

# WIS SRU Implementors Note

This note is intended to clarify server requirements for the Discovery Access and Retrieval (DAR) search service interface identified as "TechSpec 8" in "WIS Compliance Specifications GISC, DCPC,NC" (see [http://www.wmo.int/pages/prog/www/WIS/ref\\_docs\\_en.html](http://www.wmo.int/pages/prog/www/WIS/ref_docs_en.html)). This technical specification adopts the international standard SRU (Search and Retrieval via URL), at <http://www.loc.gov/standards/sru/index.html>.

A WIS compliant SRU server must support:

- SRU version 1.1
- the searchRetrieve operation
- the explain operation
- the diagnostic schema for returning errors
- CQL (Contextual Query Language) level 2, documented at <http://www.loc.gov/standards/sru/specs/cql.html#baseprofile>

A WIS compliant SRU server should also support SRU version 1.2.

## Searchable Indexes

SRU indexes are equivalent to Z39.50 "access points". Those used in WIS are described in one or more registered context sets (see <http://www.loc.gov/standards/sru/resources/context-sets.html>). A WIS compliant SRU server must recognize indexes, relations, relation modifiers and boolean modifiers from formally defined context sets including cql, rec, bib, gils, and dc. These should be recognized with or without a context set identifier, since there are no identifier ambiguities across these context sets. For instance, a server should ignore the context set identifier "geo" in the index "geo.bounds" so that it is equivalent to "bounds".

A WIS compliant SRU server must search the following indexes as character strings, using the SRU "=" (alias "matches") relation, with structures of "word" or "word list":

serverChoice (alias anyIndexes), abstract (alias description), title (alias name), author (alias creator), keywords (alias subject), format, identifier, type, crs

A WIS compliant SRU server must search the following indexes as dates using the ordered term relations: =, <, >, <=, >=, <>. For these indexes, the relation modifier **isoDate** is a default.

creationDate, modificationDate, publicationDate (alias date), beginningDate, endingDate

A WIS compliant SRU server must search the index "bounds" containing geographic coordinates (decimal degrees, space delimited, in the order north, west, south, east) using the SRU relation "within/partial/nwse". This is equivalent to the relation "Overlaps" in the ISO 23950 Geo Profile and the OGC Filter Expression "Intersects" with the "BBOX" comparison operation

An SRU client should enclose search term values in double quotes, e.g., creationDate = "2003-12".

## Search Results

A WIS compliant SRU server must return results that are valid against the following XML schemas.

- request/reply <http://www.loc.gov/standards/sru/sru1-1archive/xml-files/srw-types.xsd>
- diagnostic <http://www.loc.gov/standards/sru/resources/diagnostic.xsd>
- explain <http://www.loc.gov/standards/sru/resources/zeerex-2.0.xsd>
- dcx <http://www.loc.gov/standards/sru/resources/dcx/dcx.xsd>
- ISO 19139 <http://www.isotc211.org/2005/gmd/gmd.xsd>

## Record Attributes: recordPacking and recordSchema

An SRU server returns a result set represented in XML, wherein each returned record is within a "record" element. The attributes "recordPacking" and "recordSchema" convey information to allow clients to parse the contents of such "record" elements in an SRU result set.

A WIS compliant server must use recordPacking=xml. The recordSchema value should be from the register at <http://www.loc.gov/standards/sru/resources/schemas.html> for well-known schemas.

When returning a brief set of record elements, for purposes such as displaying a "hit list", a WIS compliant SRU server should use the DCX (Dublin Core Extended) schema. The well-known schema identifier "info:/srw/schema/1/dcx-v1.0" should be provided as the recordSchema value.

When returning records with embedded XML that follows a schema not listed in the SRU register, a WIS compliant server should identify the appropriate schema using the recordSchema parameter and insert the actual schemaLocation (discussed below). ISO 19139 is common record schema, for which the recordSchema value could be "http://www.isotc211.org/2005/gmd/gmd.xsd".

## searchRetrieveResponse: schemaLocation

To enable validation of XML that is embedded in the SRU response, the schemaLocation should be included in the top level element (searchRetrieveResponse).

Example 1: To return a "hit list" that uses the DCX schema, the schemaLocation attribute could be coded as follows:

```
<sru:searchRetrieveResponse xmlns:sru="http://www.loc.gov/standards/sru"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.loc.gov/standards/sru
    http://www.loc.gov/standards/sru/xml-files/srw-types.xsd
    info:lc/xmlns/dcx-v1
    http://www.loc.gov/standards/sru/resources/dcx/dcx.xsd">
```

Example 2: if the SRU response includes XML following ISO 19139, the schemaLocation attribute could be coded as follows:

```
<sru:searchRetrieveResponse xmlns:sru="http://www.loc.gov/standards/sru"
  xmlns:zr="http://explain.z3950.org/dtd/2.0/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.loc.gov/standards/sru
    http://www.loc.gov/standards/sru/xml-files/srw-types.xsd
    http://www.isotc211.org/2005/gmd
    http://www.isotc211.org/2005/gmd/gmd.xsd">
```