



March 30, 2023

The NACCIS-CAT/ILL Catalog Information Service for University Libraries and Other Institutions Taking a new step towards the international distribution of metadata with a new system

The National Institute of Informatics (NII; Director General: Dr. KITSUREGAWA Masaru, Tokyo, Japan) has updated its catalog information service for universities and other institutions (NACSIS-CAT/ILL, hereafter) to a new system that went live on Tuesday, January 31, 2023. The upgrade involved rebuilding the system to improve systemwide capabilities and features based on CBS (Controlled Bibliographic Service), an international packaged system from OCLC.

While the previous version of NACSIS-CAT /ILL used a unique metadata format (CATP), as the MARC21 metadata format has now become an international standard, interoperability between CATP-compliant metadata and MARC21 has been long awaited. In response, with the recent implementation of an international packaged system in the NACSIS-CAT infrastructure, the metadata managed internally by NACSIS-CAT/ILL will maintain interoperability not with CATP but with the internationally standard MARC21 metadata format. This has made it possible to guarantee the future extensibility and universality of the system.

Additionally, for institutions that use MARC21, we have shut down the Z39.50 gateway feature, an outdated standard from before the popularization of the Web, and launched an SRU (Search/Retrieve via URL) gateway feature, the successor standard that operates over HTTP/HTTPS.

In the future, we will also consider the application of the 2018 edition of the Nippon Cataloging Rules (NCR2018), which is compatible with RDA (Resource Description and Access), the international standard for cataloging rules, and pursue the international distribution of metadata utilizing the base systems used by institutions around the world.

As a piece of academic information infrastructure jointly developed with university libraries and other participating institutions over a period of nearly 40 years since 1984, NACSIS-CAT /ILL has taken a new step towards internationalization.

[Background]

NACSIS-CAT/ILL began operating in 1984 as a service to create a comprehensive catalog database of the materials held by university libraries across Japan and support inter-library use. In the years since, it developed as a core project of the National Center of Science Information Systems

(NACSIS), the predecessor of NII. As of January 31, 2023, NACSIS-CAT/ILL had grown to include 1,339 participating institutions, 13.45 million bibliographic records and 150 million holding records. The service helps researchers and students obtain the academic materials they seek.

Institutions that use NACSIS-CAT/ILL (participating institutions) almost all use local systems developed based on the CATP^{*1} Specifications, unique specifications published by NII. The NACSIS-CAT/ILL specifications that have made up the academic information infrastructure for some four decades are utilized throughout library operations through these local systems, not only in cataloging operations but also for acquisitions, search and inter-library loan tasks.

Today, however, MARC21^{*2} has become the mainstream international standard metadata format, the interoperability between CATP-compliance metadata and MARC21 has been long awaited. These improvements to the functionality of NACSIS-CAT/ILL were considered over a period of 10 years by the Future Scholarly Information Systems Committee^{*3} ("Future Committee," hereafter) established in 2012 under the Council for Promoting Collaboration Between University Libraries and the National Institute of Informatics^{*4}.

On May 29, 2015, the Future Committee summarized its findings in "The Vision on Future Scholarly Information Systems," and then published "The Vision on Future Scholarly Information Systems (2019)" ("Vision 2019," hereafter) on February 15, 2019, indicating the next direction to be pursued.

Vision 2019 recommended support for international standards on metadata, and the development of a Library System Network to create an environment for discovering materials in an integrated fashion without distinguishing between electronic information resources and printed materials (Figure 1).

Based on this policy, NII planned a system upgrade, and on June 17, 2021, a news released titled "Renewal of Academic Information System After 36 Years New Catalog Information Service Corresponding to Digital Resources to Be Introduced from 2022" was posted.

It was then decided that on January 31, 2023, the previous NACSIS-CAT/ILL would be rebuilt as the New NACSIS-CAT/ILL, a shared use system on the Library System Network, with the aim of achieving compatibility with international standards for metadata as indicated in Vision 2019.

[Replacement System]

The New NACSIS-CAT base system employed CBS (Controlled Bibliographic Service)^{*5} from the US-based OCLC^{*6}, with Kinokuniya Company Ltd. (Chairman and President: Masashi Takai; Headquarters: Meguro-ku, Tokyo) acting as the contracting contact party. The New NACSIS-ILL was developed by CMS Co., Ltd., and seamlessly integrated with CBS. CBS has a track record of introduction in European countries such as England, the Netherlands, Germany and France, as well as in Australia, and is an international packaged system designed for comprehensive cataloging at the regional and national level.

Library System Network (Universities, etc.)

