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*  ATTRIBUTE SET BIB-1 (Z39.50-1995):  *
*          SEMANTICS                    *
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September 1995

Modified October 1997 to change the definition of Use attribute Document identifier (1032).

- Old Definition: A persistent identifier, or Doc-ID, assigned by a server, that uniquely identifies a document on that server.
- New Definition: An identifier or Doc-ID, assigned by a server, that uniquely identifies a document on that server. May or may not be persistent. May be, for example, a URL.

1. ABOUT THIS DOCUMENT

This document provides suggested interpretations for the semantics of the bib-1 Attribute Set.

This document represents consensus among the members of the Z39.50 Implementors Group. It will be maintained as an official document of the Z39.50 Maintenance Agency, and will be revised periodically to reflect the most pragmatic guidelines for interoperability agreed upon by the Implementors Group.

This document contains references to certain definitions and behaviors that are specific to the target. These can be problem areas for interoperability. The specific definitions and behaviors may be described in a "Profile" document. In the absence of a profile, one must contact the service provider and ask. The behavior may be UNIQUE to that target. The expectation is that, over time, more and more will be documented explicitly in the standard and in profiles.

2. ATTRIBUTES

The attributes of Attribute Set bib-1 are used to indicate the characteristics of a search term in a Type-1 query when the query is of the form AttributeList+term (as described in section 3.7.1 of Z39.50-1995). The descriptions in this document apply when all attributes within 'AttributeList' are from the bib-1 attribute set. It does not define semantics when bib-1 is mixed with other attribute sets.

There are six types of attributes: Use, Relation, Position, Structure, Truncation, and Completeness. The Use attribute, if provided, identifies a set of access points against which the term is to be matched. The Relation, Completeness, Truncation and Position attributes, if provided, specify additional match criteria. The Structure attribute, if provided, identifies the form in which the term has been supplied.

Within an attribute list, each attribute type is optional. However, if a particular attribute type is not supplied, this document does not address target behavior -- a given target might supply a default attribute, dynamically select an appropriate attribute based on the other attributes supplied, or fail the search because it requires that

the attribute type be supplied.

While Attribute Set bib-1 was originally established for use in the retrieval of records that are representable using the MARC formats for information interchange, it can also be used for the retrieval of records or documents representable in other formats.

Within an attribute list, multiple instances of a given type of attribute element are undefined and discouraged. Use of version 3 semantic actions is encouraged.

The remainder of this section describes each of the six attribute types, in order by the type number:

Use attributes	(type = 1)
Relation attributes	(type = 2)
Position attributes	(type = 3)
Structure attributes	(type = 4)
Truncation attributes	(type = 5)
Completeness attributes	(type = 6)

2.1 USE ATTRIBUTES (TYPE = 1)

A Use attribute specifies an access point (e.g., corporate name, personal name, title, subject).

The Use attributes are given below in two separate tables. Table 1 is similar to the listing in Z39.50-1995, Appendix 3, ATR: Attribute Sets, in that the attributes are in order by their values and the same names that appear in the Appendix appear in the left column of Table 1. The right column of Table 1 contains a reference to the name of the attribute that is used in Table 2. Table 2 rearranges the Use attributes alphabetically by group name in an attempt to bring similar Use attributes together. The groups are somewhat arbitrary; no rigorous classification of the attributes has been attempted.

In Table 2, all attribute names are followed by their values, a brief definition or description, and tag values of representative USMARC bibliographic format fields that would contain data that could be described in the search by using the attribute. Whenever possible, definitions are taken from the Anglo-American Cataloguing Rules or the USMARC Format for Bibliographic Data as these are the guidelines that are used by a significant number of libraries for formulating data. In Table 2, the notation '\$' following a USMARC tag refers to a subfield of the named field. The notation 'i' following a USMARC tag refers to values of the second indicator in the named field; when the second indicator of the field has the value , the data in the field is associated with that Use attribute.

