Hong Kong Communications Company Introduction

We Connect Everything

HKC International Holdings Limited is a major Information Communication Technology (ICT) Solution Provider in Asian Pacific region. With headquarter in Hong Kong, HKC group also owns oversea branches in Mainland China and Singapore. The Group was successfully listed in The Stock Exchange of Hong Kong Limited in 2001 named as HKC international Holdings Limited (Stock Code: 248).

Our Vision & Mission

Vision

Add Life to Digital Transformation

Mission

Improve the quality of life through Digital Transformation

Value

Realize Safety, Security, and Sustainability via Digital Transformation
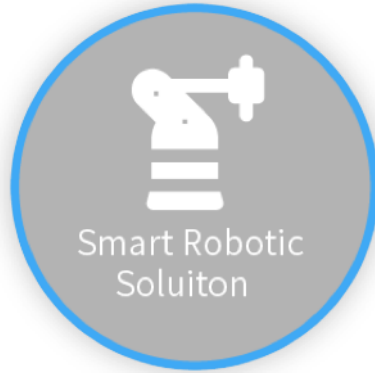
Our Core Business

Smart Living Solution

Smart Library Solution

Smart Robotic Solution

Smart RFID Asset Management Solution

Smart Healthcare Solution

Smart Library Solution

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

library 1.0	library 2.0	library 3.0	library 4.0

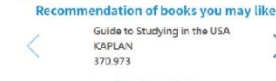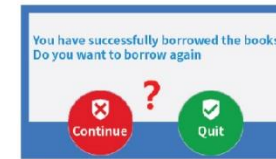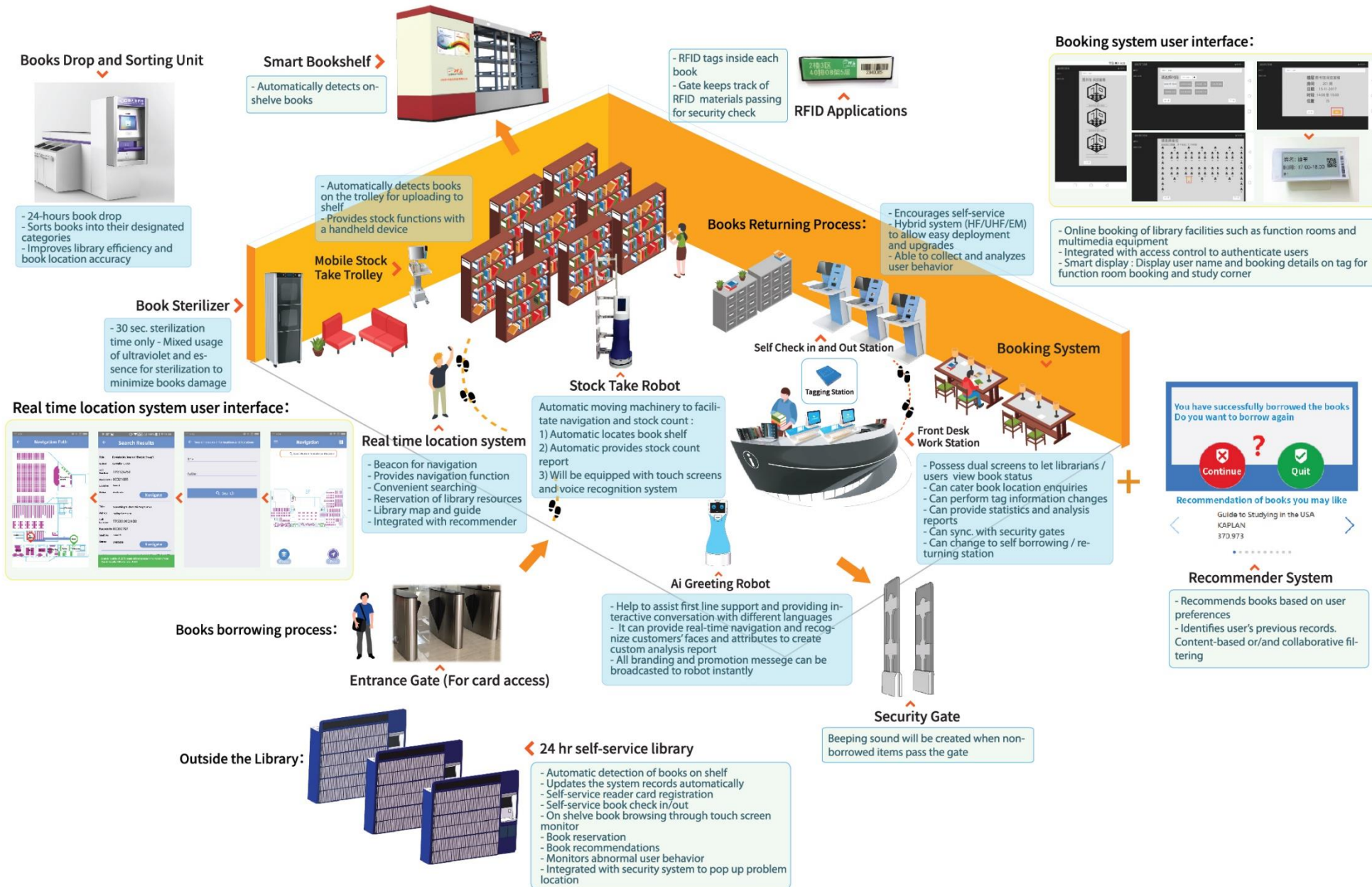**library 1.0**
- Connect to Internet
- Turn Digital

