NCIP

Direct Consortial Borrowing: User Agency Manages Transactions with Proxy Checkout Application Profile

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

Abstract: This application profile describes the functions, applications, and the operating environment in which the agency, which interacts with the user at the point of checkout, manages the initial checkout.

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1.   Introduction

This profile, referred to as the NCIP Direct Consortial Borrowing: User Agency Manages Transaction with Proxy Checkout Application Profile (DCB-4) of the NISO Circulation Interchange Protocol (NCIP) describes the functions, applications, and the operating environment in which the agency which interacts with the user at the point of checkout manages the initial checkout. Following checkout, the user agency manages the remainder of the circulation 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 are three other Direct Consortial Borrowing profiles as follows:

DCB-1	Item Agency Manages the Transaction
DCB-2	User Agency Manages the Transaction
DCB-3	Broker Application Manages Transaction Application Profile

2.   Description of Application Area

Through Direct Consortial Borrowing, users of one agency can request and borrow items from another agency within a consortium. The NCIP facilitates the transfer of user and item data between disparate circulation applications, thereby allowing an agency to manage traffic for non-local users and/or provide local control of items belonging to another agency.

3.   Scope

This profile defines the use of the NISO Circulation Interchange Protocol by a group of libraries to circulate Items to users where the items are not owned (more broadly, controlled) by the library to which the user belongs. This Profile also defines reporting functions (using Notification services) that keep the user's library informed of the events in the circulation of items to its users and that keep the Item's library informed of the status of its item. In this Profile, the user agency manages the majority of the circulation transaction. The agency that interacts with the user at the point of checkout manages the initial checkout. Following checkout, the user agency manages the remainder of the circulation transaction. How funds are distributed after collection is outside of the NCIP protocol.

The User Agency Manages Transactions with Proxy Checkout is suitable for:

•   A consortium whose members employ a union catalog, either physical or virtual, which provides a user requesting interface.
•   A consortium that also offers direct on-site loans to users of other agencies.
•   A consortium concerned with the throughput speed at the point of checkout.

- A consortium where privacy of the end-user information is of primary importance.

4. References

There are no standards or other references beyond those included in the NISO Circulation Interchange Protocol and the Implementation Profile 1.

5. Definitions

In addition to the definitions in the NCIP protocol, this profile further defines:

Event	An indication to an item agency or user agency application that a user or staff user seeks to invoke an NCIP service or, a determination by such an application to invoke an NCIP service.
Dropoff Agency	An agency where a user prefers to drop off physical information resources other than the user or item agency.
Item Agency	The agency to which a specific physical or electronic information resource belongs. the item agency is typically responsible for providing the Unique Item ID.
Location	The physical location of the user or staff user when the event occurs.
Pickup Agency	An agency where a user prefers to pick up physical information resources other than the user or item agency.
User Agency	The agency to which a user (person) is affiliated through registration and/or membership. It is expected that the user will be assigned a library card and/or authorization/password for use when accessing the resources of other agencies. The user agency typically is responsible for providing the Unique User ID and stores other user information such as name, address and user privilege.
User Interface	An application that provides an interface to users for those events that a user can generate without intervention of staff users of any agency (e.g, Request Item).

6. Conformance

Conformance to this Profile by an item agency application or a user agency application SHALL require the following:

1. The application conforms to the NISO Circulation Interchange Protocol and the Implementation Profile 1.
2. The application provides a mechanism to generate every Required Event in those rows where it is listed in the Initiating Application column of the Event Table in section 7.6.
3. When an Event is generated the application invokes each Required Service and each Required Service, Initiator only where it is listed in the Initiating Application column of the Event Table in section 7.6, and receives the response message.
4. Where the application is listed in the Responding Application column of a row identified as a Required Service in the Event Table in section 7.6 it can receive the initiation message and respond successfully.
5. The messages produced by the application meet the Message Constraints as defined in the Event Table in section 7.6.
6. The messages produced by the application include all required and conditionally required elements as defined in the Lookup Service Table in section 7.7.
7. The application abides by all restrictions on enumerated types as stated in section 7.5.3.

All references to section are to sections of this Profile document.

Conformance to this profile requires that an application supports all required services. It is not required that an agency must implement or use all services. Use of certain services is an agency decision and/or consortia policy.

7. Profile Specification

7.1 Profile Description

This profile requires three participants:

• User Interface
• Item Agency
• User Agency.

Pickup and dropoff agencies may also exist but are not required by this profile.

