BS EN ISO 18618:2022

BSI Standards Publication

Dentistry — Interoperability of CAD/CAM Systems

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National foreword

This British Standard is the UK implementation of EN ISO 18618:2022. It is identical to ISO 18618:2022. It supersedes BS EN ISO 18618:2018, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CH/106/-/1, Dental CAD/CAM systems.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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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)

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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of an identical text or by endorsement, at the latest by April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.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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Foreword

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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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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.

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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 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.

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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.

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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.)

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3.2.12
host service
system that receives the IDS document and processes the contents

3.2.13
IDMapCatalog
collection of <IDMapItem> nodes which provide a means of defining alternate identifiers for key elements within the IDS

3.2.14
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 in accordance with the needs of the parties exchanging information.

3.2.15
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 can be created or manufactured by a different provider. Each order contains its own delivery (or reply) instruction nodes.

3.2.16
OrderCatalog
collection of <Order> nodes that provide attributes and elements necessary to define or describe an order

Note 1 to entry: An <Order> will often contain one or more <Restoration> nodes but can omit those nodes when not needed.

3.2.17
parcel
physical package that is mailed

3.2.18
patient
patient for whom a case is being manufactured

Note 1 to entry: Patient infomation is not a mandatory part of the IDS schema.

3.2.19
PatientCatalog
collection of <Patient> nodes that provide attributes and elements to define patients that are referenced in the <Order> or <Case> elements

Note 1 to entry: Because patients are referenced in either multiple <Order> nodes or multiple <Case> nodes, or both, the patient information is grouped into a catalog.

3.2.20
prescription
written directive from the dentist or responsible clinician to the supplier specifying the product that should be manufactured for the patient

3.2.21
ProductCatalog
means for a provider or *broker* (3.1.1) to publish the products that will be available for ordering

Note 1 to entry: The node provides attribute and elements to define a product, include multiple descriptions in different languages and specify ordering options and variations.

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3.2.22
productSKU
product stocking unit used by manufacturers to identify their products to their internal systems

3.2.23
providerID
identifiers used by a *broker* (3.1.1) and a *originator* (3.1.2) to identify a *provider* (3.1.3), or by a provider to identify itself

3.2.24
submission
batch or group of one or more <Cases> described in the IDS document

Note 1 to entry: In traditional (non digital) dentistry, a submission is equivalent to receiving a physical package [*parcel* (3.2.17)] containing one or more cases. In the digital IDS realm, the submission represents any combination of one or more either physical or digital, or both, cases that are being "submitted" to a provider for production.

3.2.25
UUID
universally unique identifier
label used for identifying key elements

Note 1 to entry: UUIDs are denoted in the document as string(36) to correspond to the xsd definition for the UUIDTypeDef. 128-bit (16 bytes) number represented as a 36-character string of its hexadecimal presentation (32 characters + separators including leading 0 values) in the format: XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX.

Note 2 to entry: An <IDMap> within the <Catalogs> of the document provides a means of equating the UUID with alternate identifiers that carry external meaning, such as a lab management system ids for a dentist, case or patient.

Note 3 to entry: UUID values can have multiple alternate ids in the <IDMap> but each UUID is defined only once and used on a single key element.

EXAMPLE If the UUID "107face6-fc51-4366-805d-2ee23014d835" is assigned to the dentist "smith", that UUID value can possibly not be used on any other element as a key identifier and can only be used as a reference in other elements needing to associate with that specific dentist.

3.2.26
update
means to send an abbreviated set of data elements to update or modify a previously submitted <Order>

Note 1 to entry: It contains elements that allow the update to match expected values in addition to providing the new values.

4 Data security and storage methods

The Internet has proven to be an effective means of communication, yet its vulnerability to interception raises issues of privacy, authentication and integrity of the communicated message. Therefore, data security is of utmost importance to users of dental information systems.

Because of the personal and private nature of health records, the dental practitioner needs to understand the security issues associated with "data at rest" and "data in transit." This document is not intended to explain security concepts and the risks associated with the maintenance of data in storage and transit, and over an internet connection. The ADA Standards Committee on Dental Informatics has published a series of technical reports that provide dental practitioners with guidelines in addressing issues of security of data in storage and transmission over the internet.

