Z39.58-1992 commands by functional group

Choose databases

CHOOSE	Select database(s) to search

Query databases

FIND	Searches for records in database(s)

Display results

DISPLAY	Displays results of searches
BACK	Displays data preceding displayed data
FORWARD	Presents continuing data
SORT	Arranges search results by specified field(s)
PRINT	Requests offline printing

Suggest search terms/keywords

RELATE	Displays terms logically related to search term
SCAN	Presents an ordered list of index terms

Information/instruction

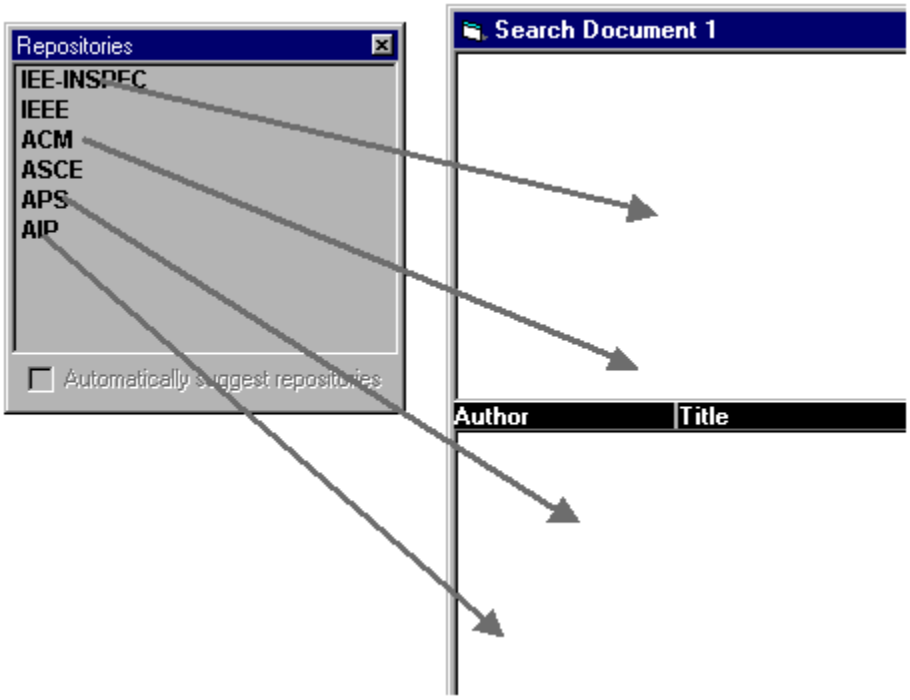
EXPLAIN	Obtain information about the system, its use, and databases
HELP	Obtain online assistance or instruction specific to the context of the interaction

Session control

DEFINE	Renames a command name or names a command expression or series of expressions with a word
DELETE	Deletes search strategies, search statements or result sets, PRINT requests, or definitions created by a DEFINE command expression
REVIEW	Presents a search history
SAVE	Saves search strategies for subsequent use
SEE	Displays session parameter default values and non-instructional system or session information
SET	Changes default parameter values
START	Initializes all default values and settings
STOP	Ends a session

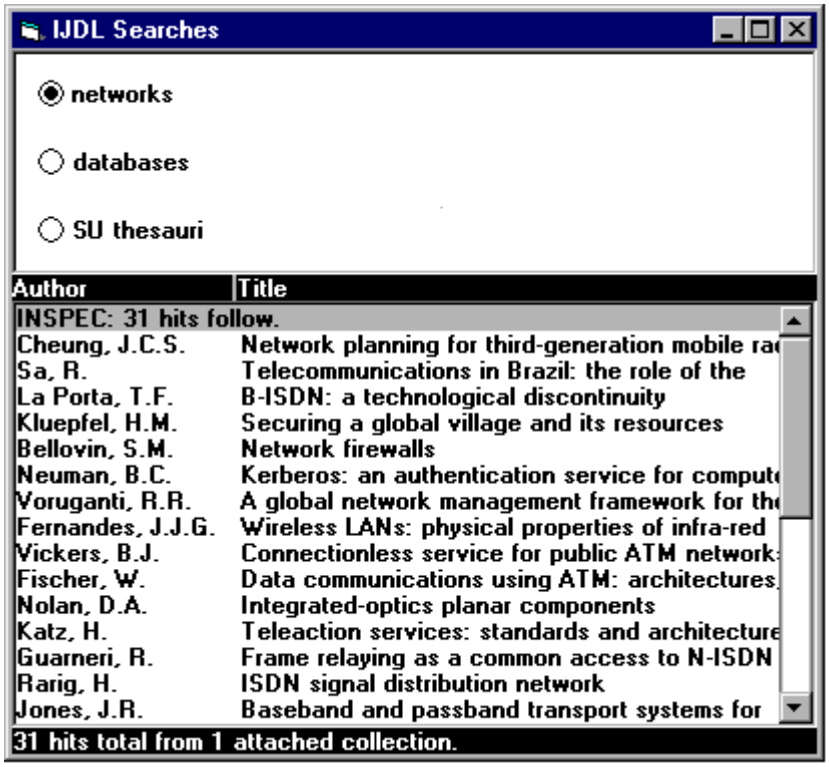
GUIfied **choose databases** functional group.

