

NDL Search

Application Programming Interface (API) Specifications

(Ver. 1.19)

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1. Introduction

This document describes interface specifications which are used in search and acquisition of metadata from "NDL Search" (hereinafter referred to as this system) by applications of institutions.

This system provides following Application Programming Interfaces (API).

Table 1-1 List of supported interfaces and their overviews

No.	Interface type	Overview	Input format	Output format
1	SRU	Protocol for searching information by using REST that was developed based on Z39.50, a communication protocol for information search	URL	XML
2	SRW	Protocol for searching information using Webservice, which was developed based on Z39.50, a communication protocol for information search	XML	XML
3	OpenSearch	Communication protocol for cross search, which are proposed by A9.com	URL	XML (RSS)
4	OpenURL	Protocol for sending metadata information to link server in URL format to specify link destination of contents	URL	HTML
5	Z39.50	Communication protocol in client-server style for information search	Z39.50 interface	Z39.50 interface
6	OAI-PMH	Communication protocol, defined by OAI (Open Archives Initiative), for giving requests and receiving results in order to mechanically collect metadata between servers	URL	XML

2. Common Items

(1) Access URL

The access URL (base URL) of each provision method is as follows:

Table 2-1 Access URL

No.	Provision method	URL
1	SRU	http://iss.ndl.go.jp/api/sru
2	SRW	http://iss.ndl.go.jp/api/srw
3	OpenSearch	http://iss.ndl.go.jp/api/opensearch
4	OpenURL	http://iss.ndl.go.jp/api/openurl
5	Z39.50	iss.ndl.go.jp:210
6	OAI-PMH	http://iss.ndl.go.jp/api/oaipmh

You can access WSDL and OpenSearch Description Document, which are the setting files for SRW and OpenSearch, respectively, at the following URL:

- <http://iss.ndl.go.jp/api/srwwsdl>
- http://iss.ndl.go.jp/api/opensearch_description

(2) List of data providers and their IDs

In each provision method, the database for a search request (hereinafter referred to as "data provider") shall be specified with data provider ID. Data providers are added at any time. For the list of the latest data providers and their IDs, see Appendix 1: List of data providers and their corresponding Application Programming Interfaces (API) in this document.

(3) Data provider group

In each provision method, you can specify group of data providers instead of directly specifying data provider IDs. Following table shows data provider groups:

Table 2-2 Data provider groups

No.	Data provider group ID	Details of data provider groups
1	Digitalcontents	Body text, digital images, etc. (Primary information)
2	Catalogue	Listing, index, etc.
3	Site	Site information
4	Reference	Information convenient for search, reference information
5	Science	Information about natural sciences
6	Humanities	Information about humanities
7	Library	Information concerning libraries
8	Child	Information for children
9	Ndl	Information provided by NDL

For correspondence between data provider groups and data providers, see Appendix 1: List of data providers and their corresponding Application Programming Interfaces (API) in this document.

(4) Character code

Character code shall be UTF-8 for any provision method.

(5) Difference between harvest type and cross search type by data provider

Data providers to be searched in this service are mainly classified into following two types as search method implementations:

- Harvest type: Metadata is collected (harvested) from data providers and a database as this service is created with collected data.
- Cross search type: No database is created but a request is issued directly to data providers via a network at the time of search.

At an application programming interface (API), no result is acquired from data providers in cross search type; therefore, Table 1 “List of data providers and their corresponding Application Programming Interfaces (API)” and Table 2 “Data provider groups and their corresponding data provider” of Appendix 1 describes only harvest-type data providers, and no cross search-type data provider is described.

(6) Relationship with search function of this service

Available search conditions vary depending on each interface, and these conditions differ from the search items in this service. Remember that at the Application Programming Interface (API), basically only part of the conditions available for this service is supported.

(7) Format and contents of data

Format (schema) and contents of data to be returned are explained in the description on each interface in the next section onwards. The "dcndl" and "dcndl_simple" formats or data to be returned are the formats defined in this service based on the NDL Dublin Core Metadata Description (DC-NDL). For details about dcndl and dcndl_simple, see the DC-NDL (RDF) Format Specifications and DC-NDL (Simple) Format Specifications, respectively.

3. SRU

(1) Overview

This is an interface for external institutions to use this service for search and acquire search results by SRU (Search/Retrieve via URL).

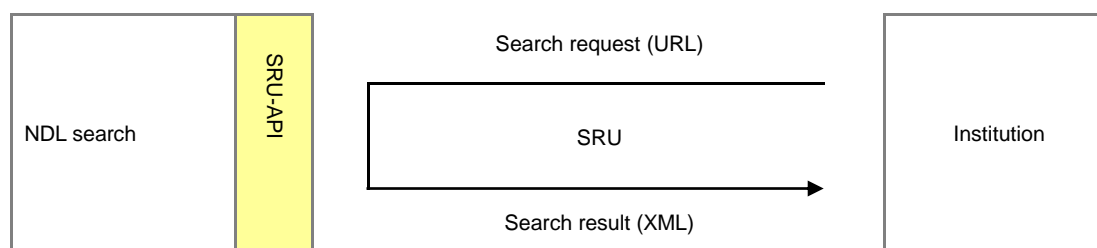


Figure 3-1 Overview of interface provided by SRU

You can find the basic specifications of SRU at the following URL:

<http://www.loc.gov/standards/sru/>

This service supports SRU version 1.1 and 1.2.

ZEEREX is not supported.

Note that this service supports both SRU and SRU/SOAP (SRW) described in the previously mentioned basic specifications. You can find the specifications of SRU/SOAP (SRW) in 4 “SRU/SOAP (SRW).”

(2) Support range

This service supports "searchRetrieve" and "explain," which are major operations of SRU (Scan operation is not supported).

(3) Argument of searchRetrieve

Table 3-1 Arguments of searchRetrieve

No.	Argument name	Value to specify
1	operation	Required "searchRetrieve"
2	version	Optional 1.1 or 1.2 (The default is 1.2.)

No.	Argument name	Value to specify
3	query	Required Search condition (CQL) Details are described later.
4	startRecord	Start position The default is 1.
5	maximumRecords	Maximum number of acquired records The default is 200.
6	recordPacking	"xml" or "string" The default is "string."
7	recordSchema	Schema of acquired data dc, dcdnl, or dcdnl_simple The default is dc.
8	recordXPath	Not used
9	resultSetTTL	Not used
10	sortKeys	Sort key information Valid for version 1.1 only
11	schema	Not used
12	path	title, creator, created_date, or modified_date Without sortKeys specified, the default (in the order of title) is applied. (Available only when 1.1 is specified for the version with sortKeys specified)
13	ascending	"0" (descending order), "1"(ascending order) (Available only when 1.1 is specified for the version with sortKeys specified) The default is "1."
14	stylesheet	Not used
15	extraRequestData	Not used
16	inprocess	With "true" specified, only "NDL newly acquired Bibliographic data ¹ " is acquired.
17	onlyBib	With "true" specified, only "Bibliographic data" is acquired. (Available only when dcdnl is specified for recordSchema)

(4) CQL specifications

CQL is the specification of search queries in SRW. This service is provided based on CQL 1.2. The basic specification of CQL can be found at URL shown in 3 "SRU (1) Overview." The following shows the items available when issuing a query using CQL.