TABLE 1: USE ATTRIBUTES FROM Z39.50-1995 APPENDIX 3, ATR: ATTRIBUTE SETS

Use	Value	Reference to Group Name Used in Table 2
-----	-----	-----
Personal name	1	Name-personal
Corporate name	2	Name-corporate
Conference name	3	Name-conference
Title	4	Title
Title series	5	Title-series
Title uniform	6	Title-uniform
ISBN	7	Identifier-ISBN

ISSN	8	Identifier-ISSN
LC card number	9	Control number-LC
BNB card number	10	Control number-BNB
BGF(sic) number	11	Control number-BNF
Local number	12	Control number-local
Dewey classification	13	Classification-Dewey
UDC classification	14	Classification-UDC
Bliss classification	15	Classification-Bliss
LC call number	16	Classification-LC
NLM call number	17	Classification-NLM
NAL call number	18	Classification-NAL
MOS call number	19	Classification-MOS
Local classification	20	Classification-local
Subject heading	21	Subject
Subject Rameau	22	Subject-RAMEAU
BDI index subject	23	Subject-BDI
INSPEC subject	24	Subject-INSPEC
MESH subject	25	Subject-MESH
PA subject	26	Subject-PA
LC subject heading	27	Subject-LC
RVM subject heading	28	Subject-RVM
Local subject index	29	Subject-local
Date	30	Date
Date of publication	31	Date-publication
Date of acquisition	32	Date-acquisition
Title-key	33	Title-key
Title collective	34	Title-collective
Title parallel	35	Title-parallel
Title cover	36	Title-cover
Title added-title-page	37	Title-added-title-page
Title caption	38	Title-caption
Title running	39	Title-running
Title spine	40	Title-spine
Title other variant	41	Title-other-variant
Title former	42	Title-former
Title abbreviated	43	Title-abbreviated
Title expanded	44	Title-expanded
Subject PRECIS	45	Subject-PRECIS
Subject RSWK	46	Subject-RSWK
Subject subdivision	47	Subject-subdivision
Number natl bibliography	48	Identifier-national-bibliography
Number legal deposit	49	Identifier-legal-deposit
Number govt publication	50	Classification-government-publication
Number publisher for music	51	Identifier-publisher-for-music
Number DB	52	Control-number-DB
Number local call	53	Identifier-local-call
Code--language	54	Code-language
Code--geographic area	55	Code-geographic-area
Code--institution	56	Code-institution
Name and title	57	Name and title
Name geographic	58	Name-geographic
Place publication	59	Name-geographic-place-publication
CODEN	60	Identifier-CODEN
Microform generation	61	Code-microform-generation
Abstract	62	Abstract
Note	63	Note
Author-title	1000	Author-name-and-title
Record type	1001	Code-record-type
Name	1002	Name
Author	1003	Author-name
Author-name personal	1004	Author-name-personal
Author-name corporate	1005	Author-name-corporate
Author-name conference	1006	Author-name-conference
Identifier--standard	1007	Identifier-standard

Subject--LC children's	1008	Subject-LC-children's
Subject name--personal	1009	Subject-name-personal
Body of text	1010	Body of text
Date/time added to database	1011	Date/time added to database
Date/time last modified	1012	Date/time last modified
Authority/format identifier	1013	Identifier-authority/format
Concept-text	1014	Concept-text
Concept-reference	1015	Concept-reference
Any	1016	Any
Server choice	1017	Server-choice
Publisher	1018	Name-publisher
Record source	1019	Record-source
Editor	1020	Name-editor
Bib-level	1021	Code-bib-level
Geographic class	1022	Code-geographic-class
Indexed by	1023	Indexed-by
Map scale	1024	Code-map-scale
Music key	1025	Music-key
Related periodical	1026	Title-related-periodical
Report number	1027	Identifier-report
Stock number	1028	Identifier-stock
Thematic number	1030	Identifier-thematic
Material type	1031	Material-type
Doc ID	1032	Identifier-document
Host item	1033	Title-host-item
Content type	1034	Content-type
Anywhere	1035	Anywhere
Author-Title-Subject	1036	Author-Title-Subject

TABLE 2: USE ATTRIBUTES (CLASSIFIED AND DEFINED)

Use	Value	Definition	USMARC tag(s)
Abstract	62	An abbreviated, accurate representation of a work, usually without added interpretation or criticism.	520
Any	1016	The record is selected if there exists a Use attribute that the target supports (and considers appropriate - see note 1) such that the record would be selected if the target were to substitute that attribute.	

