
**Information and documentation —
Bibliographic data element directory —**

Part 4:
Circulation applications

*Information et documentation — Répertoire des éléments de données
bibliographiques —*

Partie 4: Applications à la circulation



Foreword

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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.

International Standard ISO 8459-4 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 4, *Computer applications in information and documentation*.

ISO 8459 consists of the following parts, under the general title *Information and documentation — Bibliographic data element directory*:

- *Part 1: Interloan applications*
- *Part 2: Acquisitions applications*
- *Part 3: Information retrieval applications*
- *Part 4: Circulation applications*

Annex A forms an integral part of this part of ISO 8459. Annexes B and C are for information only.

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Introduction

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 part of ISO 8459 describes, in the form of a directory, data elements used to support circulation processes.

The data elements that may occur in a circulation transaction are presented in four ways:

- a) A data element directory (see clause 4) with annexes containing code values and description for messages (see A.1) and date/time qualifier (see A.2).
- b) An index (see clause 5) consisting of names, keywords and synonyms for data elements and data element values including names assigned to messages.
- c) A structured order of data elements (see clause 6) which relates similar data elements in a hierarchical fashion.
- d) A matrix (see clause 7) showing the data elements pertaining to specific circulation messages.

This part of ISO 8459 is the fourth part in a series which will, when complete, comprise a comprehensive data element directory for bibliographic use. This part of ISO 8459 is primarily intended for new circulation systems, for the exchange of circulation messages between different systems and for the exchange of data between client and server in the client/server model.

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Information and documentation — Bibliographic data element directory —

Part 4: Circulation applications

1 Scope

This part of ISO 8459 specifies and describes data elements required in the interchange of data between circulation systems (i.e. terminal to computer or computer to computer). It also identifies messages and their data elements which are used in circulation systems.

It is intended to support both batch and interactive circulation transactions.

Annex B provides examples of how this part of ISO 8459 may be used.

The structuring of the data elements into messages falls outside the scope of this part of ISO 8459.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8459. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8459 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 639:1988, *Code for the representation of names of languages*.

ISO 2108:1992, *Information and documentation — International standard book numbering (ISBN)*.

ISO 3166-1:1997, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*.

ISO 3297:1986, *Documentation — International standard serial numbering (ISSN)*.

ISO 3901:1986, *Information and documentation — International Standard Recording Code (ISRC)*.

ISO 4217:1995, *Codes for the representation of currencies and funds*.

ISO 5218:1977, *Information interchange — Representation of human sexes*.

ISO 7498-3:1989, *Information processing systems — Open Systems Interconnection — Basic Reference Model — Part 3: Naming and addressing*.

ISO 8601:1988, *Data elements and interchange formats — Information interchange — Representation of dates and times*.

ISO/IEC 10027:1990, *Information technology — Information Resource Dictionary System (IRDS) Framework*.

ISO 10957:1993, *Information and documentation — International standard music number (ISMN)*.

3 Definitions

For the purposes of this part of ISO 8459, the following definitions apply.

3.1 character string: An arbitrary combination of letters, digits, punctuation marks or other symbols.

3.2 circulation: The work of controlling the loan and supply, user identification, status, return, recall, associated fees, bookings and reservations for items or copies thereof of the holdings of a library.

3.3 data element: A basic unit of identifiable and definable data. It has a data element name represented by a tag as identifier and one or more values for expressing (a) particular fact(s).

3.4 data element directory: A listing of data elements with specifications of representative data element values, as appropriate.

3.5 data element group: A set of related data elements.

3.6 data element group name: One or more words in a natural language identifying a data element group.

3.7 data element name: One or more words in a natural language identifying a data element.

3.8 data element value: A fact expressed by codes, digits or natural language corresponding to the data element description and representation.

3.9 message: A structured combination of data elements used in a circulation transaction.

3.10 record: A group of data usually treated as a unit.

3.11 representation: The way in which a particular data element value is expressed using one or more number(s), letter(s) or symbol(s).

3.12 tag: An identifier allocated for use in place of a data element name or data element group name. (In this part of ISO 8459, a group of three digits.)

3.13 transaction: The creation or modification of a message required to support the circulation of an item or to provide information concerning circulation status.

