INTERNATIONAL STANDARD

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Information and documentation — Commands for interactive text searching

Information et documentation — Commandes pour les systèmes interactifs de recherche 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 8777 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Sub-Committee SC 4, *Computer applications in information and documentation*.

Annexes A, B, C and D of this International Standard are for information only.

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Introduction

A consequence of the many information retrieval systems that exist today is the great number of different commands, types of command language and even search philosophies in existence. A way to facilitate the use of such systems, particularly for the more infrequent user, is to create a standard user interface consisting of a basic set of commands and rules for their use. This International Standard is intended for that purpose.

Many types of user-system interface are used with interactive search systems, and this International Standard, recognizing this variety, is addressed to one particular type of interface, namely, command-driven systems.

The mode of operation of search systems complying with this International Standard is often known as user-driven dialogue, where most actions are initiated by the user issuing commands to this system; however, this does not preclude the system requiring answers to specific questions on occasion.

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Information and documentation — Commands for interactive text searching

1 Scope

This International Standard specifies a basic set of commands for the interactive search of retrieval systems data and the types of response expected from the processing system. It is intended for use by designers and users of information retrieval systems, including computer-based library catalogues and computer-based database access and search facilities.

This International Standard does not restrict or prohibit the use of other types of user-system interaction, such as menus or natural language interfaces, or the use of a "native" (non-standard) command language.

NOTE 1 If the meaning of a standard command name conflicts with the meaning of a command name in the "native" language, the function of the standard command name is preferred.

Some systems incorporate fewer functions than specified in this International Standard; others use additional functions. These additional functions may include added command names, operators or qualification and limitation techniques. It is important that additional functions and the type of response they generate conform to the general features and syntax set out in this International Standard.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard 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.*

3 Definitions

The definitions in this International Standard are intended to reflect the point of view of the user. They are not intended to reflect the technical or engineering aspects of computers. For the purposes of this International Standard, the following definitions apply.

3.1 basic index: Index associated with *fields* that are searched when no *field* designations are stated.

3.2 command expression: Complete request for the performance of a function.

3.3 command name: Specially defined *reserved word* or abbreviation used to initiate a *command expression*.

3.4 command specification: String of characters following a *command name*, specifying how and on what the *command expression* is to operate.

3.5 connector: Symbol used to link *search terms* and *qualifiers*.

3.6 default: Value automatically assumed by the system, unless the user specifies a different value or values.

3.7 field: As a subset of a *record*, structured data treated as a unit and used to store a particular type of data.

3.8 field label: String of characters used to uniquely identify a particular *field* defined in a *record*.

3.9 masking: Symbolizing unknown or unspecified character(s) in a *search term* by special characters that are defined to represent any character or characters, no characters, or blank spaces.

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3.10 operator: *Reserved word* or symbol used to specify the relationship between two entities being searched. Operators include the following.

3.10.1 Boolean operator: *Operator* that expresses logical relationships between two *search terms* or *search elements*, e.g. AND, NOT and OR.

3.10.2 proximity operator: *Operator* that specifies the sequence of and distance between two *search terms*.

3.10.3 ranging operator: *Operator* that assigns ranges of consecutive values between two *search terms*.

3.11 parameter: Variable that is given a constant value for a specified application, and that may denote that application. [ISO 2382-2]

3.12 qualifier: Parameter used to restrict or otherwise direct the range of values of a given variable.

3.13 record: Group of data usually comprising a number of *fields* and treated as a unit.

3.14 reserved word: *Word*, abbreviation or symbol that has a special meaning defined explicitly in the command language.

3.15 restoration mark: Symbol used to restore the literal meaning of a defined *reserved word*.

3.16 result set: Group of *records* retrieved by a *search statement*.

3.17 result set identifier: Label assigned by the system or by the user to a *result set*. The result set identifier for a given *search statement* is identical to its *search statement identifier*.

3.18 (online) search: Interactive search process via computer to as many databases as the searcher considers necessary to find the requested information.

3.19 search element: *Search term*, or Boolean combination of *search terms* to be searched in the same index, and its *qualifier* or *qualifiers* (the *qualifier* may be implicit), or a *result set identifier*, or terms selected from the display resulting from a SCAN or RELATE command expression.

3.20 search statement: *Command specification* of a particular FIND command.

3.21 search statement identifier: Label assigned by the system to each *search statement*.

3.22 search strategy: Series of command expressions intended to satisfy a request for information. A search strategy may include a variety of database selection commands, term identification commands, and search and display commands.

