INTEROPERABILITY TESTING

WITH THE

NATIONAL LIBRARY OF CANADA

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INTRODUCTION

Purpose:

The objective of this interoperability test plan is to verify that protocol software is able to exchange ILL messages with the National Library of Canada's automated ILL system (NAVIS) and that the data transmitted is complete.

Before testing begins, participants must contact their partners to establish: mode of communication, system address, library symbols, personal email addresses, telephone and fax numbers.

Implementation Details:

a) **Roles Supported**

At the present time, the National Library of Canada can only participate in interoperability testing in the 'responder' role.

b) **Transaction Types Supported**

NAVIS supports the 'simple' transaction type only.

c) **Communication Services**

The National Library's test system is able to communicate via SMTP store and forward email only.

The address is: **illtest@services.nlc-bnc.ca**

However, in the production environment, the National Library is able to communicate via SMTP and TCP.

d) **Responder Optional Messages**

The shipped apdu sent by the NAVIS system will always contain the responder optional parameter 'CANSend' for shipped and checked-in apdus.

The shipped apdu sent by the NAVIS system will always contain the responder optional parameter 'desires' for received and returned apdus.

e) **Institution Symbol**

NAVIS supports the following symbol identifiers as specified in the 'Register of Identifiers Assigned to ILL Protocol Implementers':

Identifier	Name
nlc-bnc	National Library of Canada
oclc	OCLC
rlg	Research Libraries Group

f) **Levels of Service**

The National Library provides two levels of service: Basic and In-depth. The symbols for the abstract levels of service are converted as follows:

Symbol	Handling	Search	NAVIS
<	when convenient	local	Basic
(	normal	local	Basic
{	normal	extended	In-depth
[	normal	full	In-depth
|	priority	local	Basic
]	priority	extended	In-depth
}	rush	local	Basic
)	rush	extended	In-depth
>	express	local	Basic

PART 1

Basic Communication

This portion of the interoperability testing is designed to establish interconnection between the requester and the responder.

Case #1   Basic Communication

! = data to be sent
? = data to be received

REQUESTER	RESPONDER
ILL REQUEST!	ILL REQUEST?
ILL ANSWER?	ILL ANSWER!

Once communication has been established both partners must agree on the remaining test plan and devise a timetable for its completion.

PART 2

MAIN APDUS

The purpose of this portion of the test plan is to confirm the transmission of the main apdus.

Case #2   ILL REQUEST for a 'Loan' is replied to by a 'SHIPPED - Loan'

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Loan'
-Requester Optional Messages
  --Shipped msg. 'requires'
  --Checked-in msg. 'requires'
	ILL-REQUEST?

SHIPPED? -Verify that service type is 'Loan'	SHIPPED! -Shipped service type: 'Loan'
RECEIVED!	RECEIVED?
RETURNED!	RETURNED?
CHECKED-IN?	CHECKED-IN!

*Case #3   ILL REQUEST for a 'Copy/Non-Returnable' is replied to by a SHIPPED
            'Copy/Non-Returnable'*

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Copy/Non-Returnable'
-Requester Optional Messages
   --Shipped msg. 'desires'
   --Checked-in msg. 'desires'
	ILL-REQUEST?

SHIPPED? -Verify that type is: 'Copy/Non-Returnable'	SHIPPED! -Shipped service type: 'Copy/Non-Returnable'
RECEIVED!	RECEIVED?

Case #4   ILL REQUEST for a 'Loan' is replied to by a SHIPPED
'Copy/Non-Returnable'

      !   = data to be sent
      ?   = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Loan'
-Requester Optional Messages
  --Shipped msg. 'no requirements'
  --Checked-in msg. 'no requirements
	ILL-REQUEST?

SHIPPED? -Verify that type is: 'Copy/Non-Returnable'	SHIPPED! -Shipped service type: 'Copy/Non-Returnable'
RECEIVED!	RECEIVED?

Case #5   ILL REQUEST for a 'Copy/Non-Returnable' is replied to by a 'Loan'

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Copy/Non-Returnable'
-Requester Optional Messages
  --Shipped msg. 'requires'
  --Checked-in msg. 'no requirement'
	ILL-REQUEST?

