# Determining
# Staff Cost Savings Using
# the NCIP Calculator

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## Introduction

The NISO Circulation Interchange Protocol (NCIP) is a technical standard that enables a library's circulation system to interact with one or more other circulation systems, with its resource sharing system, and/or with its self-service system.

This paper illustrates how libraries can benefit from implementing NCIP between their resource sharing and circulation systems by describing several NCIP implementations. The paper provides a tool for individuals to measure potential staff cost savings using NCIP. The paper and calculator will help state librarians, statewide resource sharing managers, library directors, and resource sharing staff to understand how implementing NCIP will streamline library workflow and reduce staff costs. Finally, the paper provides an overview of the standard and associated profiles, discusses how the standard and profiles help streamline a library's workflow, and summarizes library activities the standard does not support.

## What is NCIP?

NCIP is a technical standard, or communications protocol, approved by the National Information Standards Organization (NISO). It is formally known as ANSI/NISO Z39.83-2008, NISO Circulation Interchange Protocol, Parts 1 and 2. Version 2, approved in 2008, brought enhanced extensibility, improved self-service and error handling, and

addressed issues that surrounded the first version of the standard. Version 2 includes two parts:

- ANSI/NISO Z39.83-1 - 2008 NISO Circulation Interchange - Part 1: Protocol

  This document describes a protocol that defines the exchange of messages between and among computer-based applications to enable them to perform the functions necessary to lend and borrow items, to provide controlled access to electronic resources, and to facilitate co-operative management of these functions.

- ANSI/NISO Z39.83-2 - 2008 NISO Circulation Interchange Protocol -  Part 2: Implementation Profile 1

  This document defines a practical implementation structure for the NISO Circulation Interchange Part 1: Protocol.

The standard defines and specifies the messages and data elements needed to facilitate interoperability between dissimilar circulation systems in a consortium or library group. The standard assumes that the consortium has existing agreements to cooperate and share materials using a circulation-based model.   NCIP also streamlines resource sharing within a library as it permits the library's resource sharing or interlibrary loan (ILL) system to interact with its local circulation system. Finally, the standard permits a library's self-service kiosk to interact with its circulation system.

The NCIP protocol includes 46 messages; each message has an initiating query (for example, from the ILL system to the circulation system) and a response (e.g., from the circulation system back to the ILL system). Another way of looking at NCIP messages is based on their behavior. There are three significant types of behaviors:

- Inquiries or lookups: Examples: What is the name associated with ID 987654321? How many books does the patron have checked out? What are their titles?

- Actions: Examples: Authenticate the user. Check out this item. Place a reserve on this title. Return this item. Register this individual as a new user.

- Notifications: Examples: The ILL system informs the circulation system that the item has been checked in. The ILL system informs the circulation system that the loaned item has been returned.

The standard is maintained by the NCIP Standards Committee (NCIP-SC), formerly the NCIP Implementation Group. Through in-person meetings and monthly conference calls, the group reviews reported bugs and enhancement requests, plans educational activities to promote and publicize the standard, and serves as an advisory body to the NCIP Maintenance Agency.

# Implementing NCIP: Case Studies

East Hampton, Connecticut Public Library implemented NCIP between reQuest, an SHAREit system, and its local circulation system, VERSO. Both systems are provided by Auto-Graphics, Inc. Library Director Sue Berescik commented:

*"Roughly speaking, CILL has allowed us to reduce the amount of time we spend on ILL borrowing and lending requests by 55.5 percent, while increasing our ILL volume from 1,472 requests in 2007 to 2,449 requests in 2009, or a 66 percent increase. Our library staff would not have been able to handle the significant increase in ILL requests without CILL. We continue to see the greatest staff time savings on the borrowing side. End-to-end, borrowing supported by CILL takes 61percent less time to execute than those that require staff intervention."*[i]

Berescik also reported that the efficiencies provided by CILL in the reduction of the number of steps to complete ILL transactions has allowed staff to provide less 'on-system' time managing interlibrary loan requests:

- Before CILL, about 20 of 24 allocated staff hours per week were spent on interlibrary loan, or 83.3 percent of the allocated hours.