Notes:

- (1) When the origin uses 'any' the intent is that the target locate records via commonly used access points. The target may define 'any' to refer to a selected set of Use attributes corresponding to its commonly used access points.
- (2) In set terminology: when Any is the Use attribute, the set of records selected is the union of the sets of records selected by each of the (appropriate) Use attributes that the target supports.

Anywhere	1035	The record is selected if the term value (as qualified by the other attributes) occurs anywhere in the record.
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Note: A target might choose to support 'Anywhere' only in combination with specific (non-Use) attributes. For example, a target might support 'Anywhere' only in combination with the

Relation attribute 'AlwaysMatches' (see below), to locate all records in a database.

Notes on relationship of Any and Anywhere:

- (1) A target may support Any but not Anywhere, or vice versa, or both. However, if a target supports both, then it should exclude 'Anywhere' from the list of Use attributes corresponding to 'Any' (if it does not do so, then the set of records located by 'Any' will be a superset of those located by 'Anywhere').
- (2) A distinction between the two attributes may be informally expressed as follows: 'anywhere' might result in more expensive searching than 'any'; if the target (and origin) support both 'any' and 'anywhere', if the origin uses 'Any' (rather than 'Anywhere') it is asking the target to locate the term only if it can do so relatively inexpensively.

Author-name	1003	A personal or corporate author, or a conference or meeting name. (No subject name headings are included.)	100, 110, 111, 400, 410, 411, 700, 710, 711, 800, 810, 811
Author-name-and-title	1000	A personal or corporate author, or a conference or meeting name, and the title of the item. (No subject name headings are included.) The syntax of the name-title combination is up to the target, unless used with the Structure attribute Key (see below).	100/2XX, 110/2XX, 111/2XX, subfields \$a & \$t in following: 400, 410, 411, 700, 710, 711, 800, 810, 811
Author-name-corporate	1005	An organization or a group of persons that is identified by a particular name. (Differs from attribute "name-corporate (2)" in that corporate name subject headings are not included.)	110, 410, 710, 810
Author-name-conference	1006	A meeting of individuals or representatives of various bodies for the purpose of discussing topics of common interest. (Differs from attribute "name-conference (3)" in that conference name subject headings are not included.)	111, 411, 711, 811
Author-name-personal	1004	A person's real name, pseudonym, title of nobility nickname, or initials. (Differs from attribute "name-personal (1)" in that personal name subject headings are not included.)	100, 400, 700, 800
Author-Title-Subject	1036	An author or a title or a subject.	1XX, 2XX, 4XX, 6XX, 7XX, 8XX

Note: When the Use attribute is Author-name-and-title (1000) the term contains both an author name and a title. When the

Use attribute is Author-Title-Subject (1036), the term contains an author name or a title or a subject.

Body of text	1010	Used in full-text searching to indicate that the term is to be searched only in that portion of the record that the target considers the body of the text, as opposed to some other discriminated part such as a headline, title, or abstract.	
Classification-Bliss	15	A classification number from the Bliss Classification, developed by Henry Evelyn Bliss.	
Classification-Dewey	13	A classification number from the Dewey Decimal Classification, developed by Melvyl Dewey.	082
Classification-government-publication	50	A classification number assigned to a government document by a government agency at any level (e.g., state, national, international).	086
Classification-LC	16	A classification number from the US Library of Congress Classification.	050
Classification-local	20	A local classification number from a system not specified elsewhere in this list of attributes.	
Classification-NAL	18	A classification number from the US National Agriculture Library Classification.	070
Classification-NLM	17	A classification number from the US National Library of Medicine Classification.	060
Classification-MOS	19	A classification number from Mathematics Subject Classification, compiled in the Editorial Offices of Mathematical Reviews and Zentralblatt fur Mathematik.	
Classification-UDC	14	A classification number from Universal Decimal Classification, a system based on the Dewey Decimal Classification.	080
Code-bib-level	1021	A one-character alphabetic code indicating the bibliographic level such as monograph, serial or collection	Leader/07