SHIPPED? -Verify that type is: 'Loan'	SHIPPED! -Shipped service type: 'Loan'
RECEIVED!	RECEIVED?
RETURNED!	RETURNED?
CHECKED-IN?	CHECKED-IN!

Case #6   ILL ANSWER - Locations Provided

!   =   data to be sent
?   =   data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -Service type: 'Locations'	ILL-REQUEST?
ILL ANSWER? -Verify locations	ILL ANSWER! -Locations Provided

Case #7 **ILL ANSWER - Not Located**

```
!  =  data to be sent
?  =  data to be received
```

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -Service type: 'Loan'	ILL-REQUEST?
ILL ANSWER?	ILL ANSWER!
-Reason Unfilled: -locations-not-found	-Reason Unfilled: - locations-not-found

Case #8   ILL ANSWER - Estimate

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -Service type: 'Estimate'	ILL-REQUEST?
ILL ANSWER? -Responder note: 'The National Library's ILL services are free of charge....'	ILL ANSWER! Responder note: 'The National Library's ILL services are free of charge....'

Case #9   *ILL REQUEST - Responder Specific*

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -Service type: 'Responder Specific'	ILL-REQUEST?
ILL ANSWER? -transaction-results: unfilled -reason-unfilled: policy-problem -responder note	ILL ANSWER! -transaction-results: unfilled -reason-unfilled: policy-problem -responder note

*Case #10   ILL REQUEST for a 'Loan' with an <u>expiry date</u> is replied to by a
      SHIPPED - 'Loan'*

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -Service type: 'Loan' -Expiry Date*	ILL-REQUEST?
SHIPPED? -Does the system accept the shipped message?	SHIPPED! -Shipped message is to be sent after the expiry date has passed
RECEIVED!	RECEIVED?
RETURNED!	RETURNED?
CHECKED-IN?	CHECKED-IN!

* The National Library has not implemented an expiry date function. The data is retained in the NAVIS system but it is not honoured. This test is done to establish what would happen if the responder replies to an ILL request after the expiry date has passed.

PART 3

FOLLOW-UP MESSAGES

This portion of the test plan covers the follow-up messages normally associated with an interlibrary loan request.

Case #11   RENEW - 'Granted'

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
 -Service type: 'Loan'
 -Requester Optional Messages
   --Shipped msg. 'desires'
   --Checked-in msg. 'no requirements'
	ILL-REQUEST?

SHIPPED?	SHIPPED! -Shipped service type: 'Loan' -Renewable indicator set to 'yes'
RECEIVED!	RECEIVED?
RENEW!	RENEW?

RENEWAL ANSWER?
 -Verify new due date
 -Verify the renewable indicator "Yes"
	RENEWAL ANSWER!
	  -New due date
	  -Renewable indicator "Yes"

RENEW!	RENEW?

RENEWAL ANSWER?
 -Verify new due date
 -Verify renewable indicator "No"
	RENEWAL ANSWER!
	  -New due date
	  -Renewable indicator "No"

RETURNED!	RETURNED?
CHECKED-IN?	CHECKED-IN!

Case #12   *RENEWt - 'Not Granted'*

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'LOAN'
-Requester Optional Messages
  --Shipped msg. 'requires'
  --Checked-in msg. 'desires'
	ILL-REQUEST?

SHIPPED?	SHIPPED! -Shipped service type: 'Loan' -Renewable indicator set to 'no'
RECEIVED!	RECEIVED?
RENEW!	RENEW?
RENEWAL ANSWER? -Verify that the note is received	RENEWAL ANSWER! -Negative (no due date)
RETURNED!	RETURNED?
CHECKED-IN?	CHECKED-IN!

Case #13   *RENEW/OVERDUE/MESSAGE*

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Loan'
-Requester Optional Messages
  --Shipped msg. 'desires'
  --Checked-in msg. 'desires'
	ILL-REQUEST?

