

NCIP Implementation Guidelines:

Collaboration between Integrated and Connected Libraries

danZIG-specification 07

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NCIP Implementation Guidelines: Collaboration between Integrated (strongly-coupled) and Connected (weakly-coupled) Libraries

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1. Introduction

This scenario describes a specific implementation of the Direct Consortial Borrowing: User Agency Manages Transaction Application profile (DCB-2).

These guidelines are part of a series of specifications for technical interoperability between libraries and between libraries and partners called "danZIG specifications". The danZIG is a committee representing library system vendors, library technical interoperability consultants and national library services supplemented by library representatives put together by Danish Agency for Libraries and Media and chaired by the agency. The purpose of danZIG is to advise the governmental agency *Danish Agency for Libraries and Media*, which have the responsibility for the published specifications.

The target group for these specifications is vendors to Danish libraries and people interested in technical interoperability in the library sector.

This specification is based on and depends on *NCIP Implementation Guidelines: Collaboration between Danish libraries and other agencies* (danZIG Specification 03).

This specification is based on and is a further development of *NCIP Implementation Guidelines: Combined public-school libraries* (danZIG Specification 05).

2. Scope

This scenario describes a specific implementation of the Direct Consortial Borrowing: User Agency Manages Transaction Application profile (DCB-2).

3. Description

This specification operates with two scenarios, the integrated libraries scenario and the connected libraries scenario.

The Integrated (strongly-coupled) scenario is an extended cooperation between libraries (e.g. school and public libraries) with the goal to act as *one*

library. The Connected (weakly-coupled) Libraries scenario is focused on handling return of items on others libraries that the item belong to.

In the integrated libraries scenario the library automation tool in the integrated library should be able to offer the circulation services to patrons from any of the cooperating libraries (external patrons) and concerning items owned by any of the cooperating libraries (external items). The following services will be offered (concerns items and patrons from any of the cooperating libraries, if not stated otherwise):

1. Reserve an item for a patron (including reservations with 3rd pickup location).
2. Lend an item for a patron.
3. Renew a loan.
4. Return an item.
5. Cancel a reservation.
6. Ship an item to a cooperating library.
7. Receive an item shipped from a cooperating library.
8. Report that an item is lost.
9. Perform a payment for a fee or fine.

In the connected libraries scenario the library automation tool should be able to offer return of an item owned by any of the connected libraries.

In order to support a number of specific use cases in these scenarios, various NCIP services have to be implemented.

4. Conformance

These guidelines require same level of conformance as *NCIP Implementation Guidelines: Collaboration between Danish libraries and other agencies*.

Additionally, all parameters required in the DCB-2 are also required by these guidelines, unless otherwise stated in the following.

5. Support

Vendors of integrated library systems have stated that named systems support these guidelines from a given version. Present information divided in Integrated libraries and Connected libraries at:

http://biblstandard.dk/ncip/support_cooperative.htm

6. Services

6.1 List of services

These guidelines require implementation of the following services to support this scenario and the associated use cases.

NCIP service	DCB-2	Integrated libraries	Connected libraries
Accept Item Service	Required (in consortia with 3 rd pickup location)	Required	Required *)
Cancel Request Item Service	Optional	Required	Optional
Check In Item Service	Required	Required	Required
Check Out Item Service	Required	Required	Required *)
Item Checked In Service	Optional	Required	Required
Item Checked Out Service	Optional	Required	Optional
Item Received Service	Optional	Required	Optional
Item Renewed Service	Optional	Required	Optional
Item Request Cancelled Service	Optional	Required	Optional
Item Request Updated Service	Optional	Required	Optional
Item Requested Service	Optional	Required	Optional
Item Shipped Service	Required	Required	Required *)
Lookup Agency Service	Required	Required	Required *)
Lookup Item Service	Required	Required	Required
Lookup User Service	Required	Required	Required *)
Lookup Version Service	Required	Required	Required
Lookup Request	Optional	Required	Optional
Recall Item Service	Required	Required	Required *)
Renew Item Service	Required	Required	Required *)
Request Item Service	Optional	Required	Optional
Report Circulation Status Change Service	Optional	Optional	Optional
Circulation Status Change Reported Service	Optional	Optional	Optional
Create User Fiscal Transaction Service	Optional (required for fiscal account support at locations other than the User Agency)	Optional (required for fiscal account support at locations other than the User Agency)	Optional

*) These services are required by DCB-2, but they are not actively used in the Connected Libraries scenario.