3.23 search term: *Word* or group of *words* that the FIND command instructs the system to retrieve. A search term contains *search words* and may contain *proximity operators* but does not include *Boolean operators* or *ranging operators* or *qualifiers*.

3.24 search word: *Word* that the system is capable of searching.

3.25 separator: Character or series of characters used to set apart components of a command expression. Space, colon, semicolon and parentheses are defined in this International Standard as separators.

3.26 session: All transactions between user and system from logon to logoff.

3.27 stopword: *Word* ignored by the indexing of a particular database.

3.28 thesaurus: Compilation of terms showing synonymous, hierarchical and other relationships and dependencies, the function of which is to provide a previously-built controlled vocabulary for information storage and retrieval.

3.29 truncation: Special form of character *masking* that masks a character or characters at either end of a word.

3.30 word: Character or characters preceded and followed by *separators*. The characters may be alphanumeric or symbols.

4 General principles

4.1 Implementation

This International Standard does not specify the manner in which system designers implement the functions it describes. These command functions and the expected system responses are described from the user's point of view.

4.2 Conformance

An information retrieval system conforms to this International Standard when it recognizes and responds to every command specified by this International Standard. Where a facility is unavailable, the system response shall inform the user of this.

4.3 Command structure

In this International Standard, the following general command structure is applied:

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< command expression >=
< command name > < command specification >

A command expression shall start with a command name or abbreviation. Not all command expressions require a command specification.

4.4 Command names

4.4.1 General

Command names are considered international in language and are selected to describe the function to be performed. See table 1 for a summary of command names.

The following criteria have been followed in the selection of command names and shall be followed in the formulation of additional command names:

a) the number of command names should be kept to a usable minimum;

b) verb forms are preferred;

c) command names should be as self-explanatory as possible.

4.4.2 Command name abbreviations

Command names shall be abbreviated by truncation of characters from the right. For all command names in this International Standard, the first three characters are specified as the standard abbreviation (see annex A). The system is required to accept both the full form of the command name and the three-letter abbreviation.

In addition, any unambiguous truncated form of the command name ranging from the initial character to the full command name shall be recognized by the system. If ambiguity results from the user's abbreviation in any case, the system should respond by asking for a fuller, unambiguous form of the command name.

4.5 Command specification components and format

4.5.1 Components

A command specification may contain user-supplied data such as:

a) search terms;

b) system-defined qualifiers (e.g. field labels);

NOTE 2 Commonly used field labels are given in annex B.

c) record or format identifiers;

d) term identifiers (e.g. those resulting from a SCAN or RELATE command expression);

e) standard-defined Boolean, proximity and ranging operators;

f) character masking symbols;

g) result set identifiers.

If the command specification lacks the necessary details, the system shall respond either by asking the user to supply essential information or according to preset default values.

4.5.2 Format

The order and format of the components in a command expression are specified in this International Standard.

4.6 Character codes

This International Standard is designed to be used with the 7-bit code specified in ISO/IEC 646, and all references to characters or special symbols refer to that code. Systems using other codes capable of providing the same or equivalent graphic characters may be used.

4.7 Characters

The system shall be capable of accepting user input without discriminating between upper and lower case.

4.8 Separators

4.8.1 Spaces

Spaces are significant and are used to separate components of a command expression. A space shall appear after a command name when it is followed by a command specification. A system conforming to this International Standard shall accept multiple spaces as a separator equivalent to a single space.

In addition, a space between search words shall be interpreted as a proximity operator requiring immediate adjacency of the two words in the order entered.

4.8.2 Commas

The comma (,) shall be used as a special purpose separator to separate two or more like command components, such as qualifiers (e.g. field labels) or record identifiers (e.g. record numbers). The system shall accept any number and any combination of spaces and commas together as a single comma.

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The treatment of commas that occur within the text of data fields, such as within author fields that use inverted names, is implementation-specific and is not dictated by this International Standard. In any other cases where the presence of a comma causes conflict with the rules of this International Standard, restoration marks shall be used to preserve the textual nature of the comma.

4.8.3 Semicolons

The semicolon (;) shall be used to separate command expressions in user-defined sequences of command expressions, or for command "stacking" purposes, that is, when several commands are submitted to the system in a single transmission.

4.8.4 Parentheses

Parentheses act as implicit separators; that is, a left parenthesis shall not require a preceding space, nor shall a right parenthesis require a following space. A space immediately inside a parenthesis shall be ignored.

