NCIP

Self Service: Unmediated Online Circulation Application Profile

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

Abstract: This application profile describes the functions, applications, and the operating environment for a self service application that accepts transactions and transfers them to a circulation application for a processing.

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Table of Contents

1.   Introduction

This profile, referred to as Self Service: Unmediated Online Circulation (SS-1) describes the functions, applications, and the operating environment for a self service application that accepts transactions and transfers them to a circulation application for a processing.

Application Area: Self Service

Profile Name: Unmediated Online Circulation Application (SS-1)

Implementation Profile: Implementation Profile 1

2.   Description of Application Area

Self service applications support user or device-initiated requests for circulation services without intervention by library staff. This includes kiosk and other hardware-based systems, as well as third-party web-based applications. In all cases, the self service application must communicate with the circulation system in order to process the user's requests. Self service applications described herein are designed to operate in offline mode (but may offer a more limited range of functionality while offline).

Self service applications can vary greatly in the extent of functionality offered. Some self service systems may be very specialized (check-in/sorters, for example) while others may support the complete range of circulation services. Services that may be supported in the self service environment include check-in/check-out, renewal, fee payment, place/cancel holds, and view/update user record.

Self service applications can only act as initiators of requests, never as responders. A characteristic of all the NCIP self service profiles is, therefore, that services are always and only initiated by the self service client, and responses are always and only given by the circulation application.

3.   Scope

This profile describes self service applications (often called "patron empowerment" or "patron self service" modules) that do not have an offline recovery feature; that is, the application can only operate while connected via some network to a circulation system. For example, such applications allow library users to request circulation services from kiosk units and web browsers.

In a consortial environment, these third-party self service applications may be intended to communicate with several circulation systems. Within the context of this profile, however, it is assumed that the user of the self service application is known to the agency from which services are being requested (most commonly, this would mean the user is represented by a patron record in the agency's database). Self service applications not conforming to this restriction are out of scope for this profile.

This profile defines only the exchange of NCIP messages between the self service and

circulation applications. Messaging for any other purpose, and other activities (e.g., determination which circulation system to contact; or the display of information to the user) is out of scope for this profile.

4.   References

This profile has no references beyond those included in the NCIP and the Implementation Profile 1.

5.   Definitions

Circulation Application	A system responsible for receiving requests for circulation services and acting on those requests. Synonymous with circulation system.
Item Agency	The agency to which a specific physical or electronic information resource belongs.
Request	A request for an item the user wishes to have. The nature of the request must be specified as part of the request; request types supported by this profile are: hold/reserve, stack retrieval, loan, and non-returnable copy.
Self Service Application	A system (device or client application) that communicates with a circulation system to request services on behalf of a library user.
User	In this profile, user is defined to mean the user of the self service application. User is further defined to be an individual library user affiliated with the agency from which he or she is requesting services.
User Agency	The agency to which a user (person) affiliates himself through use of a library card or authorization/password when representing himself to other agencies for access to those agencies' resources. The user agency typically is responsible for providing the Unique User ID and stores other user information such as name, address and user privilege.

6.   Conformance

There are different conformance requirements for each participating application type:

Circulation Application

A circulation application is conformant if it supports all of the NCIP messages defined in this profile (as responder only). The circulation application cannot send a request to the self service application. The circulation application must also be compliant with all rules defined in the NCIP Protocol and the Implementation Profile 1.

Self Service Application

A self service application is conformant if it uses NCIP messages to initiate circulation activities. The self service application can only act as initiator in this profile. Any other activities conducted by the self service application are out of scope. The self service application must also be compliant with all rules defined in the NCIP Protocol and the Implementation Profile 1.

7.   Profile Specification

7.1 Profile Description

This profile describes the interaction between a circulation application and an online self service application (often called "patron empowerment" or "patron self service" modules) that allows library users at remote locations (i.e., anywhere on the Internet) or inside the library to request circulation services without staff mediation.

In this profile, a wide range of circulation services may be supported. Circulation applications are required to implement all functionality. Self service applications may implement any of the services described.