6.2 Registered schemes

In addition to the scheme extension and restrictions mentioned in the guidelines, the following is required to support this scenario:

Name	Note	Scheme
Item Element Type	For Item Element Type the following values must always be used: <ul style="list-style-type: none"> • Bibliographic Description • Item Description 	http://www.niso.org/ncip/v1_0/schemes/itemelementtype/itemelementtype.scm

6.3 Additionally required parameters

As it is defined in the guidelines to the DCB-2 (DCB-2 documentation, page 16), in order to support the widest range of user functionality, while not required by the protocol or the profile, system should send the most complete version of any message or message response including optional data. This is also required by this document. Especially it applies to the following cases:

- Always when the Unique Item Id is sent and there is the Item Optional Fields optional element in the NCIP message definition, it should be sent with at least the following data supplied:
 - Bibliographic Description
 - Bibliographic Record Id
 - Bibliographic Record Identifier
 - Bibliographic Record Identifier Code

If a given bibliographic record has only a local identifier in the initiating application, the Unique Agency Id element (with the Item Agency identifier) should be used instead of Bibliographic Record Identifier Code.
 - Title
 - Circulation Status
 - Item Description
 - Visible Item Id
- Always when the Unique User Id is sent and there is the User Optional Fields optional element in the message definition, it should be sent with at least the following data supplied:
 - Date Of Birth (if available)
 - Name Information

- Personal Name Information
 - Structured Personal User Name (if it is not possible to deliver Structured Personal User Name, the Unstructured Personal User Name may be delivered instead)
 - Surname

It is also recommended, but not required, to supply the Given Name element.
- Visible User Id
 - Unique Agency Id
 - Visible User Identifier
 - Visible User Identifier Type
- The Item/User Optional Fields do not need to be sent, when the Item Optional Fields is sent to the Item Agency or User Optional Fields to the User Agency, as obviously those agencies have the current data of their items/users.
- For the Shipping Information element (e.g. in the Request Item Service, Item Requested Service, Item Shipped Service, Lookup Request) the following address data should be supplied:
 - Physical Address
 - Physical Address Type (with "Street Address" value)
 - Structured Address (if it is not possible to deliver Structured Address, the Unstructured Address may be delivered instead)
The Physical Address is used to identify the Pickup Agency. The following sub-elements of Structured Address are used to identify the Pickup Agency:
 - Line1 (required)
 - Line2
 - Postal Code
 - Locality

6.4 Additionally required request parameters

Some of the request data is optional in the DCB-2, but in the combined library the following elements are required:

- Accept Item
 - Unique User Id
- Check Out Item

- Unique Request Id (If the checkout fulfils the request)
- Item Checked Out
 - Unique Request Id (If the checkout fulfils the request)
- Item Received
 - Unique User Id (If the shipment of the item fulfilled a request of this user)
 - Unique Request Id (If the shipment of the item fulfilled this request)
- Item Request Cancelled
 - Unique Item Id (if a concrete item is already assigned)
 - Unique User Id
 - Unique Request Id
- Item Request Updated
 - Add Request Fields
 - Pickup Expiry Date (when the User Agency is informed about shipment of an item to the pickup location it must set the expiration date of the pickup and inform about it the Item Agency)
- Item Requested
 - Unique User Id
 - Unique Bibliographic Id
 - Bibliographic Record Id
 - Unique Request Id
 - Shipping Information – with the address of the Pickup Agency. It should be the same address, which might be obtained by looking up the Pickup Agency with Lookup Agency.
 - Need Before Date (if known)
- Item Shipped
 - Unique Item Id
 - Unique Request Id – must be sent always when the shipment of the item is realised to fulfil the user request
 - Unique User Id – must be sent always when the shipment of the item is realised to fulfil the user request
 - Shipping Information – with the address information of the agency which the item is transported to. It should be the same address, which might be obtained by looking up a given agency with Lookup

Agency. In case of the shipment for pickup, this element should contain the address of the Pickup Agency.

- Lookup Item
 - Unique Item Id (if available)
 - Visible Item Id (if Unique Item Id is not available)
In the Lookup Item message there is a Visible Item Id required in the DCB-2. However, in combined libraries there are multiple situations when the Unique Item Id must be sent.
- Lookup User
 - Unique User Id (if available and a user have already been authenticated)
 - Visible User Id (if Unique User Id is not available and user have already been authenticated)
 - Authentication Input (if a user needs to be authenticated)
In the Lookup User message there are Visible User Id or Authentication Input elements required in the DCB-2. However, in combined libraries there are multiple situations when the Unique User Id must be sent.
- Request Item
 - Unique User Id
 - Unique Item Id - it is the identifier of any item of the requested material.
At time of sending the Request Item message, the item, which fulfils the reservation, is not known yet. However, during the process of creating a reservation, the responding application needs to initiate Lookup Item service to get the bibliographic description and the Lookup Item service requires the Unique Item Id element.
 - Shipping Information – with the address of the Pickup Agency. It should be the same address, which might be obtained by looking up the Pickup Agency with Lookup Agency.
 - Need Before Date (if known)