- After CILL, five (5) of 18 allocated staff hours per week are spent on interlibrary loan, or just 27.8 percent of the allocated hours.

She concluded:

*"Overall, CILL has provided us with time savings both in the form of fewer hours and a lower percentage of total hours spent on ILL. This has provided us with the opportunity to divert resources to supporting public programs, person-to-person services, and both traditional and technological outreach efforts."*[ii]

Vernon Parish Library in Louisiana implemented NCIP between LoanSHARK, a SHAREit system, and its circulation system, The Library Corporation's (TLC) Library.Solution.

According to Howard Coy, Library Director, the implementation process was drawn out. Vernon Parish first began working with TLC in January, 2007 and, in March, 2007, was given a "realistic" timeline of three (3) months.

However, Vernon Parish didn't begin using NCIP in a production mode until February, 2010. This extended timetable illustrates the complexity of a library working with two vendors, each with different development schedules.

On the borrowing side, NCIP adds a bibliographic record of borrowed item to the circulation database. The circulation system automatically removes the records when the loaned item has been returned, though this step is outside of the NCIP standard but is a great workflow enhancement. The patron's circulation record now shows complete

title/author information rather than brief, and possibly inaccurate, information entered by a staff member in the pre-NCIP workflow.

The time to process an ILL transaction is now *"a fraction of the time it once took."* Although Vernon Parish did not quantify the staff cost savings it gained, it is possible to estimate those savings.

In 2009 Vernon Parish borrowed an average of 43 items per month, or 516 items annually.  Based on an estimate of 10 minutes to process a borrowing request using the pre-NCIP workflow, and NCIP reduced processing time by 80 percent, Vernon Parish saved 69 hours, or approximately one-quarter of a staff position.

If the ILL staff members reduced their processing time by 90 percent, Vernon Parish would have saved 77 hours, or approximately one-third of a staff position. Vernon Parish has implemented only the borrowing side of NCIP because TLC has no immediate plans to implement the NCIP messages required to support lending.

Howard Coy summed up their NCIP implementation with the following:

*"I don't know how we functioned so long without NCIP."*[iii]

When the Boston Library Consortium implemented the NCIP-compliant URSA direct consortial borrowing system in 2003, SirsiDynix estimated that an NCIP-enabled circulation system reduced costs by up to 75 percent, or less than $8 per transaction compared with the average of nearly $30 for a mediated interlibrary loan transaction.[iv]  These

estimates include staff, communication, delivery, and other direct costs associated with the transaction.

## Challenges Implementing NCIP

Once a state library or individual library decides to implement NCIP, a number of challenges may need to be overcome.

At the state level, the ILL system may support only a few of the NCIP messages included in the Circulation Interlibrary Loan Interaction (CILL) Profile *(see page 14)*. Some ILL systems support only the patron authentication messages, so staff cost savings will be minimal as staff members will still need to perform duplicative steps to process ILL requests once the patron has been authenticated. Some ILL systems may support the resource sharing core messages, but not the additional messages in the CILL Profile, again, minimizing workflow efficiencies.

The local library may not have an NCIP-compliant circulation system. Many integrated library system (ILS) vendors charge an additional fee for the NCIP module, and the library may not have funds to pay for the upgrade. If a local library has an NCIP-compliant circulation system it may be using an ILL system that is not NCIP-compliant. Some ILS vendors have opted not to implement NCIP or complete testing with other NCIP implementers. In these cases, the library will never be able to improve their ILL workflow.

Most ILS vendors have implemented NCIP as a responder only. That is, the circulation system is unable to send an NCIP message to the resource sharing system, but only responds to a query from the resource sharing system. Having the circulation system function as a responder only has significant limitations in ILL workflow.

