No relevance	Some relevance	High relevance	No relevance	No relevance
DIF	Credential Manifest	Credential Manifest 0.0.1	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
DIF	Sidetree	Sidetree v1.0.0	No relevance	High relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
DIF	Well Known	Well Known DID Configuration	No relevance	No relevance		No relevance	Some relevance	No relevance	No relevance	High relevance
DIF	PeerDID	Peer DID Method Specification	No relevance	High relevance		No relevance	No relevance	High relevance	No relevance	No relevance
DIF	WACI PEX	WACI-DIDComm Interop Profile	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
DIF	VC-JSON	Verifiable Credentials JSON Schema	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
DIF	Decentralized Web Node	Decentralized Web Node	No relevance	No relevance		No relevance	No relevance	No relevance	High relevance	No relevance
DIF	Encrypted Data Vaults	Encrypted Data Vaults v0.1	No relevance	No relevance		No relevance	No relevance	Some relevance	High relevance	Some relevance
DIN	DIN 77005-1	Lebenslaufakte für technische Anlagen - Teil 1: Strukturelle und inhaltliche Festlegungen					Significant relevance			
DIN	DIN 77005-2	Lebenslaufakte für technische Anlagen - Teil 2: Digitale Lebenslaufakte					Significant relevance			
ECLASS & OTHERS										
ECLASS	ECLASS	ECLASS	No relevance	No relevance		Some relevance	No relevance	Significant relevance	Some relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
EN ISO	EN ISO 14021	Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)		Some relevance		Some relevance				
ENISA	Security Framework	Security Framework	No relevance	No relevance		No relevance	High relevance	No relevance	No relevance	High relevance
Enterprise Ethereum	Baseline	Baseline Protocol	No relevance	High relevance		No relevance	No relevance	High relevance	Some relevance	High relevance
Enterprise Ethereum	EEA CIW	EEA Crosschain Security Guidelines Version 1.0	No relevance	Significant relevance		No relevance	Some relevance	High relevance	Some relevance	High relevance
EON	Circular Product Data Protocol	Circular Product Data ProtocolTM V1.0	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
Etherum Community	ERC#1056	ERC: Lightweight Identity #1056	No relevance	High relevance		No relevance	No relevance	No relevance	No relevance	High relevance
GreenBlue	RMS	Receicled Material Standard	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
GS1 & Hyperledger Foundation										
GS1	GS1 Global Data Model Standard	GS1 Global Data Model Standard, Release 2.2	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
GS1	GS1 Attribute Definitions for Business	GS1 Attribute Definitions for Business, Release 1.7	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
GS1	GS1 Global Data Model Attribute Implementation Guide	GS1 Global Data Model Attribute Implementation Guide, Release 1.7	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
GS1	GS1 Digital Link Standard	GS1 Digital Link Standard, Release 1.2.1	Significant relevance	Significant relevance		High relevance	No relevance	Significant relevance	No relevance	No relevance
GS1	GS1 General Specifications	GS1 General Specifications, Release 22.0	High relevance	High relevance		Significant relevance	No relevance	Some relevance	No relevance	No relevance



Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
GS1	GS1 Digital Link Implementation Guideline (Global Edition)	GS1 Digital Link Implementation Guideline (Global Edition), Release 1.0.1	Significant relevance	Significant relevance		High relevance	No relevance	Significant relevance	No relevance	No relevance
GS1	GS1Web Vocabulary	GS1 Web Vocabulary, Release 1.5.1	No relevance	No relevance		Significant relevance	No relevance	High relevance	No relevance	No relevance
GS1	GS1 Human Readable Interpretation (HRI) Implementation Guide	GS1 Human Readable Interpretation (HRI) Implementation Guide, Release 1.2	High relevance	Some relevance		Some relevance	No relevance	No relevance	No relevance	No relevance
GS1	Consumer Product Variant - Implementation Guide	Consumer Product Variant - Implementation Guide	Significant relevance	High relevance		Some relevance	No relevance	No relevance	No relevance	No relevance
GS1	GS1 DataMatrix Guideline	GS1 DataMatrix Guideline, Release 2.5	High relevance	Significant relevance		Some relevance	No relevance	No relevance	No relevance	No relevance
GS1	Global Traceability Standard	Global Traceability Standard, Release 2	Some relevance	Some relevance		No relevance	No relevance	High relevance	No relevance	No relevance
GS1	EPC Information Services (EPCIS) Specification Conformance Requirements	EPC Information Services (EPCIS) Specification Conformance Requirements	No relevance	Some relevance		Some relevance	high relevance	High relevance	No relevance	No relevance
GS1	GS1 SmartSearch implementation guideline	GS1 SmartSearch implementation guideline	No relevance	No relevance		Significant relevance	No relevance	High relevance	No relevance	No relevance
GS1	Vocabulary of GS1 SmartSearch	Vocabulary of GS1 SmartSearch	No relevance	No relevance		Significant relevance	No relevance	High relevance	No relevance	No relevance
Hyperledger Foundation	Aries	Aries Interop Profile	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
Hyperledger Foundation	Indy	Hyperledger Indy	No relevance	High relevance		No relevance	No relevance	No relevance	No relevance	High relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
IDTA & OTHERS										
IDTA	IDTA 02023	IDTA Submodel Template Carbon Footprint					High relevance			
IEC	IEC 82474-1	Material declaration - Part 1: General requirements	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
IEC	IEC/TR 62837	Energy efficiency through automation systems	No relevance	No relevance		No relevance	No relevance	Some relevance	Some relevance	No relevance
IETF	OAuth2	OAuth 2.0	No relevance	No relevance		No relevance	High relevance	No relevance	No relevance	High relevance
ISO										
ISO	ISO 20140-5	Automation systems and integration - Evaluating energy efficiency and other factors of manufacturing systems that influence the environment - Part 5: Environmental performance evaluation data	No relevance	No relevance		No relevance	No relevance	High relevance	Some relevance	No relevance
ISO	ISO 14067	Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification and communication	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO	ISO/WD 59040	Circular Economy - Product Circularity Data Sheet	Some relevance			Some relevance	Some relevance	Some relevance	Some relevance	Some relevance
ISO	ISO 9735	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules						Significant relevance		

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 22742	Packaging - Linear bar code and two-dimensional symbols for product packaging	Some relevance	Some relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO	ISO 28219	Packaging - Labelling and direct product marking with linear bar code and two-dimensional symbols	Some relevance	Some relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO	ISO 17442	ISO 17442:2012 - Financial services - Legal Entity Identifier (LEI)	No relevance	High relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO	ISO/TR 23249	Blockchain and distributed ledger technologies - Overview of existing DLT systems for identity management		High relevance						
ISO	ISO/TR 23244	Blockchain and distributed ledger technologies - Privacy and personally identifiable information protection considerations					High relevance		High relevance	High relevance
ISO	ISO/TR 6039	Blockchain and distributed ledger technologies - Identifiers of subjects and objects for the design of blockchain systems		High relevance						
ISO	ISO/TR 16340	Application of blockchain-based traceability platform for cold chain food						High relevance	High relevance	High relevance
ISO	ISO 7603	Decentralized Identity standard for the identification of subjects and objects		High relevance						

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 9735-1	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4) - Part 1: Syntax rules common to all parts						High relevance		
ISO	ISO 9735-2	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 2: Syntax rules specific to batch EDI						High relevance		
ISO	ISO 9735-3	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 3: Syntax rules specific to interactive EDI						High relevance		



Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 9735-4	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 4: Syntax and service report message for batch EDI (message type - CONTRL)						High relevance		
ISO	ISO 9735-5	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 5: Security rules for batch EDI (authenticity, integrity and non-repudiation of origin)						High relevance		
ISO	ISO 9735-6	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 6: Secure authentication and acknowledgement message (Message type: AUTACK)						High relevance		

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 9735-7	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 7: Security rules for batch EDI (confidentiality)						High relevance		
ISO	ISO 9735-8	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 8: Associated data in EDI						High relevance		
ISO	ISO 9735-9	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 1) - Part 9: Security key and certificate management message (message type: KEYMAN)						High relevance		

