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Information and documentation — Format for information exchange

Information et documentation — Format pour l'échange d'information

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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.

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 2709 was developed by Technical Committee ISO/TC 46, *Information and documentation,* Subcommittee SC 4, *Computer applications in information and documentation.*

This third edition cancels and replaces the second edition (ISO 2709:1981), of which it constitutes a technical revision.

Annex A of this International Standard is for information only.

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Information and documentation — Format for information exchange

1 Scope

This International Standard specifies the requirements for a generalized exchange format which will hold records describing all forms of material capable of bibliographic description as well as other types of records. It does not define the length or the content of individual records and does not assign any meaning to tags, indicators or identifiers, these specifications being the functions of an implementation format.

This International Standard describes a generalized structure, a framework designed specially for communications between data processing systems and not for use as a processing format within systems.

2 Normative references

The following standards contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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/IEC 646:1991, *Information technology — ISO 7-bit coded character set for information interchange.*

ISO/IEC 10646-1:1993, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane.*

3 Definitions

For the purposes of this International Standard the following definitions apply. They are listed in the order corresponding to figure 2.

3.1 record: Collection of fields, including a record label, a directory and data.

NOTE 1 If required, linking of records and their division into subrecords is allowed, which should be implemented as specified in the explicit exchange format.

3.2 field: Variable length portion of the record containing a particular category of data, following the directory and associated with one entry of the directory.

NOTE 2 A field may contain one or more subfields.

3.3 (subfield) identifier: Data element of one or more characters immediately preceding and identifying a subfield.

3.4 indicator: First data element, if present, associated with a field supplying further information about the contents of the field, about the relationship between the field and other fields in the record, or about the action required in certain data manipulation processes.

3.5 directory: Index to the location of the fields within a record.

3.6 record label: Field occurring at the beginning of each record providing parameters for the processing of the record.

3.7 directory map: Set of parameters specifying the structure of the entries in the directory.

3.8 separating character: Control character used to separate and qualify units of data logically, and in some cases hierarchically.

3.9 subfield: Part of a field containing a defined unit of information.

3.10 subrecord: Group of fields within a record which may be treated as an entity.

3.11 structure: Arrangement of the parts constituting a record.

3.12 (field) tag: Three characters associated with a field and used to identify it.

4 Structure of communication format for record

The general structure of a record is shown schematically in figure 1. A more detailed structure is shown schematically in figure 2, which includes four alternatives for the data fields.

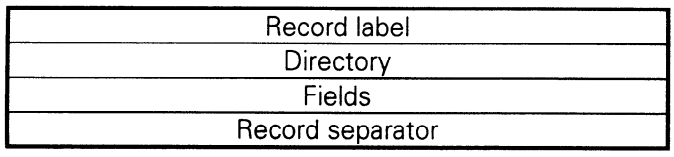

Figure 1 — General structure

A record contains the following fixed and variable length fields in the sequence shown in figure 2:

a) a record label (fixed length);

b) a directory (variable length);

c) record identifier (variable length);

d) reference fields (variable length);

e) data fields (variable length);

f) field separator(s), i.e. separator IS2 of ISO/IEC 646 or ISO/IEC 10646;

g) record separator, i.e. separator IS3 of ISO/IEC 646 or ISO/IEC 10646.

The directory, record identifier, reference fields and data fields is terminated by a field separator. The record is terminated by the record separator.

4.1 Record label

The record label shown in figure 2 is fixed in length and defined as follows.

4.1.1 Record length (character positions 0 to 4)

The number of character positions in the record including the record label, directory, fields, and the record separator. The length is a 5-digit decimal number, right-aligned with zero fill if necessary.

NOTE 3 The record length described here is a logical record length. For practical reasons relating to machine processing of data in the magnetic tape environment, it can be necessary to divide the information into blocks.

4.1.2 Record status (character position 5)

A single character, to be defined in an implementation International Standard, describing the status of a record, for example, new or amended.

In the absence of an International Standard, special agreement shall be reached between the interchange partners.

4.1.3 Implementation codes (character positions 6 to 9)

The codes are not defined in this International Standard. Special agreement shall be reached between the interchange partners

4.1.4 Indicator length (character position 10)

One decimal digit giving the number of character positions of the indicators.

If indicators are not used, the indicator length is set to zero.

4.1.5 Identifier length (character position 11)

One decimal digit giving the number of character positions of the identifier. The first or only character of this identifier shall always be IS1 of ISO/IEC 646 or ISO/IEC 10646.

If the identifier is not used, the identifier length is set to zero.

4.1.6 Base address of data (character position 12 to 16)

Five decimal digits, right-aligned with zero fill if necessary, equal to the combined length in characters of the record label and the directory including the field separator at the end of the directory.

4.1.7 Defined by user systems (character positions 17 to 19)

These positions are defined by user systems.

4.1.8 Directory map

Character position 20: One decimal digit equal to the length in characters of the length of field part of each entry in the directory.