SHIPPED?	SHIPPED! -Shipped service type: 'Loan'
RECEIVED!	RECEIVED?
RENEW!	RENEW?

RENEWAL ANSWER?
-Verify new due date
-Verify the renewable indicator "Yes"
	RENEWAL ANSWER!
	  -Due date
	  -Renewable indicator "Yes"

OVERDUE? -Verify that the note is received	OVERDUE!
RENEW!	RENEW?

RENEWAL ANSWER?
-Verify new due date
-Verify renewable indicator "No"
	RENEWAL ANSWER!
	  -New due date
	  -Renewable indicator "No"

SECOND OVERDUE? -Verify that the note is received	SECOND OVERDUE!
MESSAGE!	MESSAGE? - Verify that the note is received
MESSAGE? -Verify that the note is received	MESSAGE!
RETURNED!	RETURNED?
CHECKED-IN?	CHECKED-IN!

Case #14   STATUS QUERY 'Request in Process'

                                                    !   = data to be sent
                                                    ?   = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST!	ILL-REQUEST?
STATUS QUERY!	STATUS QUERY?
STATUS/ERROR REPORT?	STATUS/ERROR REPORT!
-Verify date-of-last-transition	-Date-of-last-transition
-Verify most-recent-service	-Most-recent-service
-Verify date-of-most-recent-service	-Date-of-most-recent-service
-Verify current state	-Current state

Case #15   STATUS QUERY - ERROR REPORT 'Unknown-Transaction-id'

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST!	ILL-REQUEST?
STATUS QUERY!	STATUS QUERY?
STATUS/ERROR REPORT? -Verify the transaction-id problem: unknown-transaction-id	STATUS/ERROR REPORT! -Transaction-id problem: unknown- transaction-id

Case #16 CANCEL 'Request in Process'

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST!	ILL-REQUEST?
CANCEL!	CANCEL?
CANCEL REPLY - "Yes"?	CANCEL REPLY - "Yes"!

Case #17   RECALL

                                                    !   = data to be sent
                                                    ?   = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
 -Service type: 'Loan'
 -Requester Optional Messages
   --Shipped msg. 'requires'
   --Checked-in msg. 'requires'
	ILL-REQUEST?

SHIPPED?	SHIPPED!
RECALL?	RECALL!
CHECKED-IN?	CHECKED-IN!

Case #18   LOST

!   = data to be sent
?   = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Loan'
-Requester Optional Messages
  --Shipped msg. 'requires'
  --Checked-in msg. 'requires'
	ILL-REQUEST?

SHIPPED?	SHIPPED!
LOST!	LOST?

Case #19   DAMAGED

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS

ILL-REQUEST!
-Service type: 'Loan'
-Requester Optional Messages
  --Shipped msg. 'requires'
  --Checked-in msg. 'requires'
	ILL-REQUEST?

SHIPPED?	SHIPPED!
RECEIVED!	RECEIVED?
DAMAGED!	DAMAGED?
RETURNED!	RETURNED?
MESSAGE?	MESSAGE!
CHECKED-IN?	CHECKED-IN!

Part 4

Content of Each APDU

This portion is designed to verify the content of each message. It is suggested at this point that both parties agree to send the information that will be contained in each apdu to the other party via fax or email. See Appendix A-F for pre-designed forms.

Case #20   Bibliographic Data of the ILL REQUEST 'Loan' - ILL ANSWER 'Locations Provided'

(a) **ILL REQUEST**

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -The requester should fill in as many of the following parameters as possible:	ILL-REQUEST? -The data received by the responder should be verified against that sent by the requester (See note)
- level-of-service	
- author	
- title	
- sub-title	
- sponsoring-body	
- place-of-publication	
- publisher	
- series-title-number	
- edition	
- publication-date	
- national-bibliography-number	
- isbn	
- system-no*	
- additional-no-letters	
-verification-reference-source	

N.B. See Appendix **"A"** for form: 'Information Contained in the ILL REQUEST' to be faxed from the requester to the responder.