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 9735-10	Electronic data interchange for administration, commerce and transport (EDIFACT) - Application level syntax rules (Syntax version number: 4, Syntax release number: 2) - Part 10: Syntax service directories						High relevance		
ISO	ISO 14533-1	Processes, data elements and documents in commerce, industry and administration - Long term signature profiles - Part 1: Long term signature profiles for CMS Advanced Electronic Signatures (CAAdES)						High relevance		
ISO	ISO 14533-2	Processes, data elements and documents in commerce, industry and administration - Long term signature - Part 2: profiles for XML Advanced Electronic Signatures (XAdES)						High relevance		
ISO	ISO 22378	Guidelines for establishing interoperability among independently functioning product identification and related authentication systems	No relevance	Significant relevance		No relevance	Some relevance	Significant relevance	No relevance	Some relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 14533-3	Processes, data elements and documents in commerce, industry and administration - Long term signature profiles - Part 3: Long term signature profiles for PDF Advanced Electronic Signatures (PADES)						High relevance		
ISO	ISO 23354	Business requirements for end-to-end visibility of logistics flow	High relevance							High relevance
ISO	ISO 22381	Guidelines for establishing interoperability of object identification and authentication systems	No relevance	Significant relevance		No relevance	Some relevance	No relevance	No relevance	Some relevance
ISO	ISO 22383	Guidelines for selection and performance evaluation of authentication solutions for material goods	No relevance	High relevance		No relevance	Some relevance	No relevance	No relevance	Some relevance
ISO	ISO 22385	Guidelines for establishing a Framework for Trust and Interoperability	No relevance	High relevance		No relevance	high relevance	Significant relevance	No relevance	Some relevance
ISO	ISO 22387	Confirmation procedures for the application of artefact metrics	No relevance	High relevance		No relevance	Some relevance	No relevance	No relevance	Some relevance
ISO	ISO 22376	Electronic Storage Specifications for use of Visible Digital Seal (VDS) for the authentication, verification and acquisition of data carried by a document or object	No relevance	High relevance		No relevance	Some relevance	Significant relevance	No relevance	Some relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 22372	Framework for establishing trustworthy supply chains	No relevance	High relevance		No relevance	Some relevance	Significant relevance	Some relevance	Some relevance
ISO	ISO 23247-1	Automation systems and integration - Digital twin framework for manufacturing - Part 1: Overview and general principles	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO	ISO 23247-2	Automation systems and integration - Digital twin framework for manufacturing - Part 2: Reference architecture	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO	ISO 23247-3	Automation systems and integration - Digital twin framework for manufacturing - Part 3: Digital representation of manufacturing elements	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO	ISO 23247-4	Automation systems and integration - Digital twin framework for manufacturing - Part 4: Information exchange	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO	ISO 10303 series	Industrial automation systems and integration - Product data representation and exchange	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO	ISO 8000 series	Data quality	No relevance	No relevance		Some relevance	No relevance	Significant relevance	Significant relevance	Significant relevance



Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO	ISO 10303-1	Industrial automation systems and integration - Product data representation and exchange - Part 1: Overview and fundamental principles				Some relevance		Some relevance		
ISO and OASIS	ISO 15000-2:2021	AS4 profile of ebXML Messaging v3	Significant relevance	No relevance		No relevance	Significant relevance	Significant relevance	No relevance	High relevance
ISO/IEC	ISO/IEC TR 24729-2	Information technology - Radio frequency identification for item management - Implementation guidelines - Part 2: Recycling and RFID tags	Some relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC	ISO/IEC 29161	Information technology - Data structure - Unique identification for the Internet of Things		High relevance						
ISO/IEC	ISO/IEC 27040	Information technology - Security techniques - Storage security							Significant relevance	High relevance
ISO/IEC	ISO/IEC 27566	Information security, cybersecurity and privacy protection - Age assurance systems - Framework					Significant relevance			High relevance
ISO/IEC	ISO/IEC 29146	Information technology - Security techniques - A framework for access management					Significant relevance			High relevance