Parentheses shall be used to specify precise groupings of elements in a search statement to ensure that a sequence of operators is executed in the intended order.

5 Command names

The command names specified in table 1 shall be used, in accordance with clauses 6 to 17, in constructing the command expressions specified in this International Standard.

6 User aids

6.1 System guidance: INFO

The command name INFO shall be used to obtain information about the system, its database(s), or other features. This information is the same at any point in the session.

INFO does not require a command specification but may be used with one. When INFO is entered alone, the system shall display the list of available topics.

Only one topic shall be specified in the command specification. If the topic specified by the user is not available, the system shall display a list of available topics.

See C.1.1 for examples of the use of INFO.

6.2 Session guidance: HELP

The command name HELP shall be used to obtain online assistance or instruction specific to the user's situation or to the context of the interaction.

HELP does not require a command specification. No particular command specification is defined in this International Standard.

See C.1.2 for examples of the use of HELP.

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Table 1 — Basic command names

Principal application	Command name	Relevant clause or subclause for command
User aids	INFO	6.1
	HELP	6.2
	REVIEW	6.3
Paging	FORWARD	7.1
	BACK	7.2
Database selection	BASE	8
Query formulation	FIND	9
Index scanning	SCAN	10
Thesaurus scanning	RELATE	11
Output commands	SHOW	12
	PRINT	12
Saving and recalling search strategies	SAVE	13
Deletion	DELETE	14
User-defined functions	DEFINE	15
Interrupt	not specified	16
End of session	STOP	17

6.3 Search history: REVIEW

The command name REVIEW is used to review the search elements and search statements entered during the session and still available for use.

REVIEW does not require a command specification but may be used with one. When REVIEW is used alone, the system shall provide a list of all search statements entered during the session including the number of retrieved records for each statement and the search statement or result set identifiers.

The following command specifications for REVIEW shall be available:

a) search statement identifier(s); to review the statements identified including the number of retrieved records. The identifiers may be given as a range < *n* > TO < *m* >.

b) SAVE=< saved search strategy identifier >; to recall a saved search strategy without reprocessing.

See C.1.3 for examples of the use of REVIEW.

6.4 Numbering: < number >

Numbers or other means of identification shall be used to identify:

a) search statements;

b) terms displayed in response to a SCAN or RELATE command expression;

c) records retrieved in response to a search;

d) print command expressions; and

e) saved searches.

While the precise form of identifiers may differ from system to system, each series shall be separately labelled and, if numeric, consecutively listed.

7 Paging

7.1 FORWARD

FORWARD shall be used in any application to view continuing data, or data following displayed data or items on a list.

FORWARD does not require a command specification but may be used with one. If no command specification is given, the system default shall apply.

The following command specifications shall be available for the FORWARD command expression:

a) < *n* >, a positive integer; to move forward *n* screens or pages;

b) REC < *n* >, where *n* is a positive integer; to move forward *n* records, regardless of the number of screens or pages those records occupy.

FORWARD is not a substitute for a search statement or other command expression. A FORWARD command expression will usually be entered after a command expression initiated by DISPLAY, RELATE, REVIEW, or SCAN has been executed, as well as after any other command expression whose response fills more than one screen or page.

See C.2.1 for examples of the use of FORWARD.

7.2 BACK

BACK shall be used in any application to view preceding data, or data coming before displayed data or items on a list.

BACK does not require a command specification but may be used with one. If no command specification is given, the system default shall apply.

The following command specifications shall be available for the BACK command expression:

a) < *n* >, a positive integer; to move backward *n* screens or pages;

b) REC < *n* >, where *n* is a positive integer; to move backward *n* records, regardless of the number of screens or pages those records occupy.

BACK is not a substitute for a search statement or other command expression. A BACK command expression will usually be entered after a command expression initiated by DISPLAY, RELATE, REVIEW, or SCAN has been executed, as well as after any other command expression whose response fills more than one screen or page.

See C.2.2 for examples of the use of BACK.

8 Database selection: BASE

The command name BASE shall be used to select the database(s) to be searched.

BASE does not require a command specification but may be used with one. When BASE is entered alone, the system shall respond with a list of available databases and instructions on how to select one or more.

When BASE is used with a command specification, the system shall confirm the name(s) for the database(s) and give the time span(s) for the databse(s).

Database names are system-dependent.