For example, a patron will need to return the borrowed item to the ILL office, not to the circulation desk. If she returns the item to the circulation desk, circulation staff would discharge the item from the patron's record, but the circulation system could not send an NCIP message to the ILL system asking the ILL system to update the ILL request to Returned. The circulation staff member would need to ask the ILL staff member to update the ILL request manually.

Similarly, an item loaned by the local library will need to be returned to the ILL department rather than to circulation desk as the ILL system must send the NCIP message to the circulation system directing the circulation system to check in the item from the borrowing library. The inability for the circulation system to initiate any NCIP messages requires library staff to modify internal procedures so that their workflow fits the limitations of how the circulation system implemented NCIP rather than the NCIP implementation supporting their current workflow.

## Staff Cost Savings Using NCIP

The cost savings enjoyed by Vernon Parish Library and East Hampton Public Library may be greater or lesser than what other libraries have realized. But, their averages will be used to illustrate the potential savings that can be realized by using the NCIP CILL Profile between a library's resource sharing system and its circulation system.

To illustrate the potential staff cost savings on a statewide level, the following chart estimates staff cost savings for several states using the SHAREit system.

Several scenarios are provided: all libraries using the ILL system have NCIP-compliant circulation systems, 75 percent of the libraries are NCIP-compliant, 50 percent are NCIP-compliant, and finally, just 25 percent of the libraries have NCIP-compliant circulation systems.

These estimates also assume that a staff member spends ten (10) minutes to process one borrowing or lending request. These estimates also assume a conservative 50 percent savings in staff time processing borrowing and lending requests after NCIP has been implemented (or now 5 minutes per request).

The savings will be significantly greater if libraries realized a 60 or 75 percent savings in the amount of time a staff member spends processing one ILL request.

## Staff Time Savings in Hours

| Statewide System | 2009-2010 Filled Borrowing and Lending Requests | Number of Hours to Process ILL Requests Statewide Without NCIP | Number of Hours to Process ILL Requests – 25% NCIP Circ. Systems | Number of Hours to Process ILL Requests – 50% NCIP Circ. Systems | Number of Hours to Process ILL Requests – 75% NCIP Circ. Systems | Number of Hours to Process ILL Requests – 100% NCIP Circ. Systems |
|---|---|---|---|---|---|---|
| Connecticut | 193,284 | 32,214 | 28,187 | 24,161 | 20,134 | 16,107 |
| Kansas | 153,049 | 25,508 | 22,320 | 19,131 | 15,943 | 12,754 |
| Louisiana | 136,676 | 22,779 | 19,932 | 17,085 | 14,237 | 11,390 |
| New Jersey | 167,971 | 27,995 | 24,496 | 20,996 | 17,497 | 13,998 |
| Wisconsin | 188,340 | 31,390 | 27,466 | 23,543 | 19,619 | 15,695 |

These estimates illustrate the significant savings in staff time possible in a state even if only one-quarter of the libraries using an NCIP-compliant resource sharing system have an NCIP-compliant circulation system. Savings may be even greater in libraries with complicated or labor-intensive procedures, ones that take more than ten minutes to process one request.
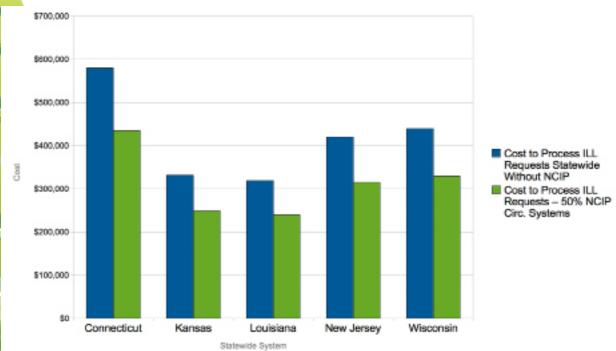
Like East Hampton Public Library, any staff cost savings at the local level will likely be used to have existing staff perform other library functions. These examples do not assume or imply that any staff cost savings will result in layoffs or terminations of individuals processing ILL requests, a fear expressed by more than one ILL staff member.