7.2 Participating Applications

This profile permits only two participants, a self service application and a circulation application. In this context, the user agency and the item agency must be the same, therefore there can only be one circulation application involved in any transaction.

The self service application always initiates requests for circulation services. The circulation application only responds.

7.3 Business Rules

In the self service application area, the item agency and user agency are the same. The circulation application applies its business rules for all circulation functions. This applies to all three objects: Agency, User and Item.

7.4 Management of User and Staff User Interaction

The self service application is responsible for providing an interface for the user (library user or staff user) to request circulation services. Every self service application will have its own user interface. The only requirement in the context of this profile is that the user interface shall provide for one or more NCIP services.

7.5 Required Components

7.5.1 Required and Optional Services

Note: NCIP services not listed in the following table as either Required or Optional are not employed by this profile.

Service	Required (R) or Optional (O)	
	Self Service Application Initiation Message	**Circulation Application Response Message**
Authenticate User	O	R
Cancel Request Item	O	R
Check In Item	O	R
Check Out Item	O	R
Undo Check Out Item	O	R
Create User	O	R
Create User Fiscal Transaction	O	R
Lookup Agency	O	R
Lookup Item	O	R
Lookup User	O	R
Renew Item	O	R
Request Item	O	R
Update Request Item	O	R
Update User	O	R

The self service application must support a minimum of one service.

None of the NCIP notification services are supported in this profile.

Note: The self service application initiates requests and the circulation application responds. Therefore, in the table above, the self service column is referring to the initiation of the request, while the circulation application column refers to responding to a request.

7.5.2 Required and Conditionally Required Data Elements

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 by this profile.	Conditions when the data elements are required.

Message	Profile Required Elements	Conditions
Check In Item Response	Routing Information	Required for check-in/sorting systems
	Routing Information Unique User Id	Required to print "hold for patron" information during check in
Check Out Item	Acknowledged Fee Amount	Required in order to lend items for which a fee will be assessed
	Acknowledged Item Use Restriction Type Required Item Use Restriction Type	Required when use restrictions must be acknowledged in order to borrow item
Check Out Item Response	Due Date	Required
	Renewal Count	Required to determine if item is renewed or initial checkout
	Required Fee Amount	Required if fee required for loan of item
Create User Fiscal Transaction	Mandated Action	Required when self service application includes device for cash acceptance
Renew Item	Acknowledged Fee Amount	Required in order to renew items for which a fee will be assessed
	Acknowledged Item Use Restriction Type Required Item Use Restriction Type	Required when use restrictions must be acknowledged in order to renew item
Request Item	Acknowledged Fee Amount	Required in order to renew items for which a fee will be assessed
	Acknowledged Item Use Restriction Type Required Item Use Restriction Type	Required when use restrictions must be acknowledged in order to request item

Note: As noted in the standard (see introductory text in section 5.4), the circulation application is not required to supply an element requested by the self service application when, for example, the data is unavailable or when policy or practice restricts access

7.5.3 Enumerated Types

There are no additional schemes for open enumerated types and no enumerated types or undefined types that are closed by this profile.

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.				
User cancels a request for an item	Self service	Cancel Request Item	Circulation	
User presents item for check in	Self service	Check In Item	Circulation	
User presents item for check out	Self service	Check Out Item	Circulation	
User acknowledges fee for check out	Self service	Check Out Item	Circulation	Acknowledged Fee Amount element required
User asks to register for service (i.e., new user is created)	Self service	Create User	Circulation	
User requests to pay fine or fee	Self service	Create User Fiscal Transaction	Circulation	
User deposits monetary value to pay fine or fee	Self service	Create User Fiscal Transaction	Circulation	Mandated Action element required
User requests information about an item	Self service	Lookup Item	Circulation	
User requests information about his current loans and requests	Self service	Lookup User Lookup Item	Circulation	
User requests item be renewed.	Self service	Renew Item	Circulation	
User acknowledges fee for renewal	Self service	Renew Item	Circulation	Acknowledged Fee Amount element required
User requests an item be placed on hold	Self service	Request Item	Circulation	Request Type = Hold
User requests an item be retrieved from stacks	Self service	Request Item	Circulation	Request Type = Stack Retrieval
User asks to borrow an item not available locally	Self service	Request Item	Circulation	Request Type = Loan
User requests a non-returnable copy of an item not available locally	Self service	Request Item	Circulation	Request Type = Non-returnable Copy
User acknowledges fee for item requested	Self service	Request Item	Circulation	Acknowledged Fee Amount required
User changes request for an item	Self service	Update Request Item	Circulation	
User asks to update user information	Self service	Update User	Circulation	
Suspicious activity during check-out	Self service	Undo Check Out Item	Circulation	