¹ Quick delivery service of inprocess bibliography information on domestic publications and overseas publications collected by NDL

<http://www.ndl.go.jp/jp/library/data/pbsrss.html>

Table 3-2 Search items of SRU

No.	Reference name	Details
1	dpid	Data provider ID
2	dpgroupid	Data provider group ID
3	title	Title
4	creator	Creator
5	publisher	Publisher
6	ndc	Classification (NDC, NDLC, LCC, DCC, UDC)
7	ndlc	Classification (NDLC)
8	description	Contents description
9	subject	Subject
10	isbn	ISBN (Search is available in either 10- or 13-digit format)
11	issn	ISSN
12	jpno	National Bibliography No.
13	from	Start date of publication (YYYY-MM-DD)
14	until	End date of publication (YYYY-MM-DD)
15	anywhere	The search items are the same as that of Simple search of NDL Search.
16	itemno	Item number of bibliography within NDL Search (repository number - item number - branch number)
17	mediatype	Material type Corresponds to the material type of Advanced Search of NDL Search. "1": Book "2": Article/Paper "3": Newspaper "4": Children's literature "5": Reference information "6": Digital material "7": Others "8": Material for the persons with disabilities (Material for Material search for persons with disabilities) "9": Legislative information
18	sortBy (available only when "1.2" is specified for the version argument of searchRetrieve)	Describe the reference name of the sort criterion. Note that the sort criterion that is valid for NDL Search is "title," "creator," "created_date," "modified_date" or "issued_date." To indicate the ascending or descending order, /sort.ascending or /sort.descending shall follow the item.

If a search keyword includes "AND" or "OR" (also includes "andy," "organic," etc.), a search error occurs. To avoid this error, add "%20" to before and after "%3d" and execute search.

Example: When you want to specify the search keyword "andy" for the title

Specify "title%20%3d%20%22andy%22."

For the items, "title," "creator," and "publisher," prefix match (^), partial match, and exact match (exact) can be specified as matching condition. If no condition is specified, partial match is assumed.

For other items, no matching condition can be specified.

For "isbn" and "issn," exact match is assumed as the matching condition. If 10- or 13-digit isbn is entered, the condition is converted to both 10 and 13 digits to perform exact match search. If entered in other digits than 10 or 13, the exact match search shall be performed; no other search, such as the prefix search, shall be performed.

For "dpid," "dpgroupid," etc., exact match is assumed as matching condition.

* For the items other than "dpid" and "dpgroupid" for which exact match is assumed, see "Table 3-3 Conditions that can be specified for each item of SRU."

For description and subject, partial match is assumed.

The items, from and until, are specified in YYYY-MM-DD format, and exact match is assumed as matching condition for them. Note that YYYY or YYYY-MM format is also available, and in this case, YYYY-01-01 or YYYY-MM-01 for YYYY or YYYY-MM, respectively, is assumed to be specified as matching condition for exact match.

In addition, as logical condition for each item, you can specify "and" or "or." For join condition for items, you can specify either "all and" or "all or."

Following table shows possible conditions for each item

Table 3-3 Possible conditions for each item of SRU

No.	Reference name	Match condition (^, exact)	Logical condition (all, any, =)	Multiple values
1	dpid	No (exact match)	=, any only	Yes
2	dpgroupid	No (exact match)	= only	No
3	title	Yes	Yes	Yes
4	creator	Yes	Yes	Yes
5	publisher	Yes	Yes	Yes
6	ndc	No (prefix match)	= only	No
7	ndlc	No (prefix match)	= only	No
8	description	No (partial match)	Yes	Yes
9	subject	No (partial match)	Yes	Yes
10	isbn	No (exact match)	= only	No
11	issn	No (exact match)	= only	No
12	jpno	No (exact match)	= only	No
13	from	No	= only	No
14	until	No	= only	No
15	anywhere	No (partial match)	Yes	Yes
16	porta_type	No (exact match)	= only	No
17	digitalize_type	No (exact match)	= only	No
18	webget_type	No (exact match)	= only	No
19	payment_type	No (exact match)	= only	No
20	ndl_agent_type	No (exact match)	=, any only	Yes
21	itemno	No (exact match)	= only	No
22	mediatype	No (exact match)	= only	Yes

To specify multiple values for one item, you must use "" to enclose the specified values (example: title="ruby python"). If specified value is just one and thus no ambiguity occurs, "" can be omitted.

(Example: title=architecture)

(5) Number of returned data records

Records of up to specified number for maximumRecords are returned. The default is 200. Also, the maximum number of records that can be acquired at a time is 500.

(6) Return format

Table 3-4 Details of SearchRetrieve Response

No.	Item name	Return value
1	Version	"1.2" or "1.1" (Specified in the request)
2	numberOfRecords	Number of search results
3	resultSetId	Not used
4	resultSetIdleTime	Not used
5	Records	Search result list
6	nextRecordPosition	Start position of next record With startRecord=1 and maximumRecords=200, if the number of search results is more than 200, 201 is returned, and if the number of search result is less than 200 (no next page exists), 0 is returned.
7	Diagnostics	Error message list
8	extraResponseData	Search result (facet)
9	echoedSearch retrieveRequest	Not used
10	Record	Start of 1 Book
11	recordSchema	Schema
12	recordPacking	"xml" or "string"
13	recordData	Start of Bibliographic data
14	recordPosition	Position of the Bibliographic data

The format of returned data is XML. The schema is specified at request, which shall be dc, dcndl, or dcndl_simple.

As extraResponseData, facet data of search results is returned. The facet items are as follows. (Note that a facet item whose search result is zero is not included in the returned data):

- Data provider

Number of search results for each data provider is returned.

Search result is expressed as dpid="data provider ID" in dp element.

For data provider ID, see Appendix 1: List of data providers and their corresponding Application Programming Interfaces (API) in this document.

Example:

```
<lst name="REPOSITORY_No">
    <int name="R100000001">159</int>
    <int name="R100000004">7</int>
    .
    .
</lst>
```

* Numeric value specified by name=~ is repository number of data provider. For details about repository number, see Appendix 1: List of data providers and their corresponding Application Programming Interfaces (API) in this document.

•NDC

In NDC classification of documents, the number of the first digit of NDC code is interpreted as genre, and number of search results for each field is returned.

Example:

```
<lst name="NDC">
    <int name="7">1</int>
    <int name="9">2</int>
    .
    .
</lst>
```

- Year of publication

Number of search results for each publication year is returned.

Search result of facet does not include record if its year of publication is unknown.

Example:

```
<lst name="ISSUED_DATE">
    <int name="1600">1</int>
    <int name="1650">3</int>
    .
    .
</lst>
```

For details about examples of returned data, see Appendix 3 "Examples of returned data for each interface" in this document.

(7) Error message

If an error occurs, such as a syntax error or a server error, the server returns an error message. Return format and error message details shall comply with the SRU standard specifications "Diagnostics List" (at <http://www.loc.gov/standards/sru/resources/diagnostics-list.html>).