Source	Source_REF	Title_Full	Relevance to Selected Categories							
			Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC	ISO/IEC 24760-1	IT Security and Privacy - A framework for identity management - Part 1: Terminology and concepts					Significant relevance			High relevance
ISO/IEC	ISO/IEC 24760-2	IT Security and Privacy - A framework for identity management - Part 2: Reference architecture and requirements					Significant relevance			High relevance
ISO/IEC	ISO/IEC 24760-3	Information technology - Security techniques - A framework for identity management - Part 3: Practice					Significant relevance			High relevance
ISO/IEC	ISO/IEC 24760-4	IT Security and Privacy - A framework for identity management - Part 4: Authenticators, Credentials and Authentication					Significant relevance			High relevance
ISO/IEC	ISO/IEC 24761	Information technology - Security techniques - Authentication context for biometrics					Significant relevance			High relevance
ISO/IEC	ISO/IEC TS 29003	Information technology - Security techniques - Identity proofing					Significant relevance			High relevance
ISO/IEC	ISO/IEC 29115	Information technology - Security techniques - Entity authentication assurance framework	No relevance	Some relevance		No relevance	Some relevance	Some relevance	No relevance	High relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC	ISO/IEC 19790	Information technology - Security techniques - Security requirements for cryptographic modules	No relevance	Some relevance		No relevance	Some relevance	Some relevance	No relevance	High relevance
ISO/IEC	ISO/IEC TS 30168 ED1	Internet of Things (IoT) - Generic Trust Anchor Application Programming Interface for Industrial IoT Devices								
ISO/IEC and OASIS	ISO/IEC 19845:2015	Universal Business Language (UBL) v2.1	No relevance	Significant relevance		No relevance	No relevance	High relevance	No relevance	Some relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 24458	Information technology – Automatic identification and data capture techniques – Bar code printer and bar code reader performance testing specification	Significant relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC TR 24244	Automatic identification and data capture techniques - Bar code print quality test specification - Evolution of the grading and measurement of linear symbols in ISO/IEC 15416	Some relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 23941	Information technology - Automatic identification and data capture techniques - Rectangular Micro QR Code (rMQR) bar code symbology specification	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC JTC 1/ SC 31	ISO/IEC 23634	Information technology - Automatic identification and data capture techniques - JAB Code polychrome bar code symbology specification	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 22603-1	Information technology - Digital representation of product information - Part 1: General requirements	Significant relevance	No relevance		Some relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 22603-2	Information technology - Digital representation of product information - Part 2: Requirements for electronic devices with integral display	Some relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 21471	Information technology - Automatic identification and data capture techniques - Extended rectangular data matrix (DMRE) bar code symbology specification	Significant relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 20248	Information technology - Automatic identification and data capture techniques - Digital signature data structure schema	Some relevance	Significant relevance		Some relevance	Significant relevance	Significant relevance	Some relevance	High relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC JTC 1/ SC 31	ISO/IEC 19762	Information technology - Automatic identification and data capture (AIDC) techniques - Harmonized vocabulary	Significant relevance	Significant relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC NP 18975	Encoding and resolving identifiers over HTTP	No relevance	Some relevance		Significant relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 18004	Information technology - Automatic identification and data capture techniques - QR Code bar code symbology specification	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 16480	Information technology - Automatic identification and data capture techniques - Reading and display of ORM by mobile devices	Some relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 16022	Information technology - Automatic identification and data capture techniques - Data Matrix bar code symbology specification	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance



Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC JTC 1/ SC 31	ISO/IEC 15459-4	Information technology - Automatic identification and data capture techniques - Unique identification - Part 4: Individual products and product packages	Some relevance	Significant relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 15459-6	Information technology - Automatic identification and data capture techniques - Unique identification - Part 6: Groupings	Some relevance	Some relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 15434	Information technology - Automatic identification and data capture techniques - Syntax for high-capacity ADC media	No relevance	No relevance		Some relevance	No relevance	Some relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 15426-2	Information technology - Automatic identification and data capture techniques - Bar code verifier conformance specification - Part 2: Two-dimensional symbols	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC JTC 1/ SC 31	ISO/IEC 15424	Information technology - Automatic identification and data capture techniques - Data Carrier Identifiers (including Symbology Identifiers)	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 15418	Information technology - Automatic identification and data capture techniques - GS1 Application Identifiers and ASC MH10 Data Identifiers and maintenance	No relevance	High relevance		Significant relevance	No relevance	Some relevance	No relevance	Some relevance
ISO/IEC JTC 1/ SC 31	ISO/IEC 15415	Information technology - Automatic identification and data capture techniques - Bar code symbol print quality test specification - Two-dimensional symbols	High relevance	No relevance		No relevance	No relevance	No relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 20924	Information technology - Internet of Things (IoT) - Vocabulary	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 21823-1	Internet of things (IoT) - Interoperability for IoT systems - Part 1: Framework	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 21823-2	Internet of things (IoT) - Interoperability for IoT systems - Part 2: Transport interoperability	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC JTC 1/ SC 41	ISO/IEC 21823-3	Internet of things (IoT) - Interoperability for IoT systems - Part 3: Semantic interoperability	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 21823-4	Internet of things (IoT) - Interoperability for IoT systems - Part 4: Syntactic interoperability	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 30141	Internet of Things (IoT) - Reference Architecture	No relevance	Some relevance		Some relevance	Some relevance	High relevance	No relevance	Some relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 30147	Information technology - Internet of things - Methodology for trustworthiness of IoT system/service	No relevance	No relevance		No relevance	Significant relevance	Significant relevance	No relevance	Some relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 30161	Internet of Things (IoT) - Requirements of IoT data exchange platform for various IoT services	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 30162	Internet of Things (IoT) - Compatibility requirements and model for devices within industrial IoT systems	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	Some relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC 30169	Internet of Things (IoT) - IoT applications for electronic label system (ELS)	No relevance	No relevance		No relevance	No relevance	Some relevance	Some relevance	No relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC AWI 30149	Internet of things (IoT) - Trustworthiness framework	No relevance	No relevance		No relevance	Significant relevance	Significant relevance	No relevance	Significant relevance
ISO/IEC JTC 1/ SC 41	ISO/IEC AWI 30173	Digital twin - Concepts and terminology	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
ISO/IEC, ITU and IETF	ISO/IEC 9834-8:2004 (and RFC 4122)	Procedures for ... generation and registration of Universally Unique Identifiers (UUIDs)	No relevance	High relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ITU & OTHERS										
ITU	ITU-T X.1403	SERIES X: DATA NETWORKS, OPEN SYSTEM COMMUNICATIONS AND SECURITY - Secure applications and services (2) – Distributed ledger technology security	No relevance	High relevance		No relevance	Some relevance	Some relevance	No relevance	Some relevance
ITU-T	ITU-T L Supplement 28	Circular economy in information and communication technology; definition of approaches, concepts and metrics	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
ITU-T and OASIS	ITU-T Rec X.1144 (XACML v3)	eXtensible Access Control Markup Language (XACML) 3.0				No relevance	High relevance	No relevance	No relevance	High relevance
ITU-T and OASIS	ITU-T Rec X.1141 (SAML v2)	Security Assertion Markup Language (SAML) 2.0				No relevance	Significant relevance	No relevance	No relevance	High relevance
Ministry of the Economy of Luxembourg	Product Circularity Data Sheet	Product Circularity Data Sheet (PCDS) v3.2s	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
OpenID Foundation	OpenIDConnect	OpenID Connect	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
OpenID Foundation	OID4VC	OpenID for Verifiable Credential Issuance	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
OpenID Foundation	OID4VP	OpenID Connect for Verifiable Presentations	No relevance	No relevance		No relevance	No relevance	High relevance	No relevance	No relevance
OpenPEPPOL	PEPPOL eDelivery	eDelivery Network Specifications v.2.0.2	Significant relevance	Some relevance		Some relevance	Some relevance	Some relevance	No relevance	Some relevance
UNECE-UN/CEFACT										
UNECE-UN/CEFACT	CEFACT CII	Cross Industry Invoice version D16B	No relevance	Significant relevance		No relevance	No relevance	High relevance	No relevance	Some relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
UNECE-UN/CEFACT	UMM	UML Profile for UN/CEFACT's Modeling Methodology (UMM) Foundation Module Version 2.0 Technical Specification	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
UNECE-UN/CEFACT	CCTS	Core Components Technical Specification – Part 8 of the ebXML Framework	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
UNECE-UN/CEFACT	JSON-NDR	Application Programming Interface Technical Specification JSON schema naming and design rules	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
UNECE-UN/CEFACT	OpenAPISpecifications	OpenApi Naming and design rules technical specification	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
UNECE-UN/CEFACT	UNCCL	United Nations Core Component Library version 22A	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	UNCL	United Nations Code List	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	UNLOCODE	United Nations Code for Trade and Transport Locations	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Circular product data exchange use case	An extension to Business Requirement Specification part 2 of the Textile and Leather sector.	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Sustainable Development and Circular Economy Reference Data Model	XSD Schema	No relevance	No relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Circular product data exchange structure	XSD Schema	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance



Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
UNECE-UN/CEFACT	Product traceability data exchange structure (EPCIS)	XSD Schema	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Product transparency data exchange structure	XSD Schema	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Product traceability data exchange structure (EPCIS)	JSON schema / JSON-LD	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Product transparency data exchange structure	JSON schema / JSON-LD	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Circular product data exchange structure	JSON schema / JSON-LD	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Sustainable Development and Circular Economy Reference Data Model	JSON schema / JSON-LD	No relevance	Some relevance		No relevance	No relevance	Significant relevance	No relevance	No relevance
UNECE-UN/CEFACT	Supply Chain Reference Data Model Business Requirement Specification	Business Requirement Specification Supply Chain Reference Data Model	No relevance	Some relevance		No relevance	No relevance	High relevance	No relevance	No relevance
UNECE-UN/CEFACT	Exchange Header Envelope (XHE)	XSD Schema	No relevance	No relevance		No relevance	No relevance	Some relevance	No relevance	No relevance
VDI & W3C										
VDI	VDI 2770	Mindestanforderungen an digitale Herstellerinformationen für die Prozessindustrie - Grundlagen	No relevance				Some relevance	High relevance	Some relevance	No relevance

Source	Relevance to Selected Categories									
	Source_REF	Title_Full	Data carriers	Unique identifiers for companies, products, packaging, raw material, etc. and their verification		Physical digital Link, look-up mechanism	Access right management	Interoperability (technical, semantic, organisation), including data exchange protocols and formats and Data processing (introduction, modification, update)	Data Storage	Data authentication, reliability, and integrity and Data security and privacy
W3C	DIDs	Decentralized Identifiers (DIDs) v1.0, Core architecture, data model, and representations	Some relevance	High relevance		High relevance	Some relevance	Some relevance	Some relevance	Some relevance
W3C	VCs	Verifiable Credentials Data Model v1.1	No relevance	Significant relevance		No relevance	High relevance	High relevance	Some relevance	High relevance
W3C	DID Resolution	Decentralized Identifier Resolution (DID Resolution) v0.3	Some relevance	Some relevance		High relevance	No relevance	Significant relevance	Some relevance	Some relevance
W3C	VC Integrity	Verifiable Credential Data Integrity 1.0	No relevance	No relevance		No relevance	No relevance	No relevance	No relevance	High relevance
W3C	ODRL Model	ODRL Information Model 2.2	No relevance	No relevance		Some relevance	High relevance	Some relevance	No relevance	Some relevance
W3C	ODRL Vocabulary	ODRL Vocabulary & Expression 2.2	No relevance	No relevance		No relevance	High relevance	Some relevance	No relevance	Some relevance
W3C	JSON-LD	JSON-LD 1.1	No relevance	No relevance		No relevance	No relevance	High relevance	Some relevance	No relevance





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