A ZIP file format is recommended for transport of the IDS XML file and related files, however, implementation of a file container is left up to the implementer.

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5 Naming

The file name shall end with an .ids extension. The file name can be prepended with any naming convention that the user desires.

6 Tooth numbering system

Throughout the entire document, the tooth number system shall be based on ISO 3950 for tooth numbering.

7 Measurement units

All units are in millimetres unless otherwise specified.

8 Additional restrictions on IDS XML documents

In addition to the schema provided above, a valid IDS document shall also meet the following requirements.

a) The total length of the document shall not exceed 2 MB.

b) The document shall contain a unique identifier for ProviderIDs.

c) The document shall contain a unique identifier for BrokerIDs.

9 XSD Description

The definition of the elements of the XSD schema provided in Annex A shall be used. A sample XML schema of IDS is shown in Annex B. The XSD definition document can be obtained by e-mailing standards@ada.org.

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Annex A
(normative)

XML schema for IDS

A.1 General

NOTE Below is a description of the IDS schema. Please note the following conventions used in this annex:

a) An asterisk (*) denotes a required XML node or attribute. Unless marked with an asterisk, all nodes and attributes are considered optional. Note that some optional nodes have required attributes, which means that if the node is present at all, then those attributes marked with * are also present.

b) For nodes and attributes of type "String," the allowed length of the string is unlimited unless the length is specified [e.g. String(100)].

c) The data type "Datetime UTC" implies a DateTime value, in accordance with ISO 8601-1.

d) All data types refer to the XML schema data types: string, integer, boolean, dateTime, etc.

A.2 XML schema for IDS root

Detailed information of XML schema for IDS Root and subdirectories is given in Table A.1 to Table A.3.

Table A.1 — Description of the root directory of IDS

IDS *		
The root node for all IDS documents.		
Attribute	**Data type**	**Description**
IDSVersion *	String(10)	The version identifier of the XML schema of the message.
IDSUUID *	String(36)	A globally unique identifier for the IDS message.

Table A.2 — Description of the directory of IDS/IDSSource

IDS/IDSSource		
An optional node describing the system from which the document originates.		
Attribute	**Data type**	**Description**
HostName	String(100)	The network name of the source host system creating and sending the message.
IPAddress	String(15)	An IPv4 address of the source host system creating and sending the message.
IPAddress6	String(45)	An IPv6 address of the source host system creating and sending the message.
MACAddress	String(15)	A MAC address of the source host system creating and sending the message.
OperatorID	String(100)	A network user identifier for the user account on the source host system creating and sending the message.
NetworkDomain	String(100)	A network name identifier for the domain containing the system sending the message.
ApplicationName	String(100)	A value indicating the application (by name) that was used to generate or originate the IDS message.

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Table A.2 *(continued)*

IDS/IDSSource		
An optional node describing the system from which the document originates.		
Attribute	**Data type**	**Description**
SystemName	String(100)	A value indicating the system (by name) that the IDS document originated in.
SystemID	String(100)	A value indicating the originating system by identifier or version.
SubSystemName	String	A value identifying the name of the subsystem originating the message.
SubSystemID	String	A value indicating the originating subsystem by identifier or version.
SystemVersion	String	The software or system version information from the system originating the message.

Table A.3 — Description of the directory of IDS/IDSReplies/ReplyTo

IDS/IDSReplies/**ReplyTo**		
An element specifying address information used for IDS message responses.		
Attribute	**Data type**	**Description**
Address	String(200)	The text of an address. The address itself can be in one of a variety of formats.
AddressType	String(5)	An enumerated value identifying the format of the address provided. Acceptable values are: — URL; — WCF; — MSMQ; — IPV4; — IPV6; — UNC.

A.3 XML schema for IDS <Submission> request

Detailed information of XML schema for IDS <Submission> request and subdirectories is given in Table A.4 to Table A.34.

Table A.4 — Root directory of IDS/Submission

IDS/Submission *		
The root node for the submission XML.		
Attribute	**Data type**	**Description**
UUID *	String(36)	A globally unique identifier for this submission. This UUID can change for each new submission and should be provided by the originator.
DateUTCSubmitted	DateTime UTC	The date and time that the submission was first submitted to the receiver.
DateUTCReceived	DateTime UTC	The date and time that the submission was actually received by the receiver. This value will be populated by the receiver (broker or provider) and should be omitted (or left blank) on new submissions.

