

Hong Kong Communications Company Introduction



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Hong Kong Communications Group Structure

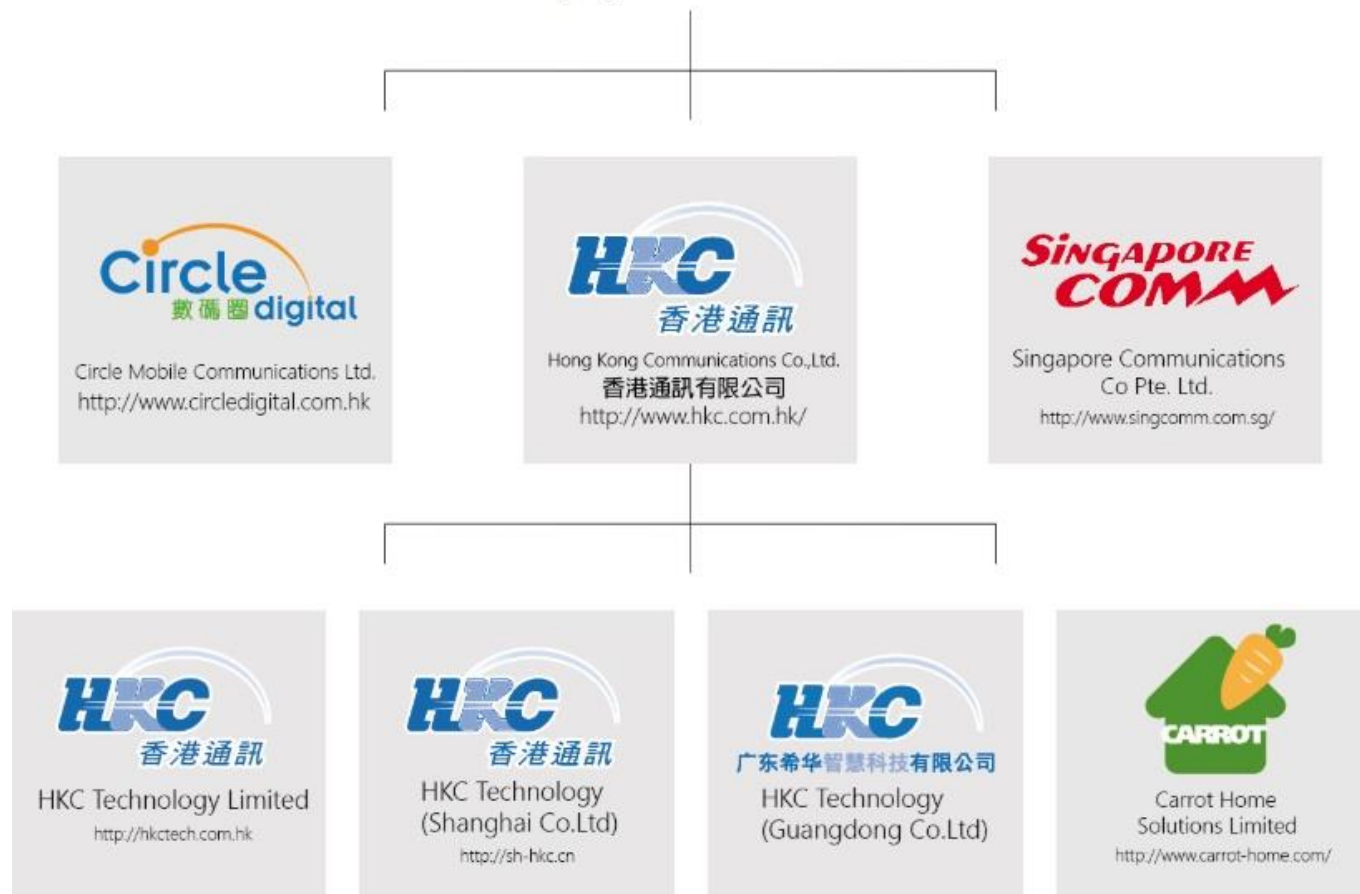
Group Structure

HKC International Holdings Limited

Stock Code: 248 HK

Information Communication Technology

(ICT)Solution Provider



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Our Vision & Mission



VISION

Add Life to ICT

MISSION

Improve the quality of life through ICT

VALUE

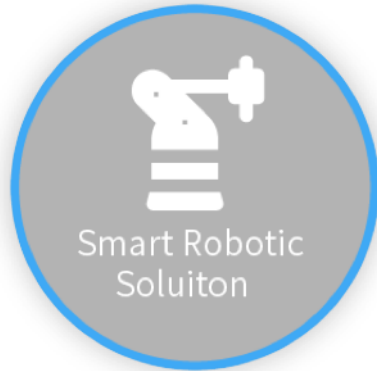
We Connect Everything



Our Core Business



Smart Building Solution



Smart Robotic Solution



Smart Library Solution



Smart Asset Management Solution



Smart Healthcare Solution





Smart Library Solution



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Traditional Library Pain Points

- Difficult to find a book due to unfamiliar with the location
- Books are misplaced in wrong shelf
- Stock take
- No recommendation to readers