(8) Request example (CQL example)

Example 1: If the material was published after January 1, 2008 and the title includes "桜," the request shall be `title="桜"AND from="2008."`

* For the actual request URL to this service, this request is encoded to

`(title%3d%22%e6%a1%9c%22%20AND%20from%3d%222008%22),`

and this is added to the query, resulting in the following:

<http://iss.ndl.go.jp/api/sru?operation=searchRetrieve&query=title%3d%22%e6%a1%9c%22%20AND%20from%3d%222008%22>

Example 2: The author is "夏目漱石" (exact match).

CQL is `creator exact "夏目漱石."`

* For the actual request URL to this service, this request is encoded to

`(creator%20exact%20%22%e5%a4%8f%e7%9b%ae%e6%bc%b1%e7%9f%b3%22),` and this is added to the query, resulting in the following:

<http://iss.ndl.go.jp/api/sru?operation=searchRetrieve&query=creator%20exact%20%22%e5%a4%8f%e7%9b%ae%e6%bc%b1%e7%9f%b3%22>

4. SRU/SOAP(SRW)

(1) Overview

This is the interface for external institutions to use this service for search and acquire the search result by SRU/SOAP (SRW: Search/Retrieve Web Service) (hereinafter referred to as SRW).

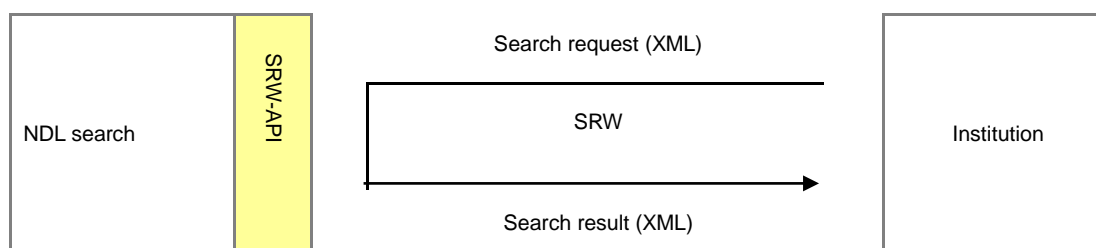


Figure 4-1 Overview of interface provided by SRW

SRW is a Web Service-based search protocol. You can find its basic specifications at the following URL:

<http://www.loc.gov/standards/sru/index.html>

The specifications are described as SRU/SRW. SRU (Search Retrieve via URL) is similar to SRW; however, an SRW request is made in XML format based on the SOAP specifications while an SRU request is made in URL (where a request is made in URL is similar to OpenURL, OpenSearch, etc.). This service supports both SRU and SRW. For details about the specifications concerning SRU, see 3 “SRU.”

You can find the description of WSDL concerning this service at

<http://iss.ndl.go.jp/api/srw/wSDL>

(2) Support range

This service supports "searchRetrieve" and "explain," which are major operations of SRW (scan operation is not supported).

(3) Argument of searchRetrieve

Table 4-1 Argument of searchRetrieve

No.	Argument name	Value to specify
1	operation	Required "searchRetrieve"

No.	Argument name	Value to specify
2	version	Optional 1.1 or 1.2 (The default is 1.2.)
3	query	Required Search condition (CQL) Details are described later.
4	startRecord	Start position The default is 1.
5	maximumRecords	Maximum number of acquired records The default is 200.
6	recordPacking	"xml" or "string" The default is "string."
7	recordSchema	Schema of acquired data dc, dcndl, or dcndl_simple The default is dc.
8	recordXPath	Not used
9	resultSetTTL	Not used
10	sortKeys	Sort key information Valid for version 1.1 only
11	schema	Not used
12	path	title, creator, created_date, or modified_date Without sortKeys specified, the default (in the order of title) is applied. (Available only when 1.1 is specified for the version with sortKeys specified)
13	ascending	"0" (descending order), "1"(ascending order) (Available only when 1.1 is specified for the version with sortKeys specified) The default is "1."
14	stylesheet	Not used
15	extraRequestData	Not used
16	inprocess	With "true" specified, NDL newly acquired Bibliographic data only is obtained.
17	onlyBib	With "true" specified, Bibliographic data only is obtained. (Available only when dcndl is specified for recordSchema)

(4) CQL specifications

CQL is the specification of search queries in SRW. This service is provided based on CQL 1.2. The basic specification of CQL can be found at URL shown in 4 "SRU/SOAP (SRW) (1) Overview." The following shows the items available when issuing a query using CQL.

Table 4-2 Search items of SRW

No.	Reference name	Details
1	dpid	Data provider ID
2	dpgroupid	Data provider group ID
3	title	Title
4	creator	Creator
5	publisher	Publisher
6	ndc	Classification (NDC, NDLC, LCC, DCC, UDC)
7	ndlc	Classification (NDLC)
8	description	Contents description
9	subject	Subject
10	isbn	ISBN (Search is available in either 10- or 13- digit format)
11	issn	ISSN
12	jpno	National Bibliography No.
13	from	Start date of publication (YYYY-MM-DD)
14	until	End date of publication (YYYY-MM-DD)
15	anywhere	The search items are the same as those of Simple search of NDL Search.
16	itemno	Item number of bibliography within NDL Search (repository number - item number - branch number)
17	mediatype	Material type Corresponds to material type of Advanced Search of NDL Search. "1": Book "2": Article/Paper "3": Newspaper "4": Children's literature "5": Reference information "6": Digital material "7": Others "8": Material for the persons with disabilities (Material for Material search for persons with disabilities) "9": Legislative information
18	sortBy (available only when "1.2" is specified for the version argument of searchRetrieve)	Describe reference name of sort criterion. Note that sort criterion that is valid for NDL Search is "title," "creator," "created_date," "modified_date" or "issued_date." To indicate ascending or descending order, /sort.ascending or /sort.descending shall follow the item.

For items, "title," "creator," and "publisher," prefix match (^), partial match, and exact match (exact) can be specified as matching condition. If no condition is specified, partial match is assumed.

For the other items, no matching condition can be specified.

For "isbn" and "issn," exact match is assumed as matching condition. If 10- or 13-digit isbn is entered, the condition is converted to both 10 and 13 digits to perform exact match search. If entered in other digits than 10 or 13, exact match search shall be performed; no other search, such as prefix search, shall be performed.

For "description" and "subject," the partial match is assumed

The items, "from" and "until," are specified in YYYY-MM-DD format, and exact match is assumed as matching condition for them. Note that YYYY or YYYY-MM format is also available, and in this case, YYYY-01-01 or YYYY-MM-01 for YYYY or YYYY-MM, respectively, is assumed to be specified as matching condition for exact match.

In addition, as logical condition for each item, you can specify "and" or "or". For join condition for items, you can specify either all "and" or all "or".