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Table A.5 — Description of the directory of IDS/Submission/Originator

IDS/Submission/**Originator** *		
Contains information describing the person or business entity that has created the <Submission>.		
Attribute	**Data type**	**Description**
UUID *	String(36)	A unique identifier for this element that can be used by reference elsewhere in the document. It should be defined within the <IDMapCatalog> along with any alternate identifiers from external (non IDS) sources.
Name *	String(255)	Name of the originator.
BusinessType	String(3)	A three-character code signifying the originator's entity type. Valid values are: — LAB : Laboratory; — DOC : Dentist; — SRV : Broker or intermediary service; — OTH : Other.
FacilityID	String(50)	The originator's identifier for the facility where this <Submission> originated.
FacilityUTCOffset	Time	The UTC offset for this originator facility. Note that this is an [hh]:time value, represented at the midnight plus/minus the UTC offset. For example, a facility in the Eastern time zone has a value of 00:00:00-05:00.

Table A.6 — Description of the directory of IDS/Submission/Originator/Address

IDS/Submission/Originator/**Address**		
The postal address of the originator.		
Attribute	**Data type**	**Description**
Street1 *	String(125)	Line 1 of the street address.
Street2	String(125)	Line 2 of the street address.
City *	String(125)	The name of the city or town.
State	String(64)	A two-character state code (in the US) or up to 64 characters for a postal zone, other region (and sub-region) name, such as province, department, canton or county area outside the US.
PostalCode	String(100)	The postal code.
Country *	String(3)	Three-character country code signifying the originator's country. The value shall conform to the ISO 3166-1 Alpha-3 codes.

Table A.7 — Description of the directory of IDS/Submission/Originator/BillingAddress

IDS/Submission/Originator/**BillingAddress**		
The billing address of the originator.		
Attribute	**Data type**	**Description**
Street1 *	String(125)	Line 1 of the street address.
Street2	String(125)	Line 2 of the street address.
City *	String(125)	The name of the city or town.
State	String(64)	A two-character state code (in the US) or up to 64 characters for a postal zone, other region (and sub-region) name, such as province, department, canton or county area outside the US.
PostalCode	String(100)	The postal code.
Country *	String(3)	Three-character country code signifying the originator's country. The value shall conform to the ISO 3166-1 Alpha-3 codes.

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Table A.8 — Description of the directory of IDS/Submission/Originator/Contact

IDS/Submission/Originator/**Contact**		
The originator's contact information.		
Attribute	**Data type**	**Description**
Name	String(255)	Contact person's name.
Phone	String(255)	Contact phone number (business).
Fax	String(255)	Contact fax number.
MobilePhone	String(255)	Contact mobile number.
Email	String(255)	Contact email address.

Table A.9 — Description of the directory of IDS/Submission/Originator/Localization

IDS/Submission/Originator/**Localization**		
The originator's localization preferences.		
Attribute	**Data type**	**Description**
Language	String(4)	A four-character code for language as defined in ISO 639-4.
DecimalSymbol	String(1)	The symbol to use for decimals.
DigitGrouping	String(1)	The character to use for digit grouping.
CurrencyCode	String (3)	The three-character ISO 4217 currency code for the preferred currency (e.g. "USD" for US. Dollar).
CurrencySymbol	String(5)	The symbol to use for currency values.

Table A.10 — Description of the directory of IDS/Submission/Originator/OriginatorExtraInfo

IDS/Submission/Originator/**OriginatorExtraInfo**
A node allowing for un-validated XML data to augment the <Originator> data. This node is a CDATA (Character data) marked block and will not be validated by the XML schema. It is suggested that any additional or proprietary data added to this node be embedded within custom identifying XML tags so that additional data can be added by different systems or partners minimizing the risk of breaking the IDS structures.