		of the record.	
Code-geographic-area	55	A code that indicates the geographic area(s) that appear or are implied in the headings assigned to the item during cataloging.	043
Code-geographic-class	1022	A code that represents the geographic area and if applicable the geographic subarea covered by an item. The codes are derived from the LC Classification-Class G and the expanded Cutter number list.	052
Code-institution	56	An authoritative-agency symbol for an institution that is the source of the record or the holding location. The code space is defined by the target.	040, 852\$a
Code-language	54	A code that indicates the language of the item. The codes are defined by the target.	008/35-37, 041
Code-map-scale	1024	Coded form of cartographic mathematical data, including scale, projection and/or coordinates related to the item.	034
Code-microform-generation	61	The code specifying the generation of a microform.	007/11
Code-record-type	1001	A code that specifies the characteristics and defines the components of the record. The codes are target-specific.	Leader/06
Concept-reference	1015	Used within Z39.50-1988; included here for historical reasons but its use is deprecated.	
Concept-text	1014	Used within Z39.50-1988; included here for historical reasons but its use is deprecated.	
Content-type	1034	The type of materials contained in the item or publication. For example: review, catalog, encyclopedia, directory.	derived value from 008/24-27
Control number-BNB	10	Character string that uniquely identifies a record in the British National Bibliography.	015
Control number-BNF	11	Character string that uniquely	015

		identifies a record in the Bibliotheque Nationale Francais.	
Control number-DB	52	Character string that uniquely identifies a record in the Deutsche Bibliothek.	015
Control number-LC	9	Character string that uniquely identifies a record in the Library of Congress database.	010, 011
Control number-local	12	Character string that uniquely identifies a record in a local system (i.e., any system that is not one of the four listed above).	001, 035
Date	30	The point of time at which a transaction or event takes place.	005, 008/00-05, 008/07-10, 260\$c, 008/11-14, 033,etc.
Date-publication	31	The date (usually year) in which a document is published.	008/07-10, 260\$c 046, 533\$d
Date-acquisition	32	The date when a document was acquired.	541\$d
Date/time added to database	1011	The date and time that a record was added to the database.	008/00-05
Date/time last modified	1012	The date and time a record was last updated.	005
Identifier-- authority/format	1013	Used in full-text searching to indicate to the target system the format of the document that should be returned to the originating system. The attribute carries not only the format code, but also the authority (e.g., system) that assigned that code.	
Identifier-CODEN	60	A six-character, unique, alphanumeric code assigned to serial and monographic publications by the CODEN section of the Chemical Abstracts Service.	030
Identifier-document	1032	An identifier or Doc-ID, assigned by a server, that uniquely identifies a document on that server. May or may not be persistent. May be, for example, a URL.	
		Note: this definition was modified October 1997.	
Identifier-ISBN	7	International Standard Book Number -- internationally agreed upon number that identifies a book uniquely.	020

		Cf. ANSI/NISO Z39.21 and ISO 2108.	
Identifier-ISSN	8	International Standard Serial Number -- internationally agreed upon number that identifies a serial uniquely. Cf. ANSI/NISO z39.9 and ISO 3297.	022, 4XX\$x, 7XX\$x
Identifier-legal-deposit	49	The copyright registration number that is assigned to an item when the item is deposited for copyright.	017
Identifier-local-call	53	Call number (e.g., shelf location) assigned by a local system (not a classification number).	
Identifier-national-bibliography	48	Character string that uniquely identifies a record in a national bibliography.	015
Identifier-publisher-for-music	51	A formatted number assigned by a publisher to a sound recording or to printed music.	028
Identifier-report	1027	A report number assigned to the item. This number could be the STRN (Standard Technical Report Number) or another report number. Cf. ANSI/NISO Z39.23 and ISO 10444.	027, 088
Identifier-standard	1007	Standard numbers such as ISBN, ISSN, music publishers numbers, CODEN, etc., that are indexed together in many online public-access catalogs.	010, 011, 015, 017, 018, 020, 022, 023, 024, 025, 027, 028, 030, 035, 037
Identifier-stock	1028	A stock number that could be used for ordering the item.	037
Identifier-thematic	1030	The numeric designation for a part/section of a work such as the serial, opus or thematic index number.	\$n in the following: 130, 240, 243, 630, 700, 730
Indexed-by	1023	For serials, a publication in which the serial has been indexed and/or abstracted.	510
Material-type	1031	A free-form string, more specific than the one-letter code in Leader/06, that describes the material type of the item, e.g., cassette, kit, computer database, computer file.	derived value from Leader/06-07, 007, 008, and 502
Music-key	1025	A statement of the key in which the music is written.	\$r in the following: 130, 240, 243, 630, 700, 730