4 Directory

The directory names and defines data elements and data element groups used to support circulation transactions. The information pertaining to each data element or data element group is presented in four separate columns, labelled tag, name, description and representation. A "tag" is used to identify a data element as well as a data element group. "Name" contains data element names and data element group names. Data element group names are printed in bold letters to distinguish them from data element names. "Description" includes a definition for each data element or data element group followed by a list of corresponding tags for data elements that comprise the group. "Representation and Remarks" includes explanatory text about conventions and/or standards used to represent values applicable to a data element or a data element group as well as sample values, if applicable.

Tag	Name	Description	Representation and remarks
001	Message identification	Data used to identify a particular message. Group identifier for data elements 002-004, 010.	
002	Message name	A phrase or code identifying the function of a message.	See A.1.
003	Date	Year, month and day on which a transaction is performed, a message is sent or an event occurs.	Also used in conjunction with date/time qualifier (905). See A.2 for the various qualifiers that can be specified. See ISO 8601.
004	Time stamp	Time at which a transaction is sent, a message is sent or received or an event occurs.	Used by automated systems to indicate the precise hour, minute and second that a transaction occurred. Used in conjunction with A.2. See ISO 8601.
010	Transaction number	A code or number assigned to a document or message exchanged in a circulation-related transaction .	This number is assigned by the institution responsible for creating the specific type of document or message (e.g. loan, user identification, return, etc.).
040	Session details	Data that identifies various details about a specific session. Group identifier for data elements 050-078, 080-090, 092-097, 110, 231, 724-725, 848-849.	

Tag	Name	Description	Representation and remarks
050	Transaction participant	Data that identifies an institution which participates in a circulation transaction. Group identifier for data elements 060-078, 110.	
060	Participant's function	A word or code specifying the function or role performed by a party to a circulation session.	Possible values: 0 = circulation service provider 1 = database provider 2 = intermediary, gateway server 3 = circulation service user
076	Password	A code used by a system to authenticate the identity of an individual or automated process that has requested, or is using, a system function or service.	This code may be revised periodically to preserve its security. A password is typically supplied by the user at session initiation time but it could also be requested at any time during a session.
077	Password edition	A code or phrase used to identify the current and previous password(s).	This data element is used in conjunction with a user identification number (303), an institution identifier (115-116) and telenetwork user identifier (165).
078	Password type	A code or phrase used to indicate the specific services allowed to the password holder.	This data element is used by systems to support multiple levels of authentication. Possible values: 0 = system connection 1 = database connection 2 = read access 3 = write access 4 = delete privileges 5 = output instructions Security level (849) is used to control access to classified information. Related to access privileges (724), which provides various details associated with a type of privilege. 078 states the type of privilege.

Tag	Name	Description	Representation and remarks
080	Session identifier	A code or number used to identify a specific period of interaction between a user and an automated system.	A session typically covers all transactions between user and system from log-on to log-off. Sessions may be aborted prematurely by unusual systems or telecommunications events to produce an artificial log-off point. Sophisticated systems allow sessions to be suspended and resumed later or to change applications during a particular session.
081	Subsession identifier	A code or number used to identify a period of interaction with one specific service provided within a single session on an automated system.	
086	Reference identifier	A code or number assigned to an intersystem communication.	This number is used to monitor and verify that all system interactions have been transferred and processed in the proper sequence.
087	Continue flag	An instruction that processing should continue even though resource constraints (090 and 725) have been exceeded.	Possible values: 0 = continue 1 = stop
088	Suspend flag	An indication whether processing has been suspended whenever resource constraints have been exceeded (090, 092 and 725).	Possible values: 0 = processing not suspended 1 = processing suspended
090	Cost constraint	A predefined monetary value, which, if exceeded, will result in a specific system action.	Cost constraints are frequently used to limit the system resources that may be consumed by any one user over a given period of time.
092	Session length constraint	A predefined time limit, which, if exceeded, will result in a predefined system action.	A system will typically terminate a session after a set amount of time of system usage or inactivity.

Tag	Name	Description	Representation and remarks
095	Resource usage type	A numeric value used to indicate the type of system resource that has been used within a session or given time period.	Systems typically maintain information on the following resources in order to support planning, monitoring and controlling of these resources. Possible values: 0 = CPU time 1 = connect type 4 = number of sessions 7 = packets transmitted 8 = memory 9 = terminal transactions 10 = number of disk accesses 11 = number of tapes Used in conjunction with amount of usage (097).
096	System performance	Data collected to inform management about system performance.	Typical system performance measures include: Possible values: 0 = start-up delay 1 = percentage of down time 2 = number of system malfunctions 3 = number of telecommunication interruptions 4 = average response time Used in conjunction with amount of usage (097).
097	Amount of usage	A figure that measures the values established under resource usage type (095) and system performance (096).	
110	Institution identification	A group of data elements or code intended to identify an institution participating in a session or circulation transaction. Group identifier for data elements 111-118 and 130-142, 160-166.	