library 2.0
- Social web
- Mobile Apps
- Customer & Agent Portal
- Integrated System

library 3.0
- Semantic web
- Big Data
- Predictive Analytics

library 4.0
- 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

Books Drop and Sorting Unit
- Automatically detects on-shelve books

Smart Bookshelf
- Automatically detects on-shelve books

- RFID tags inside each book
- Gate keeps track of RFID materials passing for security check

RFID Applications

Booking system user interface:

- 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

- Automatically detects books on the trolley for uploading to shelf
- Provides stock functions with a handheld device

Mobile Stock Take Trolley

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

Books Returning Process:
- Encourages self-service
- Hybrid system (HF/UHF/EM) to allow easy deployment and upgrades
- Able to collect and analyzes user behavior

Self Check in and Out Station

Tagging Station

Booking System

Real time location system user interface:

Real time location system
- Beacon for navigation
- Provides navigation function
- Convenient searching
- Reservation of library resources
- Library map and guide
- Integrated with recommender

Stock Take Robot
Automatic moving machinery to facilitate navigation and stock count :
1) Automatic locates book shelf
2) Automatic provides stock count report
3) Will be equipped with touch screens and voice recognition system

Front Desk Work Station
- Possess dual screens to let librarians / users view book status
- Can cater book location enquiries
- Can perform tag information changes
- Can provide statistics and analysis reports
- Can sync. with security gates
- Can change to self borrowing / returning station

You have successfully borrowed the books
Do you want to borrow again?

Continue   Quit

Recommendation of books you may like
Guide to Studying in the USA
KAPLAN
370.973

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

Ai Greeting Robot
- Help to assist first line support and providing interactive conversation with different languages
- It can provide real-time navigation and recognize customers' faces and attributes to create custom analysis report
- All branding and promotion messege can be broadcasted to robot instantly

Books borrowing process:

Entrance Gate (For card access)

Security Gate
Beeping sound will be created when non-borrowed items pass the gate

Outside the Library:

24 hr self-service library
- Automatic detection of books on shelf
- Updates the system records automatically
- Self-service reader card registration
- Self-service book check in/out
- On shelve book browsing through touch screen monitor
- Book reservation
- Book recommendations
- Monitors abnormal user behavior
- Integrated with security system to pop up problem location

- 24-hours book drop
- Sorts books into their designated categories
- Improves library efficiency and book location accuracy

HONG KONG ICT AWARDS 2019 香港資訊及通訊科技獎

For users to borrow / return / renew / search catalogue and self service enquires

Self Check in and Out Station / Self Service Kiosk

AI Stock Take Robot

How AI Stock Take Robot Operates

AI Image processing algorithm
Our robot contains cameras and antennas. When the robot is at a certain distance it is able to read the tags , image scanning and update its system on cloud.