Name	1002	The name of a person, corporate body, conference, or meeting. (Subject name headings are included.)	100, 110, 111, 400, 410, 411, 600, 610, 611, 700, 710, 711, 800, 810, 811
Name-and-title	57	The name of a person, corporate body, conference, or meeting, and the title of an item. (Subject name headings are included.) The syntax of the name-title combination is up to the target, unless used with the Structure attribute Key (see below).	100/2XX, 110/2XX, 111/2XX, subfields \$a & \$t in following: 400, 410, 411, 600, 610, 611, 700, 710, 711, 800, 810, 811
Name-corporate	2	An organization or a group of persons that is identified by a particular name. (Subject name headings are included.)	110, 410, 610, 710, 810
Name-conference	3	A meeting of individuals or representatives of various bodies for the purpose of discussing topics of common interest. (Subject name headings are included.)	111, 411, 611, 711, 811
Name-editor	1020	A person who prepared for publication an item that is not his or her own.	100 \$a or 700 \$a when the corresponding \$e contains value 'ed.'
Name-geographic	58	Name of a country, jurisdiction, region, or geographic feature.	651
Name-geographic-place-publication	59	City or town where an item was published.	008/15-17, 260\$a
Name-personal	1	A person's real name, pseudonym, title of nobility nickname, or initials.	100, 400, 600, 700, 800
Name-publisher	1018	The organization responsible for the publication of the item.	260\$b
Note	63	A concise statement in which such information as extended physical description, relationship to other works, or contents may be recorded.	5XX
Record-source	1019	The USMARC code or name of the organization(s) that created the original record, assigned the USMARC content designation and transcribed the record into machine-readable form, or modified the existing USMARC record; the cataloging source.	008/39, 040
Server-choice	1017	The target substitutes one or more access points. The origin	

leaves the choice to the target.

Notes on relationship of Any and Server-choice:

- (1) When the origin uses 'Server-choice' it is asking the target to select one or more access points, and to use its best judgment in making that selection. When 'Any' is used, there is no selection process involved; the target is to apply all of the (appropriate) supported Use attributes. The origin is asking the target to make a choice of access points.
- (2) The target might support 'Any' and not 'Server-choice', or vice versa, or both. If the target supports both, when the origin uses 'Server-choice', the target might choose 'Any'; however, it might choose any other Use attribute.

Subject	21	The primary topic on which a work is focused.	600, 610, 611, 630, 650, 651, 653, 654, 655, 656, 657, 69X
Subject-BDI	23	Subject headings from Bibliotek Dokumentasjon Informasjon -- a controlled subject vocabulary used and maintained by the five Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden).	
Subject-INSPEC	24	Subject headings from Information Services for the Physics and Engineering Communities -- the Information Services Division of the Institution of Electrical Engineers.	600i2, 610i2, 611i2, 630i2, 650i2, 651i2
Subject-LC	27	Subject headings from US Library of Congress Subject Headings.	600i0, 610i0, 611i0, 630i0, 650i0, 651i0
Subject-LC-children's	1008	Subject headings, for use with children's literature, that conform to the formulation guidelines in the "AC Subject Headings" section of the Library of Congress Subject Headings.	600i1, 610i1, 611i1, 630i1, 650i1, 651i1
Subject-local	29	Subjects headings defined locally.	
Subject-MESH	25	Subject headings from Medical Subject Headings -- maintained by the US National Library of Medicine.	600i2, 610i2, 611i2, 630i2, 650i2, 651i2
Subject-name-personal	1009	A person's real name, pseudonym, title of nobility nickname, or initials that appears in a subject heading.	600
Subject-PA	26	Subject headings from Thesaurus of Psychological Index Terms -- maintained by the Retrieval Services Unit	600i2, 610i2, 611i2, 630i2, 650i2, 651i2