Triggering Event and Event Location	Initiating Application	Service Initiated	Responding Application	Message Constraints
Application requests block or trap due to suspicious activity	Self service	Update User	Circulation	Block or Trap element required

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. The first column lists the application that provides the information. The second column lists the service executed. The third column lists the identifiers that are optional within the NCIP, but are required for this profile. The fourth column lists the data returned.

Responding Application	Lookup Service	Required Unique Ids	Required Response Data Elements
Circulation	Lookup Agency	Unique Agency Id	Authentication Prompt
Circulation	Lookup Item	Unique Item Id	Medium Type
Circulation	Lookup Item	Unique Item Id	(current circulation status of an item, location/routing information)
Circulation	Lookup User	Unique User Id or Authentication Input	(information about the user)
Circulation	Authenticate User	Authentication Input	Unique User Id

8.   Transport Protocol

The self service system SHALL support one of the following transport protocols:

- HTTP
- HTTPS
- Direct Transmission over TCP/IP

The circulation system SHALL support all of the following transport protocols:

- HTTP
- HTTPS
- Direct Transmission over TCP/IP

The selection of the transport protocol by the initiator (Self Service application) of a message will govern the transport protocol used by the responder (Circulation application). It SHALL respond using the same connection, and therefore the same transport protocol, that was used to send the message.

9.   Securities and Privacy

Authentication of the user is handled by the circulation application. The self service application may use the NCIP Authenticate User service for this purpose, but authentication through other means is permitted.

User authorization is also handled by the circulation application. A successful response to the user's request for service is assumed to indicate that the user is authorized for that service.

Use of encryption or any other security mechanisms is neither required nor prohibited in this profile.

10.   Registration of Schemes Used in the Profile

There are no profile-specific schemes for this profile. For information about maintenance and registration activities see Appendix G, Designation of Maintenance and Registration Agency in the NCIP standard.

11.   Guidelines for Implementors

Guidelines listed below are intended to assist vendors in implementing this profile. As guidelines, they are non-normative and represent non-protocol assumptions or options that might be employed by a well-designed application that is conformant to this profile.

Optional Elements

There are several elements defined as optional in the protocol. These optional elements may be required for some functionality on the self service system. For example, if the title is not returned in a Check Out Item response, the self service unit will not have the capability to display the title for the user.

The following list defines elements that should be returned if requested to provide the self service client the greatest functionality. The functionality list below exists in self service systems today. There may be additional functionality can be provided with these elements, but not listed.

Service / Elements				Example: Self Service System Functionality
Cancel Request Item				
	Existing Fiscal Transaction			Notification to user of fiscal activity
	Item Optional Fields			
		Bibliographic Description		
			Medium type	Verification Item id same as requested.

