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## Resource Sharing Protocols

See also under: [General- Standards - ILL](#) and [General - Standards - Exchange protocols](#)

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## Does Alma support resource sharing protocols such as ISO and NCIP?

Alma supports 2 main Resource sharing workflows:

- [P2P](#) – in this workflow the borrowing library and the lending library communicate directly. Supported protocols: [ISO](#) [NCIP](#)
  - [Broker based](#) – in this workflow the borrowing library communicates with an ILL broker. The broker passes the request to potential suppliers, and handles the request against the borrowing library. Supported protocols: [NCIP](#)
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## How does Alma support NISO Circulation Interchange Protocol (NCIP)

The NISO Z39.83 Circulation Interchange Protocol (NCIP) plays a major role in two aspects of resource sharing:

1. Integrating third party resource sharing systems with Alma in deployments where Alma is intended to make use of existing third party systems for managing the resource sharing communication, taking on itself the management of the internal library processes on which the resource sharing process relies, such as:
  - Identifying the most suitable library resource for fulfilling a request
  - Making the requested resource available for the requester
  - Checking out/in a resource that is loaned as part of a resource sharing process

In this model, NCIP is the key building stone by which the Alma integration with the resource sharing system is achieved.

2. Managing a full and independent resource sharing process. Alma's NCIP capabilities may be implemented also for directly obtaining resource sharing related information, such as holdings availability and patron eligibility for requesting a resource sharing service, as well as orchestrating the process of identifying the most suitable library resource, making it available to the requester and managing the fulfillment lifecycle of the supplied resource.

NCIP support is an attribute of Alma's resource sharing Integration Profiles. As each integration profile may be specifically tailored to the specific integration it is intended to facilitate, the NCIP message support may be specifically profiled per the use of the specific integration it is part of.

The Alma-supported version of NCIP is 2.0.

Communication between Alma and resource sharing systems, such as OCLC Navigator, OCLC iLLiad, VDX, and Relais D2D, is done via NCIP 2.0 messages. Note that Alma supports the OCLC CIRC ILL and Relais application profiles for both borrowing and lending, as well as the responder role for the following NCIP messages: RequestItem, CheckOutItem, CheckInItem, AcceptItem, LookupUser.

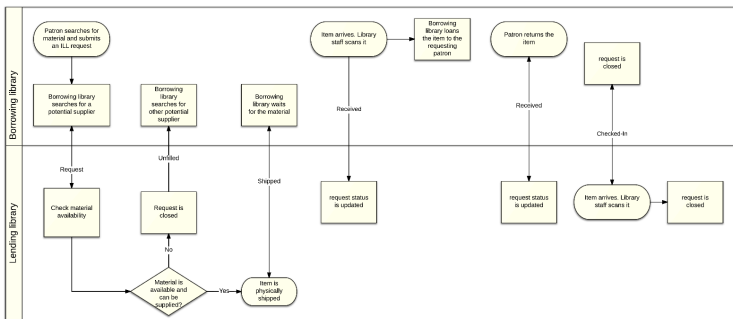
Alma's support for NCIP is over HTTPS secure protocol.

# How does Alma support P2P Resource Sharing ?

A typical P2P Resource Sharing communication includes the following messages between the borrowing library and the lending library:

- Request - the borrowing library asks the potential lending library for material.
- Answer - the lending library answers that the material was shipped, or that the request cannot be filled.
- Received - the borrowing library notifies the lending library that the material has arrived.
- Returned - the borrowing library notifies the lending library that the material has sent back.
- Check in - the lending library notifies the borrowing library that the material has arrived back. The communication can be closed.

The following diagram illustrates the workflow:



# What protocols are supported for P2P resource sharing?

The following protocols are supported for P2P Resource Sharing:

- ISO
- NCIP
- ARTEmail

Each protocol implements the above communication with specific messages, including the relevant information.