LIBRA meet library digitalization journey



- **Connect to Internet**
- **Turn Digital**

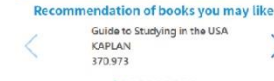
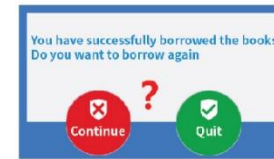
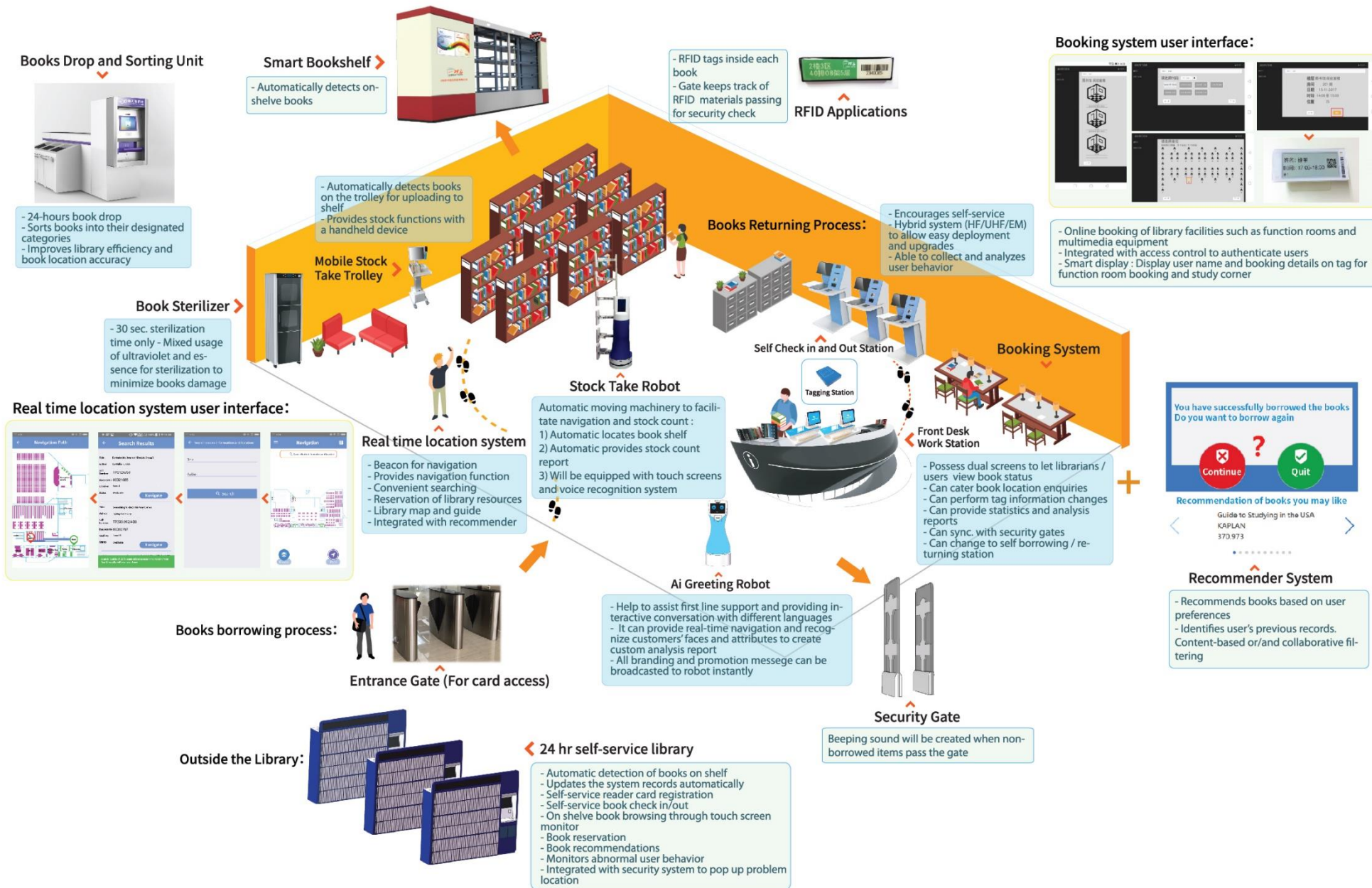
- **Social web**
- **Mobile Apps**
- **Customer & Agent Portal**
- **Integrated System**

- **Semantic web**
- **Big Data**
- **Predictive Analytics**

- **Intelligent**
- **Makerspace**
- **Context-Aware Technology**
- **Open Source**
- **Big Data**
- **Cloud Service**
- **Augmented Reality**
- **State-of-the-art Display**
- **Librarian 4.0**

Entering a New Era of Smart Library 4.0

Smart People (Smart Education and Learning) Bronze Award



Stock Take Robot Jia Jia

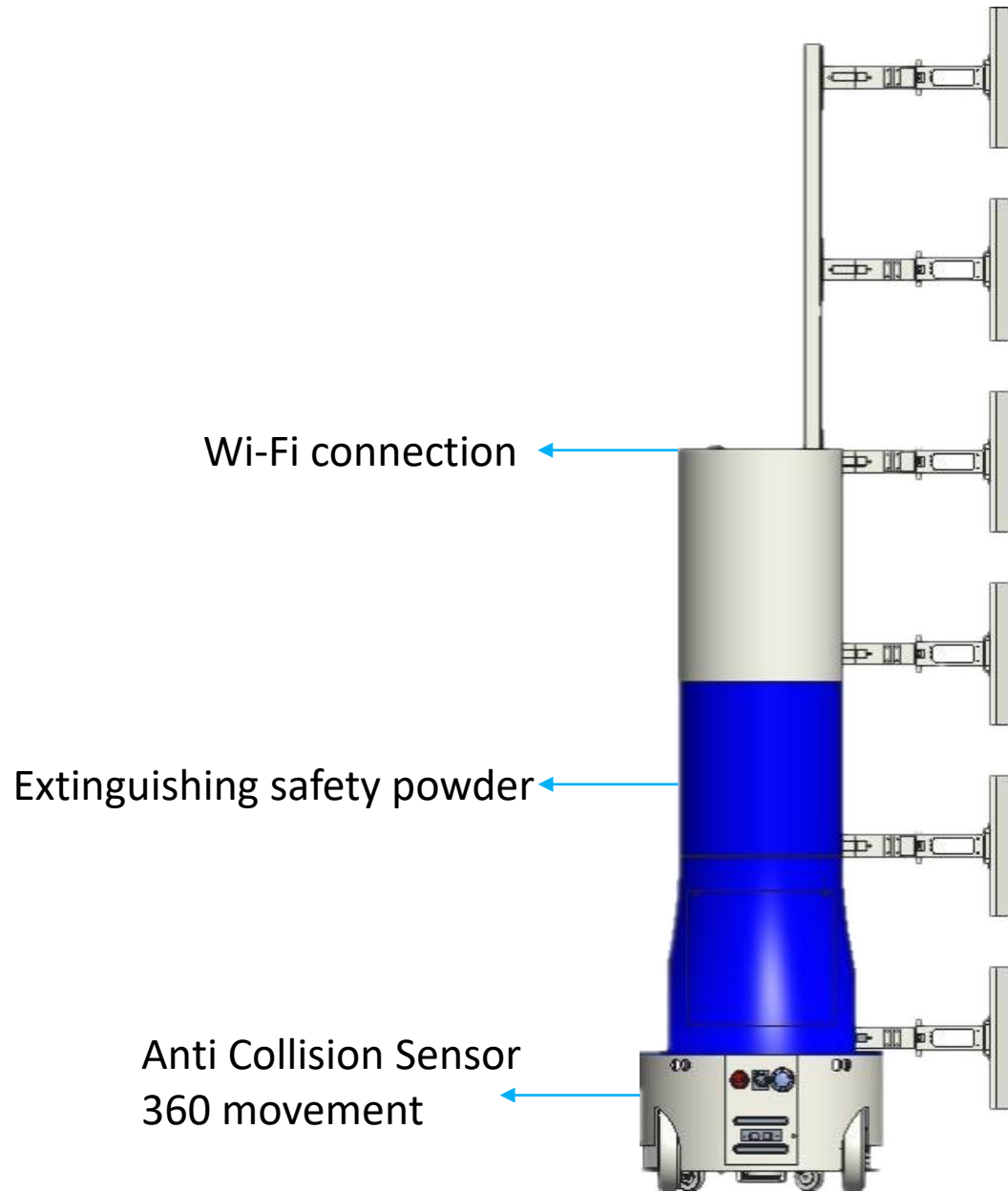
Jia Jia supports autonomous mapping, localization (SLAM) and navigation. No human assistance is required. Autonomous recharging is supported. It can go back to charge station automatically.