6.5 Additionally required response parameters

Some of the requested data is optional in the DCB-2, but in the combined library the following elements are required:

- Lookup Agency
Whenever the agency address information is requested, there must always be delivered the address data which may be used to identify this agency as a target of the shipment of the item. The address data for this aim should have the following structure:

- Agency Address Information
 - Agency Address Role Type (with "Ship To" or "Multi-Purpose" value)
 - Physical Address
 - Physical Address Type (with "Street Address" value)
 - Structured Address (if it is not possible to deliver Structured Address, the Unstructured Address may be delivered instead)
The Physical Address is used to identify the Pickup Agency. The following sub-elements of Structured Address are used to identify the Pickup Agency:
 - + Line1 (required)
 - + Line2
 - + Postal Code
 - + Locality

Other Agency Address Information elements may also be used additionally (with other values of the Physical Address Type and Agency Address Role Type) because the Agency Address Information element is repeatable.

- Lookup Item
 - Unique Item Id
 - Unique Request Id (required if the item is assigned to fulfil a given request)
 - Hold Pickup Date (required if the item is assigned to fulfil a request)
This value should be used at the pickup location to set the pickup expiration date.
 - Item Transaction
 - Current Requesters (if requested)
This is a repeatable element. The list should contain the requester for whom this concrete item has been assigned and the requesters awaiting the same Bibliographic Item with no concrete items assigned yet. The list should be sorted by the position in the reservation queue – first requester in the queue should be the first on the list. Especially, for a concrete item which is awaiting a requester on a reservation shelf, a given requester should be on the first position on the list.
 - Current Borrower (if requested)

- Lookup Request
 - Shipping Information
- Renew Item
 - Date Due
- Request Item
 - Unique Request Id
 - Shipping Information – with the address of the Pickup Agency. It should be the same address, which might be obtained by looking up the Pickup Agency with Lookup Agency.

6.6 Integrated library issues

In order to support special use cases in combined libraries the following events must be handled:

- Event: A patron checks out an item outside the Item Agency without a prior reservation

In the DCB-2 application profile, the User Agency manages the transaction and the decision whether the external item should be borrowed or whether a loan should be renewed is to be made by the User Agency. However, as a part of the decision process, the User Agency may verify in the Item Agency whether there are other patrons awaiting this item. It can be realised by sending the Lookup Item message to the Item Agency with Visible Item Id and the Current Requesters Desired flag. Lookup Item Response should contain the list of current requesters (if the item is currently reserved by someone).

- Event: An item is shipped to a pickup location.

Item Shipped message should be sent to all branches of the combined library (all potential Pickup Agencies). For a pickup in location of the Item Agency, when the item becomes available for pickup and is moved to a reservation shelf, the Item Shipped message should not be sent to the combined branches of the Item Agency.

- Event: An item is received at pickup location

In addition to DCB-2 requirements Item Received should also be sent to agencies combined with the agency (as they were potential pickup locations), so they are also aware that the item has been received.

- Event: A patron checks out an item which awaited him on the reservation shelf

When the User Agency performs the checkout of the item, the Item Checked Out message should be sent to the Item Agency and to each agency combined with the branch where the pickup was performed (so that each potential Pickup Agency does not await for the item anymore).

- Event: A patron cancels a reservation for the item which have been awaiting him on the reservation shelf

When the User Agency performs the cancellation of the reservation requested, the Item Request Cancelled message should be sent to the Item Agency and to each combined branch in the pickup location (so that each potential Pickup Agency does not await for the item anymore).

- Event: A patron returns an item in an agency combined with Item Agency

The agency sends Check Item In to User Agency and afterwards Item Checked In to Item Agency.

Additionally the agency checks what should be done with the item by looking up current requesters in Item Agency. If there are none the item should be put on a local shelf. Otherwise by using Lookup Request for the first request the agency should do the following:

- If Shipping Information contains address of the agency or an agency combined with it then the item should be put on a local reservation shelf. The agency sends Item Shipped to Item Agency and User Agency.
 - Otherwise the item should be shipped to Pickup Agency indicated by Shipping Information. The agency sends Item Shipped to Item Agency, User Agency and Pickup Agency (also to agencies combined with Pickup Agency).
- Event: An agency combined with Item Agency receives an item shipped from Dropoff Agency

The agency sends Item Received to Dropoff Agency and Item Agency.

The agency sends Check Item In to User Agency and afterwards Item Checked In to Item Agency.

Additionally the agency checks what should be done with the item by looking up current requesters in Item Agency. If there are none the item should be put on a local shelf. Otherwise by using Lookup Request for the first request the agency should do the following:

- If Shipping Information contains address of the agency or an agency combined with it then the item should be put on a local

- reservation shelf. The agency sends Item Shipped to Item Agency and User Agency.
- Otherwise the item should be shipped to Pickup Agency indicated by Shipping Information. The agency sends Item Shipped to Item Agency, User Agency and Pickup Agency (also to agencies combined with Pickup Agency).

