SLOVENSKI STANDARD
SIST EN ISO 21597-1:2020

01-julij-2020

Informacijski vsebnik za izročitev povezanih dokumentov - Specifikacija za izmenjavo - 1. del: Vsebnik (ISO 21597-1:2020)

Information container for linked document delivery - Exchange specification - Part 1: Container (ISO 21597-1:2020)

Informationscontainer zur Datenübergabe - Austausch-Spezifikation - Teil 1: Container (ISO 21597-1:2020)

Conteneur d'informations pour la livraison de documents liés - Spécification d'échange - Partie 1: Conteneur (ISO 21597-1:2020)

Ta slovenski standard je istoveten z: **EN ISO 21597-1:2020**

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91.010.01	Gradbeništvo na splošno	Construction industry in general

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Information container for linked document delivery - Exchange specification - Part 1: Container (ISO 21597-1:2020)

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This European Standard was approved by CEN on 20 April 2020.

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Contents

Page

European foreword

This document (EN ISO 21597-1:2020) has been prepared by Technical Committee ISO/TC 59 "Buildings and civil engineering works" in collaboration with Technical Committee CEN/TC 442 “Building Information Modelling (BIM)” the secretariat of which is held by SN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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

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Endorsement notice

The text of ISO 21597-1:2020 has been approved by CEN as EN ISO 21597-1:2020 without any modification.

INTERNATIONAL STANDARD

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Information container for linked document delivery — Exchange specification —

Part 1: Container

Conteneur d'informations pour la livraison de documents liés — Spécification d'échange —
Partie 1: Conteneur

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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 13, *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 442, *Building Information Modelling (BIM)*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 21597 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The ISO 21597 series has been developed in response to a recognized need within the construction industry to be able to handle multiple documents as one information delivery.

Information deliveries are often a combination of drawings, information models (representing built or natural assets in the physical world), text documents, spreadsheets, photos, videos, audiofiles, etc. Increasingly, this may also include datasets based on any ontology. An ability to specify relationships using links between information elements in those separate documents can contribute significantly to the value of an information delivery. The composition of such a package arises both from the requirements of the process, e.g. delivery of as-built information, and from the specific functional purpose e.g. performing a quantity take-off or communication about issues in 3D models.

In this document a specification is given for a container that stores documents, along with a means of linking otherwise disconnected data within those documents.

The container format includes a header file and optional link files that define relationships by including references to the documents, or to elements within them. The header file uniquely identifies the container and its contractual or collaborative intention. This information is defined using the RDF, RDFS and OWL semantic web standards.

The header file, along with any additional RDF(S)/OWL files or resources, forms a suite that may be directly queried by software. The link references may be interpreted by the recipient applications or reviewed interactively by the recipient. Where it includes link references into the content of documents that don't support standardized querying mechanisms, their resolution may depend on third party interpreters.

The format can also be used to deliver multiple versions of the same document.

Information container for linked document delivery — Exchange specification —

Part 1: Container

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This document defines an open and stable container format to exchange files of a heterogeneous nature to deliver, store and archive documents that describe an asset throughout its entire lifecycle.

It is suitable for all parties dealing with information concerning the built environment, where there is a need to exchange multiple documents and their interrelationships, either as part of the process or as contracted deliverables. The format is intended to use resources either included in the container (such as documents) or referenced remotely (such as web resources). A key feature is that the container can include information about the relationships between the documents. Relevant use-cases reflect the need for information exchange during the entire life cycle of any built asset and can include, but are not limited to, the handover of

1. a published bidding package,
2. required project deliverables at a specific project stage (e.g. when proposing different design scenarios),
3. shared information as background or for further development,
4. published approval packages, or
5. information about versions between partners to provide a means to reference particular states of the information and track changes.

