
**Information and documentation —
Bibliographic data element directory for
use in data exchange and enquiry**

*Information et documentation — Répertoire pour l'échange des
éléments de données bibliographiques et la recherche*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 8459 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 4, *Technical Interoperability*.

This first edition cancels and replaces ISO 8459-1, ISO 8459-2, ISO 8459-3, ISO 8459-4 and ISO 8459-5, which have been technically revised.

It contains the data elements still in force today and incorporates a number of new ones linked to new types of resources into a single document. It is presented in two basic parts:

- a) a data element directory (Clause 3) where the different data elements are regrouped in different columns, specifying for each of them its rank (a sequence number is allocated to each element), class, entry, definition, examples and synonyms when existent;
- b) an alphabetical sequence (Clause 4) which lists for each element its entry, equivalence, name, class and sub-class.

Introduction

This International Standard specifies and describes data elements required in the interchange of data between bibliographic systems (i.e. terminal or browser to computer or computer to computer). Data are interchanged for the purpose of starting or supporting a process. In order to transmit information required to support a process, the various elements of data in the interchanged messages must be fully understandable to the processes concerned.

This International Standard is seen as serving as a resource tool for interoperability among standards in bibliographic and library domains. It serves to harmonize the various different standards in these domains, comprising content schemas, protocols, profiles and models. To this end, data elements are defined at various levels because they may be defined at different levels in different protocols and schemas. The focus of the standard is to provide common definitions for data elements that are exchanged in protocol messages between systems.

System developers typically employ multiple standards and thus can profit from the identified inter-relationships and definitions in their database designs to achieve dynamic inter-operability when employing various standards.

This International Standard is also intended as a foundation for new standards. By inheriting element names and definitions, new standards can be achieved in an efficient way that directly relates them with existing standards in the field.

The inclusion of multiple examples and synonyms is also intended to assist in the translation of the standard into other languages.

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The elements from the previously published five parts of ISO 8459 have been examined, updated where necessary and consolidated into a single set of elements such that this International Standard replaces these previous parts.

There are no referenced documents that are indispensable for the application of this International Standard. The Bibliography indicates sources consulted and used in the construction of this International Standard.

The standards cited in the Bibliography are examples for data elements in this International Standard but are not prescriptive.

The list also contains reference to the protocol and schema standards that were used to validate the data elements and concepts in this International Standard.

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Information and documentation — Bibliographic data element directory for use in data exchange and enquiry

1 Scope

This International Standard describes, in the form of a directory, data elements used to support the processes of acquisition, resource description and cataloguing, searching and requesting loan or copy by an end user or an institution.

This International Standard includes data elements that are exchanged or are potentially exchanged among bibliographic systems. Those data elements that are not exchanged or not likely to be exchanged are ignored as they do not need standardization. Data elements being handled by transport protocols are not included, only those related to application level protocols.

As part of the consolidation phase, the data elements were broadly classed and sub-classed and are presented in two sequences, one by class and sub-class and the other by an alphabetical sequence. The alphabetical sequence includes examples and synonyms identified during the consolidation phase and those found in related interchange protocols and schemas.

As the grouping of data elements may differ among different protocols and record schemas, the data elements have been broadly classed and grouped, but no further structure has been made. Similarly, the sequence of data elements, whether or not a data element is mandatory or how it is structured and validated may vary according to its employment and consequently these data element attributes are outside the scope of this International Standard.

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As new ways of inter-operating evolve, some new data elements may evolve, but the biggest change is usually in the way that existing data elements are grouped. For example, whether a purchase transaction is carried out manually or electronically, the base data elements of the transaction, requester, supplier and object of purchase remain constant, and this is reflected in the fact that most data elements in this International Standard originated several decades ago. To accommodate the potential changing grouping of data elements, an attempt has been made to identify common concepts across processes. For example, a new focus on end user delivery is causing diverse delivery options to be grouped together such that purchase, loan and inter-library loan processes are presented as alternatives; therefore, the identification of common concepts in all these processes is necessary for the development of seamless user interfaces.

NOTE The French version of this International Standard does not contain the column entitled “Synonyms” in Tables 2 to 12 for the following reasons:

- a large number of the variant data element names translate to the same data element name in French;
- a number of the variant data element names have been taken from standards which have not been translated into French.

The difference between the English and French versions is particularly noticeable in Table 13.