		of the American Psychological Association.	
Subject-PRECIS	45	Subject headings from PREserved Context Index System -- a string of indexing terms set down in a prescribed order, each term being preceded by a manipulation code which governs the production of pre-coordinated subject index entries under selected terms -- maintained by the British Library.	
Subject-RAMEAU	22	Subject headings from Repertoire d'authorite de matieres encyclopedique unifie -- maintained by the Bibliotheque Nationale (France).	
Subject-RSWK	46	Subject headings from Regeln fur den Schlagwortkatalog -- maintained by the Deutsches Bibliotheksinstitut.	
Subject-RVM	28	Subject headings from Repertoire des vedettes-matiere -- maintained by the Bibliotheque de l'Universite de Laval.	600i6, 610i6, 611i6, 630i6, 650i6, 651i6
Subject-subdivision	47	An extension to a subject heading indicating the form, place, period of time treated, or aspect of the subject treated.	6XX\$x, 6XX\$y, 6XX\$z
Title	4	A word, phrase, character, or group of characters, normally appearing in an item, that names the item or the work contained in it.	130, 21X-24X, 440, 490, 730, 740, 830, 840, subfield \$t in the following: 400, 410, 410, 600, 610, 611, 700, 710, 711, 800, 810, 811
Title-abbreviated	43	Shortened form of the title; either assigned by national centers under the auspices of the International Serials Data System, or a title (such as an acronym) that is popularly associated with the item.	210, 211 (obs.), 246
Title-added-title-page	37	A title on a title page preceding or following the title page chosen as the basis for the description of the item. It may be more general (e.g., a series title page), or equally general (e.g., a title page in another	246i5

		language).	
Title-caption	38	A title given at the beginning of the first page of the text.	246i6
Title-collective	34	A title proper that is an inclusive title for an item containing several works.	243
Title-cover	36	The title printed on the cover of an item as issued.	246i4
Title-expanded	44	An expanded (or augmented) title has been enlarged with descriptive words by the cataloger to provide additional indexing and searching capabilities.	214 (obs.), 246
Title-former	42	A former title or title variation when one bibliographic record represents all issues of a serial that has changed title.	247, 780
Title-host-item	1033	The title of the item containing the part described in the record, for example, a journal title when the record describes an article in the journal.	773\$t
Title-key	33	The unique name assigned to a serial by the International Serials Data System (ISDS).	222
Title-other-variant	41	A variation from the title page title appearing elsewhere in the item (e.g., a variant cover title, caption title, running title, or title from another volume) or in another issue.	212 (obs.), 246i3, 247, 740
Title-parallel	35	The title proper in another language and/or script.	246i1
Title-related-periodical	1026	Serial titles related to this item, either the immediate predecessor or the immediate successor.	247, 780, 785
Title-running	39	A title, or abbreviated title, that is repeated at the head or foot of each page or leaf.	246i7
Title-series	5	Collective title applying to a group of separate, but related, items.	440, 490, 830, 840, subfield \$t in the following: 400, 410, 411, 800, 810, 811
Title-spine	40	A title appearing on the spine of an item.	246i8

Title-uniform	6	The particular title by which a work is to be identified for cataloging purposes.	130, 240, 730, subfield \$t in the following: 700,710, 711
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2.2 RELATION ATTRIBUTES (TYPE = 2)

Relation attributes describe the relationship of the access point (left side of the relation) to the search term as qualified by the attributes (right side of the relation), e.g., Date-publication <= 1975.

The Relation attributes are the following:

Relation	Value
-----	-----
Less than	1
Less than or equal	2
Equal	3
Greater or equal	4
Greater than	5
Not equal	6
Phonetic	100
Stem	101
Relevance	102
AlwaysMatches	103

Relation attribute Equal -- specifies an exact match (subject to possible qualification by the truncation or structure attributes).

Relation attributes Less than, Less than or equal, Greater than or equal, and Greater than -- meaningful only when both the term value as qualified by the attributes and the access point can be realized as elements of a set that has an inherent implied order.

Relation attributes Stem and Phonetic -- Stem refers to a lexical or linguistic match; the term is to be compared with words in a record to find those with the same stem. Phonetic refers to a match based on aural similarity such as Soundex. In both cases, the match algorithms are defined by the target.

Relation attribute Relevance -- used to select records that are relevant to the term. When used, the Use attribute determines what portion of a record is to be evaluated for relevance. The relevance algorithm is defined by the target.