A User may be physically located at the home institution, the home institution's web site via web browser at any location, or may be at another library, but a user always interacts with the user interfacevia networks or internet connections. User authentication establishes the user's library affiliation and the actual physical location of a user when a request is placed has no relevance. This profile requires support for services that enable a user to pick up requested materials at a pickup location of the user agency. Optional services may be employed to support other pickup and delivery options.

The user interface provides the user interface where users place requests for materials

owned by the item agencies. Searching library catalogs and identifying specific items to request is outside of the NCIP protocol. However, the broker application may be integrated with an application that provides the search mechanism, such as a union catalog.

In order to support the ability of all users within a consortium to borrow items from all other members of the consortium, it is expected that the circulation systems will implement both the item and user agency roles described in this profile, however the profile does not require all participating agencies to support all roles. In any given event, an agency plays only one role, primarily either the item or user agency or optionally the pickup or dropoff agency.

The user agency manages all circulation transactions following the initial checkout to the user, including all user notices, calculation of fees and fines, and all other communications.

This profile permits each application to determine how to handle foreign data within its system. Foreign user and item data are contained within the NCIP messages but how each application stores and manages such data is not prescribed by the profile. Consequently, this profile does not support the creation or deletion of items, users, or agencies within another agency application.

This profile supports requests made by users via the user interface; via a circulation application; and direct on-site loans. Agencies are not required to participate in direct on-site loans. This profile supports users paying fees and fines at a partner agency but does not require this practice; by policy a consortia may choose to allow payment only at the agency where the fee or fine was incurred, only at the item agency, or only at the user agency. How funds are distributed after collection is outside of the NCIP protocol.

This profile does assume that the use will be among trusted partners of a consortium with an agreed set of policies and lending rules. This profile does require that each participating agency maintain the agreed upon lending rules within their circulation application. The agreements and policies of the consortium are outside the scope of the NCIP protocol.

7.2 Participating Applications

This profile defines behaviors for interoperability among the following five applications:

- User Agency application
- Item Agency application
- User Interface
- Pickup agency
- Dropoff agency.

All these agencies and applications initiate NCIP services; however the list of NCIP services invoked by the applications is constrained by this profile to ensure that the user agency application manages the circulation transaction through its lifecycle once the initial checkout occurs.

In order to support the ability of all users within the consortium to request items from all

other members of the consortium, it is expected that the circulation systems will implement both the item and user agency applications as described by this profile.

7.3 Business Rules

The business rules for a checkout are determined and applied by the agency that interacts with the user at the point of checkout, according to the policies of the consortium. Following the initial checkout, all business rules are determined and applied by the user agency application.

7.4 Management of User and Staff User Interaction

The user agency applications and the user interface SHALL provide an interface for the user to generate Events per the Event Table in section 7.6. For example a user may use this interface to request an item be held for pickup. This interface may be an integral part of a Public Access Catalog (PAC), it may be an integral part of some other application, or it may be a separate application providing only the user interface for the User. An item agency application shall also provide an interface for the user if requests or modifications to requests can be made from the item agency application.

Both the item and user agency applications SHALL provide an interface for staff users to generate Events per the Event Table in section 7.6. For example a staff user working at the item agency may check in an item at item agency. This interface may be an integral part of the same circulation application used for the circulation of the agency's items to their own users, or it may be a separate application providing only the user interface for the staff user.

7.5 Required Components

7.5.1 Required and Optional Services

The following table lists the required and optional services, messages and responses for this profile. Groups that do not allow users to pick up materials at third locations (pickup agencies) do not need the Accept Item message pair. All other message pairs are required. NCIP Services not listed are not employed by this profile.

Service	Required (R) or Optional (O)		
	Basic Circulation Support	Consortia that Support 3rd Location Pickup	Required for fiscal account support **at locations other than the User Agency**
Lookup Agency	R	O	O
Lookup Item	R	O	O
Lookup User	R	O	O

Service	Required (R) or Optional (O)		
	Basic Circulation Support	Consortia that Support 3rd Location Pickup	Required for fiscal account support **at locations other than the User Agency**
Request Item	R	O	O
Check In Item	R	O	O
Recall Item	R	O	O
Renew Item	R	O	O
Item Shipped	R	O	O
Item Checked Out	R	R	O
Item Received	R	R	O
Update Request Item	R	O	O
Accept Item	O	R	O
Create User Fiscal Transaction	O	O	R
Cancel Recall Item	O	O	O
Cancel Request Item	O	O	O
Circulation Status Change Reported	O	O	O
Report Circulation Status Change	O	O	O
Item Checked In	O	O	O
Item Recall Cancelled	O	O	O
Item Renewed	O	O	O
Item Request Canceled	O	O	O
Item Request Updated	O	O	O
Item Requested	O	O	O
Item Updated	O	O	O

7.5.2 Required and Conditionally Required Data Elements

Message	Profile Required Elements	Conditions
Lists the message in which the elements are required	*Specifies the data elements which are optional in the NCIP or Implementation Profile 1, which are required in this profile*	*Describes any conditions when the data elements are required*
Request Item	Unique User ID and either Unique Item ID or Unique Request ID required	
Item Requested	Unique User ID and Unique Item ID required	
Accept Item	Unique User ID and Unique Item ID required	

7.5.3 Enumerated Types

This profile does not introduce open enumeration types beyond those covered in the Protocol and Implementation Profile 1.