Tag	Name	Description	Representation and remarks
111	Name of institution	A word, or phrase or initialism intended to identify an institution or corporation. Group identifier for data elements 112 to 114.	
112	Main unit of institution name	The base name of an institution.	
113	Subordinate unit of institution name	A part of a name of an institution that defines a subdivision or department or unit of the institution.	This data element may be repeated to define subordinates of subordinates.
114	Abbreviated name	Short form of an institution's name (111).	
115	Institution identifier code	A code used to identify the numbering system contained in the institution identifier.	
116	Institution identifier	Unique number or code used to identify an institution.	
117	Official seal of institution	A design, initial or other device serving to identify an institution in an official manner.	
118	Institution role	A code or phrase that defines the role of the institution in a particular circulation transaction.	Possible values: 0 = direct user 1 = associated with another user
130	Address	A code or phrase that gives the geographic location or place associated with an institution or user. Group identifier for data elements 131-142, 160-166.	This element may be used in conjunction with institution identification (110) or user identification (300). For telenetwork addresses see (160).

Tag	Name	Description	Representation and remarks
131	Address instruction	A word or code that indicates the type of message or mail that is sent to the address where there are multiple addresses associated with an institution or individual.	This data element is used in conjunction with address (130). Possible values: 0 = ship to 1 = bill to
132	Address type	A code, word or phrase that defines the nature of a particular address where there are multiple addresses associated with an institution or individual.	Possible values: 0 = Temporary address 1 = Permanent address 2 = Parent's address 3 = Business address 4 = Other
133	Delivery service	A code, word or phrase that indicates the mail service that will deliver to an address.	Possible values: 0 = National mail service 1 = Campus mail 2 = Internal courier 3 = Other
134	Current address flag	A code, word or phrase that indicates which address, of a series of addresses associated with an institution or individual, is valid.	Where all types of messages and mail are sent to only one address, this data element is used to indicate the current address from possible multiple addresses. Where different types of messages and mail are sent to different addresses, then the address instruction data element (131) is used instead of this element. Possible values: 0 = Address current 1 = Address not current 2 = Unknown
135	Post office box	A box number assigned by the postal authority.	
136	Location within building	A number and/or phrase used to identify a location within a building or building complex.	Used when a second sequence of numbering in addition to a street and number (data element 137) are needed to identify a particular location. Examples: Suite 42 Level 4

Tag	Name	Description	Representation and remarks
137	Street and number	A number and/or phrase used to identify a location of a building within a city, rural or local area.	This data element can be used to include the names of buildings. It is used in conjunction with the data element location within building (136). The two data elements may be combined into one address line.
138	City	A word or phrase used to identify a city, including suburb or postal area.	
139	Locality	A word or phrase identifying a subentity within a country.	Includes county, parish, etc.
140	Region	A word or phrase identifying an area within a country.	Includes state, province, department and prefecture.
141	Country	A word or phrase used to identify a country.	For country codes consult ISO 3166-1.
142	Postal code	A code assigned by the postal authorities of a country that uniquely identifies an address or group of addresses.	
150	Telecommunications carrier	A code, word, phrase or initialism used to identify the telecommunications carrier facilities being used to access a remote system.	It may be necessary to identify more than one carrier. The name of the carrier may also imply the switching technology that is being used (i.e. packet-switched or circuit-switched).
160	Telenetwork address	Unique number or code used to identify a device within a communications network. Group identifier for data elements 161-166.	
161	Telephone number	Unique number assigned to a telephone line.	
162	Telefacsimile number	Telecommunications number used for sending and receiving telefacsimiles.	

