

# OLE - 3M Interface

# Technical Document

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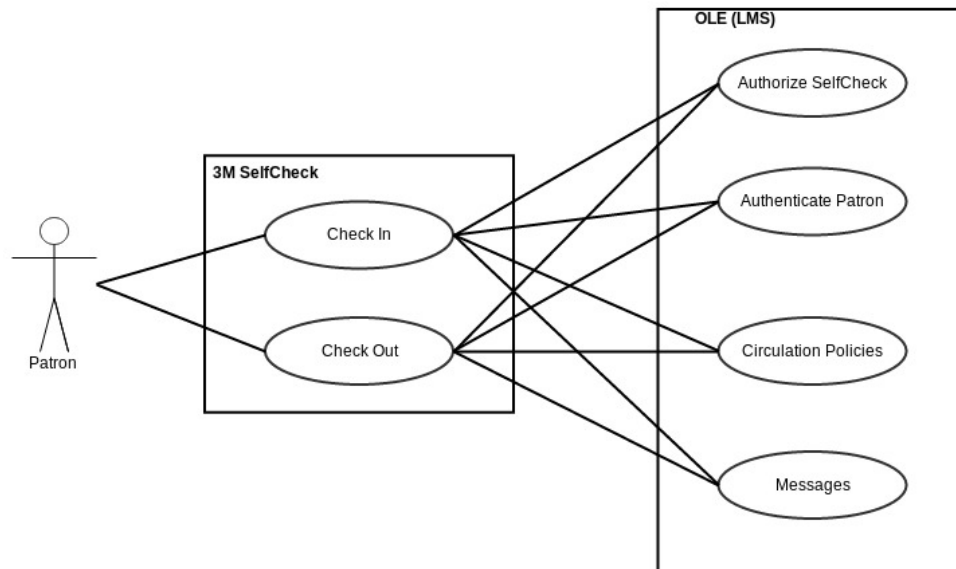
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## Purpose

The 3M SelfCheck (SC) System allows patrons to check out, check in, renew library resources and pay fines without the need of an operator/user. It communicates with the Library Management System (LMS), OLE, using a proprietary protocol, Standard Interchange Protocol ver 2.0. (SIP2) to cross verify the authenticity of the patron and for other circulation policies.



The following services are coded as part of the OLE-3M Interfacing effort

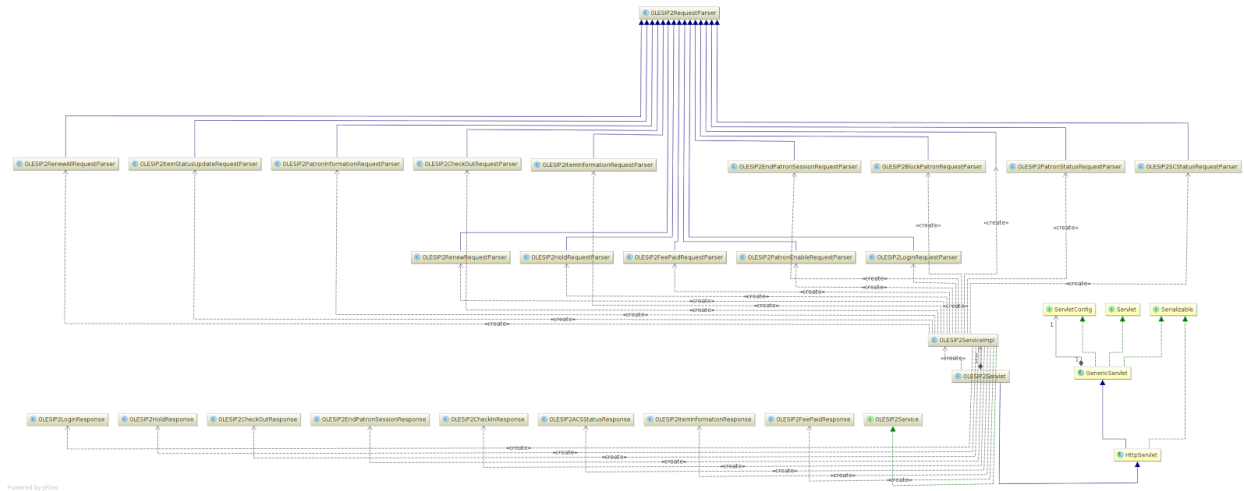
- Patron Status
- Check Out
- Check In
- Block Patron
- SC Status
- Request ACS Resend
- Login
- Patron Information
- End Patron Session
- Fee Paid
- Item Information
- Patron Enable
- Hold
- Renew
- Renew all