If simultaneous access to more than one database is possible, the names of the databases in the command

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specification shall be separated by commas. A name assigned to a group of databases is acceptable.

It shall be possible to use masking symbols in database names.

See C.3 for examples of the use of BASE.

9 Query formulation: FIND

9.1 General

The command name FIND shall be used for query formulation. It invokes a search of one or more of the system's databases.

9.2 Search statements

The command specification for FIND is mandatory and is known as the search statement.

A search statement consists of a search element or a combination of search elements.

< search statement >=< search element >< operator >< search element >

A search element may consist of:

a) a search term, or a Boolean combination of search terms to be searched in the same index, and its qualifier or qualifiers (the qualifier may be implicit); or

b) a ranging expression with its qualifiers; or

c) a result set identifier; or

d) terms identified through a SCAN or RELATE command expression.

A search term contains search words and may contain proximity operators but shall not contain Boolean or ranging operators, or qualifiers.

Example of the components of a FIND command expression

Command expression

FIND s4 AND (mark ! twain OR samuel ! clemens) AND TI,SU tom sawyer AND DA LT 1900

Command name

FIND

Search words

mark
twain
samuel
clemens
tom
sawyer
1900

Search terms

mark ! twain
samuel ! clemens
tom sawyer
1900

Search elements

s4
(mark ! twain OR samuel ! clemens)
TI,SU tom sawyer
DA LT 1900

Command specification or search statement

s4 AND (mark ! twain OR samuel ! clemens) AND TI,SU tom sawyer AND DA LT 1900

See C.4.1 for further examples.

9.3 Restoration marks

Double quotation marks (") shall enclose a reserved command name, abbreviation, operator or symbol to restore its literal meaning so that it may be used as a search term.

See C.4.2 for examples of the use of restoration marks.

9.4 Character masking

Two symbols are defined to enable the user to perform character masking and truncation. In each case, the symbol shall be embedded without intervening spaces in the word at the point of the mask. Multiple occurrences of the same symbol shall have no intervening spaces between occurrences. Different masking symbols may be used at different points within a word.

9.4.1 Masking a precise number of characters

The symbol # shall be used to indicate that precisely one character is to be masked.

Multiple #s shall be used to indicate that a precise number of characters greater than one and equal to the number of # symbols are to be masked.

See C.4.3.1 for examples of use.

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9.4.2 Masking a variable number of characters

The symbol ? shall be used to indicate a variable number of characters to be masked. A single ? shall be used to indicate an unlimited number of characters. ?*n*, where *n* is a positive integer, shall be used to indicate a limited range of characters to be masked, from zero up to and including the specified integer.

See C.4.3.2 for examples of use.

9.4.3 Response

The response to a request containing masking symbols shall be either:

a) a set resulting from a combination of all terms matching the mask, using the Boolean operator OR; or

b) a list of those terms matching the mask.

If a system's default response is response b), the specification ALL, preceding the masked word, shall be used to request response a).

9.5 Operators

9.5.1 Boolean operators

The logic operators AND, NOT and OR are used to connect search elements, result sets, or sets retrieved by a RELATE or SCAN command expression or any pair thereof.

Parentheses shall be used to ensure that a sequence of operators is executed in the intended order. The logic within the innermost matched pair of parentheses shall be executed first. Search elements may be nested, i.e. search elements may themselves contain operators, or they may be earlier search statement identifiers or result set identifiers.

Processing of Boolean operators shall occur on logical groups from left to right.

See C.4.4.1 for examples of the use of Boolean operators.

9.5.2 Ranging operators

The operators > (or GT), < (or LT), = (or EQ), < > (or NE), >= (or GE), <= (or LE) and – (or TO) shall be used to assign ranges of values to parameters in a search element. The letter equivalents shall be entered within spaces in a search element. Spaces entered on either side of the symbols shall be ignored.

The operator – (or TO) is inclusive of the start and end values; it may take nil (i.e. nothing entered) as one of its connected values.

See C.4.4.2 for examples of the use of ranging operators.

9.5.3 Proximity operators

9.5.3.1 General

Promixity operators are used to specify the relative position and distance between two search words or terms.

Three proximity operators are specified in this International Standard.

Proximity operators shall be processed on logical units from left to right.

Symbols for the proximity operators shall be separated from search words or terms by a space.

The treatment of stopwords or "common" words is not specified in this International Standard.

9.5.3.2 Direct sequence

Direct sequence means that the words shall be immediately adjacent and in the order entered. The operator for this condition shall be a single space. Multiple spaces shall be interpreted as a single space.