			Title	Verification Item id same as requested.
		Item Description		
			Call Number	Display to user for verification of cancellation.
Check In Item				
	Unique Item Id			Verification Item id same as requested.
	Unique User id			Verification User id same as requested.
	Routing Information			Sorting
		Unique User Id		Exception Printing / Routing
	New Fiscal Transaction			Notification of charges at checkin
	Item Optional Fields			
		Bibliographic Description		
			Medium type	Can be used to determine how to sensitize the item.
			Title	Display on Receipt
		Sensitization Flag		Used to determine if the item should be sensitized.
		Security Marker		Can be used to determine how to sensitize the item.
		Physical Condition		Sorting
		Location		Sorting
		Item Description		
			Visible Item Id	Display on Receipt / User Interface
			Call Number	Sorting
	User Optional Fields			
		Visible User Id		Display user if on receipt / User Interface
		Name Information		Display user name on receipt / User Interface
Check Out Item				
	Required Fee Amount			Allows for collection or acknowledgement of fee at Self Service system.
	Unique Item Id			Verification Item id same as requested.
	Unique User id			Verification User id same as requested.
	Due Date or Non Returnable Flag or IndeterminateLoanPeriodFlag			Display due date on receipt / User Interface
	Renewal Count			Notify user of initial checkout or renewal action taken.
	Electronic Resource			Delivery of electronic resource
	New Fiscal Transaction			
	Item Optional Fields			
		Bibliographic Description		
			Medium type	Can be used to determine how to de-sensitize the item.
			Title	Display on Receipt
		Sensitization Flag		Used to determine if the item should be de-sensitized.

		Security Marker		Can be used to determine how to de-sensitize the item.
		Item Description		
			Visible Item Id	Display on Receipt / User Interface
			Call Number	Sorting
	User Optional Fields			
		Visible User Id		Display user if on receipt / User Interface
		Name Information		Display user name on receipt / User Interface
Lookup Agency				
	Organization Name Information			Display organization name
	Agency Address Information			Display address
	Authentication Prompts			Display prompts to users for authentication
	Behavior Profile Supported Type			System validation for compatibility
	Agency User Privilege Type			Systems may behave differently based on user privileges.
Lookup Item				
	Hold PickUp Date			Display to user
	Date Recalled			Display to user.
	Item Optional Fields			
		Bibliographic Description		All fields - Display
		Item User Restriction type		Display or system may take action based on value.
		Hold Queue Length		Display queue length
		Circulation Status		Display or take action based on value
		Location		Display / Sorting
		Physical Condition		Display / Sorting
		Sensitization Flag		Used to determine if the item should be de-sensitized.
		Security Marker		Can be used to determine how to de-sensitize the item.
		Item Description		
			Visible Item Id	Display / Sorting
			Copy Number	Display
			Call Number	Display / Sorting
Lookup User				
	ALL optional fields			Display / Update
Renew Item				
	Required Fee Amount			Allows for collection or acknowledgement of fee at Self Service system.
	Unique Item Id			Verification Item id same as requested.
	Unique User id			Verification User id same as requested.
	Due Date			Display due date on receipt / User Interface
	Renewal Count			Notify user of initial checkout or renewal action taken.

	Electronic Resource			Delivery of electronic resource
	Item Optional Fields			
		Bibliographic Description		
			Medium type	Can be used to determine how to de-sensitize the item.
			Title	Display on Receipt
		Sensitization Flag		Used to determine if the item should be de-sensitized.
		Security Marker		Can be used to determine how to de-sensitize the item.
		Item Description		
			Visible Item Id	Display on Receipt / User Interface
			Call Number	Sorting
	User Optional Fields			
		Visible User Id		Display user if on receipt / User Interface
		Name Information		Display user name on receipt / User Interface
Request Item				
	Required Fee Amount			Allows for collection or acknowledgement of fee at Self Service system.
	Required Item Use Restriction Type			Display or change behavior based on value
	Shipping Info			Display for user verification
	Date Available			Display
	Hold PickUp Date			Display
	New Fiscal Transaction			Verification of fee collected / assessed.
	Item Optional Fields			
		Bibliographic Description		All fields - Display
		Item Description		
			Visible Item Id	Display on Receipt / User Interface
			Call Number	Sorting
	User Optional Fields			
		Visible User Id		Display
		Call Number		Display
		Copy Number		Display
Undo Check Out Item				
	Unique User Id			Verification User id same as requested.
	Existing Fiscal Transaction			Verification / fee refunded / display
Update Request Item				
	Required Fee Amount			Allows for collection or acknowledgement of fee at Self Service system.
	Date available			Display / print
	Hold Pickup Date			Display / print
	Fiscal Account Update			Display / Verification of funds collected.
	Item Optional Fields			All fields – display

	User Optional Fields	Display / verification User id same as requestor.
	Existing Fiscal Transaction	Verification / fee refunded / display