

Interface Specification

FBS-14789

Cicero RFID Interface Specification

Interface Specification

Project: 14789 - FBS
Revision: Revision: 1.7 Date: 09 Jan 2018
Document: SSE/14789/IFS/0012

Copyright (c) 2018 by Systematic Group. It shall not be copied, reproduced, disclosed or otherwise made available to third party without previous consent from Systematic Group

Table of Contents

| | | |
|----------|---|----------|
| 1 | Introduction | 4 |
| 1.1 | References..... | 4 |
| 2 | Supported vendors | 4 |
| 3 | How the integration works | 4 |
| 3.1 | Activating / deactivating read of RFID tags | 5 |
| 3.2 | Writing an item number to an RFID tag | 5 |
| 3.3 | Testing the connection to the RFID server application | 5 |
| 4 | Error handling..... | 6 |

1 Introduction

This document describes how the Cicero LMS client interacts with RFID hardware.

The target group for this document is vendors of RFID equipment and employees at the library that would like to understand the technical details of how Cicero LMS interacts with the RFID hardware.

Background knowledge and technical details about RFID in general, for example how properties are assigned to an RFID tag and what properties are used in this context, is not in the scope of this document. The protocols used in the communication with the RFID server applications are also not in scope.

1.1 References

| Reference | Titel | Link |
|-----------|---------------------|--------------------------------------|
| [USM0003] | Cicero brugermanual | Contact Systematic for the document. |

2 Supported vendors

Cicero supports integration with RFID hardware from three vendors:

| Vendor | Supported RFID server version |
|----------------------------|-------------------------------|
| TAGVision | 4.1.3.6 |
| Lyngsoe Systems | 1.1.4.1 |
| Bibliotheca | 1.3.10 |
| P.V. Supa GoodStuff | 1.21 |

3 How the integration works

Cicero does not interact directly with the RFID hardware, but interacts by TCP socket communication with an RFID server application installed on the client PC. The RFID server application is provided by the RFID hardware vendor and handles the communication with the hardware, which is a read-write unit and an antenna.

On the client PC an RFID driver and the RFID server application must be installed and the RFID hardware be connected to the client PC. Driver, RFID server application and configuration (including licensing) and the RFID hardware is provided by the RFID hardware vendor.

When all these components are in place, the Cicero LMS client must be configured to be able to communicate with the RFID server application. See [USM0003] for how to configure the connection to the RFID server application.

The interaction with the RFID server application is initiated from the Cicero LMS client in different scenarios:

- Activating / deactivating read of RFID tags.
- Writing an item number to an RFID tag.
- Testing the connection to the RFID server application.

It works in slightly different ways depending on RFID vendor as there is no standard protocol for the communication. For details about a protocol contact the vendor.

The user of the Cicero LMS client interacts with the RFID hardware in the mentioned scenarios. They are covered by the sections below.

3.1 Activating / deactivating read of RFID tags

In the Cicero LMS client reading of the RFID tags is initiated by the user. Read commands for each material in range of the RFID hardware antenna are received from the RFID server application. Each read command holds an item number from an RFID tag and a completeness indicator. The item number is used to lookup a material and the Cicero LMS client sends a reply to the RFID server application for each received read command. The reply is used to activate or deactivate the security property of an RFID tag.

Cicero LMS supports reading from a set of materials. The completeness indicator tells whether all parts of a material are present in range of the antenna.

The table below shows in what areas it is possible to read from RFID tags, and what security action is taken:

| Area in Cicero LMS client | Security property |
|----------------------------------|---|
| Checkin | Security is deactivated if the material is auto loaned during checkin, otherwise security is activated. |
| Checkin (offline) | Security is activated. |
| Checkout | Security is deactivated. |
| Checkout (offline) | Security is deactivated. |
| Forward loan | Security is deactivated. |
| Booking fulfilment | Security is deactivated. |
| Material receipt | Security is activated. |
| Interlibraryloan search | Security is deactivated. |

3.2 Writing an item number to an RFID tag

Writing an item number to an RFID tag is “programming” the RFID tag, for example a new RFID tag on a material.

The command takes two arguments, item number and item count, in the Bibliotheca and TAGVision protocols. In the Lyngsoe protocol the command takes only one argument, item number. The Lyngsoe server automatically detects the number of tags in range of the antenna and writes to them as a set.

In the Cicero LMS client “programming” of RFID tags is done from the material details area by clicking the “Skriv til RFID tag”/“Write to RFID tag” button. See [USM0003] for details about how to do this.

Activating and deactivating the security property of the RFID tag is also part of “programming” the tag. When programming an RFID tag the security property is assigned a value depending on the material state:

| Material state | Security property |
|-----------------------|-----------------------------------|
| Available | Security is activated. |
| Lost | |
| Discarded | Security is Deactivated. |
| Otherwise | Security property is not changed. |

3.3 Testing the connection to the RFID server application

Testing the connection to the RFID server application is done as part of configuring the connection. For details about configuring the connection see [USM0003].

The various protocols support an initial command, which is send to the RFID server application. A specific command is expected in the reply and is interpreted as a successful connection test.

4 Error handling

Error handling strategy “User/system expects result of invocation of data from external system” described in [SDD0003] applies.

SYSTEMATIC

Denmark

Søren Frichs Vej 39
8000 Aarhus C, DK
Tel.: +45 8943 2000
more.info@systematic.com

Landgreven 3, 2.sal
1301 Copenhagen K, DK

Australia

Level 4 & 5, 15 Moore Street
Canberra City, ACT 2600, AU
Tel.: +61 (0)2 6169 4088
more.info.au@systematic.com

Finland

Finlaysoninkuja 19
33210 Tampere, FI
Tel.: +358 207 463 870
more.info.fi@systematic.com

France

5 Place de la Bastille
75004 Paris, FR
Tel.: +45 8943 2000
(HQ in Denmark)
more.info.fr@systematic.com

Germany

Im Zollhafen 24
50678 Köln, DE
Tel.: +49 221 650 783 71
more.info.de@systematic.com

New Zealand

15 Level, 171 Featherston Street
Wellington 6011, NZ
Tel.: +64 04 894 8571
more.info.nz@systematic.com

Romania

17, Thomas Masaryk Street
Danish House, floors 1-4
Old Building, Ground Floor and 1st floor
2nd district, 030167, Bucharest, RO
Tel.: +40 770 214029
more.info.ro@systematic.com

Singapore

15 Hoe Chiang Road
#12-02 Tower Fifteen
Singapore 089316
Tel.: +65 6653 7492
more.info.sg@systematic.com

Sweden

Ostermalmstorg 1, 4th Floor
Stockholm 114 42, SE
Tel.: +46 770 770109
more.info.se@systematic.com

UAE

World Trade Centre, Level 17, Suite 56
Abu Dhabi, UAE
Tel.: +971 2 654 4675
Fax: +45 8943 2020
more.info.uae@systematic.com

United Kingdom

Meadow Gate, Farnborough Airport
Farnborough, Hampshire
GU14 6XA, UK
Tel.: +44 1276 675533
more.info.uk@systematic.com

United States of America

5875 Trinity Parkway, Suite 130
Centreville, Virginia 20120-1971, USA
Tel.: +1 703 385 7522
more.info.us@systematic.com