# Dependencies / Logical Data Model / Physical Data Model

## Model

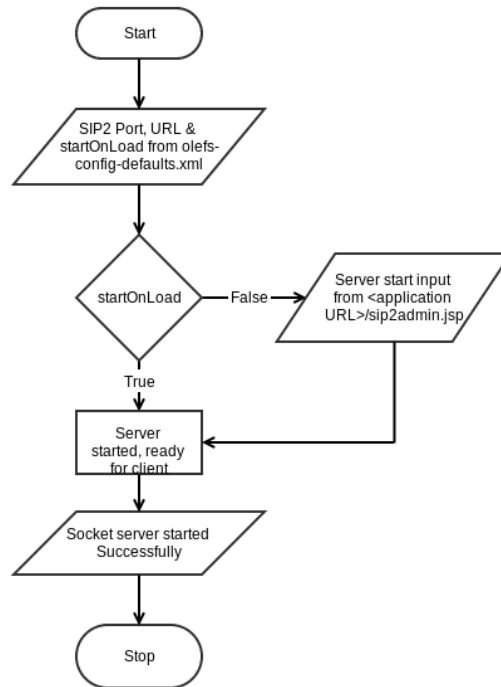
The data from 3M SelfCheck Machine is just parsed and fed to OLE and similarly sent back and none of this is stored in any table in the Database.

## Service Interface Design (Java)



(Please Zoom-in to read text)

The design is based on Java Servlet. The class *OLESIP2InitializeListener* implements *ServletContextListener* and is responsible to initialize the SIP2 Socket connection. The listener class is mentioned in the *web.xml* file. The starting of the socket server can be done manually or automated depending on the configuration (*sipp2.startOnLoad*) made at *olefs-config-defaults.xml* file. The port and URL details are also specified in the file.



The *OLESIP2Servlet* class extends the *HttpServlet* and is responsible to collect requests and send responses from and to the 3M machine. The *processRequest* method of *OLESIP2ServiceImpl* class parses the request from the 3M machine in the proprietary format and passes the request to OLE circulation service as parameters and collects the response. The response is converted to JSON format in *OLECirculationErrorMessageConverter* class and sent back to 3M SelfCheck Machine.

The SIP2 Translator is involved in translating SIP2 proprietary messages to formats OLE can take as input and respond. It also converts the response to SIP2 proprietary formats for the 3M machine to interpret.