## Staff Cost Savings

| Statewide System | Hourly Cost for Library Technician | Hours to Process ILL Requests Statewide Without NCIP | Cost to Process ILL Requests Statewide Without NCIP | Hours to Process ILL Requests – 50% NCIP Circ. Systems | Cost to Process ILL Requests – 50% NCIP Circ. Systems | Total Savings With NCIP |
|---|---|---|---|---|---|---|
| Connecticut | $18 | 32,214 | $579,852 | 24,161 | $434,898 | $144,954 |
| Kansas | $13 | 25,508 | $331,604 | 19,131 | $248,703 | $82,901 |
| Louisiana | $14 | 22,779 | $318,906 | 17,085 | $239,190 | $79,716 |
| New Jersey | $15 | 27,995 | $419,925 | 20,996 | $314,940 | $104,985 |
| Wisconsin | $14 | 31,390 | $439,460 | 23,543 | $329,602 | $109,858 |

\* Hourly Rates were obtained from The Bureau of Labor Statistics (BLS) and then rounded to the nearest whole dollar. Occupation: Library Technicians (SOC code 254031) Period: May 2010 [v]

## Staff Cost to Process ILL Requests Comparison

# NCIP Core Messages

In an effort to simplify implementation, address the perceived barriers to implementing Version 1, and to facilitate support of a common, baseline workflow, in 2009 the NCIP Standards Committee developed the core message set. The Standards Committee identified which NCIP messages had already been implemented by vendors, and from that list, defined a core message set for resource sharing and a slightly different core message set for self-service applications. For the resource sharing core message set, the resource sharing system always sends the messages to the circulation system and the circulation system always responds to the messages. This decision was based on the way vendors had already implemented the core messages.

The nine messages in the resource sharing core message set include:

- Accept Item
- Cancel Request Item
- Check In Item
- Check Out Item
- Lookup Item
- Lookup User
- Recall Item
- Renew Item
- Request Item

# NCIP Application Profiles

An Application Profile describes how the NCIP protocol is used to support a specific environment or process with a given set of practices and policies. Each application profile prescribes the specific set of NCIP messages needed to support that application.

Three key application profiles support the NCIP protocol: circulation/ interlibrary loan (CILL) interaction, direct consortial borrowing (DCB), and self-service circulation.

## Circulation/interlibrary loan interaction (CILL)

NCIP supports the linking of a library's circulation system and its interlibrary loan system. Without NCIP, a library staff member must check out an item the library is loaning on its circulation system and then update the request in the ILL system to indicate the item has been shipped. On the borrowing side, a library staff member may need to create a temporary bibliographic and item record manually in the local circulation system to be able to check out the borrowed item to the patron. By using NCIP the library's circulation system and its ILL system can exchange information about patrons and items automatically — eliminating duplicate data entry, lessening manual intervention, and ensuring consistency in loan information, bibliographic information, and transaction updates.

### Direct Consortial Borrowing (DCB)

Some library consortia now share materials among members and track them as circulation transactions. In this way the individual circulation systems record and track loans without the need of a separate interlibrary loan system. To-date DCB has been implemented using a third-party software application interfacing between disparate circulation systems. The DCB application manages transactions and uses NCIP messages to communicate with the local circulation systems.

### Self Service

Libraries provide self-service online circulation systems to allow patrons to do their own checkout and status tracking. Similar to SIP2, NCIP also supports self-service application, including an offline recovery mode.

## The CILL Profile and the Interlibrary Loan Workflow

The CILL Profile defines the complete set of messages needed to manage interlibrary loan transactions between a library's ILL system and its circulation system. Implementing NCIP will reduce the number of duplicative steps a staff member needs to take to complete borrowing and lending transactions on each system.