7.6 Event Table

Locations for Events are only stated in the few cases where the Service Initiated, Responding Application or Message Constraints differ depending on the Location.

Required Services are indicated by the text "(R)" in the Service Initiated column.

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
User requests an item be placed on hold	User Agency	Request Item (R)	Item Agency	Request Type Hold
User requests an item be placed on hold	Item Agency	Item Requested	User Agency	Request Type Hold
User requests an item be placed on hold	Broker	Request Item (R)	Item Agency	Request Type Hold
		Item Requested	User Agency	Request Type Hold

Triggering Event and Event Location	Initiating Application	Service Initiated	Responding Application	Message Constraints
User requests an item be retrieved from stacks	User Agency	Request Item (R)	Item Agency	Request Type Stack Retrieval
User requests an item be retrieved from stacks	Item Agency	Item Requested	User Agency	Request Type Stack Retrieval
User requests an item be retrieved from stacks	Broker	Request Item (R)	Item Agency	Request Type Stack Retrieval
		Item Requested	User Agency	Request Type Stack Retrieval
User requests a copy of an item for personal retention	User Agency	Request Item (R)	Item Agency	Request Type Non-Returnable Copy
User requests a copy of an item for personal retention	Item Agency	Item Requested	User Agency	Request Type Non-Returnable Copy
User requests a copy of an item for personal retention	Broker	Request Item (R)	Item Agency	Request Type Non-Returnable Copy
		Item Requested	User Agency	Request Type Non-Returnable Copy
User changes request for an item	User Agency	Request Updated	Item Agency	
User changes request for an item	Item Agency	Update Request	User Agency	
User changes request for an item	User Interface	Request Updated	Item Agency	
		Update Request (R)	User Agency	
User cancels a request for an item	User Agency	Request Cancelled	Item Agency	
User cancels a request for an item	Item Agency	Cancel Request (R)	User Agency	
User cancels a request for an item	User Interface	Request Cancelled	Item Agency	
		Cancel Request (R)	User Agency	
Item agency requests permission to send an Item to pickup location	Item Agency	Accept Item (R)	Pickup Agency	Request Action Type Pickup
Pickup agency declines to permit pickup	Item Agency	Cancel Request	User Agency	
Item is shipped to user agency for pickup	Item Agency	Item Shipped (R)	User Agency	
Item is shipped to pickup location	Item Agency	Item Shipped (R)	Pickup Agency	
		Item Shipped (R)	User Agency	
Item is received at user agency for pickup	User Agency	Item Received	Item Agency	
Item is received at pickup location	Pickup Agency	Item Received	Item Agency	
		Item Received (R)	User Agency	
User checks out Item at item agency	Item Agency	Item Checked Out (R)	User Agency	

Triggering Event and Event Location	Initiating Application	Service Initiated	Responding Application	Message Constraints
User checks out item at pickup location. Required Event if pickup agency has accepted request.	Pickup Agency	Item Checked Out (R)	Item Agency	
		Item Checked Out (R)	User Agency	
User pays a fee at item agency	Item Agency	Create User Fiscal Transaction	User Agency	
Item is recalled	Item Agency	Recall Item (R)	User Agency	
Item recall is cancelled	Item Agency	Cancel Recall Item	User Agency	
User renews Item	Item Agency	Renew Item (R)	User Agency	
User renews Item	User Agency	Item Renewed	Item Agency	
User renews Item	User Interface	Renew Item	User Agency	
User reports an Item lost	Item Agency	Report Circulation Status Change	User Agency	
User reports an Item lost	User Agency	Circulation Status Change Reported	Item Agency	
User reports an item lost	User Interface	Report Circulation Status Change	User Agency	
User claims Item was returned	Item Agency	Report Circulation Status Change	User Agency	
User claims Item was returned	User Agency	Circulation Status Change Reported	Item Agency	
User claims Item was returned	User Interface	Report Circulation Status Change	User Agency	
Item agency corrects a fine	Item Agency	Create User Fiscal Transaction	User Agency	
User pays a fine at Item agency	Item Agency	Create User Fiscal Transaction	User Agency	
Item agency receives an Item that is Checked-Out to a User	Item Agency	Check in Item	User Agency	
Dropoff agency receives an Item	Drop-off Agency	Item Shipped	Item Agency	
		Check in Item	User Agency	
		Item Shipped	User Agency	
	User Agency	Item Checked In	Item Agency	
Item agency receives an Item shipped to it by the dropoff agency	Item Agency	Item Received	Drop-off Agency	
User agency receives an item	User Agency	Item Checked In	Item agency	
		Item Shipped	Item agency	