Drag repository name to a search document to CHOOSE it.



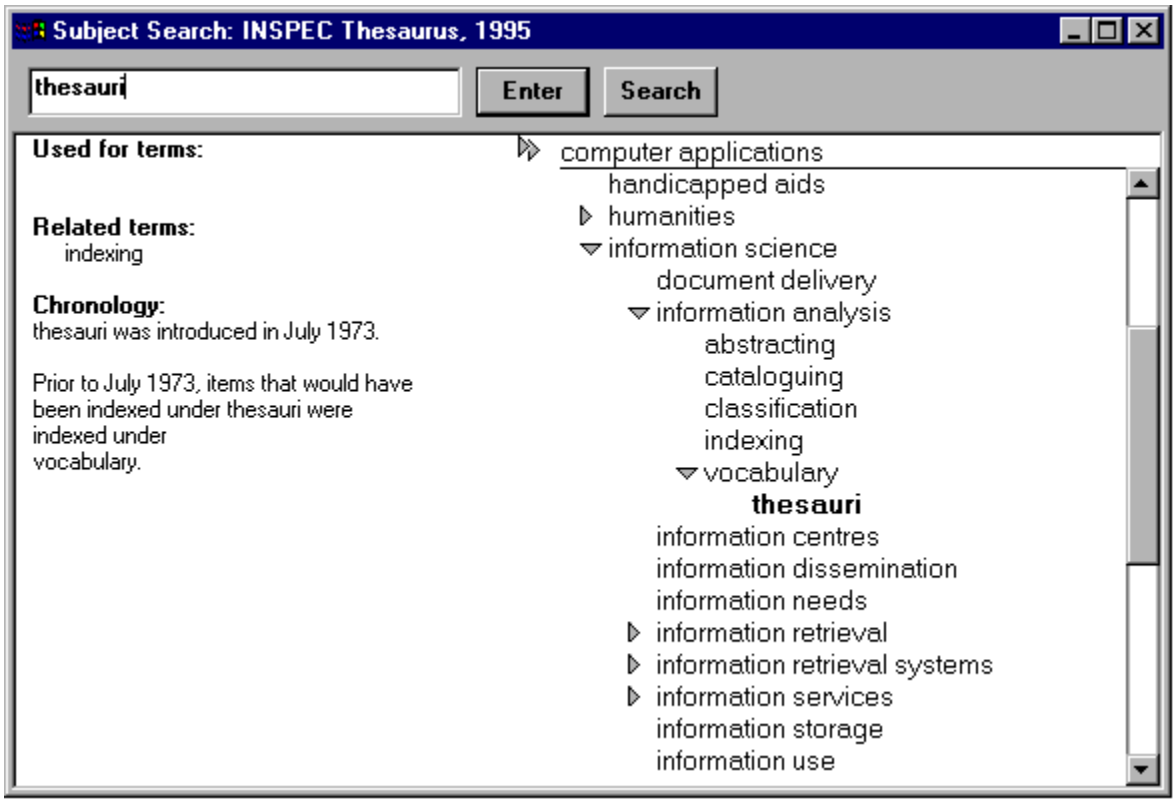
GUIfied **display results** functional group

Results corresponding to selected query DISPLAYed in scrollable area, scrollbar provides BACK and FORWARD functionality, column headings provide SORT functionality. PRINT provided by standard File menu command.

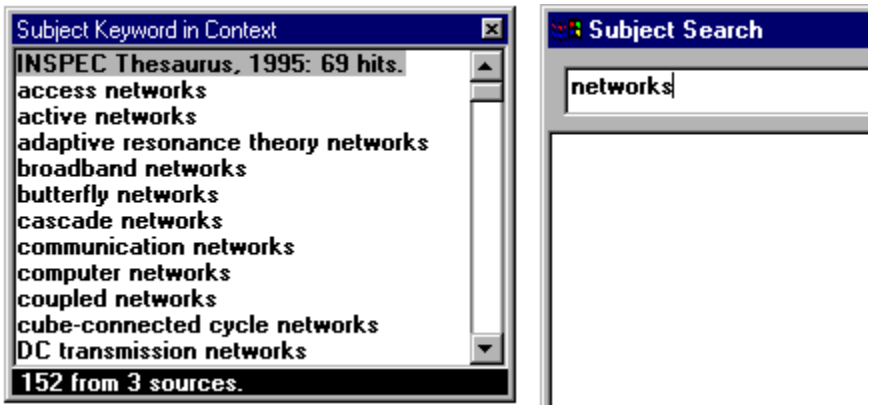


GUIfied **suggest search terms/keywords** functional group

Thesaurus/classification display, concept space display, SOM display RELATE search terms.