Following table shows possible conditions for each item

Table 4-3 Possible condition for each item of SRW

No.	Reference name	Match condition (^, exact)	Logical condition (all, any, =)	Multiple values
1	dpid	No (exact match)	=, any only	Yes
2	dpgroupid	No (exact match)	= only	No
3	title	Yes	Yes	Yes
4	creator	Yes	Yes	Yes
5	publisher	Yes	Yes	Yes
6	ndc	No (prefix match)	= only	No
7	ndlc	No (prefix match)	= only	No
8	description	No (partial match)	Yes	Yes
9	subject	No (partial match)	Yes	Yes
10	isbn	No (exact match)	= only	No
11	issn	No (exact match)	= only	No
12	jpno	No (exact match)	= only	No
13	from	No	= only	No
14	until	No	= only	No
15	anywhere	No (partial match)	Yes	Yes
16	porta_type	No (exact match)	= only	No
17	digitalize_type	No (exact match)	= only	No

18	webget_type	No (exact match)	= only	No
19	payment_type	No (exact match)	= only	No
20	ndl_agent_type	No (exact match)	=, any only	Yes
21	itemno	No (exact match)	= only	No
22	mediatype	No (exact match)	= only	Yes

(5) Number of returned data records

Records of up to specified number for maximumRecords are returned. The default is 200. Also, the maximum number of records that can be acquired at a time is 500.

(6) Return format

Table4-4 Details of SearchRetrieve Response

No.	Item name	Return value
1	version	"1.2" or "1.1" (Specified in the request)
2	numberOfRecords	Number of search results
3	resultSetId	Not used
4	resultSetIdleTime	Not used
5	records	Search result list
6	nextRecordPosition	Start position of next record With startRecord=1 and maximumRecords=200, if the number of search results is more than 200, 201 is returned, and if the number of search result is less than 200 (no next page exists), 0 is returned.
7	diagnostics	Error message list
8	extraResponseData	Search result (facet)
9	echoedSearch retrieveRequest	Not used
10	record	Start of 1 Book
11	recordSchema	Schema
12	recordPacking	"xml" or "string"
13	recordData	Start of Bibliographic data
14	recordPosition	Position of the Bibliographic data

The format of returned data is XML. The schema is specified at request, which shall be dc, dcncl, or dcncl_simple.

As `extraResponseData`, facet data of search results is returned. The facet item is the same as that of SRU. For details about specifications and returned data examples, see those of SRU.

For details about example of returned data, see Appendix 3 "Examples of returned data for each interface" in this document.

(7) Request examples (CQL example)

Example 1: If material was published after January 1, 2008 or later, and title includes "桜"
`title="桜"andfrom="2008"`

Example 2: The author is "夏目漱石" (exact match)
`creatorexact "夏目漱石"`

5. OpenSearch

(1) Overview

This is an interface for external institutions to use this service for search and acquire the search result by OpenSearch.

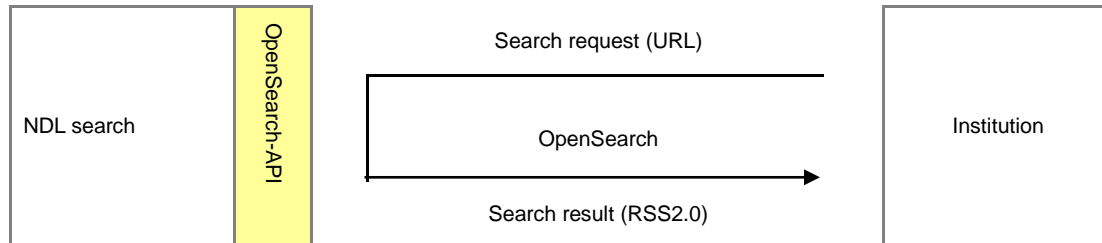


Figure 5-1 Overview of interface provided by OpenSearch

OpenSearch issues a search request in a URL and acquires the search result in RSS 2.0 format. You can find the basic specifications at the following URL. Supported version for this service is 1.0.

<http://a9.com/-/spec/opensearchrss/1.0/>

(2) Request format

Request format is following URL.

`http://iss.ndl.go.jp/api/opensearch?dpid=[dpid]&title=[title]&...`

(3) Argument ([query]) format

Following table shows possible items to be specified in a request.

Table 5-1 Search items of OpenSearch

No.	Reference name	Details	Match condition	Multiple values
1	dpid	Data provider ID	Exact match	Yes
2	dpgroupid	Data provider group ID	Exact match	No
3	any	All items are searched.	Partial match	Yes
4	title	Title	Partial match	Yes
5	creator	Creator	Partial match	Yes
6	publisher	Publisher	Partial match	Yes
7	ndc	Classification (NDC)	Prefix match	No
8	from	Start date of publication (YYYY-MM-DD)		No
9	until	End date of publication (YYYY-MM-DD) (YYYY-MM-DD)		No
10	cnt	Upper limit of output record (The default is 200.)		No
11	idx	Start position of record acquisition (The default is 1.)		No
12	isbn	ISBN If entered in 10 or 13 digits, the item is converted to both 10 and 13 digits for exact match search. If entered in other digits, prefix match search is performed.	Exact match or Prefix match	No
13	mediatype	Material type Corresponds to the material type of Advanced Search of NDL Search. "1": Book "2": Article/Paper "3": Newspaper "4": Children's literature "5": Reference information "6": Digital material "7": Others "8": Material for the persons with disabilities (Material for Material search for persons with disabilities) "9": Legislative information	Exact match	Yes

Note: The logical conditions between items are all AND.

Note: Space-separated multiple keywords can be specified in one search item.

In this case, OR search is used for "dpid" and AND search for other items. No search is available with only "dpid" or "dpgroupid" specified.

Note: If an argument (parameter) is wrong, no search result is acquired.

(4) Number of returned data records

Records of up to the number specified for cnt parameter are returned. The default is 200. The maximum number of records that can be acquired at a time is 500.

(5) Return format

The data return format is an extended version of RSS 2.0 for this service. For details about examples of returned data, see the appendix 3 ("Examples of returned data for each interface") in this document.

(6) Request example

Example 1: Title includes "マリーアントワネット".

<http://iss.ndl.go.jp/api/openserach?title=%e3%83%9e%e3%83%aa%e3%83%bc%e3%82%a2%e3%83%b3%e3%83%88%e3%83%af%e3%83%8d%e3%83%83%e3%83%88>

Example 2: Within Aozora Bunko, author includes "夏目".

<http://iss.ndl.go.jp/api/openserach?dpid=aozora&creator=%e5%a4%8f%e7%9b%ae>

6. OpenURL

(1) Overview

This is an interface for external institutions to use this service for search and acquire search results by OpenURL.

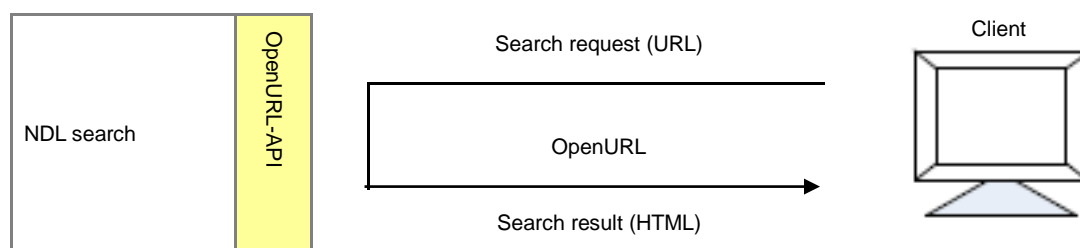


Figure 6-1 Overview of interface provided by OpenURL

OpenURL returns a result on the screen (HTML) for a request issued in a URL. You can find the basic specifications at the following URL:

http://www.niso.org/kst/reports/standards?step=2&gid=None&project_key=d5320409c5160be4697dc046613f71b9a773cd9e

(2) Request format

A request is an URL in following format

`http://iss.ndl.go.jp/api/openurl?genre=[genre]&...`

Note that a search result HTML returned in this URL format is the same as the search result screen on the Web of this service; therefore, the result can be displayed only by a browser supporting this service.