2 Terms and definitions

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

- 2.1 acquisition**
work of increasing and bringing up to date the stock of a library or documentation centre or service according to the collection policy of the institution
- 2.2 address**
group of data elements that give a geographic or electronic location or place associated with an individual or institution
- 2.3 attribute**
characteristic or property of a party or item
- 2.4 authentication**
establishment of the identity of a person or party in a transaction
- 2.5 authorization**
establishment of rights to services once the identity of a requester has been ascertained via an authentication process
- 2.6 authority record**
record in a cataloguing system that describes, analyses and controls the standardized form of a name, subject, series or other heading
- 2.7 bibliographic resource**
entity, either serial or non-serial, that forms the basis for a single resource description
- 2.8 bibliographic record**
record in a cataloguing system that describes, analyses and controls a bibliographic resource
- 2.9 booking**
reservation of an item or a location for a fixed time period and duration
- 2.10 catalogue record**
record in a cataloguing system that describes, analyses and controls bibliographic, authority or holdings data
- 2.11 cataloguing**
process of compiling a record for inclusion in one or more catalogues or indexes, which describes an entity and assists in its retrieval
- 2.12 circulation**
work of controlling the loan and supply, user identification, status, return, recall, associated fees, bookings and reservations for items or copies thereof of the physical holdings of a library

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2.13**character string**

combination of letters, digits, punctuation marks or other symbols

2.14**component**

unique bibliographic part of a set, such as a volume of a serial or multi-volume work

2.15**copy**

tangible instance of a bibliographic resource or set, whether physical or electronic, comprising one or more pieces

2.16**data element**

basic unit of identifiable and definable data, having a data element name represented by a tag as identifier and one or more values for expressing one or more particular facts

2.17**data element directory**

listing of data elements with specifications of representative data element values, as appropriate

2.18**data element group**

set of related data elements

2.19**data element group name**

one or more words in a natural language identifying a data element group

2.20**data element name**

one or more words in a natural language identifying a data element

2.21**data element value**

fact expressed by codes, digits or natural language corresponding to the data element description and representation

2.22**database**

collection of machine-readable information organized so that it can be easily accessed, managed and updated

2.23**finance**

data elements concerning monetary information associated with a transaction

2.24**holdings**

information that describes, analyses and controls copies associated with a bibliographic resource

2.25**holdings record**

record in a cataloguing system that describes, analyses and controls holdings associated with a bibliographic record

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2.26

holdings statement

summary of the locations of a specific bibliographic resource and, optionally, the units of that item held at a location

2.27

identifier

data string or pointer that establishes the identity of an item, institution or person alone or in combination with other elements

2.28

information retrieval

action, methods and procedures for recovering information on a given matter or references to pertinent documents from stored data

2.29

interloan

inter-library loan

loan of a document or documents from one institution to another or the supply of a substitute for the requested document or documents

2.30

loan

temporary transfer of custody of a copy to another individual or institution

2.31

message

structured combination of data elements used in a transaction

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2.32

metadata

structured data associated with data that describe the data or provide additional information not contained within the data themselves

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2.33

party

person or group performing a role in relation to the business of a specific community or domain

2.34

piece

item

unit of a copy on which transactions can be made, such as a physical part that can be lent or reserved or an electronic file that can be downloaded or accessed

2.35

record

group of data elements usually treated as a unit and often organized into sub-units called fields, which identifies, describes and facilitates retrieval of an entity

2.36

representation

method by which a particular data element value is expressed using one or more numbers, letters or symbols

2.37

request

transaction that initiates purchase, loan, inter-library loan, copy or access to an item

2.38**reservation**

request by a person or group to be placed on a holding (waiting) queue for a bibliographic resource that is temporarily unavailable; also called a hold

2.39**resource**

work, created as a result of intellectual effort, that may be expressed in physical or digital form

2.40**result set**

group of metadata records, citations or other information units retrieved by a search

2.41**scan**

positioning within an index or other ordered data sequence in order to retrieve and to view index entries by moving forwards and backwards within the sequence

2.42**selective dissemination of information****SDI**

service that re-enacts a standard search or searches against one or more databases to provide regular updated information

2.43**search**

structured query describing data elements and their values necessary for retrieving data from a database

2.44**serial issue**

unit of a bibliographic resource that is issued in successive parts at regular or irregular intervals and intended to be continued indefinitely

2.45**session**

period of time during which a user is connected online to a system

2.46**set**

collection of components of a bibliographic resource including multi-volume publications and resources published serially, often received by a subscription purchase

2.47**tag**

identifier allocated for use in place of a data element name or data element group name

2.48**task**

operation performed by a system that may be performed online, in background or in batch mode, thus not necessarily tied to a specific session

2.49**transaction**

creation or modification of a message required to support a process

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3 Directory

3.1 General

The directory is organized, by class and sub-class, into a series of tables. The data element name is the persistent identifier. A table is given for each class, and within the class, table row numbers have been assigned so that when this International Standard is translated into other languages, there is an easy reference to each data element and a clear sequence. The table row numbers are not unique, as each table has its own sequence and they are not intended to be used as persistent identifiers of the data elements.

Table 1 summarizes the classes.