Relation attribute AlwaysMatches -- when the Relation attribute AlwaysMatches occurs:

- The target ignores the supplied term.
- If the Use attribute is Any or Anywhere, then all records are to be selected.
- If a Use attribute other than Any or Anywhere is supplied, all records are selected for which the access point corresponding to the supplied Use attribute is meaningful. For example: if the Use attribute is Title, all records that have a title field are selected.

2.3 POSITION ATTRIBUTES (TYPE = 3)

The Position attribute specifies the location of the search term within the field or subfield in which it appears.

For the purpose of describing the Position attributes, when the expressions "field" or "subfield" do not have another understood meaning (as prescribed, for example, by the schema in use), these two expressions are used as follows:

- "subfield" has no meaning, and the Position attribute "first in any subfield" is not to be used.
- "field" refers to the portion of the record to which the access point refers.

The Position attributes are the following:

Position	Value	Definition
First in field	1	Search term must be the first data in the field.
First in subfield	2	Search term may appear in any subfield but must be the first data in the subfield in which it appears.
Any position in field	3	Search term may appear any place in the field.

2.4 STRUCTURE ATTRIBUTES (TYPE = 4)

The Structure attribute specifies the type of search term (e.g., a single word, a phrase, several words to be treated as multiple single terms, etc.).

The Structure attributes are the following:

Structure	Value	Definition
Phrase	1	A phrase consists of one or more groups of characters separated by blanks (for example, ASCII hex "20"). The value to be searched is exactly as it appears in the search term with respect to order and adjacency. Word(s) in the phrase may be explicitly truncated. (See "Truncation" -- section 2.5 below.) To indicate that additional words may appear in the access point, use the completeness attribute.
Word	2	A word consists of a group of non-blank characters. It specifies the exact text of the value to be searched, unless the word is explicitly truncated. (See "Truncation" -- section 2.5 below.) A word search term contains no blanks.
Key	3	A key specifies a sequence of characters extracted from those characters contained in an indexed word but not necessarily representing complete words. In the term, key segments should be separated by a blank (ASCII hex "20"). Each key segment should be the length of a key segment in

the origin system or the length of the word, to a maximum of 6 characters. (For example, an name/title derived key search term for "Copland, Aaron, 1900- Rodeo" could be "coplan rodeo".) A segment may be adjusted by the target to the length required for the target's indexes. For example, the following derived key searches are in use at LC and at OCLC (in Online System):

Site	Index	Letters taken	Source Data
OCLC	TITLE	3,2,2,1	title keywords
	NAME/TITLE	4,4	name, title
	NAME	4,3,1	personal name
	CNAME	4,3,1	corporate name
LC	PTK	3,1,1,1	title keywords
	PATK	3,3	name, title
	PPNK	5,1 or 6	personal name

Year	4	A year search term is numeric and contains four digits.
Date (normalized)	5	The day, month, year and time when a transaction or event takes place. The date search term structure is as defined for Generalized Time in ASN.1 (ISO 8824) except that the only mandatory portion of the string is the four-digit representation of the year.
Word list	6	A word list consists of one or more words separated by blanks (for example, ASCII hex "20"). No order of the words is implied. The attributes (other than structure) that are associated with the search term apply to each word in the word list. Any words in a word list may be explicitly truncated. (See "Truncation" -- section 2.5 below.) The relationship between the words in a word list is target-specific.
Date (un-normalized)	100	The day, month, and year when a transaction or event takes place. The un-normalized search term is unstructured.
Name (normalized)	101	A name search term that is structured in a particular order (e.g., last_name, first_name). The resulting term is subject to special matching rules on the target system that differ from those applied to names structured as phrases or unstructured names.
Name (un-normalized)	102	A name search term that is unstructured (e.g., first_name last_name), however, the resulting term is subject to matching rules on the target system that differ from those applied to phrases or structured names (e.g., the term "john smith" might be searched by the target as "smith, j#").
Structure	103	The term has a structure that is either

		implied by the Use attribute or defined by the target.
Urx	104	The term is a document identifier, for example, an identifier extracted from a Z39.50 URL.
Free-form-text	105	The term is text, input by the end user. May be used, for example, for relevance feedback.
Document-text	106	The term is text, extracted from a document. May be used, for example, for relevance feedback.
Local-number	107	A number significant to the target.
String	108	The entire term is to be treated as a string, rather than a sequence or set of individual words.
Numeric string	109	The term is a character string that represents a number.