(3) genre specification and where to search

genre (or rtf.genre) can be specified. This service searches a different place depending on following three patterns. Note that the same result is acquired when specifying "genre=" or "rtf.genre=".

- For genre=article
- For other than genre=article (Other than article among possible items for genre for OpenURL)
- When genre is not specified

For details about correspondence between genre and data providers, see Appendix 2 "Specification of OpenURL-genre and the corresponding data provider" in this document.

If there is an inconsistency between specified items for genre (or rft.genre) and atitle or btitle, an error message is displayed and the search is stopped.

In addition, if ndl_dpid is specified for search, data provider specified for genre becomes invalid.

(4) atitle or btitle specification and where to search

If ndl_dpid is specified for search, specified atitle or btitle for search location becomes invalid, and the search is performed in the same manner when the title=search character string&ndl_dpid=search location is specified.

(5) Possible search items

This service supports a part of parameters (keys) of OpenURL1.0. Following table shows possible parameters:

Table 6-1 Search items concerning OpenURL

No.	Item	genre=article	Other than genre=article	genre is not specified	Match condition	Search method	Multiple values
1	aulast (or rft.aulast)	Yes	Yes	Yes	Partial match	Same as au(rft.au) *1	No
2	aufirst (or rft.aufirst)	Yes	Yes	Yes			
3	au (or rft.au)	Yes	Yes	Yes	Partial match	Authors are searched.	Yes
4	title, atitle (or rft.title, rft.atitle)	Yes	-	Yes	Partial match	Titles (of articles) are searched.	Yes
5	btitle (or rft.btitle)	-	Yes	Yes	Partial match	Titles are searched.	Yes

No.	Item	genre=article	Other than genre=article	genre is not specified	Match condition	Search method	Multiple values
6	jtitle (or rft.jtitle)	Yes	-	Yes	Partial match	Journal titles are searched.	Yes
7	pub (or rft.pub)	-	Yes	Yes	Partial match	Publishers are searched.	Yes
8	issn (or rft.issn)	Yes	Yes	Yes	Prefix match	ISSNs are searched.	No
9	isbn (or rft.isbn)	-	Yes	Yes	Exact match or Prefix match	ISBNs are searched. (If 10- or 13-digit isbn is entered, the condition is converted to both 10 and 13 digits to perform exact match search. If entered in other digits, the prefix match search is performed.)	No
10	Any	Yes	Yes	Yes	Partial match	All data are searched. (Equivalent to Simple search)	Yes
11	ndl_jpno	-	Yes	Yes	Prefix match	National Bibliography No. is searched. (Uniquely extended)	No
12	ndl_dpid	Yes	Yes	Yes	Exact match	Given data providers only are searched. (Uniquely extended)	Yes
13	mediatype	Yes	-	Yes	Exact match	Material types are searched. (Uniquely extended)	Yes

Note: The logical conditions between items are all AND.

Note: Space-separated multiple keywords can be specified for an item other than isbn, issn, and ndl_jpno.

If multiple keywords are specified, OR search is used for "ndl_dpid" and AND search for other items.

*1: If "aufirst" and "aulast" are specified at the same time, these two conditions are used for AND search.

(6) Number of returned data records

Number of returned data records is limited to 500.

(7) Return format

Data is returned in the HTML format to requested client, and is displayed in GUI on browser.

(8) Request example

Example 1: Title includes "電子図書館."

<http://iss.ndl.go.jp/api/openurl?btitle=%e9%9b%bb%e5%ad%90%e5%9b%b3%e6%9b%b8%e9%a4%a8>

Example 2: Author includes "夏目漱石."

<http://iss.ndl.go.jp/api/openurl?au=%e5%a4%8f%e7%9b%ae%e6%bc%b1%e7%9f%b3>

7. Z39.50

(1) Overview

This is an interface for external institutions to use this service for search and acquire the search result by Z39.50.

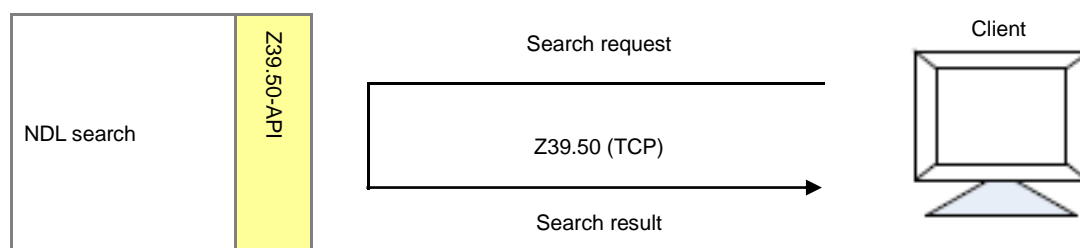


Figure 7-1 Overview of the interface provided by Z39.50

Z39.50 is an information search protocol in server and client method. You can find its specifications at <http://www.loc.gov/z3950/agency/Z39-50-2003.pdf>

The major operations between server and clients are following three. This service also supports these operations.

- Initialize (Initialization)
- Search (Search and acquisition of the number of search results)
- Present (Acquisition of records)

Typically, following tools are used to develop a client:

- YAZ Toolkit - Z39.50, SRU/SRW supported library
- JZKit - Z39.50 library for Java

Created by reference to "<http://ja.wikipedia.org/wiki/Z39.50>"

(2) Search specification

In search using Z39.50, a search request is made by specifying an attribute set. The external interface of Z39.50 in this service has the following specifications.

(i) Use (search item) attribute (Type-1)

This is the specification related to search items.

