

NCIP

Circulation/ Interlibrary Loan Interaction: Lending Agency Application Profile

An Application Profile to support ANSI/NISO Z39.83-200x

Abstract: This application profile is designed to provide one coherent, agreed-upon set of behaviors, options, and parameters that support the exchange of messages between circulation and Interlibrary Loan (ILL) applications on the lending side of the Interlibrary Loan transaction.

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1. Introduction

The NCIP Circulation/Interlibrary Loan Interaction: Lending Agency Profile of the NISO Circulation Interchange Protocol (NCIP) is designed to provide one coherent, agreed-upon set of behaviors, options, and parameters to support the exchange of messages between circulation and Interlibrary Loan (ILL) applications on the lending side of the interlibrary loan transaction.

The base standard that enables this communication is NCIP. This profile is based on that protocol, as well as the supporting NCIP Implementation Profile 1.

There is a parallel profile that defines the exchange of messages between a borrowing agency's circulation and Interlibrary Loan applications.

1.1 Profile Constraints

This profile imposes no specific requirements on the means by which the Interlibrary Loan application communicates with its peer Interlibrary Loan applications in the external environment. This profile has, however, been prepared with the assumption that many of the events described in the Event Table (Section 7.6 of this document) are based on the receipt of messages as specified by the ISO ILL Protocol and the IPIG Profile for the ISO ILL Protocol.

2. Description of Application Area

This profile is designed to support the exchange of messages between a lending agency's circulation and Interlibrary Loan (ILL) applications. Because ILL and circulation share many of the same functions such as tracking loaned items, sending overdue notices to users, etc., libraries are seeking applications that eliminate duplicate record-keeping and streamline functions, and thus, reduce workload for their staff.

3. Scope

Standard interlibrary loan transactions involve two partners: a borrower and a lender. This profile deals only with the lending agency's requirements for the interaction between the circulation and Interlibrary Loan applications.

Both the circulation and Interlibrary Loan applications deal with items from their own agency.

This profile does not mandate the mechanism by which the lending agency's Interlibrary Loan application interoperates with external Interlibrary Loan applications. This profile does assume, however, that many events described in the Event Table (Section 7.6 of this document) are ones supported by the ISO ILL Protocol and the IPIG Profile for the ISO ILL Protocol. ILL applications that do not conform to the ISO ILL Protocol or IPIG

Profile may interoperate with circulation applications using this profile as long as the ILL application supports the typical set of events of an ILL transaction.

Processing of an incoming ILL lending request begins with local determination of Item ownership and availability. The decision of which application makes that determination is out of scope of this profile. The means by which this is done (proprietary search mechanisms, Z39.50, etc.) is similarly out of scope.

4. References

- NISO Z39.83-200x, NISO Circulation Interchange Protocol
- Implementation Profile 1, a Profile of the NISO Circulation Interchange Protocol
- ISO 10160:1997, Information and Documentation - Open Systems Interconnection - Interlibrary Loan Application Service Definition
- ISO 10161-1:1997, Information and Documentation - Open Systems Interconnection - Interlibrary Loan Application Protocol Specification
- Interlibrary Loan Protocol Implementors Group. IPIG Profile for the ISO ILL Protocol, Version 2, 10 April 2001
- NCIP Circulation/Interlibrary Loan Interaction: Borrowing Agency Application Profile

5. Definitions

To clarify the difference between similar but not identical terminology used in this profile and the ISO ILL Protocol, the terms “Borrower” and “Borrowing” are used in preference to the NCIP term of “Requester” or the ISO ILL term of “Requester.” Likewise, the terms “Lender” and “Lending” are used in preference to the NCIP term of “Responder” or the ISO ILL term of “Responder.”