Key functions:

- Stock-taking
- Item Locator
- Shelf-reading

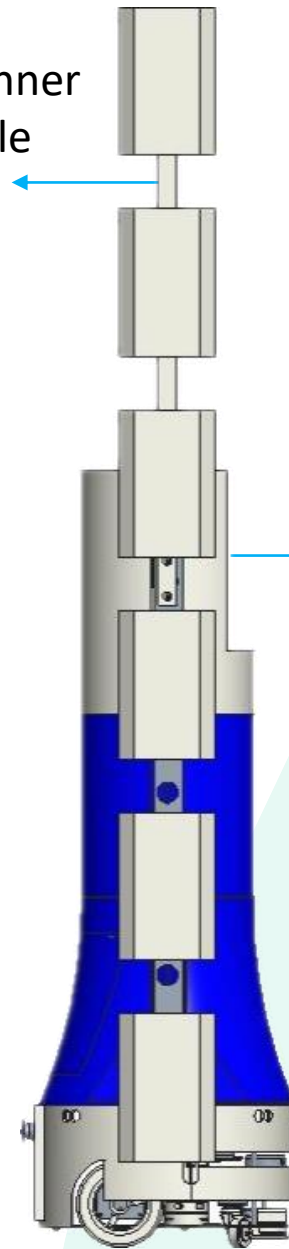


Structure & Design



RFID Tags scanner
with adjustable
slingshot

210 cm
80kg



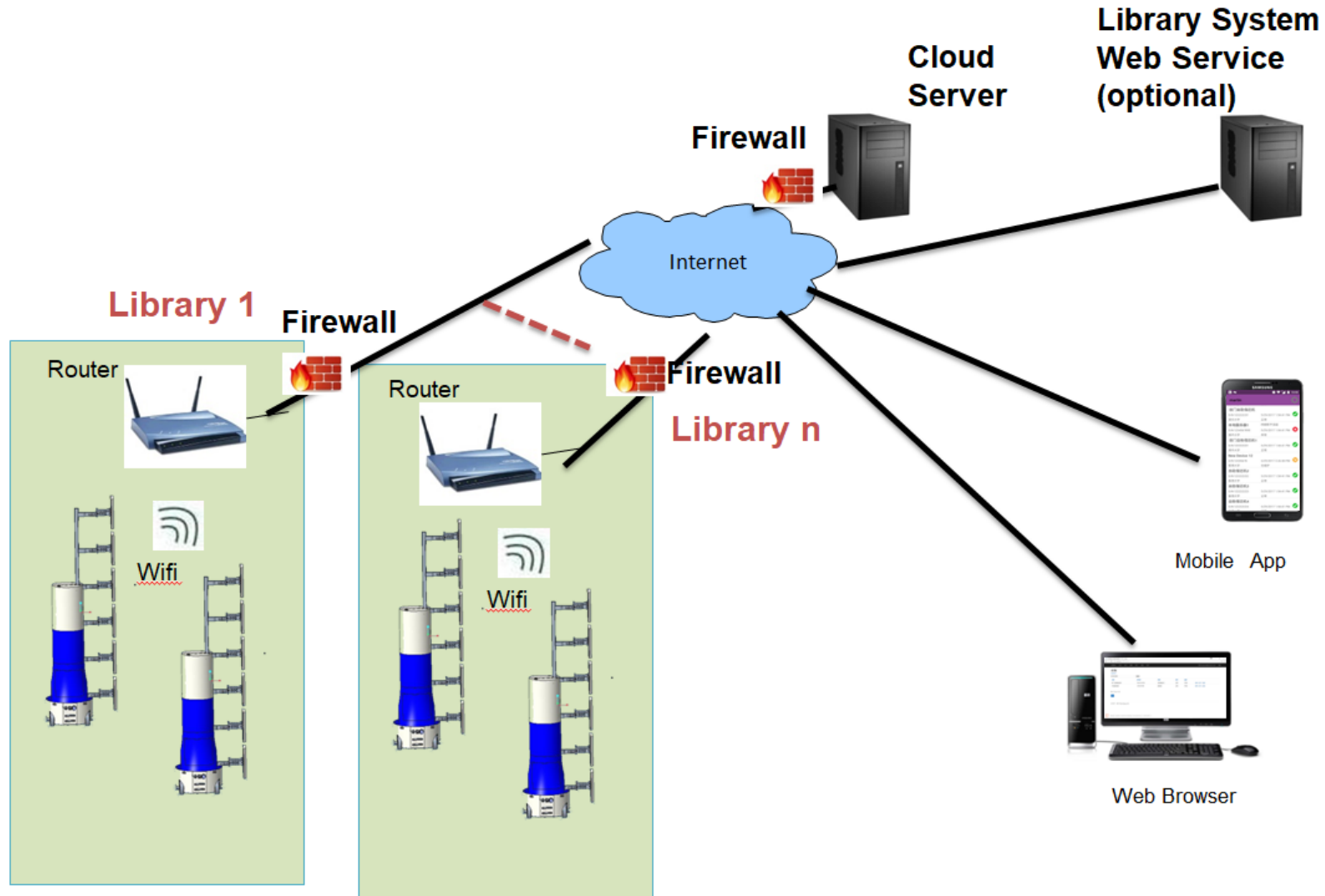
10.1" Touch Screen
Speaker
Microphones



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System Architecture

The Libra Robot System (LRS) consists of one or multiple robots operated in one or multiple sites with a Centralized Libra Robot Management System (LRMS) on cloud or on-premises.



Features of LRMS System

Item Locator

LRMS maintains a database of scanned library items and their shelf locations up to tier and bay level. It allows library staff to search and locate the last-scanned shelf location (at tier and bay level) of the item on a library layout map or via a search interface

02

01

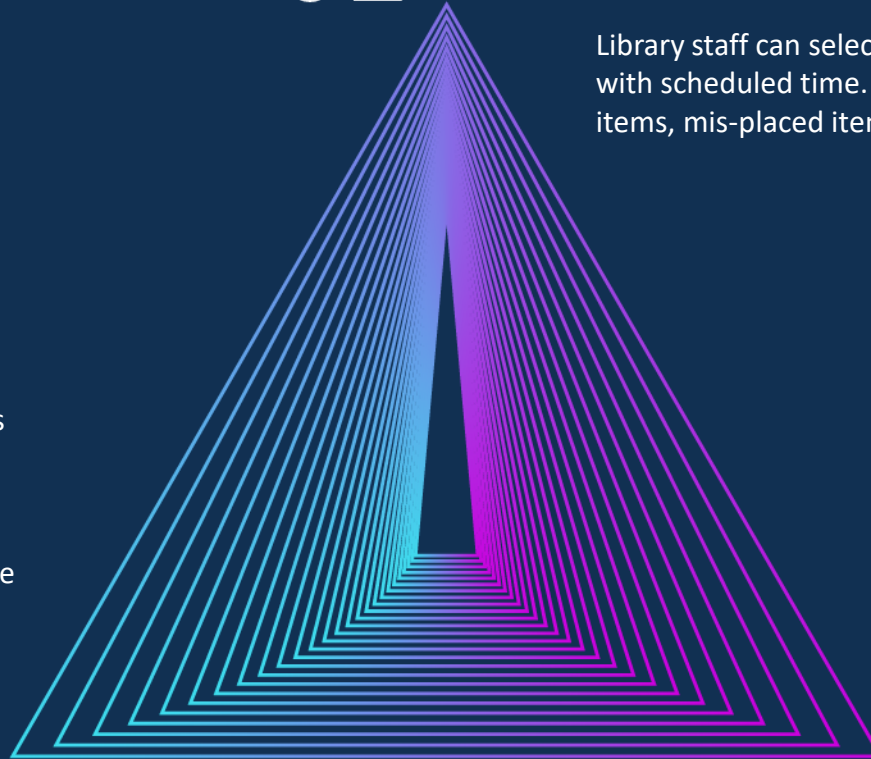
Stock Take

Library staff can select the location or zone for stock-take with scheduled time. It can provide reports of detected items, mis-placed items and suspected missing items

Shelf-reading

The LRMS supports the shelf reading function. The LRMS shall update item location in the database for any items scanned in shelves. The location of these items can also be optionally updated to LMS in real time if necessary.

03





Benefits

- 35,000 books scan within 1 hour
- Preset the complete automation of daily operation
- Reduce operation costs and decrease manual labor overhead
- Increase reader experience and their reading interest
- Save both library staff and reader accessible time

24hr self service library

Smart library kiosk breaks the traditional book lending system as part of the continuous development trend of modern libraries. It does this by providing a 24-hour smart library service without borrowing time limit and provides a more convenient self-service book borrowing experience for citizens in any region.

240 Book cases (Standard Size) |

90 Book cases |

210 Book cases





90 Book Cases	210 Book Cases	240 Book Cases (Standard Size) with Book Drop	240 Book Cases (Expanded Size) With Book Drop
Installed with 24 hours Surveillance Camera			
Size of Monitor		27 inches touch screen	
Color & Size		Customizable	
Weight		170-370KG	
Supplementary reminder		Reminder when books are out of stock	
Data Output		Remote or use SD card to collect data, enable administrators to export sales data for management analysis	
Power		220V	
Degree of protection		IP31	





Benefits

- **Breaking the time limit**, readers can initiate borrowing at any time.
- **Breaking the space constraints**, the platform can open all the books and documents that can be borrowed in the general branch system.
- **Breaking distance restrictions**, readers can use mobile terminals and networks, as well as regional branches, library lending services are available at bookcases or delivery service points.