Table 7-1 Use (search item) attributes (Type-1)

Attribute	Value	Definition	Searchable field name
Personal name	1	Personal name	
Corporate name	2	Company name	
Conference name	3	Conference name	
Title	4	Title	title
Title series	5	Title series	title
Title uniform	6	Title uniform	title
ISBN	7	ISBN	isbn
ISSN	8	ISSN	issn
LC card number	9	LC card number	
BNB card no.	10	BNB card number	
BGF number	11	BGF number	
Local number	12	Local number	
Dewey classification	13	Dewey classification	
UDC classification	14	UDC classification	
Bliss classification	15	Bliss classification	
LC call number	16	LC call number	
NLM call number	17	NLM call number	
NAL call number	18	NAL call number	
MOS call number	19	MOS call number	
Local classification	20	Local classification	ndc
Subject heading	21	Subject heading	subject
Subject Rameau	22		
BDI index subject	23	BDI index subject	
INSPEC subject	24	INSPEC subject	
MESH subject	25	MESH subject	
PA subject	26	PA subject	
LC subject heading	27	LC subject heading	
RVM subject heading	28	RVM subject heading	
Local subject index	29	Local subject index	
Date	30	Date	
Date of publication	31	Date of publication	dateissued
Date of acquisition	32	Date of acquisition	
Title key	33	Title key	

Attribute	Value	Definition	Searchable field name
Title collective	34	Title collective	
Title parallel	35	Title parallel	
Title cover	36	Title cover	
Title added title page	37	Title added to title page	
Title caption	38	Title caption	
Title running	39	Running title	
Title spine	40	Back title	
Title other variant	41	Other title	title
Title former	42	Title at the time of announcement	title
Title abbreviated	43	Abbreviated title	
Title expanded	44	Title details	
Subject precis	45	Subject summary	
Subject rswk	46		
Subject subdivision	47	Part of subject	
No.nat'l biblio.	48	National Bibliography No.	
No.legal deposit	49	Legal deposit number	
No.govt pub.	50	Government publication number	
No.music publisher	51	Music publisher number	
Number db	52	Database number	
Number local call	53	Local call number	jpno
Code--language	54	Language code	
Code--geographic area	55	Geographic area code	
Code--institution	56	Institution code	
Name and title	57	Name and title	
Name geographic	58	Geographic name	
Place publication	59	Publication place	
CODEN	60	CODEN	
Microform generation	61	Microform generation	
Abstract	62	Abstract	description
Note	63	Note	description
Author-title	1000	Author-title	
Record type	1001	Record type	
Name	1002	Name	
Author	1003	Author	creator

Attribute	Value	Definition	Searchable field name
Author-name personal	1004	Author - personal name	creator
Author-name corporate	1005	Author - corporate name	creator
Author-name conference	1006	Author - conference name	creator
Identifier--standard	1007	Standard identifier	
Subject--LC children's	1008		
Subject name-personal	1009	Personal subject name	subject
Body of text	1010	Body of text	
Date/time added to db	1011	Record registration date	
Date/time last modified	1012	Record update date	
Authority/format id	1013	Authority/format ID	
Concept-text	1014	Text concept	
Concept-reference	1015	Reference concept	
Any (same as Simple search)	1016	All	anywhere
Server-choice	1017	Server selection	
Publisher	1018	Publisher	publisher
Record source	1019	Record source	
Editor	1020	Editor	
Bib-level	1021	Bibliography level	
Geographic-class	1022	Geographic class	
Indexed-by	1023	Added index	
Map-scale	1024	Map scale	
Music-key	1025	Music key	
Related-periodical	1026	Related periodical	
Report-number	1027	Report number	
Stock-number	1028	Stock number	
Thematic-number	1030	Thematic subject number	
Material-type	1031	Material type	
Doc-id	1032	Document ID	
Host-item	1033	Host item	
Content-type	1034	Content type	
Anywhere	1035		
Author-Title-Subject	1036	Author, title, and subject	
DC-Title	1097		title
DC-Creator	1098		creator

Attribute	Value	Definition	Searchable field name
DC-Subject	1099		subject
DC-Description	1100		description
DC-Publisher	1101		publisher
DC-Date	1102		dateissued
DC-ResourceType	1103		
DC-ResourceIdentifier	1104		
DC-Language	1105		
DC-OtherContributor	1106		
DC-Format	1107		
DC-Source	1108		
DC-Relation	1109		
DC-Coverage	1110		
DC-RightsManagement	1111		

Note: Attributes in searchable field name column can be specified.

(ii) Relation attributes (Type-2)

Here describes specifications of relation of search words.

Table 7-2 Relation attributes (Type-2)

Attribute	Value	Definition	Selectable
less than	1	<	
less than or equal	2	<=	△
Equal	3	=	Yes
greater or equal	4	>=	△
greater than	5	>	
not equal	6	!=	
Phonetic	100		
Stem	101		
Relevance	102	Relation	
AlwaysMatches	103	All matched	

Note: The value 2 and 4 of Type-2 can be specified only when the value 31 and 1102 of Type-1 is specified.

(iii) Position attributes (Type-3)

This is the specification concerning the locations where a search term appears. This service does not use this specification. (Specified values are ignored.)

(iv) Structure attributes (Type-4)

This is the specification concerning the structure of a search term. No in service. (Specified values are ignored.)

(v) Truncation attributes (Type-5)

This is the specification concerning the truncation (match method) of a search term.

Table 7-3 Truncation attributes (Type-5)

Attribute	Value	Definition	Selectable
right Truncation	1	Prefix match search	Yes
left Truncation	2	Suffix match search	
left and right	3	Partial match	
do not truncate	100	Exact match	Yes
process # in search term	101	Process in search term	
regExpr-1	102		
regExpr-2	103		

Note: The item can be specified only when combination with the following items of TYPE1 is specified

- 4:Title
- 5:Title series
- 6:Title uniform
- 41:Title other variant
- 42:Title former
- 1003:Author
- 1004:Author-name personal
- 1005:Author-name corporate
- 1006:Author-name conference
- 1018:Publisher
- 1097:DC-Title
- 1098:DC-Creator
- 1101:DC-Publisher

(vi) Completeness attributes (Type-6)

This is the specification on the completeness of a search term. This service does not use this specification. (Specified values are ignored.)

(vii) Specification of data provider

To narrow down target data providers, specify the data providers IDs (dpid) for Database-name in a Search Request. If nothing is specified, all the data providers are searched.

(3) Specifications of search result return

A search result is returned in XML format.

For details about specification details and return data examples, see those of SRU.

8. OAI-PMH

(1) Overview

This is an interface providing metadata that this service collects by OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting).

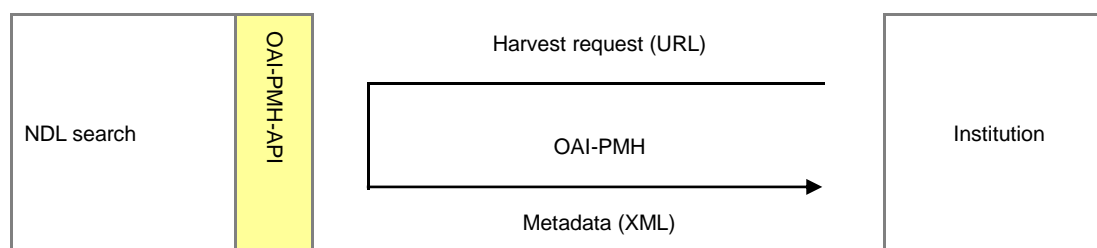


Figure 8-1 Overview of interface provided by OAI-PMH

OAI-PMH is a protocol being developed by OAI (Open Archives Initiative) for metadata exchange. You can find the basic specifications at the following URL:

<http://www.openarchives.org/OAI/openarchivesprotpcol.html>

In addition, the National Institute of Informatics published Japanese translation of this at

<http://www.nii.ac.jp/irp/archive/translation/oai-pmh2.0/>

In OAI-PMH, you can access repositories by using the following six operations (called verb). "Item" is one data (In this service, a unit of information displayed as a search result).