See C.4.4.3.1 for examples of the use of proximity operators in direct sequence.

9.5.3.3 Word order specified

The proximity operator ! shall be used between two search words in a search statement to specify precise word order. ! alone between two words shall indicate immediate adjacency in the order entered. !*n*, where *n* is a positive integer, shall be used to specify the maximum distance (number of words), *n*, within which the target words must occur in the order specified in the search statement.

See C.4.4.3.2 for examples of the use of proximity operators with word order specified.

9.5.3.4 Word order not specified

The proximity operator % shall be used between two search words when word order is not to be specified. % alone between two words shall indicate immediate adjacency of the words in either order. %*n*, where *n* is a positive integer, shall be used to specify the maximum number of words, *n*, within which the target words must occur in either order.

See C.4.4.3.3 for the examples of the use of proximity operators with word order not specified.

9.5.4 Order of precedence for evaluating operators

Operators shall be evaluated in the following order of precedence:

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a) character masking;

b) proximity operators (left to right);

c) Boolean operators (left to right).

See C.4.4.4 for an example of operator precedence.

9.6 Qualifiers

Qualifiers shall precede a search term and shall be connected to the search term by an =, or where appropriate, by a ranging operator.

Qualifiers are used to direct a search to specific indexes or textual units (e.g. fields or paragraphs). The existence and type of available qualifiers are system- and database-dependent and are not specified by this International Standard. However, where qualification is available, it shall conform to the patterns set out in this International Standard.

If no qualifier is specified, the system will search its default index; the choice of the default index is implementation-specific and is not specified in this International Standard.

If more than one qualifier is used, qualifiers shall be separated by a comma. The result set shall be the combination, using the Boolean OR, of each qualifier.

Each specified qualifier shall operate on an entire logical expression of search terms. Where no parentheses group search terms, the qualifier(s) shall apply only to those terms preceding the next Boolean operator.

See C.4.5 for examples of the use of qualifiers.

10 Index scanning: SCAN

The command name SCAN shall be used to view adjacent terms, ordered either alphabetically or otherwise.

SCAN does not require a command specification but may be used with one.

When SCAN is entered alone, the system shall display a list of terms from the beginning of a basic or default index or dictionary file.

The only command specification available is a single search term. This specification is used to indicate the portion of index terms to be displayed. If no match is found for the specified term, the system shall display a sequenced portion of the terms where it would be found.

The command specification may optionally include a qualifier. The qualifier shall precede and be connected to the search term by an =. Only one qualifier can be specified at one time. When no search term follows the qualifier, the system shall display an ordered list, either alphabetic or otherwise, from the beginning of the specified index.

When the user enters a qualifier that causes ambiguity or that cannot be interpreted by the system, the system should advise the user of the available qualifiers.

Terms displayed in response to the SCAN command expression shall have identifiers (e.g. numbers) that may be used for subsequent reference.

Following the display of a list of terms in response to a SCAN command expression, one or more of the terms from the list may be selected for searching with the FIND command. The system shall accept identifier(s) in lieu of search terms; a hyphen shall be used to indicate a range of identifiers.

See C.5 for examples of the use of SCAN.

11 Thesaurus scanning: RELATE

The command name RELATE shall be used to view logically related terms from a thesaurus, classification, or other hierarchical list.

The command specification for RELATE is mandatory. Only one term shall be specified at a time. The command specification may include a term relationship (e.g. broader or narrower), which shall take the form of a prefix qualifier connected to the term by an =. Only one relationship, and thus one prefix, may be specified at a time.

Terms displayed in response to the RELATE command shall have identifiers (e.g. numbers) that may be used for subsequent reference.

Following the display of a RELATE list of terms, one or more of the terms from this list may be selected for searching with the FIND command.

Where no thesaurus or hierarchical lists exist for a database, the response to the RELATE command shall be a response indicating "Not applicable".

See C.6 for examples of the use of RELATE.

12 Output commands: SHOW, PRINT

12.1 General

There are two command names used to obtain listings of records found:

a) SHOW for online display at the user's equipment;

b) PRINT for all other output.

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12.2 Command specifications

The command specifications are identical for the two commands.

Neither command expression requires a command specification, but both may be used with one. When a command name is entered alone, the system shall provide:

a) a system-specific number of records, in sequential order by record number (always either from "top" or "bottom");

b) output from the set of records resulting from the last entered search statement;

c) output displayed/printed in the system default format.