Borrower	The agency that makes use of the ILL and circulation applications to facilitate the management and circulation to its users of items obtained via ILL.
Borrowing Agency	See Borrower.
Circulation Application	The application that manages the circulation of items.
ILL Application	The application that manages the exchange of Interlibrary Loan messages between the borrower and the lender.
Item	An item received from a lender in response to an ILL request made by the borrower.
Lender	The agency that supplies an item in response an ILL request and manages the circulation of that item.
Lending Agency	See Lender.
Request	A request for a loan, copy, or other service

initiated by the borrowing agency and answered by the lending agency.

User

A user at the borrowing agency who places an ILL request.

6. Conformance

An application that claims conformance to a role SHALL, while operating according to this profile conform to the NISO Circulation Interchange Protocol and the Implementation Profile 1.

7. Profile Specification

7.1 Profile Description

This profile assumes a lending agency using circulation and Interlibrary Loan applications that have no proprietary means of communicating. The need for a communication standard may be unnecessary where the circulation application and Interlibrary Loan application are managed and controlled by the lending agency. However, this profile may enhance interoperability in agencies where the two applications are supplied by a single vendor, but do not interoperate using a proprietary protocol.

The primary assumption of this profile is that the circulation applications and Interlibrary Loan applications each play long-standing, well-understood roles in the ILL environment. This profile describes a specific implementation of the NISO Circulation Interchange Protocol that supports this traditional division of labor. The circulation application is responsible for the determination of and adherence to the local circulation policy. The ILL application is responsible for receiving ILL requests and other messaging from external sources, communicating appropriate messages to the local circulation application, and informing those external sources of decisions and actions with regard to their requests. Some system implementers or their customers may find value in a model that provides an alternative to the traditional roles. They are encouraged to produce profiles that support those approaches.

7.2 Participating Applications

Two applications are assumed in this profile: the circulation application and the Interlibrary Loan application.

The circulation application operates on behalf of the lending agency. It manages the loan of local items, including issuing recall notices to the ILL application, sending overdue notices, collecting overdue fines and ILL fees on behalf of the ILL application etc.

The Interlibrary Loan application also operates on behalf of the lending agency. This application manages ILL requests, including the setting of ILL lending fees, transmitting overdue notices to the borrowing agency's Interlibrary Loan application, etc.

7.3 Business Rules

The Interlibrary Loan application defines and applies its business rules regarding ILL requests, including determining whether an ILL request should be filled, the amount of the fee for filling the request, etc.

Transfer of control moves to the circulation application at the point at which the Item is ready to be checked out. The circulation application defines and applies its business rules regarding the circulation of items to users. Depending on local policy, the item may be checked out to the lending agency's ILL department or the library that initiated the ILL request. These rules may include setting the period for the loan, determining use restrictions, permitting renewals, etc. Again depending on local policy, either circulation or ILL staff may be responsible for shipment of the Item.

7.4 Management of User and Staff User Interaction

The Interlibrary Loan application manages the Interlibrary Loan staff user interface.

The circulation application manages the circulation staff user interface.

7.5 Required Components

7.5.1 Required and Optional Services

The following table lists required and optional services, messages, and responses required by this profile. Agencies that do not allow users to pickup materials at third locations (PickUp Agencies) do not need the Accept Item message pair. NCIP services not listed are not used by this profile.

Service	Required (R) or Optional (O)
Accept Item	R
Cancel Request Item	R
Check In Item	R
Circulation Status Updated	R
Cancel Request Item	R
Check In Item	R
Circulation Status Change Reported	R
Item Checked In	R
Item Checked Out	R
Item Renewed	R
Item Request Cancelled	R
Item Shipped	R
Item Updated	R
Recall Item	R
Renew Item	R

Service	Required (R) or Optional (O)
Report Circulation Status Change	R
Request Item	R
Update Item	R
Update Request Item	R
Create User Fiscal Transaction	O
Send User Notice	O

7.5.2 Required and Conditionally Required Data Elements

The following table defines those Messages/Data Elements that are Optional in the NCIP Protocol or the Implementation Profile 1, but are Mandatory or Conditional in this profile.