*If possible send AMICUS or OCLC numbers in the 'system-no.' field.
(OID-> 1.2.124.10161.2)

b) **ILL ANSWER**

<div align="right">

! = data to be sent
? = data to be received

</div>

REQUESTER APDUS	RESPONDER APDUS
ILL-ANSWER? - The data received by the requester should be verified against that sent by the responder (See note)	ILL ANSWER! -The data sent by the responder should contain the following parameters
-Reason unfilled?	-Reason unfilled!
-Reason locs provided?	-Reason locs provided!
	1st Location LocationID
	Location Note
	2nd Location LocationID
	Location Note
	3rd Location LocationID
	Location Note
	4th Location LocationID
	Location Note
	5th Location LocationID
	Location Note
	6th Location LocationID
	Location Note
	Responder Note

N.B. See Appendix **"C"** for form: 'Information Contained in the ILL ANSWER - LOCATIONS PROVIDED' to be faxed from the responder to the requester.

Case #21   *Bibliographic Data of the ILL REQUEST 'Copy/Non-Returnable' - ILL ANSWER 'Not Located'*

a) **ILL REQUEST**

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! - The requester should fill in as many of the following parameters as possible:	ILL-REQUEST? -The data received by the responder should be verified against that sent by the requester (See note)
- level of service	
- title	
- author-of-article	
- title-of-article	
- volume-issue	
- pagination	
- publication-date-of-component	
- issn	
-verification-reference-source	

N.B. See Appendix "**B**" for form: 'Information Contained in the ILL REQUEST' to be faxed from the requester to the responder.

b) **ILL ANSWER**

REQUESTER APDUS	RESPONDER APDUS
ILL-ANSWER? - The data received by the requester should be verified against that sent by the requester (See note)	ILL ANSWER! -The data sent by the responder should contain the following parameters
-Reason unfilled: Locations not found?	-Reason unfilled: Locations not found!
-Responder Note?	-Responder Note!

N.B. See Appendix "**D**" for form: 'Information Contained in the ILL ANSWER - NOT LOCATED' to be faxed from the responder to the requester.

Case #22   *Bibliographic Data of the ILL REQUEST 'Loan'- SHIPPED 'Loan'*

a) **ILL REQUEST**

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! - The requester should fill in as many of the following parameters as possible:	ILL-REQUEST? -The data received by the responder should be verified against that sent by the requester (See note)
- level of service	
- author	
- title	
- place-of-publication	
- publisher	
- edition	
- publication-date	
- isbn	
-verification-reference-source	

N.B. See Appendix "**A**" for form: 'Information Contained in the ILL REQUEST' to be faxed from the requester to the responder.

b) **SHIPPED 'Loan'**

! = data to be sent
? = data to be received

REQUESTER APDUS	RESPONDER APDUS
ILL-SHIPPED? -The data received by the requester should be verified against that sent by the responder (See note)	ILL-SHIPPED! -The data completed by the responder should be as follows:
	-Shipped service type "1"
	-Date shipped
	-Date due
	-Renewable indicator
	-Shipped conditions
	-No. of units per medium
	-Responder Note

N.B. See Appendix "**E**" for form: 'Information Contained in the SHIPPED - LOAN' to be faxed from the responder to the requester.

Case #23   ***Bibliographic Data of the ILL REQUEST 'Copy/Non-Returnable' -***
                   SHIPPED 'Copy/Non-Returnable'

a) **ILL REQUEST**

<div align="right">

! = data to be sent
? = data to be received

</div>

REQUESTER APDUS	RESPONDER APDUS
ILL-REQUEST! -The requester should fill in as many of the following parameters as possible:	ILL-REQUEST? -The data received by the responder should be verified against that sent by the requester (See note)
- level of service	
- title	
- author-of-article	
- title-of-article	
- volume-issue	
- pagination	
- publication-date-of-component	
- issn	
-verification-reference-source	

N.B. See Appendix "**B**" for form: 'Information Contained in the ILL REQUEST' to be faxed from the requester to the responder.