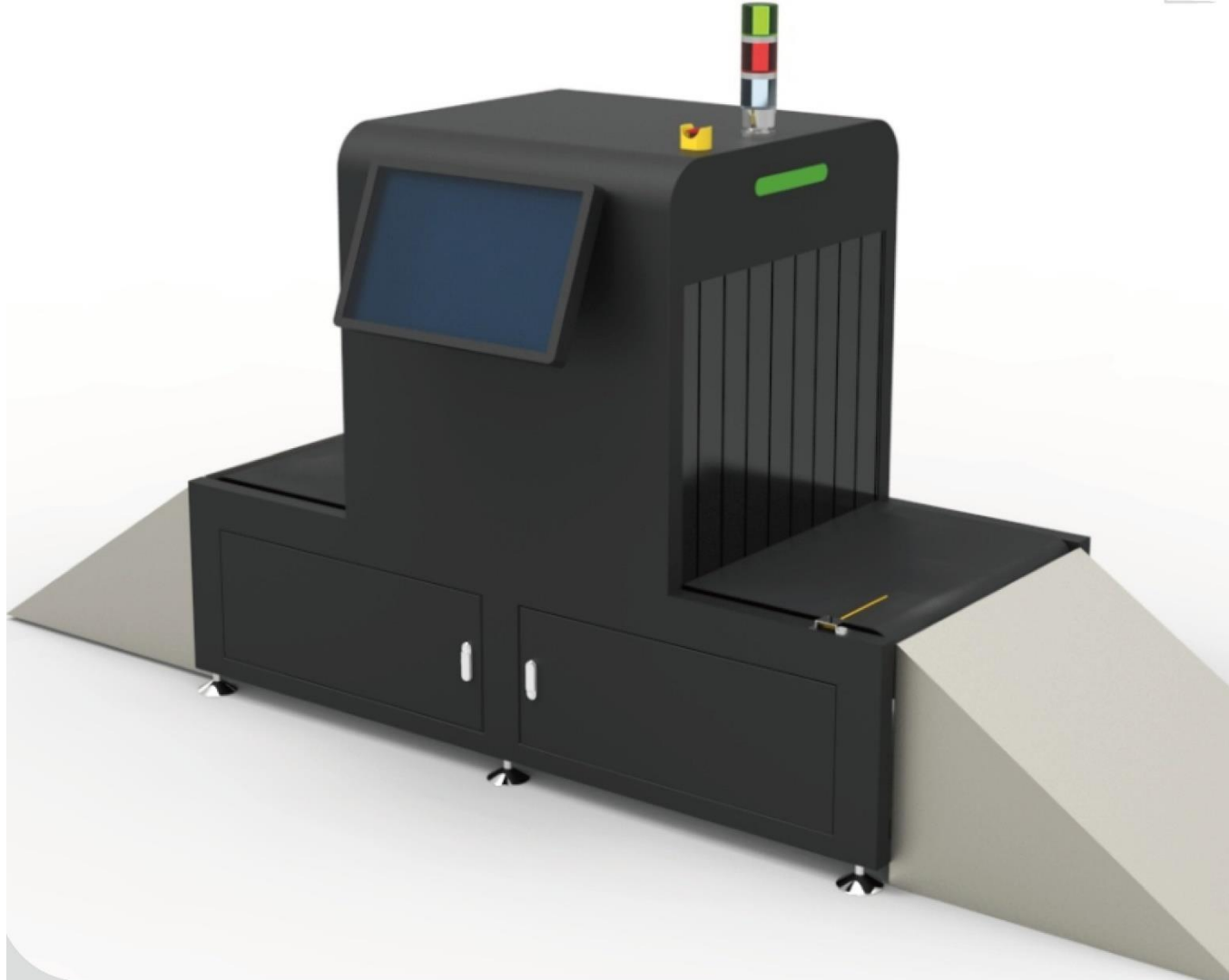
24 hr Books Return and Sorting Unit

The 24hr books return and sorting unit is a device installed in the outer wall of the library or in the library hall, which can identify the RFID tag of the books and the library cards. Through seamless connection with the library LMS system, the touch screen user interface simplifies the return procedure, readers can borrow or return their books anytime even when the library is closed. Books returned will be placed at bins and filed to book shelf accordingly.



Book Checking Machine

Book checking machine supports multiple books scanning at one time, significantly reduce librarian workload by automatically detect and verify all books with stock list of the library. It can store , deliver , verify and provide statistic book count report.



Security Gate

Beeping sound will be created when non-borrowed items pass the gate (with whitelist and headcount feature)



RFID Smart Bookshelf

Our internal structure of RFID Smart bookshelf is built by steel, the smallest unit is a double-sided five-layer design, each layer can hold about 60 books. A touch screen is installed on the side of the bookshelf to display the information of all books on the entire shelf. The antenna can effectively avoid misreading the book labels and update the system records accurately for stock take.



Bookshelf Size	single section : 1120 x 2100 x 665mm
Working frequency	920-925MHz
Power	AC220V±10%
Protocol standard	ISO18000-6C
Scanning accuracy	>98%
Power consumption	single-section consumes less than 6W
Working temperature	-20 ° C ~ 60 ° C
Storage temperature	-40 ° C ~ 85 ° C
Equipped with false alarm and temperature detection	

Features:

- Real-time monitoring
- Reminder of books misplacement
- Books Return function
- Books tracking function
- Analytics and reporting on borrowed books
- Provide OPAC search function