Perform SLAM
Our stock take robot include lidar and cameras, enabling them to perform SLAM - simultaneous localization (of their own location) and mapping of any area. This technology is able to avoid obstacles, including people and furniture.

The reader emits radio waves through different antennas
The signals are bounced back by the tags and received by the same antennas. The approximate location of each tag with respect to the robot is then be calculated by the reader by measuring the distances estimated from each antenna reception time. The use of vision cameras enable image recognition of stock items**.**

Design Structure

8寸 LCD
16.2 x 12.15 x 10 mm

视觉摄像头 x 4
49 x 51 x 6 mm

RFID 天线 x 4
102 x 102 x 6 mm

超声波距离探测器
45 x 20 x 13.3 mm

PC 材料天线盖板
107 x 12 x 1060 mm

横向伸缩杆
294 x 44 x 164 mm

收音器
11.7 x 11.7 x 9.5 mm

喇叭
50 x 50 x 10 mm

超声波距离探测器
16 x 16 x 13.3 mm

紧急开关
38 x 38 x 21 mm

USB 1.0 插口
15 x 9 x 7 mm

门锁开关
21.7 x 11 x 6.9 mm

超声波距离探测器
45 x 20 x 13.3 mm

垂直升降模组

Recent Project -

HKC Smart library robot features:

1. Automatic located book shelf
2. Real time provide book stock count report
3. With touch screen and voice recognition function to provide the book recommendation
4. Automatic return to charging dock
5. 35,000 books read within 1 hours

Benefits

• 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

**Smart Dispenser /
Reservation Locker**

24hrs Self Service Dispenser / Locker

Both Smart Dispenser and reservation locker 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.

Security Camera

Books loading compartment

Thermal receipt printer

MASC Smart Card reader (For HKID Card)

Barcode Scanner

Keypad

LED Display

Books compartment slot

23.8 inches capacitive multi touch screen monitor

Octopus payment device

Flash light if the slot is opened

RFID Smart Locker

Smart storage for equipment or officers' gears

DOOR OPEN ALERT
Alert if a locker door is left open after the transaction is complete.

USAGE REPORTS
Interactions detail that have been made with smart locker system.

LOCKER STATUS
Reports the status of all lockers (Open, Closed, Full, Empty, Assigned, Unassigned).

ABANDONED REPORT
Reports if an item has been left in the locker beyond a specific time frame.

Benefits of RFID Smart Locker

- Breaking the time limit, users can borrow or return their equipment at any time.

- Cabinets are available in various sizes, colors, and materials, allowing you to customize based on your need

- Centralized control and real-time monitoring of battery and lock status

HKC
香港通訊

48 Cases	98 Cases (Standard Size)	148 Cases (Expanded Size)	
1100mm(L) X 450mm(D) X2000mm(H)	1100mm(L) X 450mm(D) X2000mm(H) *2	1100mm(L) X 450mm(D) X2000mm(H) *3	

Installed with	
Size of Monitor	15.6 inches touch screen
Color & Size	Customizable
Weight	170-370KG
Payment Module	Octopus Payment
Data Output	Remote or use SD card to collect data, enable administrators to export sales data for management analysis
Power	220V
Hardware Modules	Printer, Barcode/ QR code Reader / HKID Reader/ UHF RFID Reader

Benefits

- **Breaking the time limit,** can initiate borrowing and returning at any time.
- **Breaking the space constraints**, can initiate borrowing and returning from any location.
- **Breaking distance restrictions,** users can use mobile app to remotely borrow or reserve storage items.