P2P Resource Sharing with Alma and the following systems is supported:

System	Vendor	Functionality	Status
VDX	OCLC	Resource Sharing Process ( <a href="#">ISO</a> )	In Testing
Aleph	ExLibris	Resource Sharing Process ( <a href="#">ISO</a> )	Verified
British Library	British Library	Resource Sharing Process ( <a href="#">ARTEmail</a> )	Production
SLNP Supporting Systems	SISIS/OCLC	Resource Sharing Process ( <a href="#">SLNP</a> )	Verified
ILL SBN	SBN	Resource Sharing Process ( <a href="#">ISO</a> )	Verified

## How does Alma support broker-based resource sharing?

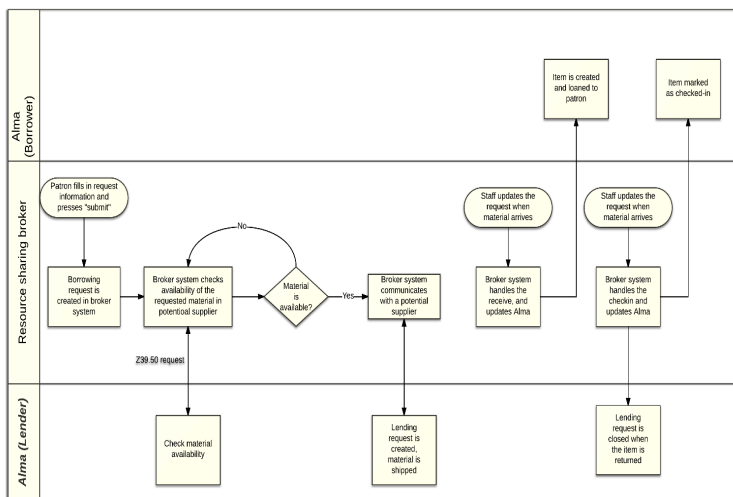
In this workflow, the ILL mail functions (such as submitting a request, defining potential suppliers and finding a supplier that is willing to supply the material) are done inside the broker ILL system. Alma is used mainly for the circulation and inventory aspects of the workflow.

Three integration points are typically part of this workflow:

- [OpenURL](#) or another URL based integration for request submission.
- [Z39.50 integration](#) for exposing the library's holdings availability to the other members of the resource sharing network. At times, systems require full [publishing](#) of the institutions' repository rather than rely on ad-hoc Z39.50 queries.
- Integration for back office processing of the requests, at both borrower and lender sides.

An integrated broker resource sharing system may support some or all of these integration points. Implementing these integration points enables libraries to use an external broker ILL system, relying on Alma and Primo to orchestrate the discovery, inventory management and fulfillment aspects of the resource sharing process.

The following diagram illustrates the workflow:



Once a requested item has been received via any of the listed systems, the request and the subsequent loan that is registered when the patron checks out the item are both managed as standard fulfillment entities. They are therefore listed in the Primo My Account lists alongside the institution internal requests and loans.

Once an item is received and loaned to the patron, it is considered as a standard loan by the system. Due date notices will be automatically sent when the item is due, and overdue/lost item notices will be sent as per library policies.

Where a broker system is used, the item renew is managed in the broker resource sharing system. Alma does support a fully integrated process that allows the patron (or librarian) to request renewal from within Primo (or Alma). The renew request is automatically reflected into the broker system (using NCIP messages). Subsequent updates about renew approval or rejection (on both the borrower and lender side) are managed in the broker system and are also automatically reflected into Alma using NCIP messages. This integrated renew process has been designed and tested with Relais systems.

Fines are independently managed in Alma. Alma may use internal terms of use to associate resource sharing actions (such as receiving a requested resource or such as an overdue check in) with a locally triggered fee. This fee is not reflected into the broker system.