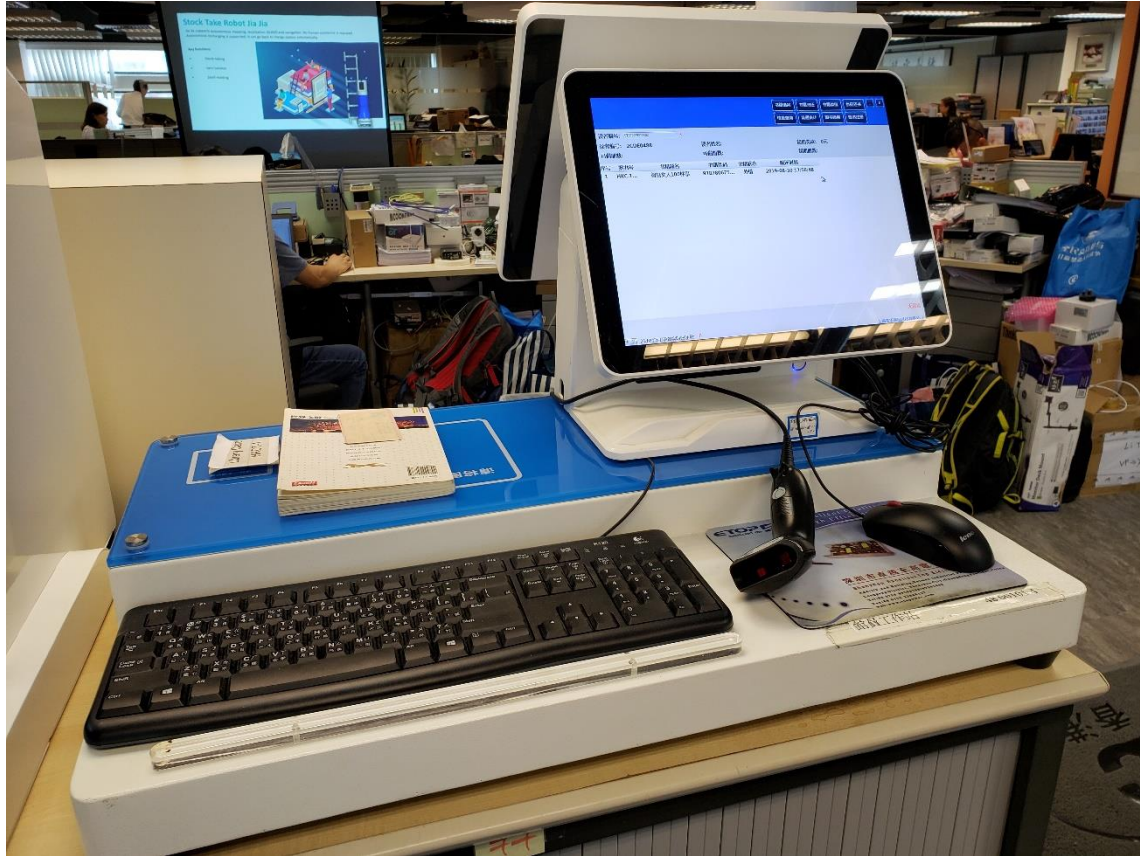
Tagging Station

Amend tag information in easy manner



Front Desk Work Station

Mainly designed for librarians to manage books borrowing /returning / renewal functions



Mobile Stock Take Trolley

Automatically detects books on the trolley for uploading to shelf and provide stock taking with a handheld device



Book Sterilizer

30 sec. sterilization time only - Mixed usage of ultraviolet and essence for sterilization to minimize books damage

LIVA Book Sterilizer structure map

ON/OFF Button

Easy power cut button
(located inner front of
the disinfecting chamber)

UV-C lamp

Install 10w*8pcs
(base on EBS-401)

Semiautomatic Book Holder

Supply semiautomatic book holder
that books can easily be plugged in
and minimize blind spot to enhance
UV sterilizing power.

Travelling Wheel

Convenient to move,
fitted with a stopper and
can be fixed after installation.



Tempered glass

Apply safety tempered glass to
prevent ultraviolet rays from being
released externally and be resistant
to external shock

Safety switch

Apply safety switch that the disinfection
operation is automatically stopped when
opening the door during disinfection

Machine room

Main electricity, Fan, Filter, Air freshener



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Software Applications

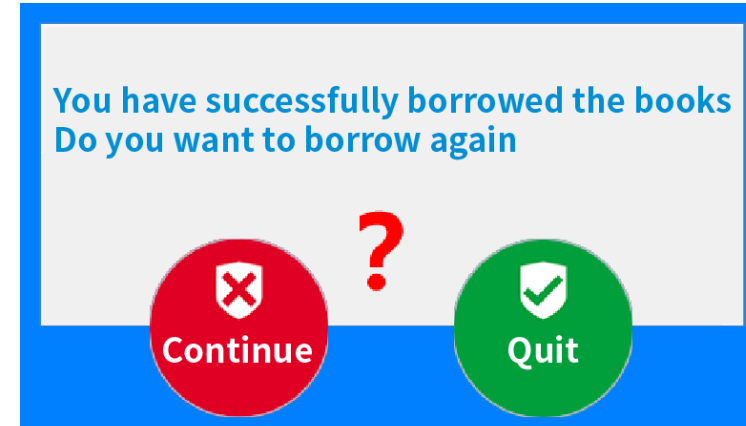


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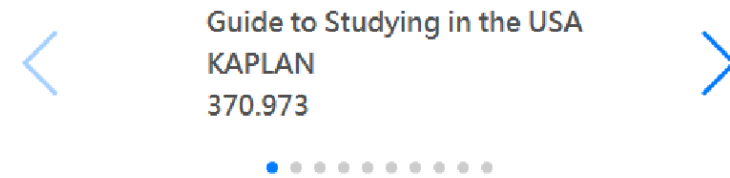


