1 ATS-1 Profile

1. Purpose

This profile specifies rules aimed at improving the reliability of Z39.50 search results. When an origin requests an author search (or title or subject search), the intent of this profile is that the target will execute the search based on its concept of author (or title or subject). For example, if the target does not support an author search, it should not re-cast the search, substituting some attribute other than author, without the origin's knowledge and consent. Neither should the target treat the inability to perform a search as a successful search with no results.

This profile is intended for use either as a self-contained profile or for reference by other profiles. When used as a self-contained profile, its purpose is to ensure that complying origins and targets can provide basic search access to bibliographic databases, similar to the common online catalog systems used in many libraries.

2. Scope

This profile specifies the use of the attribute set bib-1 within a Z39.50 type-1 query for searching by author, title, or subject, to provide basic search access to bibliographic databases.

3. Terminology

3.1 Author, Title, and Subject

For purposes of this profile, author, title, and subject are as defined as follows: An author is the proper name of a person or entity responsible for a particular work; a title is a name by which a particular work is known; a subject identifies what a particular work is about.

3.2 Use Attributes

For purposes of this profile, reference to Use attributes Author, Title, and Subject are as follows:

Author	Bib-1 Use attribute 1003 as defined in <bib-1 document>
Title	Bib-1 Use attribute 4 as defined in <bib-1 document>
Subject	Bib-1 Use attribute 21 as defined in <bib-1 document>

3.3 Attribute combinations

For purposes of this profile, the attribute combinations below are defined. Each combination consists of the single Bib-1 Use, Structure, and Relation attribute listed, and no other attributes.

	Combination:		
Combination Name	Use	Structure	Relation
Author-normalized	Author	Name (normalized)	Equal
Author-nonNormalized	Author	Name (un-normalized)	Equal
Title	Title	Phrase	Equal
Subject	Subject	Phrase	Equal

Note: the distinction by this profile of the Phrase structure attribute for title and subject is not intended to imply that there is any expectation that a target will behave differently for the Phrase structure attribute than for any other structure attribute.

3.4 Normalization

For purposes of this profile, when the structure attribute "name (normalized)" is supplied (in the Author-normalized attribute combination) the following normalization is implied:

> Names of persons are formulated according to Rule 22.4 of AACR2, and names of corporate bodies and conferences are formulated according to Rule 24.1A of AACR2. A normalized name is all or the first part of a complete name formulated according to these rules.

3.5 Semantic action indicator

This refers to the ASN.1 identifier 'semanticAction' within the choice 'complex' within 'attributeValue' within 'attributeType' within the type AttributeElement in the APDU definitions. SemanticAction is meaningful only for version 3 of Z39.50.

3.6 Boolean Query

For purposes of this profile "boolean query" refers to a Z39.50 type-1 query with multiple operands linked by boolean operators.

4. General Requirements

A system implementing this profile must support:

4.1 The bib-1 attribute set. An origin must support bib-1 attributes as prescribed in 5.1.1. A target must support bib-1 attributes as prescribed in 5.2.1.

4.2 Diagnostics.

4.2.1 Origin requirement. The origin must always accept the object identifier for the bib-1 diagnostic set (regardless of the protocol version in force). In addition, when version 3 is in force the origin must accept the object identifier for the diagnostic format diag-1.

4.2.2 Target requirement. When version 3 is in force the target must be able to return either bib-1 or diag-1 diagnostics, as prescribed in 6.2.

4.3 Z39.50 protocol version 2. Conformance requirements that pertain to version 2 are specified in section 5. A system may optionally implement version 3; conformance requirements that pertain to version 3 are specified in section 6.

4.4 MARC record syntax. See section 7.

4.5 Preferred-message-size of 4096. See section 8.

5. Conformance requirements pertaining to Version 2

5.1 Origin requirements

5.1.1 Single Operand

An origin must be able to formulate a type-1 query with a single operand consisting of an attribute combination and term, for each of the following attribute combinations as defined in 3.3:

- Title,
- Subject,
- at least one of Author-normalized and Author-nonNormalized.