Tag	Name	Description	Representation and remarks
164	Electronic mail identifier	Unique number assigned to an electronic mail box or service connection.	
165	Telenetwork user identifier	Unique code assigned to a user in a communications network.	This data element may or may not be the same value as institution identifier (116).
166	Host system network address	Unique number or code used to identify a host system within a communications network.	See ISO 7498-3.
231	Session transaction history	A listing of transactions previously executed during a session.	
300	User identification	A group of data elements or code intended to identify an individual or institution involved in circulation transactions. Group identifier for data elements 301-308.	
301	User affiliation	Name of the system that has registered a unique number or code to identify a user.	Used in conjunction with user's internal identification (302) to identify a user uniquely on any circulation system. Can include standard codes such as SAN and vendor agency code.
302	User's internal identification	Unique number or code used by a circulation system to identify a person or institution involved in a circulation transaction.	This number is the number used by the system to identify the user, as distinct from the user identification number 303 that may appear on a borrower card.
303	User identification number	Number presented to a circulation system to identify a user.	
304	Check digit algorithm	Name of an algorithm used for generating a check digit in a user external identification number.	

Tag	Name	Description	Representation and remarks
305	Former identification number at this institution	Number formerly presented to a circulation system to identify a user.	This element is usually in the same format as the current user identification number (303).
306	User password	A string of octets used to validate a user for restricted or confidential activities.	Systems may require a password when the user is performing transactions personally, e.g. loans, renewals, reservations. The password may be encrypted. This can be, and usually is, different from the passwords needed to establish a session (076).
307	User's role	The role of a user in a circulation transaction.	Possible values: 0 = borrower 1 = user of an item within the building 2 = acquirer of a copy 3 = user reserving a title or an item 4 = user booking an item 5 = receiver of notification 6 = user incurring a fee or fine 7 = has previously borrowed item
308	Alternative user identity information	Alternative information presented to a circulation system to identify a user. Group identifier for data elements 301-307.	Used when multiple IDs are issued for the same individual or institution. Examples: A research assistant borrowing on behalf of another researcher or department. A family whose members all have separate IDs but who all receive mail under a single user identification.
309	Record status	A code that indicates the status of the record for file maintenance purposes.	Possible values: 0 = new record 1 = deleted record 2 = corrected record If record status = "1", then the record may contain only this element (309), user identification information (300) and date and time of last update (A.2 - code 15).

Tag	Name	Description	Representation and remarks
310	User's name	Name of the person or institution involved in the circulation transaction. Group identifier for data elements 312, 325.	
312	Personal name	Name of a person involved in a circulation transaction. Group identifier for data elements 314-319.	
314	Surname	Family name of an individual.	Part of the name by which a name is filed and retrieved from an ordered list. If an individual has only one name, then it is recorded as a surname data element. This data element includes compound names, that is names joined by a hyphen (e.g. Bridges-Webb) and complex surnames that contain more than one separate word (e.g. Day Lewis, La Fontaine Verwey).
315	Given name	A simple, double or compound name that distinguishes an individual within a family carrying a common name.	Part of a name that is used for secondary filing. The given name usually precedes the surname when constructing a personal name. Christian names and forenames are included as given names.
317	Suffix	A name element, placed on the end of a name that, in conjunction with a surname and a given name or names, serves to identify an individual, but does not form an integral part of a name.	Includes titles, epithets and indication of office. Examples: Jr., Esq.
318	Prefix	A name element, placed before other personal name elements such as surname and given names that, in association with these elements, serves to identify an individual, but does not form an integral part of a name.	Part of a name that is normally not used for sequencing. Includes titles, epithets and indication of office. Examples: Mr., Hon., Dr.

Tag	Name	Description	Representation and remarks
319	Numeric qualifier	A numeric element, either Arabic, Roman or other numeric type, that in conjunction with surname and given names, forms an integral part of a name, serving to identify an individual.	Part of a name that is used for secondary filing. The numeric data element usually is placed after other name elements such as surname and given name. Example: IX.
320	Sex	A code indicating the gender of an individual.	See ISO 5218.
321	Language	A code indicating the language in which a user prefers to communicate.	For language codes used, consult ISO 639.
325	Corporate name	Name of an institution involved in a circulation transaction. Group identifier for data elements 111-118.	
330	User privacy information	A group of elements to protect the confidentiality of user information. Group identifier for data elements 331-332.	
331	Permission to use this record	An indication of the extent to which a user record may be used.	Possible values: 0 = access restricted to use within a single institution and/or database 1 = record may be read by another institution and/or database 2 = Record may be copied to another institution and/or database 3 = Information in this record may be used for non-traditional library activities, such as mailing lists
332	Further privacy restriction	Additional restriction on the use and distribution of information about a user.	Free-form privacy information, to be defined as needed.