Books recommendation system

Users can receive book recommendation upon borrowing



Recommendation of books you may like



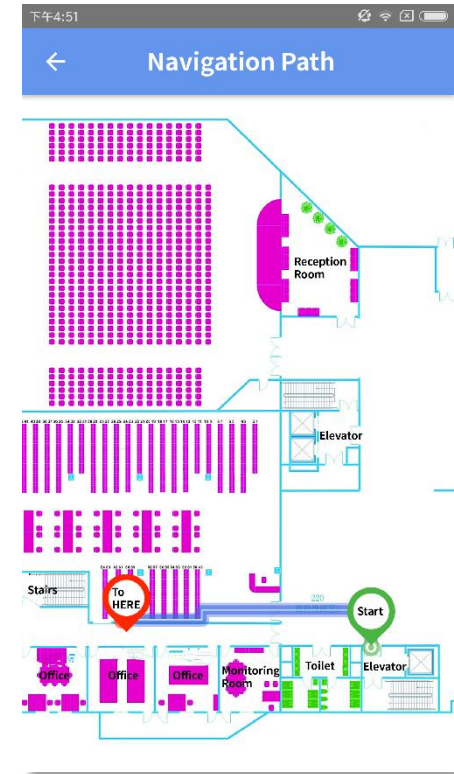
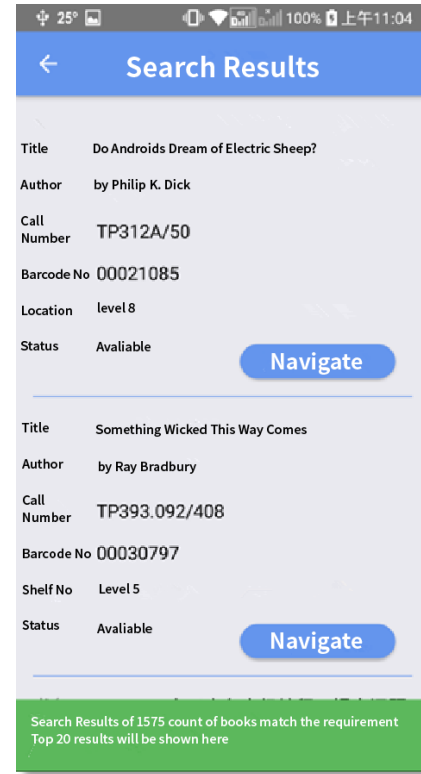
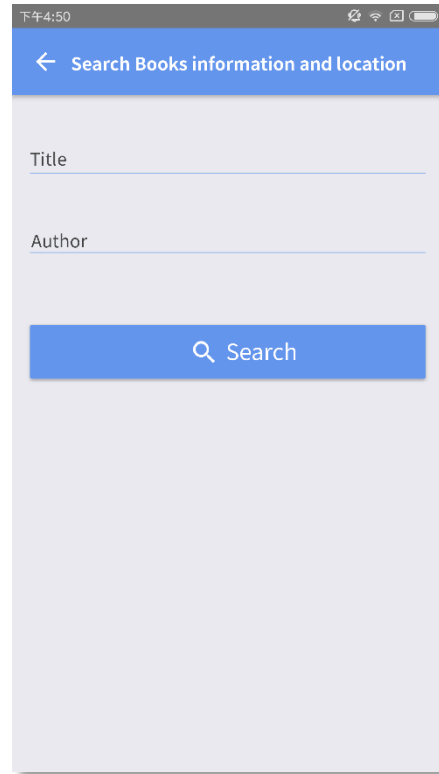
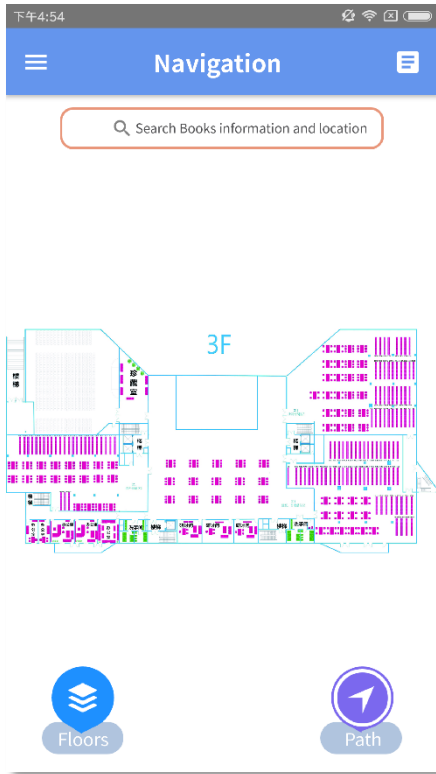
- Recommends books based on user preferences
- Identifies user's previous records. Content-based or/and collaborative filtering

Self Check in
and Out
Station



Navigation

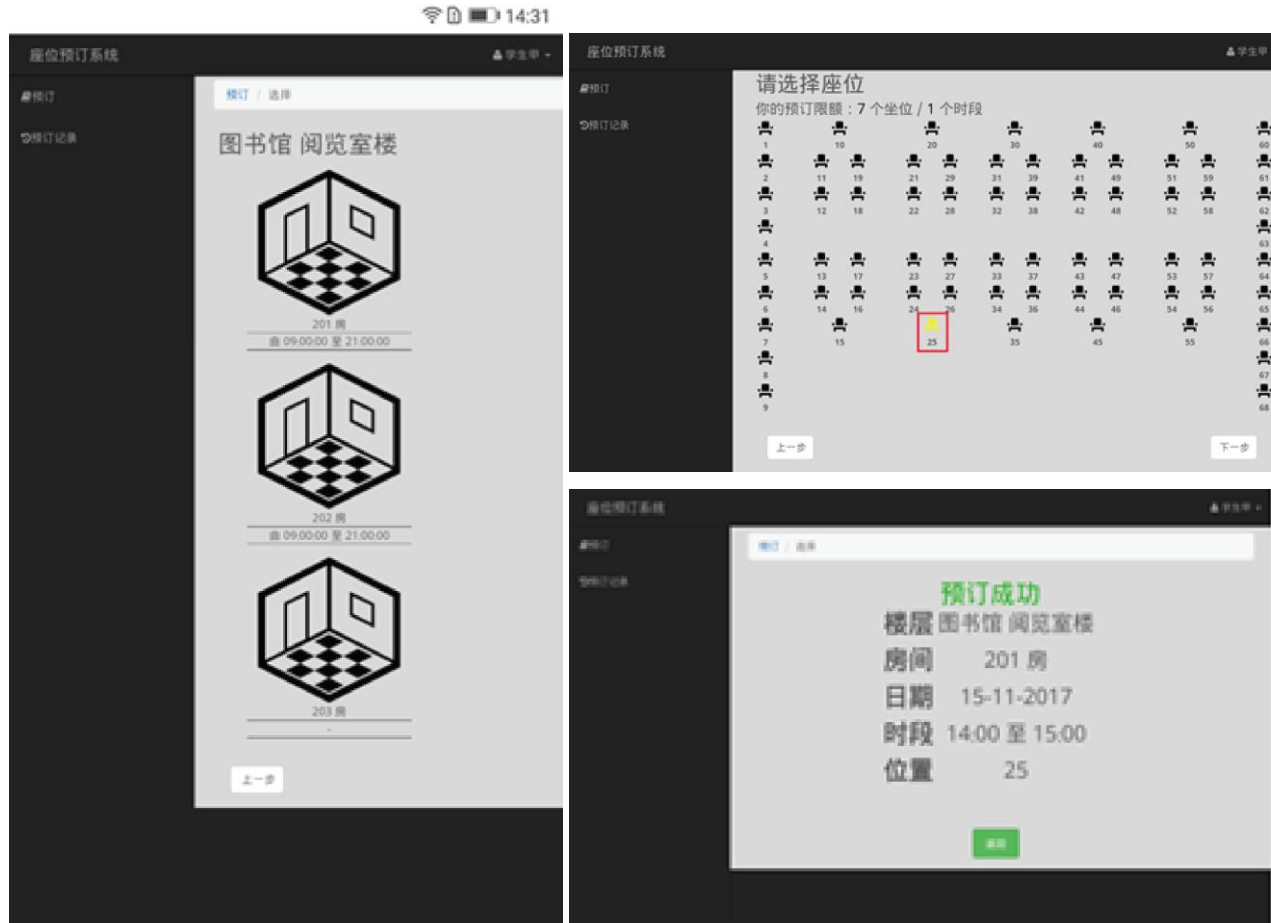
Assist users to locate books via mobile apps