Command specifications may include one or more of the following:

a) a result set identifier;

b) one or more non-exclusive display format identifiers;

c) one or more record identifiers.

Each identifier shall be unique and unambiguous. These identifiers shall exist but are not otherwise specified in this International Standard.

In addition, defaults shall exist for any unspecified parameters required by the system.

12.3 Format

The format of the two commands is identical.

Command specifications shall be separated from one another by a space. No order of command specifications is specified in this International Standard. If order is important to the system, the system shall instruct the user as to the correct arrangement.

Non-consecutive numbers or other alphanumeric labels connected to an identifier (e.g. non-consecutive record numbers or field labels chosen for record format definition) shall be separated by commas.

See C.7 for examples of the use of SHOW and PRINT.

12.4 Special rules for PRINT

In addition to the above, the following parameters shall be available for the PRINT command name:

a) REV; for requesting a printout of the search history;

b) parameters for sorting, labelling and directing output to different sites and media. This International Standard does not specify the form of these parameters. The system shall give guidance to the user about their form.

13 Saving and recalling search strategies

13.1 Saving search strategies: SAVE

The command name SAVE shall be used to save a search strategy, which may include a variety of database selection commands, term identification commands, and search and display commands.

The system shall assign a unique identifier to the saved search strategy so that it can be recalled for review or reprocessing.

The command specification for SAVE is optional.

When SAVE is entered alone, the system shall save all previous search statements.

The following command specifications shall be available for the SAVE command name:

a) identifiers of particular search statements to be saved;

b) a user-supplied name for the search strategy. If only the user-supplied name for the saved search strategy follows the command name, the system shall save all previous search statements under the user-supplied name. If a user attempts to assign a user-supplied or system-supplied name that is already in use, the system shall warn the user and request confirmation;

c) SDI; to invoke a request for selective dissemination of information, a command specification that the strategy should be used to produce notifications of additions to the database.

See C.8.1 for examples of the use of SAVE.

13.2 Recalling and reprocessing saved search strategies

To recall and reprocess a saved search strategy, the command name FIND is used. The command expression is as follows:

FIND SAVE=< saved search strategy identifier >

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To recall a saved search strategy without processing, (e.g. to modify a strategy), the command name REVIEW is used. The command expression is as follows:

REVIEW SAVE=< saved search strategy identifier >

See C.8.2 and C.1.3 for examples of use.

14 Deletion: DELETE

14.1 General

The command name DELETE shall be used to remove search statements, result sets, records from result sets, saved search strategies, print requests, and user-defined values resulting from a DEFINE command expression.

14.2 Command specifications and format

The command specification for DELETE is mandatory. Available command specifications shall include:

a) search statement identifiers;

b) result set identifiers;

c) record identifiers;

d) saved search strategy identifiers;

e) print command identifiers;

f) user-defined values; or

g) other request identifiers.

Defaults shall exist for unspecified parameters needed by the system.

Command specifications shall be separated by a space. Where order of specification is important, the system shall inform the user of this. If records are to be deleted from result sets, the record identifiers shall immediately follow the result set identifiers to which they belong.

The system shall always request confirmation before executing a DELETE command expression.

See C.9 for examples of the use of DELETE.

15 User-defined functions: DEFINE

The command name DEFINE shall be used to override default values or to create user-defined sequences of command expressions.

The command specification for DEFINE is mandatory. Values that can be defined by the user are system-dependent and are not specified in this International Standard. The format for this command expression is:

DEFINE < parameter >=< new value >

To create a named sequence of command expressions, the expressions shall be separated by semicolons. The user-supplied name shall invoke execution of the sequence of command expressions. Other command expressions that are not part of the named sequence shall not be stacked in the same command expression.

See C.10 for examples of the use of DEFINE.

16 Interrupt

An interrupt feature shall be provided. This International Standard does not specify a particular function.

17 End of session: STOP

The command name STOP is used to end the search session.

STOP does not require a command specification but may be used with one where it is appropriate for a particular database.

If the user enters STOP alone into a system that requires a specification or additional steps to terminate a session, the system should specifically ask for the additional information or steps.

In some systems, STOP can initiate logoff procedures; this is implementation-specific.

The command specification HOLD shall be used to cause a pause in the logoff procedure, i.e. the user may re-enter the system within a defined (system-dependent) number of minutes to continue the previous search session.

See C.11 for examples of the use of STOP.