Keyword in context display SCANs index terms into an ordered list.



GUIfied **information/instruction** functional group

Clicking on a repository name EXPLAINs that repository by providing descriptive information about it. This can be a combination of human-supplied text and text generated from the repository configuration object.

HELP provided by tooltips and on-line documentation.

GUIfied **query databases** functional group

Example FIND commands:
(Tell the retrieval system how to retrieve records from a collection; thought of as performing an action on a collection)

FIND ecosystems

FIND conversion tables

FIND SU library automation

FIND chopin AND etudes

FIND AU william shakespeare AND TI julius caesar

FIND AU (asimov OR bradbury) AND SU science fiction

Corresponding query objects:
(Describe subsets of records from a collection; thought of as representations of collection subsets)

ecosystems

conversion tables

SU library automation

chopin AND etudes

AU william shakespeare AND TI julius caesar

AU (asimov OR bradbury) AND SU science fiction

This semantic shift allows for query persistence. Result sets are identical.

Query object syntax

Z39.58-based query objects have a minimum amount of punctuation, and require a context-sensitive parser. Anything typed by the user can result in an interpretable query. Queries are case-insensitive. Allow beginners to type simple queries and experts to type sophisticated queries with no modal shift.

Booleans
AND, OR, NOT all infix. Infix NOT has numerous advantages. AND/NOT has precedence over OR. Parentheses can override default precedence.

```
political parties and (republicans or democrats)
party not political
```

Qualifiers
Qualifiers describe what indexes to search on, and depend on the database. When a search term has no qualifiers, the search engine uses the default index. Multiple qualifiers separated by commas. Parentheses can alter qualifier scope.

```
au orwell and ti essays
ti, ab toxic shock syndrome
ti, ab (import tariffs or protectionism)
ti, ab import tariffs or protectionism
```

Multiple spaces and commas are acceptable. Multiple commas used as qualifier separators interpreted as a single comma. The following examples are all equivalent.

```
ti,sub rheumatism
ti,   sub rheumatism
ti   ,sub rheumatism
ti,  ,,       sub rheumatism
```

Character masking (wildcards)
? indicates a variable number of characters to mask. **?n** indicates zero to n characters to mask.

cancer ?therapy
online catalog?
colo?1r

# indicates a single character to mask.

working wom#n
psych####y
so#rates

Word order and proximity
Proximity operator **W** specifies precise word order. **Wn** specifies maximum word distance still in that order.

microcomputer w software
integrated w2 systems
selective dissemination of information

Proximity operator **N** specifies words in either order. **Nn** specifies maximum word distance in either order.

ab cataloging n online
ti radiation n3 risks
income tax n2 reform

Ranging operators
GT or > (greater than), LT or < (less than), NE (not equal), GE or >= (greater than or equal to), LE or <= (less than or equal to) operators used for indexes that allow range comparisons. Hyphen used to include a range inclusive of start and end values.

au dickens and pd lt 1890
ti networks and pd >= 1996
ti submarine warfare and pd 1950-1980
ti basic algebra and ed 4-
pd –1800

Restorative marks
Restore command words, abbreviations, symbols, or operators to their literal meaning.

ti “au”
au “robert w jones”
ti “to be or not to be”

Z39.58 Qualifiers and the EMERGE Gazebo protocol

The EMERGE Gazebo protocol implements XML-based information retrieval.

Search attributes (corresponding to Z39.58 qualifiers) are modular and hierarchical.

When a query is made against a Gazebo retrieval gateway, it tries to match the query to the most specific level index available on the server. If it cannot match any index on the server, it uses the default index.

Index name	Qualifier	Attribute
Title	ti	ti
Journal title	jti	ti.jn
Author	au	au
Personal author	pau	au.p
Corporate author	corpau	au.c
Citation string	cit	cit
Cited article title	cti	cit.ti
Cited journal title	cjti	cit.ti.jn
Cited author	cau	cit.au
Cited personal author	cpau	cit.au.p
Cited personal author affiliation	cpauaff	cit.au.p.aff
Cited corporate author	ccorpau	cit.au.c

Example:
Query specifies personal author (au.p) but the server only has an author (au) index. The server determines that au is the closest index and does the search using it.

Not having hierarchy requires either explicit mapping, searching the default index, or having the query fail.

GUIfied **session control** functional group

DEFINE goes away, since the GUI has no commands.

You can DELETE query object by selecting them and pressing the **Backspace** or **Delete** key.

You can REVIEW prior searches while editing any query object by selecting the search history pulldown box next to it. You can also open search documents you have SAVEd.

You can SEE session parameter values with a dialog box. You can SET session parameter values in that same dialog box.

START and STOP have little meaning, since the user experiences a "session" only in terms of his/her use of the client software.