Message	Profile Required Elements	Conditions
Messages in which the elements are required.	Data elements, which are optional in the NCIP or Implementation Profile 1, which are required in this profile.	Conditions when the data elements are required.
Request Item Response	Required Fee Amount	If Request Type value is "Estimate."
Request Item Response	Required Fee Amount	If Required Fee Amount exceeds Acknowledged Fee Amount.
Request Item Response	Required Item Use Restriction Type	If item supply requires Acknowledge Item Use and Restriction Type is absent in the initiation message.
Item Checked out	Unique Item Id and Unique Request Id	
Item Shipped	Unique Item Id and Unique Request Id	If initiated by the circulation application.
Item Request Cancelled	Unique Request Id	
Send User Notice	User Notice Details.Overdue Item. Item Details.Unique Item Id and Mandated Action	
Renew Item Response	Date Due	

7.5.3 Enumerated Types

7.6 Event Table

Triggering Event and Event Location	Initiating Application	Service Initiated	Responding Application	Message Constraints
Describe the event that triggers the application to initiate a service and the location of the event in the application architecture.	Specify which application initiates the service that results from the triggering event.	List the service initiated.	Specify which application responds to the service.	Specify requirements for the initiation and response messages such as optional elements that must be included or are not permitted.
Triggering Events				
Below is a list of events that trigger a message in this profile.				
Triggering Event and Event Location	Initiating Application	Service Initiated	Responding Application	Message Constraints
ILL agrees to process the ILL request.	ILL	Request Item	Circulation	See table 2 in Section 11 for how Circulation might respond to this triggering message.
ILL receives a message agreeing to the Required Item Use Restriction Type.	ILL	Update Request Item	Circulation	
ILL receives a message declining the Required Item Use Restriction Type.	ILL	Cancel Request Item	Circulation	
ILL receives a message to cancel an open request.	ILL	Cancel Request Item	Circulation	
The ILL Application's Expiry Timer has triggered, forcing a cancellation of the open request.	ILL	Cancel Request Item	Circulation	NOTE: Support for this behavior is only required when the ILL application claims compliance with the ISO ILL Protocol.
Circulation checks out the Item to the User.	Circulation	Item Checked Out	ILL	This event is appropriate when the material supplied is a loan or other returnable. The "borrower" to whom the Item is checked out is a matter of local practice.
ILL reports that the Item has been shipped.	ILL	Item Shipped	Circulation	
Circulation ships a non-returnable photocopy directly to the Borrower.	Circulation	Item Shipped	ILL	This event is appropriate when the material being supplied is a non-returnable photocopy.

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Triggering Event and Event Location	Initiating Application	Service Initiated	Responding Application	Message Constraints
The hold request for an Item passes it's need -by date, or is determined to be otherwise unobtainable.	Circulation	Item Request Cancelled	ILL	
Circulation recalls an Item.	Circulation	Recall Item	ILL	
An Item on loan becomes overdue.	Circulation	Send User Notice	ILL	Notice Type = "Item Overdue."
ILL sends a renewal request to Circulation.	ILL	Renew Item	Circulation	The response contains either a new due date or a problem statement indicating why the renewal was not granted.
Circulation receives the Item directly from the Borrower.	Circulation	Item Checked In	ILL	
ILL receives the Item from the Borrower.	ILL	Check In Item	Circulation	
ILL receives a message from the Borrower that the Item has been reported lost.	ILL	Report Circulation Status Change	Circulation	
Circulation declares an Item lost as the User never returned the Item.	Circulation	Circulation Status Change Reported	ILL	
ILL alerts Circulation that an Item has been reported damaged.	ILL	Update Item	Circulation	
Circulation discovers that an Item has been damaged.	Circulation	Item Updated	ILL	
ILL receives a damaged Item from the Borrower.	ILL	Update Item	Circulation	
Circulation calculates the ILL fee for filling the ILL request.	Circulation	User Fiscal Transaction Created	ILL	
ILL calculates the ILL fee for filling the ILL request.	ILL	Create User Fiscal Transaction	Circulation	
Circulation Application modifies an existing ILL fee or fine.	Circulation	User Fiscal Transaction Created	ILL	
ILL modifies an existing ILL fee or fine.	ILL	Create User Fiscal Transaction	Circulation	

7.7 Lookup Service Table

No Lookup Services are required for this profile.