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Annex A
(informative)

Summary of command names, operators, abbreviations and symbols

Standard term	Abbreviation	Function
ALL		To specify all values in a range
AND		Boolean operator: intersection
BACK	BAC	To view data preceding displayed data
BASE	BAS	To choose databases
DEFINE	DEF	To override default parameters or create named sequences of command expressions
DELETE	DEL	To delete search statements, result sets, records, search strategies, defined values and other command expressions
EQ or =		Connector; also ranging operator: equal to
FIND	FIN	To enter a search statement
FORWARD	FOR	To view continuing data or data following displayed data on a list
GE or >=		Ranging operator: greater than or equal to
GT or >		Ranging operator: greater than
HELP	HEL	To obtain session- or context-specific assistance
HOLD		Command specification for STOP, to cause a pause in the search session
INFO	INF	To obtain general information not specific to the session
LE or <=		Ranging operator: less than or equal to
LT or <		Ranging operator: less than
NE or < >		Ranging operator: not equal
NOT		Boolean operator: complementation
OR		Boolean operator: union
PRINT	PRI	To print results remotely
RELATE	REL	To display logically related thesaurus terms
REC		Command specification for FORWARD and BACK, to count records, not pages
REV		Command specification for PRINT, to print the search history
REVIEW	REV	To review transactions of a search session (search history) or the steps of a saved search strategy
SAVE	SAV	To save a search strategy for subsequent use
SCAN	SCA	To display a list of alphabetically or otherwise ordered terms
SDI		Command specification for SAVE, to specify an update
SHOW	SHO	To display search results at the user's equipment
STOP	STO	To terminate a session
TO or — (dash)		Ranging operator: range includes endpoints
( )		Parentheses: to specify precise grouping of elements
[space]		Separator to keep components of a command expression separate; ALSO proximity operator: direct sequence
		Comma: separator to link like values

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Standard term	Abbreviation	Function
;		Semicolon: separator to link stacked command expressions
" "		Restoration marks
#		Character mask: exactly one character
?		Character mask: variable number of characters
!		Proximity operator: word order specified
%		Proximity operator: word order not specified

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Annex B
(informative)

Commonly used field labels

The following field labels, with meanings as given, are in frequent use for information retrieval. Their use with other meanings can therefore cause difficulties for the user. This list is not meant to be comprehensive; it attempts only to highlight some of the more common abbreviations.

AB	Abstract
AF	Author affiliation
AN	Accession number
AU	Author's name
CC	Classification code
CT	Controlled term (e.g. term from a controlled indexing vocabulary)
DE	Descriptor (e.g. assigned subject heading)
DT	Document type
ED	Computer entry date
JN	Journal title
JT	Journal title
LA	Language
SB	ISBN
SO	Source
SS	ISSN
SU	Subject
TI	Title
UT	Uncontrolled term (e.g. free indexing)

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Annex C
(informative)

Examples

The field labels given in annex B are used in this annex.

C.1 User aids

C.1.1 System guidance: INFO

INFO

— to receive a list of available INFO topics

INFO < database name >

— to receive information on a particular database

INFO hours

— to receive information on hours of opening

INFO < command name >

— to receive information on the function and format of a command name

INFO ISO 8777

— to receive information on the degree of conformance to ISO 8777

C.1.2 Session guidance: HELP

HELP

C.1.3 Search history: REVIEW

REVIEW

— to see a list of all search statements entered during the session and the associated number of records retrieved

REVIEW s3[1)]

— to see search statement 3 and the associated number of records retrieved

REVIEW s1-s10

— to see search statements 1 through 10 and their associated number of records retrieved

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1) The format referring to search statements, result sets, and other identifiers is system-dependent and not specified in this International Standard. In these examples, the form s*n* is used for search statement identifiers, r*n* for record identifiers, t*n* for term identifiers, etc.