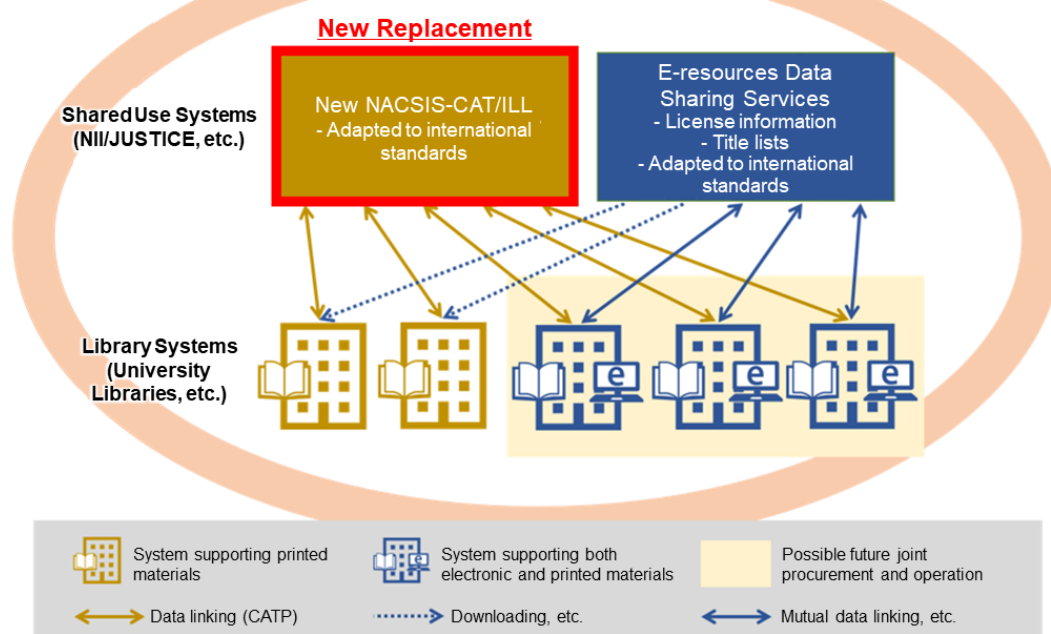


Figure 1: Library System Network and the Current Replacement

[Towards Internationalization]

By using an international packaged system as the base system for NACSIS-CAT, the metadata managed internally by NACSIS-CAT/ILL maintains interoperability with MARC21 rather than CATP. One of the benefits of this approach is that it guarantees future extensibility and universality for the system. In addition, the Z39.50 gateway feature, an outdated standard from before the popularization of the Web, was shut down, and in its place an SRU (Search/Retrieve via URL) gateway feature, the successor standard that operates over HTTP/HTTPS, was launched.

Going forward, the Future Committee will also consider applying the 2018 edition of the Nippon Cataloging Rules (NCR2018) to NACSIS-CAT/ILL⁷. NCR2018 is compatible with RDA (Resource Description and Access), the international standard for cataloging rule that is currently undergoing consideration.

By aligning the metadata format, cataloging rules and methods of data provision with international standards, it will be possible for existing NACSIS-CAT/ILL participating institutions to seamlessly utilize metadata from Japan and overseas, and the valuable bibliographic, archival and source data related to Japanese education and research which has been accumulated by NACSIS-CAT/ILL to date will be available for utilization by institutions around the world. As a result, NACSIS-CAT/ILL is expected to become a significant foundation supporting Japanese research around the world.

As a piece of academic information infrastructure jointly developed with participating institutions over a period of nearly 40 years since 1984, NACSIS-CAT /ILL took a new step towards internationalization on January 31, 2023.

[Related Links]

- NII Cataloging Information Service | <https://contents.nii.ac.jp/en/catill>
- Future Scholarly Information Systems Committee | <https://contents.nii.ac.jp/en/korekara>
- NII News Release in starting the replacement | <https://www.nii.ac.jp/en/news/release/2021/0617.html>
- Kinokuniya Company Ltd. Press Release | <https://corp.kinokuniya.co.jp/press-20230330/>
- OCLC Press Release | <https://oclc.org/press-release-20230330>

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- (*1) CATP (Cataloging information Access & Transfer Protocol) refers to a protocol that designates how clients and servers exchange messages on NACSIS-CAT/ILL. Refer to the following URL for details: https://contents.nii.ac.jp/en/catill/manuals/system/cat_ill/client
- (*2) MARC21 is an informational exchange format for cataloging data that coordinates the US and Canadian MARC formats (USMARC and Can MARC). MARC21 was created in 1997 as a result of coordination between the US and Canada. In June 2004 UK libraries transitioned from UKMARC to MARC21, and in Japan, the National Diet Library has been providing the JAPAN/MARC MARC21 format since January 2012.
(Editorial Committee on the Glossary of the Japan Society of Library and Information Science. Dictionary of Library and Information Science Terms, Maruzen Publishing, 2023, pages 235-236)
- (*3) The Future Scholarly Information Systems Committee was formed under the Council for Promoting Collaboration between University Libraries and the National Institute of Informatics. The committee is in charge of planning for enhancement of a union catalog database covering electronic information resources and advancement of activities for collective development, management, sharing, and provision of the infrastructure of the academic information resources. Refer to the following URL for details: <https://contents.nii.ac.jp/en/korekara>
- (*4) The Council for Promoting Collaboration Between University Libraries and the National Institute of Informatics was established with the aim of securing and further strengthening the development of academic information essential to Japanese universities and other educational and research institutions, and helps promote coordination and cooperation between public and private university libraries and the National Institute of Informatics. Refer to the following URL for details: <https://contents.nii.ac.jp/cpc/>
- (*5) CBS (Controlled Bibliographic Service) is one of the components that make up the Syndeo suite of metadata infrastructure services from OCLC. Syndeo is a service brand of OCLC that responds to the integrated cataloging and resource sharing network needs of countries and regions. It provides tools, content components and metadata management services based on needs. Refer to the following URL for details: <https://cdm15003.contentdm.oclc.org/digital/collection/p15003coll6/id/1438>
- (*6) OCLC (OCLC, Inc.) is a global library community that provides various services to libraries around the world as a non-profit membership-based library services organization. Its members include various national libraries such as the Library of Congress, British Library and National Diet Library, the libraries of major universities including Harvard, Stanford, Oxford and Cambridge, and public institutions such as NASA, the Smithsonian Institution, the Metropolitan Museum of Art and the World Bank. Over 48,540 libraries in some 140 countries and regions around the world use its services (as of July 2021). Refer to the following URL for details:
<https://www.oclc.org/en/home.html>
<https://mirai.kinokuniya.co.jp/catalog/oclc-about>
- (*7) Check the following URL for public comments on proposed bylaws for the application of NCR2018: <https://contents.nii.ac.jp/en/korekara/documents>