2 Normative references

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

ISO/IEC 21320-1, *Information technology — Document Container File — Part 1: Core.*

IANA. Internet Assigned Numbers Authority *Media Types*. [viewed 6 May 2019]. Available from: https://www.iana.org/assignments/media-types/media-types.xhtml

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W3C-RDF11-CONCEPTS. Cyganiak R., Wood D., Lanthaler M. *RDF 1.1 Concepts and Abstract Syntax. W3C Recommendation*, 25 February 2014 [viewed July 22nd 2019]. Latest version available at http://www.w3.org/TR/rdf11-concepts/

W3C-RDF11-SCHEMA. Brickley D., Guha R.V. *RDF Schema 1.1*. W3C Recommendation, 25 February 2014 [viewed July 22nd 2019]. Latest version available at http://www.w3.org/TR/rdf-schema/

W3C-RDF11-XML. Gandon F., Schreiber G. *RDF 1.1 XML Syntax*. W3C Recommendation, 25 February 2014 [viewed July 22nd 2019]. Latest version available at http://www.w3.org/TR/rdf-syntax-grammar/

W3C-XML-DATATYPES. Peterson D., Gao S., Malhotra A., Sperberg-McQueen C.M., Thompson H.S. eds. (Version 1.1) and Biron P.V., Malhotra A. eds. (Version 1.0). *W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes*. W3C Recommendation, 5 April 2012 [viewed July 22nd 2019]. Latest version available at http://www.w3.org/TR/xmlschema11-2/

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

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

3.1.1
container
file that conforms to the ISO 21597 series

3.1.2
payload
primary information in the form of *documents* (3.1.3) that is included within the *container* (3.1.1)

Note 1 to entry: This does not include the header file (Index.rdf) or the *ontology* (3.1.7) *resource* (3.1.14) files.

3.1.3
document
fixed and structured amount of information that can be managed and interchanged as a unit between users and systems

Note 1 to entry: This unit may not necessarily be human perceptible. Information is usually stored on a data medium.

Note 2 to entry: Used in the ISO 21597 series to refer to any document that forms part of the *payload* (3.1.2) in the container, including any 2D or 3D models that represent built or natural assets in the physical world; these may be held in any standard or proprietary format.

3.1.4
internal document
document (3.1.3) located within the *container* (3.1.1)

3.1.5
external document
document (3.1.3) located outside the *container* (3.1.1)

3.1.6
link
relation between *documents* (3.1.3), including between elements in documents

3.1.7
ontology
specification of concrete or abstract things, and the relationships among them, in a prescribed domain of knowledge

Note 1 to entry: The specification should be computer processable.

Note 2 to entry: The definition is adapted from W3C-OWL2-SPEC.

3.1.8
container ontology
RDF(S)/OWL file providing the *object* (3.1.23) *classes* (3.1.15) and properties that shall be used to specify the contents of a *container* (3.1.1)

3.1.9
linkset ontology
RDF(S)/OWL file providing the *object* (3.1.23) *classes* (3.1.15) and properties that shall be used to specify *links* (3.1.6) between *documents* (3.1.3) in a *container* (3.1.1)

3.1.10
dataset
RDF(S)/OWL file that contains *individuals* (3.1.16) that comply with the *classes* (3.1.15) as specified by *ontologies* (3.1.7)

3.1.11
index dataset
RDF(S)/OWL file containing an index of the contents of the *container* (3.1.1)

3.1.12
link dataset
RDF(S)/OWL file containing *links* (3.1.6) as defined in the ISO 21597 series

3.1.13
serialisation
encoding of an *ontology* (3.1.7) or *dataset* (3.1.10) into a format that can be stored, typically in a file

Note 1 to entry: The definition is adapted from W3C-RDF11-XML.

3.1.14
resource
something in the world (the "universe of discourse") denoted by an IRI or literal

Note 1 to entry: Anything can be a resource, including physical things, *documents* (3.1.3), abstract concepts, numbers and strings; the term is synonymous with "entity" as it is used in the RDF Semantics specification.

Note 2 to entry: The definition is adapted from W3C-RDF11-CONCEPTS.

3.1.15
class
set of *individuals* (3.1.16) having the same characteristics

Note 1 to entry: The definition is adapted from W3C-RDF11-SCHEMA, 2.2.

3.1.16
individual
resource (3.1.14) that has been placed into any RDFS *class* (3.1.15) as an instance of that class

Note 1 to entry: Like RDF classes, every OWL class is associated with a set of individuals, called the class extension; the individuals in the class extension are the instances of the class.

Note 2 to entry: There are two types of individuals in the syntax of OWL 2. Named individuals are given an explicit name that can be used in any *ontology* (3.1.7) to refer to the same *object* (3.1.23). Anonymous individuals do not have a global name and are thus local to the ontology in which they are contained.