2.5 TRUNCATION ATTRIBUTES (TYPE = 5)

The Truncation attribute specifies whether one or more characters may be omitted in matching the search term in the target system at the position specified by the Truncation attribute. For example, a word in a search term may be 1) right truncated, in which case the word is treated both as a complete word and as the beginning of a longer word; 2) left truncated in which case the word is treated both as a complete word and the ending of a longer word; 3) left and right truncated, in which case the word is treated as a complete word and the beginning or ending of a longer word; 4) and embedded truncation, in which case the word is treated as a complete word and as a longer word with additional characters at the point where the truncation symbol, "#", appears in the search term.

For Right truncation, left truncation, and Left and right truncation, the characters affected by the truncation are determined by the value of the structure attribute.

The Truncation attributes are the following:

Truncation	Value	Structure Attribute	Definition
Right truncation	1	Word or Phrase	Last word of term is right truncated.
		String	Entire term is right truncated.
		Word list	Each word is right truncated.
Left truncation	2	Word or Phrase	First word of term is left truncated.
		String	Entire term is left truncated.

		Word list	Each word is left truncated.
Left and right truncation	3	Word or Phrase	First word of term is left truncated and last word of term is right truncated.
		String	Entire term is left and right truncated.
		Word list	Each word is left and right truncated.
Do not truncate	100		No truncation is to be applied.
Process # in search term	101		The search term contains the symbol "#" (ASCII hex "23") to show where truncation will take place (e.g., "National H# Institute", or "d#on").
RegExpr-1	102		The term is in the form of a regular expression as prescribed by IEEE 1003.2 Volume 1, Section 2.8 "Regular Expression Notation".
RegExpr-2	103		The term is in the form of a regular expression whose format is target-defined.

2.6 COMPLETENESS ATTRIBUTES (TYPE = 6)

The Completeness attribute specifies that the contents of the search term represent a complete or incomplete subfield or a complete field. Completeness indicates whether additional words should appear in a field or subfield with the search term. Note the difference from Truncation (Section 2.5 above), which handles characters added to words, phrases, or strings.

For the purpose of describing the Completeness attributes, when the expressions "field" or "subfield" do not have another understood meaning (as prescribed, for example, by the schema in use) these two expressions are used as follows:

- "subfield" has no meaning, and the Completeness attribute incomplete subfield is used to mean "incomplete field".
- "field" refers to the portion of the record to which the access point refers.

The Completeness attributes are the following:

Completeness	Value	Definition
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Incomplete subfield	1	Words other than those in the search term may appear in the subfield or field in which the term appears.
Complete subfield	2	No words other than those in the

search term should appear in the entire subfield in which the term appears, but additional words may appear in other subfields in the field.

Complete field	3	No words other than those in the search term should appear in the entire field in which the term appears.
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3. RULES AND GUIDELINES

3.1 DERIVED KEY SEARCHES (STRUCTURE ATTRIBUTE = KEY)

If supplied, the following attribute values would be used for a derived key search.

- Position should always be 'first in field', even for author/title or name/title use attributes.
- Completeness should always be 'incomplete'.
- Truncation should always be 'right truncation'.
- Relation is always 'equal'.

3.2 NUMBER SEARCHES (e.g., LCCN, ISBN, ISSN, Control Numbers)

- Structure is 'word' or 'phrase' depending on whether the number contains internal blanks.
- Position and Completeness attributes are determined for number arguments as they are for textual arguments.
- all naturally occurring blanks, hyphens, slashes, etc., should be in the number search term if possible because different systems handle numbers in different ways in their indexes. The target system should apply normalization to the number according to its requirements, or return appropriate messages to allow the user to reformat the number.

3.3 MISCELLANEOUS

- search arguments generally should not be normalized by the origin system. They should be normalized by the target system.
- Position attribute 'any position in field' is compatible only with the 'incomplete subfield' Completeness attribute.

4. NEW ATTRIBUTES

The Z39.50 Maintenance Agency manages the addition of attributes to the bib-1 attribute set. Generally, suggestions for new attributes are posted to the Z39.50 Implementors Group list and discussed at a subsequent ZIG meeting before being included in the attribute set.