On the borrowing side, when a patron logs into the ILL system, the ILL system sends an NCIP message to the circulation system to validate the

status of the individual. If the patron is not blocked, she can search, find records, and submit ILL requests. When the requested item arrives at the borrowing library, the ILL system sends an NCIP message to the circulation system to create a temporary bibliographic and item record.

Depending on local policy, the ILL or circulation system notifies the patron. The circulation staff member checks out the item to the patron. The patron returns the item to the ILL department where the ILL staff member updates the ILL request to Returned, which triggers the NCIP message to the circulation system to discharge the item from the patron.

Depending on the local circulation system, the temporary bibliographic and item record may be removed or suppressed, but this functionality is outside the NCIP standard. Additional NCIP messages support renewals, recalls, overdues, and all other typical borrowing functions.

On the lending side, a new request is received in the ILL system and a staff member retrieves the item from the stacks or branch library. When the ILL staff member updates the ILL transaction to Shipped, an NCIP message is sent to the circulation system, which checks the item out to the patron, i.e., the borrowing library.

When the item is returned to the ILL department and the staff member updates the ILL request to Checked In, the ILL system sends an NCIP message to the circulation system to discharge the item from the

borrowing library. Additional NCIP messages support other lending functions such as recalling an item, sending an overdue notice, and sending fines or fees.

A typical, and manual, borrowing workflow may include 22 or more steps. With NCIP, the number of borrowing steps is reduced by 50 percent to just 11 steps. On the lending side, the traditional manual workflow of 14 steps is reduced to eight (8) steps using NCIP, or 42 percent fewer steps. See Table 1 for a summary of the traditional (non-NCIP) and NCIP-enabled workflows. The specific steps each ILL staff member performs may vary depending on local policies and workflow. However the table reflects a typical workflow managing borrowing and lending transactions.

## What NCIP does not Support

The standard was written with one basic assumption – a known item. Thus, the standard does not support the discovery of an item. Other standards, such as Z39.50, support the discovery process. NCIP does not require libraries to lend items; whether a specific item is available to send to the requesting or borrowing library is local library or consortium policy.

NCIP does not require libraries to change their policies such as the length of the loan period, whether renewals are granted, whether fees are charged, or how to handle lost or damaged items. Those policies

are set by individual lenders or may be set by a consortium.

From a technical perspective, the base standard, Part 1, does not dictate how messages are conveyed. Part 2, the Implementation Profile, describe how messages are encoded (XML) and transmitted (HTTP, HTTPS, or TCP/IP). Vendors who have implemented NCIP have all followed Implementation Profile 1, but it is not a requirement of the base standard.

## Calculating Your Staff Cost Savings Using the NCIP Savings Calculator

Developed by Auto-Graphics, the NCIP Savings Calculator permits librarians at the state or local level to estimate the number of staff hours one or more libraries can save when implementing NCIP between the resource sharing system and one or more local circulation systems.

Two calculators are provided: one for individual libraries and the second for statewide calculations.

Using the individual library calculator, a user simply enters the hourly rate, the number of borrowing and/or lending transactions, and selects the number of minutes to process one borrowing and one lending request. The calculator then displays the number of hours staff members spend processing ILL requests, the estimated number of hours worked annually using an NCIP-compliant system, and the staff cost

savings. This calculation assumes a 50 percent savings in the amount of time to process one ILL request. The calculator totals the staff cost savings for borrowing and lending requests.

The following example illustrates how the NCIP Savings Calculator estimates staff cost savings. A library processed 3,444 borrowing transactions and 3,331 lending transactions in the previous fiscal year. If 10 minutes each were saved in processing borrowing and in processing lending transactions, the library would realize a savings of approximately one-third of a staff position, and could assign that staff member other tasks. The library would also realize a staff cost savings of $14,115, assuming an hourly rate of $25.00.

The Statewide Calculator is a tool for state librarians and others at the statewide (or consortial) level to determine potential statewide (or consortium-wide) savings. It calculates staff cost savings if 25, 50, 75, or 100 percent of libraries have NCIP-compliant circulation systems interacting with the state's NCIP-compliant resource sharing system.