- Supports real time location indication
- Supports multiple floor indication
- Convenient searching
- Library map and guide
- Integrated with recommender

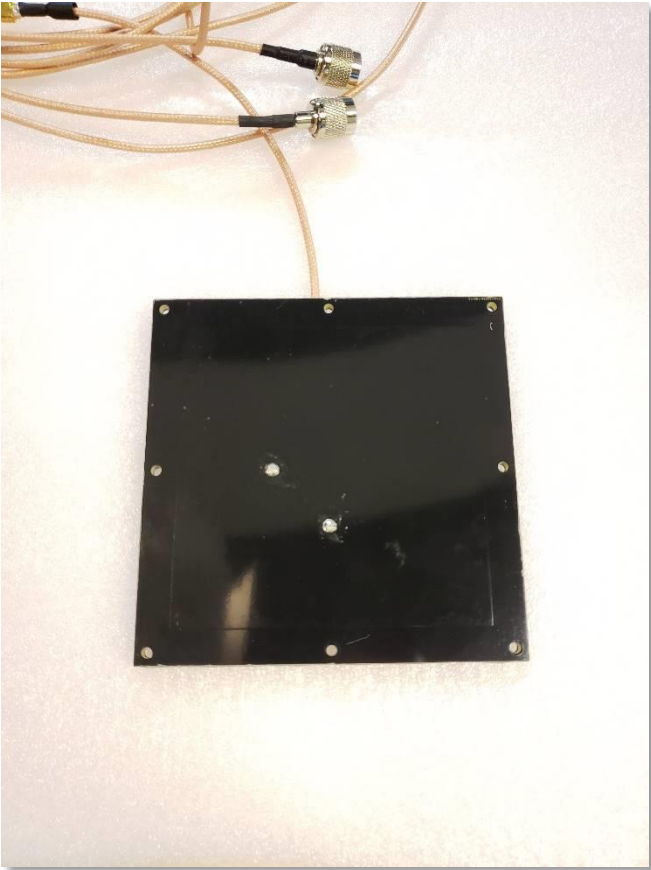
Booking System

- Online booking of library facilities such as function rooms and multimedia equipment
- Integrated with access control to authenticate users
- Smart display : Display user name and booking details on tag for function room booking and study corner



RFID localisation

Antennae to be put under the table for counting and locate books



Reading List

- "CCTV杯"全国英语演讲大赛
2002-2005
1970-01-01 08:00:00
- "CCTV杯"全国英语演讲大赛
2002-2005
1970-01-01 08:00:00
- "CCTV杯"全国英语演讲大赛
2002-2005
1970-01-01 08:00:00
- "R&D"与企业原动力
1970-01-01 08:00:00



Local reference for Libra



香港恒生大學
THE HANG SENG UNIVERSITY
OF HONG KONG



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Customers in China

Central China Normal University
Tianjin University
Anhui Normal University
Shandong University
Henan Normal University
Anqing Normal University
Dalian University
Jiangsu Duke Kunshan University
West Anhui University
Wangnan medical college
Bozhou University
Bengbu Medical College
Anhui University of Finance and Economics
Chuzhou University
Tongling University
Henan University of Urban Construction
Xuchang University
Nanyang Institute of Technology
Xinxiang Medical University
Henan University of Animal Husbandry and Economy
Anhui Medical College
Datong Health School
Hefei Preschool Education College
Anhui Water Conservancy Technical College
Hefei Technology College
Anhui Physical Education College
Anhui Vocational and Technical College
Hefei economic and trade tourism school
Huangshan Vocational Technical College
Chuzhou City Technical College
Henan Technical College Of Construction
Henan Institute of Economics and Trade
Tianjin College of Commerce
Tianjin Transportation Technical College
Hefei NO.10 Senior High School
Yingshang No.1 Middle School
Wuhan Evergreen No.1 Middle School
Senior High School of Lishui Jiangsu
The No.2 Senior High School of Mengcheng
Xuchang Experiment Primary School
Hefei Shi Fan Fu Xiao San Xiao
Hefei Wanghu Primary School
Hefei Tunxi Road Primary School
Xuzhou Air Force Service Institute
The Second Military Medical University



Overseas Customers

Hang Seng Management College
Hong Kong Institute of Vocational Education (Tsing Yi)
National library of Singapore
Singapore Polytechnic
Singapore Management University
Institute of Technical Education-College West
Singapore Dunman High School
INSEAD
Tanglin Trust School
Nanyang Technological University

Overseas Reference



Thank you!



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