Table A.11 — Description of the directory of IDS/Submission/Broker

IDS/Submission/**Broker** *		
Information describing the person or business entity that is brokering the <Submission>.		
Attribute	**Data type**	**Description**
UUID	String(36)	Unique identifier for the broker.
BrokerIDOriginator	String(50)	The identifier used internally by the originator to refer to broker.
BrokerIDProvider	String(50)	The identifier used internally by the provider (assuming there is only one provider) for the broker.
BrokerIDBroker	String(50)	The identifier used internally by the broker for itself, if applicable.
Name *	String(255)	Name of the broker.
BusinessType	String(3)	A three-character code signifying the broker's entity type. Valid values are: — LAB : Laboratory; — DOC : Dentist; — SRV : Broker or intermediary service; — OTH : Other.
FacilityID	String(50)	The broker's identifier for the facility where this submission was received.

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Table A.11 *(continued)*

IDS/Submission/**Broker** *		
Information describing the person or business entity that is brokering the <Submission>.		
Attribute	**Data type**	**Description**
FacilityUTCOffset	Integer	The UTC offset for this broker facility. Note that this is an [hh]: time value, represented at the midnight plus/minus the UTC offset. For example, a facility in the eastern time zone would have a value of 00:00:00-05:00.
SubSystemName	String(50)	The name of the broker's sub-system that received this submission.
SubSystemID	String(50)	The identifier of the broker's sub-system that received this submission.

Table A.12 — Description of the directory of IDS/Submission/Broker/Address

IDS/Submission/Broker/**Address**		
The postal address of the broker.		
Attribute	**Data type**	**Description**
Street1 *	String(125)	Line 1 of the street address.
Street2	String(125)	Line 2 of the street address.
City *	String(125)	The name of the city or town.
State	String(64)	A two-character state code (in the US) or up to 64 characters for a postal zone, other region (and sub-region) name, such as province, department, canton or county area outside the US.
PostalCode	String(100)	The postal code.
Country *	String(3)	Three-character country code signifying the originator's country. The value shall conform to the ISO 3166-1 Alpha-3 codes.

Table A.13 — Description of the directory of IDS/Submission/Broker/Contact

IDS/Submission/Broker/**Contact**		
The broker's contact information.		
Attribute	**Data type**	**Description**
Name	String(255)	Contact person's name.
Phone	String(255)	Contact phone number (business).
Fax	String(255)	Contact fax number.
MobilePhone	String(255)	Contact mobile number.
Email	String(255)	Contact email address.

Table A.14 — Description of the directory of IDS/Submission/Broker/Localization

IDS/Submission/Broker/**Localization**		
The broker's localization preferences.		
Attribute	**Data type**	**Description**
Language	String(4)	A four-character ISO 639-4 code for the preferred language.
DecimalSymbol	String(1)	The symbol to use for decimals.
DigitGrouping	String(1)	The character to use for digit grouping.
CurrencyCode	String (3)	The three-character ISO 4217 currency code for the preferred currency (e.g. "USD" for US. Dollar).
CurrencySymbol	String(5)	The symbol to use for currency values.

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Table A.15 — Description of the directory of IDS/Submission/Broker/BrokerExtraInfo

IDS/Submission/Broker/**BrokerExtraInfo**
A node allowing for un-validated XML data to augment the <Broker> data. This node is a CDATA marked block and will not be validated by the XML schema. It is suggested that any additional or proprietary data added to this node be embedded within custom identifying XML tags so that additional data can be added by different systems or partners minimizing the risk of breaking the IDS structures.

Table A.16 — Description of the directory of IDS/Submission/Providers

IDS/Submission/**Providers**
A node containing a list of <Provider> sub-nodes. Any provider represented anywhere in this <Submission> shall have a node here.

Table A.17 — Description of the directory of IDS/Submission/Providers/Provider

IDS/Submission/Providers/**Provider**		
A node describing a single provider.		
Attribute	**Data type**	**Description**
ProviderIDOriginator *	String(50)	The identifier used by the originator to identify this provider.
ProviderIDProvider	String(50)	The identifier used by the provider to identify itself.
ProviderIDBroker	String(50)	The identifier used by the broker to identify this provider.
Name	String(255)	The name of the provider.
BusinessType	String(3)	A three-character code designating what type of business the provider is (e.g. LAB). Enumeration choices include: — LAB : Laboratory; — DOC : Dentist; — SRV : Broker or intermediary service; — OTH : Other.
FacilityID	String(50)	The provider's identifier for the facility where this submission originated.
FacilityUTCOffset	Integer	The UTC offset (in hours) for this provider facility.
SubSystemName	String(50)	The name of the provider's sub-system that generated this submission.
SubSystemID	String(50)	The identifier of the provider's sub-system that generated this submission.