REVIEW SAVE=mysearch

— to display the steps saved under the name "mysearch" without reprocessing that search

C.2 Paging

C.2.1 FORWARD

FORWARD

— to move forward the default number of pages

FORWARD 10

— to move 10 pages forward

FORWARD REC 20

— to move forward 20 records

C.2.2 BACK

BACK

— to move backward the default number of pages

BACK 25

— to move backward 25 pages

BACK REC 7

— to move 7 records backward

C.3 Database selection: BASE

BASE

— to receive a list of available databases and instructions on selecting one or more

BASE isodoc

— to sign on to the database named "isodoc"

BASE database1, database2, database3

— to sign on simultaneously to databases named "database1", "database2", "database3"

BASE database#

— to sign on simultaneously to all databases whose names begin "database" and have exactly one more character

C.4 Query formulation: FIND

C.4.1 Search statement form

FIND surfactants

— to invoke a search through the basic index for the word

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FIND adult education

— to invoke a search for the phrase in the basic index

FIND s3 and s5

— to invoke a combination of the previously retrieved result sets 3 and 5

FIND t7

— to search for the term identified as 7 on a thesaurus list

FIND fuzzy sets and s4

— to invoke a combination (intersection) of the search in the basic index for the phrase with result set 4

FIND ed > 1979

— to search for all records entered after 1979

C.4.2 Restoration marks

FIND "au"

— to invoke a search for the symbol for gold

FIND ti="war and peace"

— to invoke a search for the phrase "war and peace" in the title field

C.4.3 Character masking

C.4.3.1 Precise number of characters

FIND de,ab=wom#n

— to invoke a search for "woman" or "women" in the descriptor field or the abstract field

FIND use#

— to invoke a search for the words "used", "user", or "uses"

FIND ct=int##mural

— to invoke a search for the controlled terms "intermural" or "intramural"

C.4.3.2 Variable number of characters

FIND tire?1

— to search for the words "tire", "tired", or "tires"

FIND sul?2ur and colo?1r

— to invoke a search for the words "sulfur" or "sulphur" and the words "color" or "colour"

FIND electr?

— to search for the words "electric", "electricity", "electron", "electrolysis", "electrocute", etc.

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FIND ct=politicians and ti=strateg?

— to invoke a search for the controlled term "politicians" and the words "strategy", "strategies", or "strategic", etc. in the title

FIND chloro?benzene

— to search for all terms beginning "chloro" and ending "benzene", like "chlorofluorobenzene", in the basic index

FIND ?kohle

— to search for "Braunkohle", "Steinkohle" etc.

FIND ?ref#re?

— to invoke a search of the basic index for the terms "preference", "preferential", "referee", "reference", "reforest", etc.

FIND ALL au=aristot?

— to search the author field for all forms of the name beginning "aristot" and to combine those forms into one result set without displaying the terms that match the mask

C.4.4 Operators

C.4.4.1 Boolean operators

FIND gold or silver

— to invoke a search for either or both of the two terms

FIND ct=librar?3 and ab=automat?

— to search for the controlled terms "library", "libraries", "librarian", (but not "librarians") and all words beginning "automat" that appear in the abstract

FIND apple or peach and pie

— processed as FIND (apple or peach) and pie

FIND pie and apple or peach

— processed as FIND (pie and apple) or peach

FIND pie and (apple or peach)

— processed as FIND (apple or peach) and pie

FIND (((coal or petroleum) and fuel?1) or fossil fuel?1) not natural gas

— processes

a) the character masks

b) the proximity of "fossil" to "fuel" or "fuels"

c) the proximity of "natural" to "gas"

d) the OR between "coal" and "petroleum"

e) that result AND "fuel" or "fuels"

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f) that result OR "fossil fuel" or "fossil fuels"

g) that result NOT the phrase "natural gas"

FIND de,ti=advertising not cc=6543

— to invoke a search for the term in the title or descriptor fields but to exclude from the results those records that have the classification code 6543

C.4.4.2 Ranging operators

FIND ed le 1950

— to search for all records entered into the database in or before 1950

FIND pd=1800 to 1900

— to search for all publication dates from 1800 to 1900 including both endpoints

FIND cc=#000

— to find all records associated with all four-digit classification codes ending "000"

FIND an < 10000000

— to find all records with accession numbers strictly less than 10000000

FIND an=1234567—

— to find all accession numbers from 1234567 to the end

C.4.4.3 Proximity operators

C.4.4.3.1 Direct sequence

FIND cost control

— to search for the word "cost" immediately preceding "control"

FIND income taxes

— to search for the word "income" immediately preceding "taxes"

C.4.4.3.2 Word order specified

FIND income ! taxes

— to search for "income" immediately preceding "taxes"

FIND ab=income !2 taxes

— to search for phrases in the abstract where "income" appears no more than two words before "taxes"

C.4.4.3.3 Word order not specified

FIND income % taxes

— will retrieve "income" immediately preceding or following "taxes"

FIND income %2 taxes

— will retrieve "income" within two words preceding or two words following "taxes"

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