Table 1 — Summary of classes

Class	Subclause	Table number
Address	3.2.1	2
Database record	3.2.2	3
Finance	3.2.3	4
Holdings (physical or electronic copies)	3.2.4	5
Party	3.2.5	6
Party — Group	3.2.6	7
Party — Person (involved in a transaction)	3.2.7	8
Request	3.2.8	9
Resource	3.2.9	10
Search (including database elements)	3.2.10	11
Transaction	3.2.11	12

3.2 Organization of elements by class and sub-class

3.2.1 Organization by "Address" class

Table 2 — Class: Address

Row	Class	Sub-class	Data element name	Description	Examples	Synonyms
01	Address		Address	Group of data elements that give a geographic or electronic location or place associated with an individual or institution	Address of user	Communication details
02	Address	Address	Address label	Code, word or phrase that defines the nature of a given address where there are multiple addresses associated with an institution or individual	Business address, Home address, Parents' address	
03	Address	Address	Address role	Word or code that indicates the type of message or mail that is sent to an address where there are multiple addresses associated with an institution or individual	Agency address role type, Billing address, Delivery address, Invoice address, Return to address, Ship to, Shipping address, User address information	Address instruction, Address role type
04	Address	Address	Address status	Code, word or phrase that indicates which address of a series of addresses associated with an institution or individual is preferred		Current address flag
05	Address	Address	Address type	Indicates the form of communication associated with an address, physical or electronic		Delivery method type
06	Address	Address	Contact person	Name of an individual associated with an address in a particular role	Custodian, Invoice enquiries, Reference enquiries	Care of
07	Address	Address	Date/time address invalid	Date and time from which an address is no longer valid for use	Agency address: valid to date, User address: valid to date	
08	Address	Address	Date/time address valid	Date and time from which an address is valid for use	Agency address: valid from date, User address: valid from date	
09	Address	Address	Unstructured address	Address where the components of the address are not distinguished and where the structure may be limited to the inclusion of line breaks		
10	Address	Electronic address	e-delivery description	Human readable text identifying an electronic delivery service		

Table 2 (continued)

Row	Class	Sub-class	Data element name	Description	Examples	Synonyms
11	Address	Electronic address	e-delivery details	Information concerning the nature of electronic delivery of a particular document		
12	Address	Electronic address	e-delivery service	Name of an electronic delivery service		
13	Address	Electronic address	Electronic address	Unique identifier used to identify a device or location within a communications network or service	Administration email, Email address, IP address (Internet Protocol), Telephone	Electronic address data, Telecom service address, Telenetwork address
14	Address	Electronic address	Electronic address type	Form of electronic communication used by an address, including electronic mail, Internet Protocol (IP) address and telephone number		
15	Address	Electronic address	Electronic delivery service	Group of data elements providing details of how a document should be delivered electronically		Name or code
16	Address	Electronic address	Electronic delivery time	Normal interval between a request and electronic delivery provided by an electronic delivery service		Delivery time
17	Address	Electronic address	Electronic mail identifier	Unique number assigned to an electronic mail box or service connection		Electronic address, Telenetwork address
18	Address	Electronic address	Telecommunication carrier	Code, word, phrase or initialism used to identify the telecommunications carrier facilities being used to access a remote system		Telecom service identifier
19	Address	Electronic address	Telefacsimile number	Telecommunications number used for sending and receiving telefacsimiles		
20	Address	Electronic address	Telephone number	Unique number assigned to a telephone line		
21	Address	Physical address	Address line	Phrase, usually numbered, intended to be used for printing or displaying an address with the address elements in sequence	Line 1, Line 2	Address detail, Address part
22	Address	Physical address	Building	Phrase used to identify a particular edifice within a building complex		Building name, House name
23	Address	Physical address	City	Word or phrase used to identify an urban area, including a city, suburb or postal area		
24	Address	Physical address	Country	Word or phrase used to identify a country		

Table 2 (continued)

Row	Class	Sub-class	Data element name	Description	Examples	Synonyms
25	Address	Physical address	Delivery service	Code, word or phrase that indicates the mail service that may be used to deliver to an address	Campus mail, Internal courier, National mail service	Transport
26	Address	Physical address	District	Word or phrase identifying a sub-entity within a country, including a parish, county or district, usually not an urban area		Locality
27	Address	Physical address	Location within building	Code, number and/or phrase used to identify a location within a building or building complex	Children's library, Level 4, Reserve reading room, Suite 42	
28	Address	Physical address	Physical address	Group of data elements giving location information for an institution or person	Structured address	
29	Address	Physical address	Physical address type	Characteristics of an address that may restrict delivery services	Post office box address, Postal address	
30	Address	Physical address	Post office box	Number of a receptacle assigned by a postal authority for saving mail for later collection		
31	Address	Physical address	Postal code	Code assigned by the postal authorities of a country that uniquely identifies an address or group of addresses		
32	Address	Physical address	Region	Word or phrase identifying a large area within a country including province, state and department		
33	Address	Physical address	Street name	Phrase used to identify a route within a city, rural or local area, including street, road, boulevard and avenue		Street
34	Address	Physical address	Street number	Number and/or phrase used to identify a location of a building within a route		