Table A.18 — Description of the directory of IDS/Submission/Providers/Provider/Address

IDS/Submission/Providers/Provider/**Address**		
The provider's address.		
Attribute	**Data type**	**Description**
Street1 *	String(125)	Line 1 of the street address.
Street2	String(125)	Line 2 of the street address.
City *	String(125)	The name of the city or town.
State	String(64)	A two-character state code (in the US) or up to 64 characters for a postal zone, other region (and sub-region) name, such as province, department, canton or county area outside the US.
PostalCode	String(100)	The postal code.
Country *	String(3)	Three-character country code signifying the originator's country. The value shall conform to the ISO 3166-1 Alpha-3 codes.

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Table A.19 — Description of the directory of IDS/Submission/Providers/provider/Contact

IDS/Submission/Providers/Provider/**Contact**		
The provider's contact information.		
Attribute	**Data type**	**Description**
Name	String(255)	Contact person's name.
Phone	String(255)	Contact phone number.
Fax	String(255)	Contact fax number.
MobilePhone	String(255)	Contact mobile number.
Email	String(255)	Contact email address.

Table A.20 — Description of the directory of IDS/Submission/Providers/Provider/Localization

IDS/Submission/Providers/Provider/**Localization**		
The provider's localization preferences.		
Attribute	**Data type**	**Description**
Language	String(4)	A four-character ISO 639-4 code for the preferred language.
DecimalSymbol	String(1)	The symbol to use for decimals.
DigitGrouping	String(1)	The character to use for digit grouping.
CurrencyCode	String(3)	The three-character ISO 4217 currency code for the preferred currency (e.g. "USD" for US. Dollar).
CurrencySymbol	String(5)	The symbol to use for currency values.

Table A.21 — Description of the directory of IDS/Submission/Products

IDS/Submission/**Products**
A node containing a list of all the products referenced in any of the <Order> nodes of the current <Submission>. Any product represented anywhere in this submission shall have a node here. The products listed here are products that are part of an <Order> and should not be confused with products defined in the <ProductCatalog> which are a publication of products available by a provider.

Table A.22 — Description of the directory of IDS/Submission/Products/Product

IDS/Submission/Products/**Product**		
A node containing information about a single product to be used in this <Submission>.		
Attribute	**Data type**	**Description**
ProductIDOriginator *	String(50)	The identifier used internally by the originator for this product.
ProductIDProvider	String(50)	The identifier used internally by the provider for this product, if applicable.
ProductIDBroker	String(50)	The identifier used internally by the broker for this product, if applicable.

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Table A.22 *(continued)*

IDS/Submission/Products/**Product**		
A node containing information about a single product to be used in this <Submission>.		
Attribute	**Data type**	**Description**
ProductType *	String(75)	A code designating the type of product. Valid values are in quotes (“”) definitions as follows: — “FULLCROWN” : Monolithic restoration; — “34CROWN” : Crown with 3/4 coverage of the tooth structure; — “ABUTMENT” : Customized implant abutment; — “ABUTMENTWAXUP” : Diagnostic waxup over an abutment; — “ANATOMICALCOPING” : Coping created by an offset from an already designed full crown; — “ANATOMICALPONTIC” : Pontic created by an offset from an already designed full pontic; — “TEMPCROWN” : Temporary crown; — “BRIDGE” : Multi unit restoration; — “DIGITALMODEL” : 3d printed Model; — “ORTHODONTIC” : Appliance for orthodontic; — “DENTALAPPLIANCE” : Appliance except orthodontic; — “REMOVABLE” : Denture, partial denture, customtray; — “CLASP” : Clasp engaging a tooth; — “COPING” : Substructure of a crown; — “CROWN” : Crown composed of more than one component; — “CROWNPONTIC” : Pontic that is a full crown and not a substructure; — “INLAY” : Inlay; — “ONLAY” : Onlay; — “OTHER” : Any other type of restoration not included in the enumerated list; — “PONTIC” : Substructure for a pontic used in a bridge; — “POSTANDCORE” : Post and core; — “TELESCOPECROWN” : Telescopic crown consisting of multiple substructures; — “VENEER” : Veneer; — “WAXUP” : Diagnostic waxup.
ProductDescription	String	Description of the product.