5.1.2 Boolean Query

An origin is not required to formulate a boolean query. When the origin does send a boolean query, where each operand is constructed as described in 5.1.1, the associated target procedures are specified in 5.2.3.

5.2 Target Requirements

5.2.1 Bib-1 Attribute Set

A target must support the bib-1 attribute set. This requirement does not imply that the target must support any specific attributes, with the following exception: the target must support the Relation attribute 'equal'.

5.2.2 Single Operand

When the target receives a type-1 query with a single operand consisting of an attribute combination and term where the attribute combination is of those listed in 5.1.1:

5.2.2.1 If the target cannot process the query because it does not support the one or both of the Use attribute and Structure attribute, it should fail the search and return a diagnostic from the bib-1 diagnostic set, either 114: "unsupported Use attribute", or 118: "unsupported Structure attribute", as appropriate.

Notes:

(1) In the case where the target does not support either attribute, the target may select which of the two diagnostics to return.

(2) This specific diagnostic requirement is waived when the target considers some other error condition to take precedence (for example, "permanent system error") in which case the target must return an appropriate diagnostic describing that condition.

5.2.2.2 If the target supports both the supplied Use and Structure attribute (and there are no error conditions that would otherwise cause the target to fail the search), but there are no records located by the search, the target should indicate "no records" (i.e. search-status = success; result-count = 0) rather than fail the search and return a diagnostic.

5.2.3 Boolean Query

If the target receives a boolean query where each operand is constructed as described in 5.1.1:

5.2.3.1 If the target cannot process the query because it cannot support boolean queries, or cannot support the specific boolean operators, or cannot process one of the operands, it should return an appropriate diagnostic; in the case of multiple errors, the target may select which error condition to report.

5.2.3.2 If the target can process the query but there are no records located, the target should indicate "no records" (i.e. search-status = success; result-count = 0) rather than fail the search and return a diagnostic.

6. Conformance requirements pertaining to Version 3

6.1 Origin Requirements

When version 3 is in force, the origin should be able to formulate queries as specified in 5.1.1,

without including a semantic action indicator. The origin may also, optionally, formulate queries with a semantic action indicator. If the value of the indicator is 1 (May not substitute), the associated target procedures are specified in 6.2. If the value is other than 1, the query is outside the scope of this profile.

6.2 Target Requirements

When version 3 is in force, when the target receives a query as specified in 5.1 which either:

a) does not include a semantic action indicator, or

b) includes the semantic action indicator 1 (May not substitute),

then the rules of 5.2 apply, with the exception noted below. Interpretation of other queries is not addressed by this profile.

Exception: If the target cannot process the query because it does not support an attribute or attribute combination, then as an alternative to using a bib-1 diagnostic, the target may use the diag-1 diagnostic 1005 ("attribute combination not supported") to report this condition. When using diag-1 diagnostic 1005 the target may optionally suggest one or more alternative attribute combinations. For example, if the target does not support the Use attribute 'Author' but does support one or more of the Use attributes 'Author-name personal', 'Author-name corporate' or 'Author-name conference' (bib-1 use attributes 1004, 1005, or 1006 respectively) it may report this via diag-1 diagnostic 1005.

7. Record Syntax requirement

A system must support at least one specific national or international MARC variant. (This may be any MARC format whose syntax definition is registered with an object identifier. An initial list is provided in Appendix REC of Z39.50-1994.)

8. Message Size

A system must support a value of 4096 for the Init parameter preferred-message-size. This means:

8.1 If the origin proposes a value of 4096, the target must accept that value (i.e. must respond with the same value).

8.2 If the origin proposes a value less than 4096:

- The target may accept the proposed value.
- The target may alternatively respond with a larger value, but not greater than 4096, and if so, the origin must accept the target response.
- The target may not respond with a value less than the proposed value.

8.3 If the origin proposes a value greater than 4096:

- The target may accept that value.
- The target may alternatively propose a lower value, but not less than 4096, and if so, the origin must accept the target response.
- The target may not respond with a value greater than the proposed value.