Tag	Name	Description	Representation and remarks
345	Source of primary data	Source of user information found in this record when it was derived from another system.	
366	Identity document	A document, licence or card used to identify an individual, issued by a government or other administrative body. Group identifier for data elements 367-370.	
367	Type of identity document	A code or phrase indicating a document, licence or card used to identify an individual.	Possible values: 0 = Driver's licence 1 = Passport 2 = National identity card 3 = Residency permit 4 = Military serial identification 5 = Social security card 6 = Credit card 7 = Card issued by related institution, e.g. academic, local council 8 = Locally defined identity document 9 = Other
368	Administrative authority issuing identity document	A government or other administrative authority issuing an identity document.	Includes country, state and province.
369	Identity document number	A unique number or character string assigned by an administrative authority to identify an individual.	
370	Other information related to an identity document	Information related to an identity document that clarifies the relationship of the individual to the administrative body issuing the identification.	Examples: Visa information in a passport Military service and rank associated with a military service ID number Academic affiliation information

Tag	Name	Description	Representation and remarks
400	Address of user	A code or phrase which gives the geographic location or place associated with a user. Group identifier for data elements 130, 160.	
420	Descriptive elements for user	A group of data elements which are used to identify a user's relationship to the library and/or parent institution. Group identifier for data elements 421, 435-436.	Used for policy determination and statistics. Not related to borrowing history.
421	Borrowing privileges	A group of data elements indicating a user's borrowing characteristics and privileges. Group identifier for data elements 422-434.	
422	User type	A code or phrase given by a library or parent institution that signifies a user's normal borrowing and other privileges.	Examples: Undergraduate House-bound service Military service and rank
424	User loan status	A code or phrase that may indicate a user's borrowing and other privileges.	This code is used in conjunction with User type (422) that may determine default values for this data element. Possible values: 0 = No restrictions 1 = Loan privileges denied 2 = Renewal privileges denied 3 = Recall privileges denied 4 = Too many items on loan 5 = Too many items overdue 6 = Too many renewals 7 = abnormal returns count warning (claims item returned or never borrowed) 8 = Too many items lost

Tag	Name	Description	Representation and remarks
			9 = Excessive outstanding fines 10 = Excessive outstanding fees 11 = Recall overdue 12 = Too many items billed 13 = Self-service loan privileges denied 14 = Interloan privileges denied 15 = Card reported lost or stolen Additional values may be defined as required. Interpretation of "too many" is locally defined.
427	User's home library	A code or phrase representing the library at which a user is registered for borrowing and other privileges.	
428	User's home location or branch	A code or phrase representing the location within the library at which a user is registered for borrowing and other privileges.	
429	User service point	A code or phrase representing a location within or outside a library from which a user borrows library material.	Used where a user may regularly use more than one location, for example, both a branch and a bookmobile stop.
430	Minor flag	A code indicating that a user's age is lower than that of an adult and as a consequence another person, usually a parent, is responsible for his or her loans and financial transactions.	Possible values: 0 = Minor 1 = Age of majority 2 = Unknown The definition of the threshold may vary by lending location.
432	Budget / fund identification	A code or phrase representing a budget or fund to which a user's chargeable transactions are recorded.	

Tag	Name	Description	Representation and remarks
433	Billing information	A phrase indicating instructions for billing a particular user.	Used when another user receives a particular user's bills.
434	Additional borrowing privilege information	A phrase that indicates qualifications to a user's normal borrowing privileges.	
435	User reservation status	A code or phrase that may indicate a modification to a user's normal reservation privileges.	This code is used in conjunction with user type (422) that may determine default values for this data element. Possible values: 0 = No restrictions 1 = Reservation privileges denied Additional values may be defined as required.
436	User booking status	A code or phrase that may indicate a modification to a user's normal booking privileges.	This code is used in conjunction with user type (422) that may determine default values for this data element. Possible values: 0 = No restrictions 1 = Booking privileges denied
440	General organisational information for a user	A group of data elements defining a user's relationship to a parent institution or organisation. Group identifier for data elements 110, 441-445.	
441	User title in organisation	A phrase defining a user's role and function within an organisation.	Examples: President, Managing director, Student, Visiting Professor, Research Associate
442	User's activity	A word, code or phrase that indicates a particular task being undertaken by an individual, either individually or as part of a group.	Includes details of academic enrolment and names of research projects within research institutions. Examples: AIDS research team; Ph.D in Physics