7. References

NCIP Implementation Guidelines: Collaboration between Danish libraries and other agencies (danZIG-specification 03)

<http://www.bs.dk/publikationer/andre/danzig/03/>

NCIP Implementation Guidelines: Combined public-school libraries (danZIG-specification 5)

<http://www.bs.dk/publikationer/andre/danzig/05/>

Direct Consortial Borrowing: User Agency Manages Transaction Application Profile (DCB-2)

http://ncip.envisionware.com/application_profiles/DBC_User_Agency_Manages_Transaction.pdf

8. Sample Messages

Accept Item Service	
Initiation	acceptitem-s.xml
Response (successful)	acceptitemresponse-s.xml
Response (problem)	acceptitemproblem-s.xml
Response (Pickup Agency declined to accept item)	"Cannot Accept Item" returned: acceptitemitemproblem2-s.xml
Cancel Request Item Service	
Initiation	cancelrequestitem-s.xml
Response (successful)	cancelrequestitemresponse-s.xml
Response (problem)	cancelrequestitemproblem-s.xml
Check In Item Service	
Initiation	checkinitem-s.xml
Response (successful)	checkinitemresponse-s.xml
Response (problem)	checkinitemproblem-s.xml
Check Out Item Service	
Initiation	checkoutitem-s.xml
Response (successful)	checkoutitemresponse-s.xml
Response (problem)	checkoutitemproblem-s.xml

Response (another patron is awaiting the item)	"Resource Cannot Be Provided" returned: checkoutitemproblem2-s.xml
Circulation Status Change Reported Service	
Initiation	circulationstatuschangereported-s.xml
Response (successful)	circulationstatuschangereportedresponse-s.xml
Create User Fiscal Transaction Service	
Initiation	createuserfiscaltransaction-s.xml
Response (successful)	createuserfiscaltransactionresponse-s.xml
Response (problem)	createuserfiscaltransactionproblem-s.xml
Item Checked In Service	
Initiation	itemcheckedin-s.xml
Response (successful)	itemcheckedinresponse-s.xml
Item Checked Out Service	
Initiation	itemcheckedout-s.xml
Response (successful)	itemcheckedoutresponse-s.xml
Item Received Service	
Initiation	itemreceived-s.xml
Response (successful)	itemreceivedresponse-s.xml
Item Renewed Service	
Initiation	itemrenewed-s.xml
Response (successful)	itemrenewedresponse-s.xml
Item Request Cancelled Service	
Initiation	itemrequestcancelled-s.xml
Response (successful)	itemrequestcancelledresponse-s.xml
Item Request Updated Service	
Initiation	itemrequestupdated-s.xml
Response (successful)	itemrequestupdatedresponse-s.xml
Item Requested Service	
Initiation	itemrequested-s.xml
Response (successful)	itemrequestedresponse-s.xml
Item Shipped Service	
Initiation	itemshipped-s.xml
Response (successful)	itemshippedresponse-s.xml
Lookup Agency Service	
Initiation	lookupagency-s.xml
Response (successful)	lookupagencyresponse-s.xml
Response (problem)	lookupagencyproblem-s.xml
Lookup Item Service	
Initiation	lookupitem-s.xml
Response (successful)	lookupitemresponse-s.xml
Response (problem)	lookupitemproblem-s.xml
Lookup Request Service	
Initiation	lookuprequest-s.xml
Response (successful)	lookuprequestresponse-s.xml

Response (problem)	lookuprequestproblem-s.xml
Lookup User Service	
Initiation	lookupuser-s.xml
Response (successful)	lookupuserresponse-s.xml
Response (problem)	lookupuserproblem-s.xml
Lookup Version Service	
Initiation	lookupversion-s.xml
Response (successful)	lookupversionresponse-s.xml
Recall Item Service	
Initiation	recallitem-s.xml
Response (successful)	recallitemresponse-s.xml
Response (problem)	recallitemproblem-s.xml
Renew Item Service	
Initiation	renewitem-s.xml
Response (successful)	renewitemresponse-s.xml
Response (problem)	renewitemproblem-s.xml
Response (another patron is awaiting the item)	"Renewal Not Allowed – Item Has Outstanding Requests" returned: renewitemproblem2-s.xml
Report Circulation Status Change Service	
Initiation	reportcirculationstatuschange-s.xml
Response (successful)	reportcirculationstatuschangeresponse-s.xml
Response (problem)	reportcirculationstatuschangeproblem-s.xml
Request Item Service	
Initiation	requestitem-s.xml
Response (successful)	requestitemresponse-s.xml
Response (problem)	requestitemproblem-s.xml

All example-files are stored in this directory:
<http://bibstandard.dk/ncip/examples/>