## What protocols are supported for broker-based resource sharing?

The following protocols are supported for broker-based Resource Sharing:

Broker-based Resource Sharing with Alma and the following systems is supported:

System	Vendor	Functionality	Status	Notes
ILL/D2D	<a href="#">Relais</a>	<ul style="list-style-type: none"> <li>Submit Request (<a href="#">OpenURL</a>)</li> <li>Locate and Availability (OPAC Syntax of <a href="#">Z39.50</a>)</li> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>	Production	Relais responds to "Submit Request" with request form
Navigator	OCLC/Atlas	<ul style="list-style-type: none"> <li>Submit Request (Static URL)</li> <li>Locate and Availability (OPAC Syntax of <a href="#">Z39.50</a>)</li> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>	Production	NRE responds to "Submit Request" with search interface
<a href="#">ILLiad</a>	OCLC/Atlas	<ul style="list-style-type: none"> <li>Submit Request (<a href="#">OpenURL</a>)</li> <li>Submit Request - Supplier of Last Resort (Email)</li> <li>Locate and Availability (WorldCat)</li> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>	Production	<p>ILLiad responds to "Submit Request" with request form, requiring login</p> <p>Alma can send structured emails to a configured email address, from which ILLiad may be configured to import the emails and create internally managed borrowing requests</p>
VDX	OCLC	Fulfillment ( <a href="#">NCIPv2.0</a> )	Verified	
OCLC WorldShare	OCLC	<ul style="list-style-type: none"> <li>Submit Request - Supplier of Last Resort (ISO) Not supported by Vendor</li> <li>Locate and Availability (WorldCat)</li> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>	Not supported by vendor	
ShareIt	AutoGraphics	<ul style="list-style-type: none"> <li>Locate and Availability (OPAC Syntax of</li> </ul>	Verified	

System	Vendor	Functionality	Status	Notes
		<a href="#">Z39.50</a> ) <ul style="list-style-type: none"> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>		
<a href="#">InnReach</a>	Innovative	<ul style="list-style-type: none"> <li>Patron File (<a href="#">Publishing</a>)</li> <li>Locate and Availability (<a href="#">Publishing</a>)</li> <li>Fulfillment (<a href="#">NCIPV1.0</a>)</li> </ul>	Production	Requires a script to mediate between Alma and Inn-Reach.
SLNP Supporting Systems	SISIS/OCLC	Resource Sharing Process ( <a href="#">SLNP</a> )	Production	
GTBib-SOD	Kronosdoc	<ul style="list-style-type: none"> <li>Submit Request (<a href="#">OpenURL</a>)</li> <li>Locate and Availability (OPAC Syntax of <a href="#">Z39.50</a>)</li> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>	Verified	No use of the OPAC syntax
Clio II	Clio Software	<ul style="list-style-type: none"> <li>Submit Request (<a href="#">OpenURL</a>)</li> <li>Fulfillment (<a href="#">NCIPv2.0</a>)</li> </ul>	Production	

## Can Alma integrate with INNReach?

Alma can integrate with INNReach via broker-based resource sharing methods. In this workflow, the ILL main functions (such as submitting a request, defining potential suppliers and finding a supplier that is willing to supply the material) are done inside INNReach. Alma is used mainly for the circulation and inventory aspects of the workflow.

Alma integrates with INN-Reach systems by exchanging NCIP-compliant messages via a DCB system, and supports the following features:

- Patron File ([Publishing](#))
- Locate and Availability ([Publishing](#))
- Fulfillment ([NCIPV1.0](#))

Integrating with INNReach requires a script that adds the institution and partner code into the NCIP message that is created by INNReach. Examples of this script can be found on the Developers Network, see <https://developers.exlibrisgroup.com...stems-and-Alma> and <https://developers.exlibrisgroup.com...arch-Libraries>.

Direct integration via APIs with INN-Reach is not yet supported, as INN-Reach currently lacks support for industry standard

APIs.

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## How does Alma integrate with ILLiad for requesting unowned items using single sign on?

Alma may integrate with ILLiad for requesting unowned items by:

- Supplying a link from the discovery. Patrons may use the link to receive a populated form for requesting. If ILLiad supports one of the Alma supported SSO options, which include CAS, SAML or newly implemented (soon to be released) OAuth social authenticating via Google or Facebook, then the requesting process can continue without requiring an additional log in.
- Alma may use an ILLiad supplied email based mechanism for pushing resource sharing requests directly into ILLiad, without requiring any patron intervention at all. This requires ILLiad to maintain a user user ID that is identical to an ID that is managed also in Alma's user management system.

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