## Conclusion

Implementing NCIP saves significant staff time—at the local library and aggregated at the statewide level. The saved staff time directly translates into cost savings for individual libraries and frees staff to perform other library tasks.

Patron satisfaction is increased because libraries are obtaining needed items more quickly as a result of more efficient and less labor-intensive workflow. If the state has funded the resource sharing system, the aggregated savings can be quantified and will validate a substantial return on investment for the state.

For example, if just 25 percent of the libraries in New Jersey implemented NCIP in their local circulation systems, the number of hours library staff members spend processing requests would drop from approximately 28,000 to 24,500 hours, or a 13 percent reduction. If one-half of New Jersey libraries used NCIP with JerseyCAT, the Auto-Graphics' Resource Sharing system, the total number of hours required to process ILL requests would drop by 25 percent.

Savings like these are the most compelling reason to implement the NISO Circulation Interchange Protocol.

To learn more about how implementing NCIP can achieve significant time and cost savings, please visit the NCIP Savings Calculator at - [www4.auto-graphics.com/ncipsavingscalculator](www4.auto-graphics.com/ncipsavingscalculator).

Developed by Auto-Graphics, Inc., the NCIP Savings Calculator permits librarians at the state or local level to estimate the number of staff hours, and thus staff costs, one or more libraries can save when implementing the NISO Circulation Interchange Protocol (NCIP) between the resource sharing system and one or more local circulation systems.

Two calculators are provided: one for individual libraries and the second for statewide calculations.

# End Notes

i. East Hampton Public Library Realizes a 75% Reduction in the Number of Allocated Staff Hours to Perform ILL Tasks after Implementing Auto-Graphics' Circulation-Interlibrary Loan Link (CILL). http://www4.auto-graphics.com/solutions/agentresourcesharing/cs_EHPL.htm

ii. Ibid.

iii. Howard Coy, "Vernon Parish Library NCIP Implementation," Auto-Graphics Library Management Platform User Group Meeting, 2011, PowerPoint, slide 13.

iv. Michael Rogers, Boston Library Consortium Launches NCIP ILL Service, Library Journal, May 1, 2003. http://www.libraryjournal.com/article/CA292602.html

v. This United States Department of Labor Bureau of Labor Statistics. Hourly figures were rounded to the nearest whole dollar. http://www.bls.gov/oes/2009/may/oes254021.htm

## For More Information

**NCIP Standard**

Part 1 - http://www.niso.org/kst/reports/standards?step=2&gid%3Austring%3Aiso-8859-1=&project_key%3Austring%3Aiso-8859-1=2d46d484a625029ef698b96b7537c334348c8eb8

Part 2 - http://www.niso.org/kst/reports/standards?step=2&gid%3Austring%3Aiso-8859-1=&project_key%3Austring%3Aiso-8859-1=599708d764b8a1cccb7fad45d74ec70c1b7cb235

**NCIP Standards Committee website**

http://www.ncip.info

# Borrowing Process Without / With NCIP

| BORROWING | | |
|---|---|---|
| **Without NCIP** | | **With NCIP** |
| 1 | Patron signs into local ILL system | Patron authenticates against local ILS, is linked to the ILL system, searches, finds item, places request, and request is sent to the first lender based on lenders selected by the borrowing library |
| 2 | Patron keys in bib. Info into Web-based ILL request form | |
| 3 | Patron submits request to ILL office | |
| 4 | Staff search and find locations | |
| 5 | Staff create ILL request and send to first lender | |
| 6 | Staff receive item | Staff receive item |
| 7 | Staff update the ILL system to Received | Staff update the ILL system to Received which creates a temporary bib/item record in the local OPAC & places it on hold for the patron. The circ. system emails a notice to the patron. |
| 8 | Staff create temporary bibliographic and item record in circ system | |
| 9 | Staff place a circulation hold/reserve on the item for the patron | |
| 10 | ILL system emails a notice to the patron | |
| 11 | Staff deliver the item to the pickup location | Staff deliver the item to the pickup location |