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Table A.23 — Subdirectory of IDS/Submission/ParcelIn

IDS/Submission/**ParcelIn**		
A node describing the parcel that was sent for this submission item.		
Attribute (Element)	**Data type**	**Description**
CarrierCode *	String(50)	Code designating the postal carrier used to mail the submission item. Examples values are: — USPS : US Postal Service; — UPS : United Parcel Service; — FEDEX : FedEx; — DHL : DHL Express; — OTH : (Other carrier).
CarrierServiceType	String(150)	The grade of carrier service used to send the parcel (e.g. "Priority Overnight").
CarrierTrackingID	String(255)	The carrier tracking identifier of the submission item.
DateUTCMailed	DateTime UTC	The date and time that the parcel was sent.
DateUTCExpected	DateTime UTC	The date and time that the parcel is expected to arrive at the provider.

Table A.24 — Description of the directory of IDS/Submission/Description

IDS/Submission/**Description**
A free-form text description of the contents of the parcel.

Table A.25 — Description of the directory of IDS/Submission/ParcelIn/Address

IDS/Submission/ParcelIn/**Address**		
A node containing information about the address where the original parcel was mailed. Note that this node is optional. If it is not provided, then the provider's default address will be assumed.		
Attribute	**Data type**	**Description**
Street1 *	String(125)	Line 1 of the street address.
Street2	String(125)	Line 2 of the street address.
City *	String(125)	The name of the city or town.
State	String(64)	A two-character state code (in the US) or up to 64 characters for a postal zone, other region (and sub-region) name, such as province, department, canton or county area outside the US.
PostalCode	String(100)	The postal code.
Country *	String(3)	Three-character country code signifying the originator's country. The value shall conform to the ISO 3166-1 Alpha-3 codes.

Table A.26 — Description of the directory of IDS/Submission/Cases

IDS/Submission/**Cases** *
An enveloping node containing one or more <Case> sub-nodes.

Table A.27 — Description of the directory of IDS/Submission/Cases/Case

IDS/Submission/Cases/**Case** *
A node describing a single case in the submission item.

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Table A.27 *(continued)*

IDS/Submission/Cases/**Case** *		
UUID *	String(36)	A unique identifier for this element that can be used by reference elsewhere in the document. It should be defined within the <IDMapCatalog> along with any alternate identifiers from external (non IDS) sources.
CaseDateUTCCreated	DateTime UTC	The date and time that the case was actually created by the provider. This value will be populated by the provider and should be omitted (or left blank) on new submissions.
CaseDateUTCSubmitted	DateTime UTC	The date and time that the case was first submitted to a provider or broker.
CaseDateUTCReceived	DateTime UTC	The date and time that the case was actually received by the provider (or broker).

Table A.28 — Description of the directory of IDS/Submission/Cases/Case/Patient

IDS/Submission/Cases/Case/**Patient**		
An element referencing a patient for this case.		
Attribute	**Data type**	**Description**
ReferenceID *	String(36)	A reference UUID identifying a patient within the <PatientCatalog>.

Table A.29 — Description of the directory of IDS/Submission/Cases/Case/Orders

IDS/Submission/Cases/Case/**Orders** *
A node containing a list of <Order> sub-nodes for the case.

Table A.30 — Description of the directory of IDS/Submission/Cases/Case/Orders/Order

IDS/Submission/Cases/Case/Orders/**Order** *		
A node describing a single order in the submission item.		
Attribute	**Data type**	**Description**
ReferenceID	String(36)	A reference UUID identifying an <Order> within the <OrderCatalog> .

Table A.31 — Description of the directory of IDS/Submission/Processing

IDS/Submission/**Processing**		
A node containing information about the processing of this submission by the host service. This node is created by the host service itself and need not be passed in with the original submission XML submitted from the originator.		
Attribute	**Data type**	**Description**
Status *	String(1)	A code designating the status of the submission. Valid values are: — S : Success; — F : Failure; — R : Retry; — P : Pending (use this for new submissions).

Table A.32 — Description of the directory of IDS/Submission/Processing/Problems

IDS/Submission/Processing/**Problems**
A node containing a list of <Problem> sub-nodes.

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