For example, the message from 3M SelfCheck for Login function looks as below

**Example:**

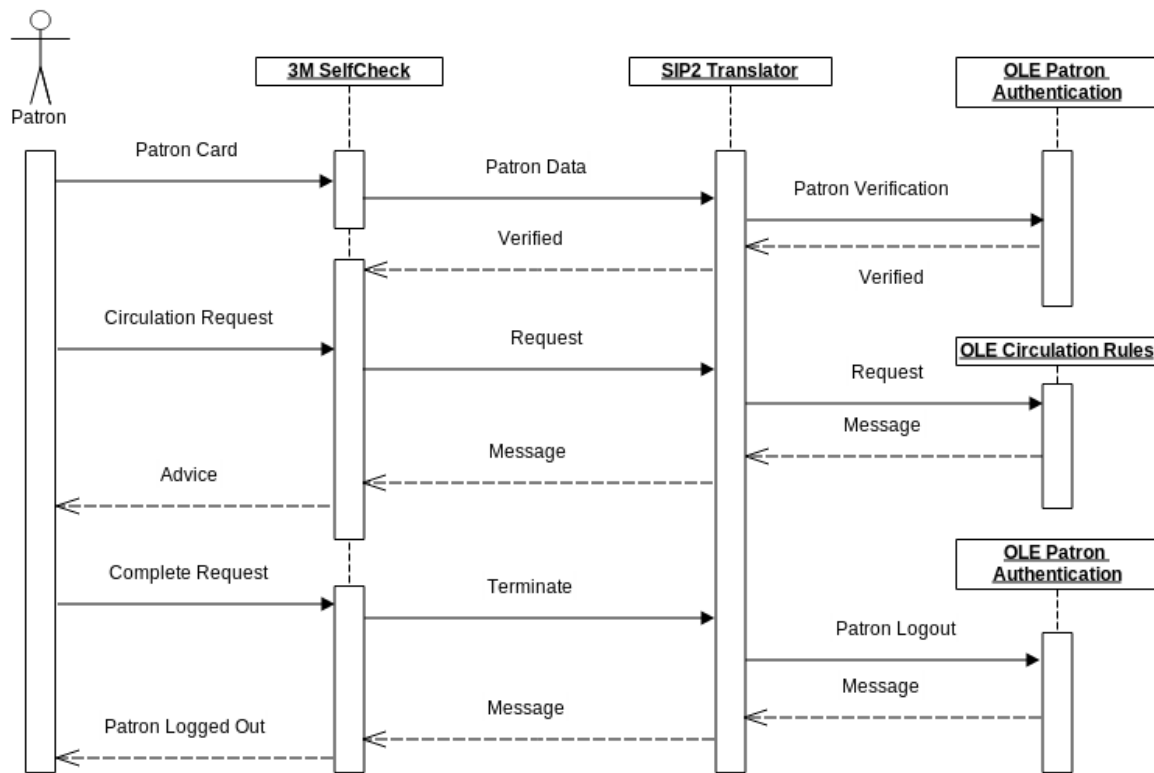
9300CNLoginUserID|COLoginPassword|CPLocationCode|AY5AZEC78<CR>

**Description of Example:**

(93)(No user identifier algorithm)(No password algorithm) (LoginUserID)(LoginPassword)(LocationCode)(Sequence Number 5)(Checksum)(CR)

For more details, please refer to the [SIP2 Developer Guide](#) and [SIP2 Protocol Definition](#) files.

Note: The actual implementation of SIP2 in 3M self-serve machines does not always comply with this protocol notably in the treatment of renewals.



An Institution can decide to switch off one or a few services provided by OLE to the 3M SelfCheck Machine through a configuration in the sip2-config.properties file.

### Maintaining Logs in 3M

A full log of the transactions/calls between 3M and the SIP server are held on each 3M machine in the following folder:

C:\Program Data\3M\3M Library Systems\3M SelfCheck\Log

The principal log files are controller.txt (which rotates itself at a certain file size) and trace.log files. For troubleshooting SIP communications, the relevant log messages contain the string 'SIP' and have numeric values corresponding to different functions as follows:

Message no	Function	Sender	Receiver
99	Verify LMS connection	3M	SIP
98	Verify LMS connection	SIP	3M
11	Check-out	3M	SIP

12	Check-out	SIP	3M
09	Check-in	3M	SIP
10	Check-in	SIP	3M
35	End session	3M	SIP
36	End session	SIP	3M
63	Account info	3M	SIP
64	Account info	SIP	3M
17	Item info	3M	SIP
18	Item info	SIP	3M
29	Renew	3M	SIP
30	Renew	SIP	3M

For more information, Javadocs can be found [here](#).

## Service Interface Design (REST if applicable)

OLE doesn't expose these services through web services.

## User Interface Design

There is no User Interface associated with this process except for a simple screen with a Start, Stop and Status buttons and Text area to display messages. The Start button is to start the socket server for the use of operators in institutions which disable socket server startup along with OLE server in the *olefs-config-defaults.xml* file. Stop button is to stop the server and the status button to display the current status of the socket server. The file, *sip2admin.jsp*, is a simple JSP with embedded JavaScript.

The screen is accessed by entering <application-url>/sip2admin.jsp. In case of staging environment, this would be <http://staging.ole.kuali.org/sip2admin.jsp>

## Data Importing

Not Applicable

## Data Exporting (if applicable)

Not Applicable

## Data Mapping (Circulation Statuses)

Under the Account Information screen, the 3M machine displays a series of counts of the patron's current items checked out. These do not directly correspond to loan statuses within OLE. To ensure an appropriate count is displayed for the patron, the following mapping has been coded.