7.7 Lookup Service Table

In order to initiate some NCIP services, one application may need to obtain information from another application. The table below lists services that can be initiated in order to obtain such information.

Responding Application	Lookup Service	Required Unique Ids	Required Response Data Elements
User Agency	Lookup Agency	Unique Agency Id	Authentication Prompt if employing optional NCIP Authentication mechanism
User Agency	Lookup Agency	Unique Agency Id	Agency Address Information where Scheme is the NCIP Agency Address Role Type Scheme and Value = "Ship To"
Pickup Agency	Lookup Agency	Unique Agency Id	Agency Address Information where Scheme is the NCIP Agency Address Role Type Scheme and Value = "Ship To"
User Agency	Lookup User	Authentication Data (only if employing optional NCIP Authentication mechanism) or Unique User Id	Note: the Unique User Id that is returned in the LookupUserResponse message must remain valid for subsequent services from that same Initiating Agency for the duration of the circulation transaction.
Item Agency	Lookup Item	Unique Item ID	Note: the Unique Item Id that is returned in the LookupItemResponse must remain valid for subsequent services for duration of circulation transaction
Item Agency	Lookup Agency	Unique Agency ID	

8.   Transport Protocol

All applications SHALL employ HTTPS for transmission of all NCIP messages.

9.   Security and Privacy

As noted in the Scope:

> This profile requires the transmission of confidential personal information by the user agency to other agencies. While it

requires use of a reasonably secure transport protocol (HTTPS), this profile is not intended for use where such sharing of confidential personal information is not acceptable.

The implication of this is that a user agency participating in activity according to this profile is assumed to trust the other agencies with which it shares this confidential user information.

Authentication of the user is assumed to occur prior to invoking further NCIP services at the direction of the user. This profile requires conforming applications to support the use of the Lookup User service to perform this; it is possible for applications to employ alternatives beyond those defined in this profile.

An agency that recognizes events indicated by staff users should authenticate those staff users, however whether it does so and how it does so is outside the scope of this profile.

Responding applications may require From Agency Authentication and/or From System Authentication elements in the initiation header of some or all messages. Whether they do, and if so what the value should be is outside the scope of this profile, as are the implications for the consortium if some applications are not able to provide this in initiation messages.

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 (Non-Normative)

The success of inter-system interoperability depends on many factors beyond proper coding and decoding of standards-based messages. These guidelines list some of the additional considerations libraries and systems should address as part of their NCIP implementation.

General Performance Issues

- Users can be expected to search and request materials at any time of day. If an application is not available messages should be queued and processed as soon as possible.

Messages

- In order to support the widest range of user functionality within the application itself, while not required by the protocol or the profile systems should send the most complete version of any message or message response including optional data.
- Applications should provide means of sending repeat messages in the event where the first message was not received or the response indicates the message could not be understood.

Interface and User Considerations

- The system itself and/or the staff interface must provide some means of negotiating transactions. For example if a pickup agency refuses Accept Item based one or more of the conditions the user agency must have some means of both seeing the problem conditions and choosing to resolve them.
- While agencies are not required to take any action on a notification it may be desirable to make at least some notifications visible to staff or take some action. For example, the user agency may want to supply information to its user that an item is in transit upon receipt of an Item Shipped message.
- In User agency Manages Transactions with Proxy Checkout, the decision of whether or not to renew a book resides with the user agency. As a courtesy to its partners the user agency may wish to use LookUp Item to determine if there are holds against the item before granting a renewal.
- The item agency should not allow users to request items its own application can predetermine are not eligible for loan. A Transaction Placement Broker application should not place requests for items if it can predetermine that an item is unavailable or ineligible for loan.
- The user agency should track the Pickup Expiry Date and send the pickup agency an Item Recalled when the date is passed.
- Item agencies should provide means of direct user input of authentication input that preserves the privacy of the user. That data should not be visible to staff at the item agency or broker application.
- Libraries should follow their own consortium and individual privacy policies to determine when to delete data or transaction history that ties a transaction to a specific user.