| BORROWING | | |
|---|---|---|
| | **Without NCIP** | **With NCIP** |
| 12 | Patron picks up the item at the pickup location | Patron picks up the item at pickup location |
| 13 | Staff check out the item on circ. system. Due date assigned by local circ. system. | Staff check out the item to the patron, using the due date assigned by the lender |
| 14 | Patron requests a renewal at the ILL office | Patron requests renewal. ILL system sends a renewal request to the lending library. |
| 15 | Staff updates ILL system to Request Renewal | |
| 16 | Staff receive new due date via ILL system | Circ. system updated with new due date and emails patron with the new due date |
| 17 | Staff notify patron of new due date | |
| 18 | Staff update the circ. system with the new due date | |
| 19 | Patron returns the item to ILL or circ. | Patron returns the item to ILL or circ. |
| 20 | Staff check in the item from circulation system | Staff update the ILL system to Returned which discharges the item from the circ. system. |
| 21 | Staff update ILL system to Returned | |
| 22 | Staff ship the item back to the lending library | Staff ship the item back to the lending library |
| **# of steps** | **22** | **11** |

# Lending Process Without / With NCIP

| LENDING | | |
|---|---|---|
| **Without NCIP** | | **With NCIP** |
| 1 | Lender prints off request | |
| 2 | Staff check OPAC and write location & call number on request if not already included on request | Lender receives request for available item, ILL system places a hold on item, and the circ. system prints a pick slip |
| 3 | Staff retrieve item from stacks | Staff retrieve item from stacks |
| 4 | Staff update the ILL system to Will Supply | |
| 5 | Staff check out item on circ. system | Staff update the ILL system to Shipped; ILL system sends check out item message to the circulation system; circulation system checks out item, respecting the due date from the ILL system |
| 6 | Staff update the ILL system to Shipped and assign a due date, which may be different from the circ. system's due date | |
| 7 | Staff place a bookband on the item with the ILL system-assigned due date | Staff place a bookband on the item with the circulation system-assigned due date |
| 8 | Staff ship item | Staff ship item |
| 9 | Lender receives renewal request on the ILL system | Lender's circulation system receives renewal request and grants renewal based on local rules. Lender's circulation system sends "renewal granted" to the borrower's ILL system, which updates its circ. system with the new due date. |

| LENDING | | |
|---|---|---|
| | **Without NCIP** | **With NCIP** |
| 10 | Staff check the circ. system and renew the item | |
| 11 | Staff update the ILL request on the ILL system to Renewed | |
| 12 | Staff receive the returned item | Staff receive the returned item |
| 13 | Staff update the ILL system to Checked In | Staff check in the item on the ILL system, which updates the circ system to Checked In |
| 14 | Staff discharge the item on the circ. system | |
| **# of steps** | **14** | **8** |

## About the Author

**Mary E. Jackson**

Mary E. Jackson is an internationally recognized authority on interlibrary loan, document delivery, and resource sharing issues. She has published over 100 books, articles, reports, books reviews and columns; has consulted for a wide variety of libraries, consortia, and networks; and has given presentations and workshops in the U.S., Canada and over 15 other countries. As the Product Manager for Resource Sharing, Ms. Jackson is responsible for leading the development efforts for Auto-Graphics' SHAREit™ product.

Prior to joining Auto-Graphics, Ms. Jackson spent 13 years with the Association of Research Libraries (ARL) in Washington, DC in a variety of roles, most recently as the LibQUAL+® Services Manager and the Director of Collections and Access.  Prior to her affiliation with ARL, Ms. Jackson managed the Interlibrary Loan Department and served in other positions at the University of Pennsylvania Libraries in Philadelphia, Pennsylvania.   Ms. Jackson holds a Bachelor of Arts from Carroll College (now Carroll University) and a Master of Science (MS) from Drexel University.