- GetRecord (acquires one record of metadata of a particular item)
- Identify (acquires an information about a repository)
- ListIdentifiers (acquires identifiers of all items)
- ListMetadataFormats (acquires supported format of metadata)
- ListRecords (acquires metadata of all items)
- ListSets (acquires supported sets (group: narrowing condition))

Following describes the specifications of repository (Application Programming Interface (API) of OAI-PMH) of this service.

(2) Repository basic information

As repository basic information, describe return details in response to an Identify request.

Table 8-1 Repository basic information

Tag name	Details	Return value
repositoryName	Repository name	NDL Digital Archive Portal
baseURL	Base URL of the repository	http://iss.ndl.go.jp/api/oaipmh
protocolVersion	Version of OAI-PMH supported by the repository	Version 2.0
adminEmail	Email of the repository administrator	
earliestDatestamp	Lower limit of all the date stamps for recording change, correction, and deletion within the repository. There is no item with date stamp earlier than this date.	Initial building date or full re-building date of repository
deletedRecord	Processing method for deleted repository records	transient: Retains the information on the deletion with restriction (Retain the records with date stamp of a certain date onwards)
granularity	Accuracy of date supported by the repository	YYYY-MM-DD
repositoryIdentifier	Name to uniquely identify the repository	oai:iss.ndl.go.jp:ID

(3) Support requests and arguments

The following requests and the arguments are supported.

Table 8-2 Requests and arguments

No.	Request	Arguments					
		identifier	metadata Prefix	from	until	set	resumption Token
1	GetRecord	◎	◎	-	-	-	-
2	Identify	-	-	-	-	-	-
3	ListIdentifiers		◎	◎	Yes	Yes	Yes
4	ListMetadataFormats	Yes	-	-	-	-	-
5	ListRecords		◎	◎	Yes	Yes	Yes
6	ListSets	-	-	-	-	-	-

◎: Required, Yes: Optional (The period of from and until are limited, which is described later.)

(4) Set

"Set" is the definition for grouping items for selective harvest. "set" is also used to acquire metadata related only to item group with a particular attribute.

"Set" in this service is data provider (ID), data provider group (ID), and NDC described in Chapter 2. When "set" is specified, only the information of data provider, data provider group, or NDC is returned.

For NDC, prefix match shall be applied. For example, if one digit "7" is specified, bibliographic data belonging to the classification code "7xx" are output.

For example, if Aozora Bunko is specified for the data provider, specify as "set=aozora." For the data whose NDC classification is "735," specify as "set=735." For the data whose NDC classification of Aozora Bunko is "735," specify as "set=aozora:735" or "set=735:aozora."

* Since 2010, NDL has provided the newly acquired NDL bibliographic data. The data provider of the newly acquired NDL bibliographic data is NDL-OPAC. If you want to acquire the metadata of the newly acquired bibliographic data, make a request with "set=iss-ndl-opac-inprocess" specified. Note that although the metadata of NDL-OPAC can be acquired by a request with "set=iss-ndl-opac" specified, the result from this request does not include the data of the newly acquired NDL bibliographic data.

* Since 2013, NDL has provided the Japanese national bibliography. The data provider of the Japanese national bibliography is NDL-OPAC. If you want to acquire the metadata of the Japanese national bibliography, make a request with "set=iss-ndl-opac-national" specified. Note that the metadata of Japanese national bibliography, which have JPNO, is out of the metadata of NDL-OPAC requested with "set=iss-ndl-opac".

(5) Number of returned data records

For ListIdentifiers, ListRecords, and ListSets, the number of returned data records at a time is 200. To acquire 201st and later records, make a request while specifying the resumptionToken notified when the first 200 records were acquired.

(6) Return format

The data return format is XML. For the schema (metadataPrefix), you can select either oai_dc, dcndl or dcndl_simple.

To acquire the bibliographic data only, make a request with onlyBib=true specified.

(Available only when dcndl is specified for metadataPrefix)

For an example of returned data, see Appendix 3 (Examples of returned data for each interface) in this document.

(7) Identifier

For OAI-PMH, a unique item identifier on the repository side can be received on the service provider side. By using this, you can update the data on the service provider at the time of differential harvest (the parameter

described as the identifier in (3) Support requests and argument).

This service uses this identifier as the metadata ID. (The ID, with the configuration shown below, uniquely given to all the metadata of this service.)

oai:iss.ndl.go.jp :[repository number]-[item number]-[branch number]

(8) from, until

If a date (YYYY-MM-DD or YYYY-MM-DDThh:mm:ssZ) is specified for "from," the bibliographic data updated after the specified date is returned. If a date (YYYY-MM-DD or YYYY-MM-DDThh:mm:ssZ) is specified for "until" the bibliographic data updated earlier than the specified date is returned.

The restriction on the period of "from" and "until," see "(10) Access restriction of OAI-PMH."

(9) Access restriction of OAI-PMH

OAI-PMH applies following restriction to accesses in order to prevent the load on this service from being raised by accesses for large data acquisition.

For ListRecords and ListIdentifier, "from" is required. The following restriction is applied to the range (period) that can be specified by "from" or "until":

- * Maximum period is one year.
- * In case of non-specified, maximum period (one year) is automatically assigned.

(11) Request sample

Example 1: Identify request

<http://iss.ndl.go.jp/api/oaipmh?verb=Identify>

Example 2: ListMetadataFormats request

<http://iss.ndl.go.jp/api/oaipmh?verb=ListMetadataFormats>

Example 3: ListIdentifiers request

http://iss.ndl.go.jp/api/oaipmh?verb=ListIdentifiers&metadataPrefix=oai_dc&from=2010-07-01

Example 4: ListRecords request

http://iss.ndl.go.jp/api/oaipmh?verb=ListRecords&metadataPrefix=oai_dc&set=aozora&from=2010-07-01

http://iss.ndl.go.jp/api/oaipmh?verb=ListRecords&metadataPrefix=dcndl_simple&from=2011-02-01&set=iss-ndl-opac-inprocess

Example 5: GetRecord request

http://iss.ndl.go.jp/api/oaipmh?verb=GetRecord&metadataPrefix=oai_dc&identifier=oai:iss.ndl.go.jp:R00000014-I000044174-00

Example 6: ListSets request

<http://iss.ndl.go.jp/api/oaipmh?verb=ListSets>

Revision History

No.	Revision	Date of Issue	Details
1	Tentative edition	Aug.17, 2010	First edition
2	Ver. 1.1	Jun. 20, 2011	<ul style="list-style-type: none"> - Modified return items of OpenSearch. - Added dcdnl_simple to return-format schema of OAI-PMH. - Added "set=iss-ndl-opac-inprocess" to allow you to request only the Inprocess bibliography of NDL Newly Acquired Books Information and to the set parameter of OAI-PMH.
3	Ver. 1.2	Jul. 22, 2011	<ul style="list-style-type: none"> - Added reference materials in accordance with the revision of dcdnl, the return-formatted schema of OAI-PMH, SRU, and SRU/SOAP (SRW).