Note: The status values have been hard-coded. Installations wanting to use different values to represent item circulation statuses will need to change this protocol to ensure the counts display valid counts to the patron.

<b>Item Availability Status Code</b>	<b>Item Availability Status Name</b>	<b>Count to be displayed in 3M ACCOUNT INFO screen</b>
ON-HOLDSHELF	On HoldShelf	Ready for Pickup
LOANED	Loaned	CHECKED OUT: sum of all LOANED OVERDUE: add to count if current Date > Due Date
BILLED	Billed	OVERDUE
RECENTLY-RETURNED	Recently Returned	
ONHOLD	On Hold	Hold Requests

Example patron scenario:

Patron has the following circulation history in OLE statuses:  
items loaned= 5

- of these 2 are 'loaned' passed the due date
- one item is BILLED

items requested= 7

□ of these 4 have been returned by current borrower = OnHoldShelf

Patron sees the following in 3M Account Information:

Checked out: 5

Overdue: 2+1

Hold Requests: 7

Ready for pickup: 4

#### NOTE

- "RENEW ITEM" count can include items with any item availability status \*NOT\* equal to "LOST".
- Given that all LOANED items appear as checked out, they will be available for RENEW. That is, billed items can be renewed via 3M.

## Workflow

The whole process is automated and is for patrons to carry out circulation activities without library personnel involvement. No workflow is involved.

## System Parameters

No System Parameters are currently defined.

## Roles and Permissions

Permissions are linked to roles which are in turn linked to Users to give them access to screens and functions.

The 3M SelfCheck machine is involved in circulation activity. Therefore, a dedicated person identity needs to be created in OLE. This person will be logged as the 'user' triggering the loans, returns, renewals. In order to allow these transactions within the Circulation Rules, the person identity needs the following Roles and Permissions.

Permission ID	Permission Name
OLE10195	Create fastadd
OLE10197	Display existing loan
OLE10198	Update due date



OLE10199	Display request
OLE10200	Update request queue
OLE10201	Can override
OLE10202	Post payment
OLE10203	Post forgive
OLE10205	Create/Update proxy patron
OLE10206	Can backdate check-in time/date
OLE10207	EDITOR_ITEM_INFORMATION
OLE10208	Update patron address only
OLE10209	Display Current loan
OLE10210	Display bill
OLE10211	Create/update bill
OLE10212	Can update item status
OLE10214	Edit Request Document
OLE10276	Initiate Patron Document
OLE10282	Update Patron overview
OLE10283	Update Patron name only
OLE10284	Update Patron phone only
OLE10285	Update Patron email only
OLE10286	Update Patron affiliation
OLE10287	Update Patron library policies
OLE10288	Display Loaned records
OLE10289	Display Temporary Circulation History records
OLE10290	Update Patron Notes
OLE10291	Display Proxy patron
OLE10292	Update Patron local id

OLE10293	Display InvalidOrLost Barcode
OLE10224	DESC_WORKBENCH_SEARCH
OLE10234	INSTANCE_EDITOR_EDIT_ITEM
OLE10298	Patron record expired
OLE10299	Proxy patron record expired
OLE10300	Patron has a general block
OLE10301	Patron has max # of items checked out
OLE10302	Patron has max # of checked out items marked 'claimed returned'
OLE10303	Patron has max amount of overdue fines
OLE10304	Patron has max amount of replacement fees
OLE10305	Patron has max amount of all charges
OLE10306	Patron has max # of overdue items checked out
OLE10307	Patron has max # of recalled overdue items checked out
OLE10308	Item on hold for another patron
OLE10309	Renewal limit reached
OLE10311	Patron has at least one item overdue for more than n days
OLE10312	Patron has at least one recalled item overdue for more than n days
OLE10313	Item currently loaned to another patron
OLE10314	Item has pending request queue where patron presenting item is NOT the patron in queue position '1'
OLE10315	Item not at circ desk authorized to service the item's shelving location
OLE10324	Item contains the pending request

<b>Role ID</b>	<b>Role Name</b>
OLE10074	Circulation Supervisor
OLE10060	Operator