SLOVENSKI STANDARD
SIST EN ISO 18618:2023

01-januar-2023

Nadomešča:
SIST EN ISO 18618:2018

Zobozdravstvo - Medobratovalnost sistemov CAD/CAM (ISO 18618:2022)

Dentistry - Interoperability of CAD/CAM Systems (ISO 18618:2022)

Zahnheilkunde - Interoperabilität der CAD/CAM-Systeme (ISO 18618:2022)

Médecine bucco-dentaire - Interopérabilité des systèmes de CFAO (ISO 18618:2022)

Ta slovenski standard je istoveten z: **EN ISO 18618:2022**

ICS:

11.060.01	Zobozdravstvo na splošno	Dentistry in general
35.240.80	Uporabniške rešitve IT v zdravstveni tehniki	IT applications in health care technology

SIST EN ISO 18618:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 18618

October 2022

ICS 11.060.01

Supersedes EN ISO 18618:2018

English Version

Dentistry - Interoperability of CAD/CAM Systems (ISO 18618:2022)

Médecine bucco-dentaire - Interopérabilité des systèmes de CFAO (ISO 18618:2022)

Zahnheilkunde - Interoperabilität der CAD/CAM-Systeme (ISO 18618:2022)

This European Standard was approved by CEN on 22 August 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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European foreword

This document (EN ISO 18618:2022) has been prepared by Technical Committee ISO/TC 106 "Dentistry" in collaboration with Technical Committee CEN/TC 55 “Dentistry” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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

This document supersedes EN ISO 18618:2018.

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Endorsement notice

The text of ISO 18618:2022 has been approved by CEN as EN ISO 18618:2022 without any modification.

INTERNATIONAL STANDARD

ISO 18618

Second edition
2022-09

Dentistry — Interoperability of CAD/CAM systems

Médecine bucco-dentaire — Interopérabilité des systèmes de CFAO

Reference number
ISO 18618:2022(E)

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Published in Switzerland

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 106, *Dentistry*, Subcommittee SC 9, *Dental CAD/CAM systems,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 55, *Dentistry,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 18618:2018), which has been technically revised.

The main change compared to the previous edition is: the XML schema for IDS (interface for dental CAD/CAM systems) and the examples of interoperability of dental products relating to dental implant systems, removables, dental appliances and orthodontics have been updated in Annex A due to the fast nature of the software system innovation and the need for ongoing testing.

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

Manufacturers of dental CAD/CAM systems differ in how they exchange manufacturing information and three dimensional data. This causes difficulty in data processing, design processes and manufacturing processes for users of those systems. In order to overcome these interoperability issues, this document has been prepared to facilitate open interoperability between CAD/CAM systems in dentistry.

Dentistry — Interoperability of CAD/CAM systems

1 Scope

This document specifies an extensible markup language (XML) format to facilitate the transfer of dental case data and CAD/CAM data between software systems.

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 1942, *Dentistry — Vocabulary*

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country code*

ISO 3950, *Dentistry — Designation system for teeth and areas of the oral cavity*

ISO 16443, *Dentistry — Vocabulary for dental implants systems and related procedure*

ISO 18739, *Dentistry — Vocabulary of process chain for CAD/CAM systems*

W3C — Extensible Markup Language (XML) 1.0 (Fifth Edition), November 2008

W3C XML Schema Definition Language (XSD) 1.1, April 2012

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942, ISO 16443, ISO 18739, W3C XML 1.0, W3C XML XSD 1.1 and the following 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 https://www.electropedia.org/

3.1 General terms

3.1.1
broker
entity that acts as a middleman or intermediary

Note 1 to entry: Such organizations take multiple orders from multiple sources and consolidate them into a single order for a provider or they take single orders from an originator and split them among multiple providers or they just pass orders through between originators and providers.

3.1.2
interface for dental CAD/CAM systems
IDS
nodes immediately within the enveloping root element that provide traceability and source identification features as well as information on how to reply to a document transaction

Note 1 to entry: The IDS schema organizes the IDS document into structures for specific transactions. They represent a submission, a query, an update of a previous submission, a notification of an event or status change and a series of catalogs. A single IDS document can contain a combination of different transaction nodes or consist of only a single transactional node.

3.1.3
originator
entity (organization or person) that is responsible for creating the current document, order, submission

Note 1 to entry: As such, they are the “originator” of the data being exchanged.

Note 2 to entry: Most often an originator is a dental practice. In some cases, an originator is a dental laboratory that is outsourcing work to another lab.

3.1.4
provider
entity that is responsible for providing the services or products that are being requested in an order

Note 1 to entry: An entity can be a company, a lab.

Note 2 to entry: Most often, a provider is a dental laboratory or manufacturer.

3.2 Terms related to XML content

3.2.1
brokerID
identifiers used by a *broker* (3.1.1) to identify itself, or by an *originator* (3.1.2) and a *provider* (3.1.3) to identify a broker

3.2.2
CADDataCatalog
collection of nodes describing CAD data associated with one or more of either the orders or restorations, or both

Note 1 to entry: It can include either a digital scan or design files, or both.

3.2.3
case
set of one or more orders for dental appliances, products or services, all of which are submitted for a single patient

EXAMPLE A case can contain one order for a crown and another order for a bridge.

3.2.4
catalog
data that are referenced in other elements or areas

Note 1 to entry: The catalogs are subdivided by the data they are grouping, making it easier to manage and reference.

3.2.5
character data
CDATA
certain portion of the document which is general character data, rather than non-character data or character data with a more specific, limited structure

Note 1 to entry: CDATA is used for distinct, but related, purposes in the markup languages SGML and XML.

3.2.6
DataQuery
method to request data from another system or entity

Note 1 to entry: It provides elements to define the data elements to be searched or matched on as well as elements to define the data requested in response.

3.2.7
DeliveryRequest
information for the out-going, finished order, which is sent to the originator (or an originator's agent) as a separate delivery

Note 1 to entry: A delivery is either physical or electronic, or both.

3.2.8
dentist
node that defines the responsible clinician who requested the order

3.2.9
DentistCatalog
collection of *dentist* (3.2.8) nodes that provides attributes and elements to define the dentists being referenced in the IDS schema

Note 1 to entry: The definition can include billing information and license information.

3.2.10
ExtraInfo
child node that can be used to extend the schema with undefined XML

Note 1 to entry: Many of the elements contain child nodes with the suffix "ExtraInfo" (i.e. <DentistExtraInfo>, <OrderExtraInfo>, etc). These are intended to be areas that can be used to extend the defined schema with proprietary or undefined XML. For example, an implementation can use one (or more) of these to embed XML that is only of use to the implementer for an internal workflow. Another use can be two business partners using these to experiment with XML they intend to propose for future versions or to pass proprietary XML they have previously defined between themselves. The IDS schema and XSD ignore the contents of these so they are not validated as part of the IDS schema. It is highly recommended that if these are used, that any XML be enclosed within some proprietary element tag so that if the XML document passes through multiple handlers, there are no conflicts:

```
<DentistExtraInfo>
    <MyCompanyData>
        data specific and of use only to "MyCompany"…
    </MyCompanyData>
</DentistExtraInfo>
```

3.2.11
FileCatalog
collection of <IDSFile> nodes that describe files associated with the <Case>, <Order> or CAD data (scans, design files, etc.)