No.	Revision	Date of Issue	Details
4	Ver. 1.3	Jan. 6, 2012	<ul style="list-style-type: none"> - Added "dcndl_simple" to recordSchema of SRU. - Added "inprocess" to arguments of SRU. - Added "mediatype" to search items of SRU. - Added "mediatype" to condition that can be specified for SRU. - Changed the maximum number of return items of SRU data. - Added "dcndl_simple" to recordSchema of SRW. - Added "inprocess" to arguments of SRW. - Added "mediatype" to search items of SRW. - Added "mediatype" to condition that can be specified for SRW. - Added "mediatype" to search items of OpenSearch. - Added "mediatype" to search items of OpenURL. - Added "mediatype" to request arguments of OAI-PMH.
5	Ver. 1.4	Sep. 28, 2012	<ul style="list-style-type: none"> - Corrected the description about the value to specify for "inprocess" argument of SRU. - Corrected the description about the value to specify for "inprocess" argument of SRW. - Added retuned data example at each interface (Appendix 3) - Added table of data providers and their corresponding media types when using OAI-PMH (Appendix 4). - Corrected clerical errors and revised descriptions.

No.	Revision	Date of Issue	Details
6	Ver. 1.5	Nov. 29, 2012	<ul style="list-style-type: none"> - Added "onlyBib" to arguments for SRU. - Added "onlyBib" to arguments for SRW. - Added "onlyBib" to arguments for OAI-PMH. - Added the example in case where only dcndl-formatted Bibliographic data is acquired for returned data example for SRU, SRW, and OAI-PMH. (Appendix 3) - Added URL "rdfs:seeAlso" and namespaces "xmlns:rdf" and "xmlns:rdfs" of source "Bibliography details" to returned data example for OpenSearch. (Appendix 3)
7	Ver. 1.6	Jan. 25, 2013	<ul style="list-style-type: none"> - Added to search item "isbn" for SRU that either 10-digit or 13-digit format is effective for search. - Added to search item "isbn" for SRW that either 10-digit or 13-digit format is effective for search. - Added to -search item "isbn" for OpenSearch that either 10-digit or 13-digit format is effective for search. - Added to search item "isbn (rfl.isbn)" for OpenURL that either 10-digit or 13-digit format is effective for search. - Added namespace "xmlns:xsi" to return data example of "dcndl format," "dcndl format (Bibliographic data only is obtained)," and "dcndl_simple format" for OAI-PMH(GetRecord, ListIdentifiers, ListRecords). (Appendix 3)

No.	Revision	Date of Issue	Details
8	Ver. 1.7	Jan. 21, 2014	- Added data providers and date of metadata deletion. (Appendix 1)
9	Ver. 1.8	Mar. 31, 2014	<ul style="list-style-type: none"> - Added “set=iss-ndl-opac-national” to the set parameter of OAI-PMH. - Updated returned data example at each interface. Corrected clerical errors. (Appendix 3) - Corrected clerical errors on search item for OpenURL.
10	Ver. 1.9	Jul. 18, 2014	<ul style="list-style-type: none"> - Corrected the searchable field name in Table 7-1. - Corrected the Note in Table 7-2. - Corrected “(iv) Structure attributes (Type-4)” for Z39.50. Deleted Table 7-3. - Modified Table 7-X, corrected “partial match” in Table 7-3, and added the Note in Table 7-3. - Added new data provider (Union Catalog of Agriculture, Forestry and Fisheries Research Institute's Libraries). (Appendix 1) - Added the name of closed data provider (The Kyushu University Museum Digital Archive). (Appendix 1) - Added information for closed data providers. (Appendix 2) - Added returned data example for Z39.50. (Appendix 3)
11	Ver. 1.10	Sep. 22, 2014	- Added new data providers (Tokyo Metropolitan Library Edo-Tokyo Digital Collections, Komazawa University Electronic unique collections). (Appendix 1, 2)

No.	Revision	Date of Issue	Details
12	Ver.1.11	Oct. 31,2014	<ul style="list-style-type: none"> -Corrected (5) Numeber of returned data records of SRU. -Corrected URL in (1) Overview for OAI-PMH. -Corrected the description of (10) Access restriction of OAI-PMH for OAI-PMH. -Added new data provider(NWEC Women's Digital Archive System).(Appendix 1) -Corrected information for data provider(AKITA PREFECTURAL LIBRARY DIGITAL ARCHIVE, Union Catalog of Agriculture, Forestry and Fisheries Research Insititute's Libraries). (Appendix 1) -Added new data provider(NWEC Women's Digital Archive System).(Appendix 2)
13	Ver.1.12	Dec. 15,2014	<ul style="list-style-type: none"> - Added information for closed data provider(publications in NDL-HP) and date of metadata deletion.(Appendix 1, 2)
14	Ver.1.13	Mar.31,2015	<ul style="list-style-type: none"> -Added the description of data stamps for selective harvesiting (OAI-PMH).
15	Ver.1.14	Aug.14,2015	<ul style="list-style-type: none"> -Changed the name of data providers (Rare material gallery and Regional material lography of ISHIKAWA prefectural library) into Rare material gallery of ISHIKAWA prefectural library. (Appendix 1,2,4) -Changed the name of data providers (Forest of material (Digital library of Chiba Prefectural Central Library)) into Chiba Digital Archive. (Appendix 1,2) -Added data provider (Chiba Digital Archive). (Appendix 4)

No.	Revision	Date of Issue	Details
16	Ver.1.15	Sep. 18,2015	<ul style="list-style-type: none"> - Changed the name of data provider (Rare books image database of Osaka Prefectural Nakanoshima Library) into OSAKA PREFECTURAL LIBRARY OSAKA e-COLLECTION (Appendix 1,2,4) -Added new data providers (Yamanashi Digital Archive (Yamanashi Prefectural Library) and Digital Library System for Ministry of Agriculture, Forestry and Fisheries). (Appendix 1,2,4) -Added some unrecorded data providers. (Appendix 1,2,4)

No.	Revision	Date of Issue	Details
17	Ver.1.16	May 11,2015	<ul style="list-style-type: none"> -Corrected return value of “Repositoy name”, “Processing method for deleted repository records” and “Accuracy of date supported by the repository” in Table8-1. -Corrected parameters in Table8-2. -Changed “date (YYYY-MM-DD)” into “YYYY-MM-DD or YYYY-MM-DDThh:mm:ssZ” of “(8) from, untill” for OAI-PMH. -Changed “(10)Acces restriction of OAI-PMH” into “(9)Acces restriction of OAI-PMH” according to deletion of “(9)mediatype” for OAI-PMH. -Modified maximum period (one year only) for OAI-PMH request -Changed “(12)Request sample” into “(10) Request sample” according to deletion of “(11)return times” for OAI-PMH. -Deleted Appendix 4 in accordance with abolishment of mediatype when using OAI-PMH.
18	Ver.1.17	Jun 27,2016	<ul style="list-style-type: none"> -Added data provider (J-STAGE). (Appendix 1,2,3) -Corrected clerical errors.
19	Ver.1.18	Nov17,2016	<ul style="list-style-type: none"> -Added data provider (Kyushu University Collections). (Appendix 1,2,3)
20	Ver.1.19	Mar29,2017	<ul style="list-style-type: none"> -Added data provider (Cultural Heritage Online),(Digital Archive System ADEAC). (Appendix 1,2,3)