SLOVENSKI STANDARD
SIST EN ISO 18618:2018

01-september-2018

Zobozdravstvo - Skladno delovanje sistemov CAD/CAM (ISO 16818:2018)

Dentistry - Interoperability of CAD/CAM-systems (ISO 16818:2018)

Zahnheilkunde - Interoperabilität der CAD/CAM-Systeme (ISO 16818:2018)

Médecine bucco-dentaire - Interopérabilité des systèmes de CFAO (ISO 18618:2018)

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35.240.80	Uporabniške rešitve IT v zdravstveni tehniki	IT applications in health care technology

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN ISO 18618

June 2018

ICS 11.060.01

English Version

Dentistry - Interoperability of CAD/CAM systems (ISO 18618:2018)

Médecine bucco-dentaire - Interopérabilité des systèmes de CFAO (ISO 18618:2018)

Zahnheilkunde - Interoperabilität der CAD/CAM-Systeme (ISO 18618:2018)

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Contents

Page

European foreword

This document (EN ISO 18618:2018) 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of an identical text or by endorsement, at the latest by December 2018, and conflicting national standards shall be withdrawn at the latest by December 2018.

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INTERNATIONAL STANDARD

ISO 18618

First edition
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Dentistry — Interoperability of CAD/CAM systems

Médecine bucco-dentaire — Interopérabilité des systèmes de CFAO

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Contents

Page

Foreword

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This document was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 9, *CAD/CAM Systems.*

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.

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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 codes*

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*

ISO 19429:2015, *Dentistry — Designation system for dental implants' after '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, 2012

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942, ISO 16443, ISO 18739, W3C XML1.0, W3C XSD 1.1and the following apply.

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

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

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

NOTE 1 Throughout the IDS (interface for dental CAD/CAM systems) schema there are terms that have special meaning or definition. Understanding the use of these terms is the key to well-defined IDS documents that all parties can understand universally.

NOTE 2 The IDS schema defines several peer level nodes immediately within the enveloping root <IDS> element that 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.

NOTE 3 In addition to the transactional nodes mentioned above, the IDS schema also defines several nodes that provide traceability and source identification features as well as provide information on how to reply to a document transaction.

3.1 General terms

3.1.1
broker
entity that acts as a middleman or intermediary

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

3.1.2
originator
entity (organization or person) that is responsible for creating the current document, order, submission, etc.

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

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

3.1.3
provider
entity (company, lab, etc.) that is responsible for providing the services or products that are being requested in an order

Note 1 to entry: Most often, this would be a dental laboratory or manufacturer.

3.2 Terms and definitions relating to XML content

3.2.1
CADDataCatalog
collection of nodes describing CAD data associated with one or more of the orders and/or restorations

Note 1 to entry: It can include digital scan and/or design files, etc.

3.2.2
case
set of one or more orders for dental appliances, products or services, all of which are being submitted for a single patient

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

3.2.3
catalogs
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.

3.2.4
DeliveryRequest
information for the out-going, finished order, which will be sent to the originator (or an originator's agent) as a separate delivery

Note 1 to entry: A delivery may be physical, electronic, or both.

3.2.5
dentist
dentist or responsible clinician who requested the order

3.2.6
DentistCatalog
collection of *dentist* (3.2.5) nodes that provides attribute and elements to define the dentists being referenced within this document

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

3.2.7
ExtraInfo
child node that can be used to extend the schema with undefined XML

EXAMPLE Many of the elements will contain child nodes with the suffix "ExtraInfo" (i.e. <DentistExtraInfo>, <OrderExtraInfo>, etc. These sections are intended to be areas that can be used to extend the defined schema with proprietary or undefined XML. For example, an implementation may use one (or more) of these sections to embed XML that is only of use to the implementer for an internal workflow. Another use could be two business partners using these sections 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 will ignore the contents of these sections so they will not be validated as part of the IDS schema. It is highly recommended that if these sections 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>
```


3.2.8
FileCatalog
collection of <IDSFile> nodes that describe files associated with the <Case>, <Order> or CAD data (scans, design files, etc.)

3.2.9
host service
system that receives the IDS document and processes the contents

3.2.10
IdMapCatalog
collection of <IdMapItem> nodes which provide a means of defining alternate identifiers for key elements within the IDS

3.2.11
notification
means for publishing or returning a defined status, event or message related to an order

Note 1 to entry: Within the notification node is an untyped element that can be defined according to the needs of the parties exchanging information.

3.2.12
order
request for a self-contained dental appliance, service or product that is being requested by an originator

Note 1 to entry: Each order in a case might be created or manufactured by a different provider. Each order contains its own delivery (or reply) instruction nodes.