8. Transport Protocol

The circulation application SHALL support both of the following transport protocols:

- Direct Transmission over TCP/IP
- HTTPS

The Interlibrary Loan application SHALL support both of the following transport protocols:

- Direct Transmission over TCP/IP
- HTTPS

The selection of the transport protocol by the initiator of a message SHALL govern the transport protocol used by the responder. The responder SHALL respond using the same connection, and therefore the same transport protocol, that was used to send the message.

9. Security and Privacy

All user authentication and authorization is considered out of scope for this profile.

This profile assumes that the ILL and circulation applications whose interactions are described in this profile trust each other. Where the two applications are managed by a single agency, trust may be implicit and a minimum exchange of information may be required to enable the applications to communicate. Situations may arise, however, in which the two applications are not managed by the same agency even though a single agency's staff interact with both the ILL application and the circulation application. In this case preliminary exchange of information will need to be used to allow each application to authenticate and authorize the other. This exchange will require a priori bilateral agreement between the communicating applications and, thus, is out of scope for this profile.

10. Registration of Schemes Used in the Profile

For information about maintenance and registration activities see Appendix G, Designation of Maintenance and Registration Agency, in the NCIP standard.

11. Guidelines for Implementers

The following guidelines do not represent behavior required by this profile. They are offered only as recommended behavior for implementations with ILL applications that comply with the ISO ILL Protocol and the IPIG Profile for the ISO ILL Protocol.

11.1 NCIP Messages emitted by the ILL Application as a Result of Messages Received from External ILL Borrowing Agencies

Incoming APDU	Appropriate NCIP Message to send to Circulation Application	Conditions
ILL-REQUEST	Request Item	
CONDITIONAL-REPLY, Answer=Yes	Update Request Item	
CONDITIONAL-REPLY, Answer=No	Cancel Request Item	
CANCEL	Cancel Request Item	
RENEW	Renew Item	
DAMAGED	Update Item	
LOST	Report Circulation Status Change	

11.2 ISO ILL Protocol Messages Emitted by the ILL Application as the Result of NCIP Messages Received from the Circulation Application

Incoming NCIP Message	Appropriate APDU to send	Conditions
Request Item Response	ILL-ANSWER/Conditional	If (1) Required Fee Amount exceeds Acknowledged Fee Amount; or (2) supply of the item requires an Acknowledge Item Use Restriction Type value that was not included in the initiation message.
Request Item Response	ILL-ANSWER/Unfilled	If Problem is not otherwise handled by one of the other ILL-ANSWER types.
Request Item Response	ILL-ANSWER/Will Supply	If Request Type is Loan, Non-Returnable Copy, or Stack Retrieval and Date Available is present.
Request Item Response	ILL-ANSWER/Hold Placed	If Request Type value is "Hold."
Request Item Response	ILL-ANSWER/Estimate	If Request Type value is "Estimate."
Item Checked Out	SHIPPED	
Item Shipped	SHIPPED	
Item Request Cancelled	ILL-ANSWER/Unfilled	
Recall Item	RECALL	
Send User Notice	OVERDUE	If Notice Type value is "Item Overdue."
Renew Item Response	RENEW-ANSWER/Yes	If response includes Unique Item Id + a new Due Date

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Incoming NCIP Message	Appropriate APDU to send	Conditions
Renew Item Response	RENEW-ANSWER/No	If response includes Problem (which indicates why renewal could not be granted)
Item Checked In	CHECKED-IN	
Circulation Status Change Reported	LOST	If Circulation Status Change Reported values is "Item Reported Lost."
Item Updated	DAMAGED	If Add Item Fields.Physical Condition.Physical Condition Type value is "any."