b*)* **SHIPPED 'Copy/Non-Returnable'**

<div align="right">

! = data to be sent
? = data to be received

</div>

REQUESTER APDUS	RESPONDER APDUS
SHIPPED? -The data received by the requester should be verified against that sent by the responder (See note)	SHIPPED! -The data completed by the responder should be as follows:
-Verify: Shipped service type "2"	-Shipped service type "2"
-Verify: Date shipped	-Date shipped
-Verify: No-of-units-per-medium	-No-of-units-per-medium
-Verify: Responder Note	-Responder Note

N.B. See Appendix "**F**" for form: 'Information Contained in the SHIPPED - COPY/NON-RETRURNABLE' to be faxed from the responder to the requester.

Part 5

Checklist of APDUS Tested

a) Message types included in this test plan:

SENT BY THE REQUESTER	SENT BY THE RESPONDER
ILL REQUEST	ILL ANSWER
RENEWAL REQUEST	SHIPPED
GENERAL MESSAGE	RENEWAL ANSWER
STATUS QUERY	GENERAL MESSAGE
RECEIVED	STATUS/ERROR REPORT
RETURNED	CANCEL REPLY
LOST	RECALL
DAMAGED	CHECKED-IN
CANCELATION REQUEST	OVERDUE
STATUS/ERROR REPORT	

APPENDIX A   **Information Contained in the ILL REQUEST 'Loan'**

Parameter	Bibliographic Data supplied by the Requester	Data Received by the Requester	
		YES	NO
- level of service			
- author			
- title			
- sub-title			
- sponsoring-body			
- place-of-publication			
- publisher			
- series-title-number			
- edition			
- publication-date			
- national-bibliography-number			
- isbn			
- system-no			
- additional-no-letters			
-verification-reference-source			

Apdus may not contain all elements listed in this table.

APPENDIX B   Information Contained in the ILL REQUEST
                                       'Copy/Non-Returnable'

Parameter	Bibliographic Data supplied by the Requester	Data Received by the Requester	
		YES	NO
- level of service			
- title			
- author-of-article			
- title-of-article			
- volume-issue			
- pagination			
- publication-date-of component			
- issn			
-verification- reference-source			

Apdus may not contain all elements listed in this table.

APPENDIX C   Information Contained in the ILL ANSWER
'Locations Provided'

Parameter	Location Information supplied by the Responder	Data Received by the Responder	
		YES	**NO**
1st Location LocationID	nlc-bnc:		
Location Note			
2nd Location LocationID	nlc-bnc:		
Location Note			
3rd Location LocationID	nlc-bnc:		
Location Note			
4th Location LocationID	nlc-bnc:		
Location Note			
5th Location LocationID	nlc-bnc:		
Location Note			
6th Location LocationID	nlc-bnc:		
Location Note			
Responder Note			

Apdus may not contain all elements listed in this table.

APPENDIX D   **Information Contained in the ILL ANSWER
'Not located'**

Parameter	Location Information supplied by the Responder	Data Received by the Responder	
		YES	NO
Reason Unfilled			
Responder Note			

APPENDIX E   Information Contained in the SHIPPED - 'Loan'

Parameter	Location Information supplied by the Responder	Data Received by the Responder	
		YES	NO
Shipped service type			
Date shipped			
Date due			
Renewable indicator			
Shipped conditions			
No-of-units-per-medium			
Responder Note			

APPENDIX F   Information Contained in the SHIPPED -
'Copy/Non-Returnable'

Parameter	Location Information supplied by the Responder	Data Received by the Responder	
		YES	NO
Shipped service type			
Date shipped			
No-of-units-per-medium			
Responder Note			

INTEROPERABILITY TEST RESULTS

CASE: _____   **PARTNER:** _____

TRANSACTION ID: _____

Date Started: _____   **Date Completed:** _____

EVENTS:

1) _____   9) _____

2) _____   10) _____

3) _____   11) _____

4) _____   12) _____

5) _____   13) _____

6) _____   14) _____

7) _____   15) _____

8) _____   16) _____

PROBLEMS:

_____

_____

_____

_____

RESOLUTION:

_____

_____

_____