RFID Smart Display Shelf

RFID Smart Display Shelf is a high tech exhibit management system that integrates video advertising, Information interaction, and data collection. When the customer takes the product off the shelf, the system automatically detect detailed information of the product (product name, price, purchase channel, exquisite renderings etc.) on the display screen after automatic detection. It can reduce labor costs and improves the service image of the store.

EXPRESS Smart Sorter

Library / Retail / Warehouse Automation Sortation System

Features

- **Express Smart Sorter can automatically sort the items according to the set rules**
- **The system can support up to 72 sorting bins**
- **Unrecognized items will be assigned to designated carts**
- **There is alarm and remote prompt function when the sorting bins are full**
- **UHF RFID Reader with integrated antenna**
- **Overall Sorting rate: ≤ 3200 items / hour**

Modules of Smart Sorter

Turning Machine
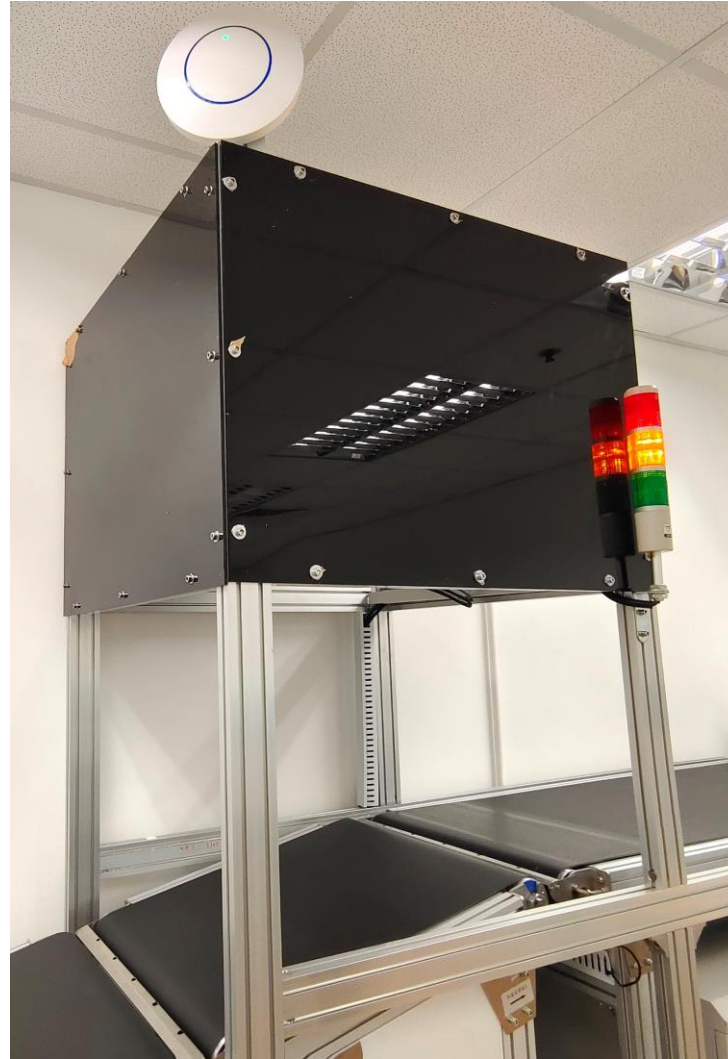
UHF RFID Reader /
High Speed Barcode Reader

72 Sorting Bins

Small Branch Sorters (Customizable Sizes)

- Each bin can hold more than 160 items
- Automatic weight lift feature for health protection

Applications

Retail Distribution Centre

Food Distribution Warehouse

Book Store / Schools and Libraries

Video Introduction of Smart Sorter

https://youtu.be/Eo8WVKu_1Go

24hrs Books Return Unit

The 24hrs books return 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.
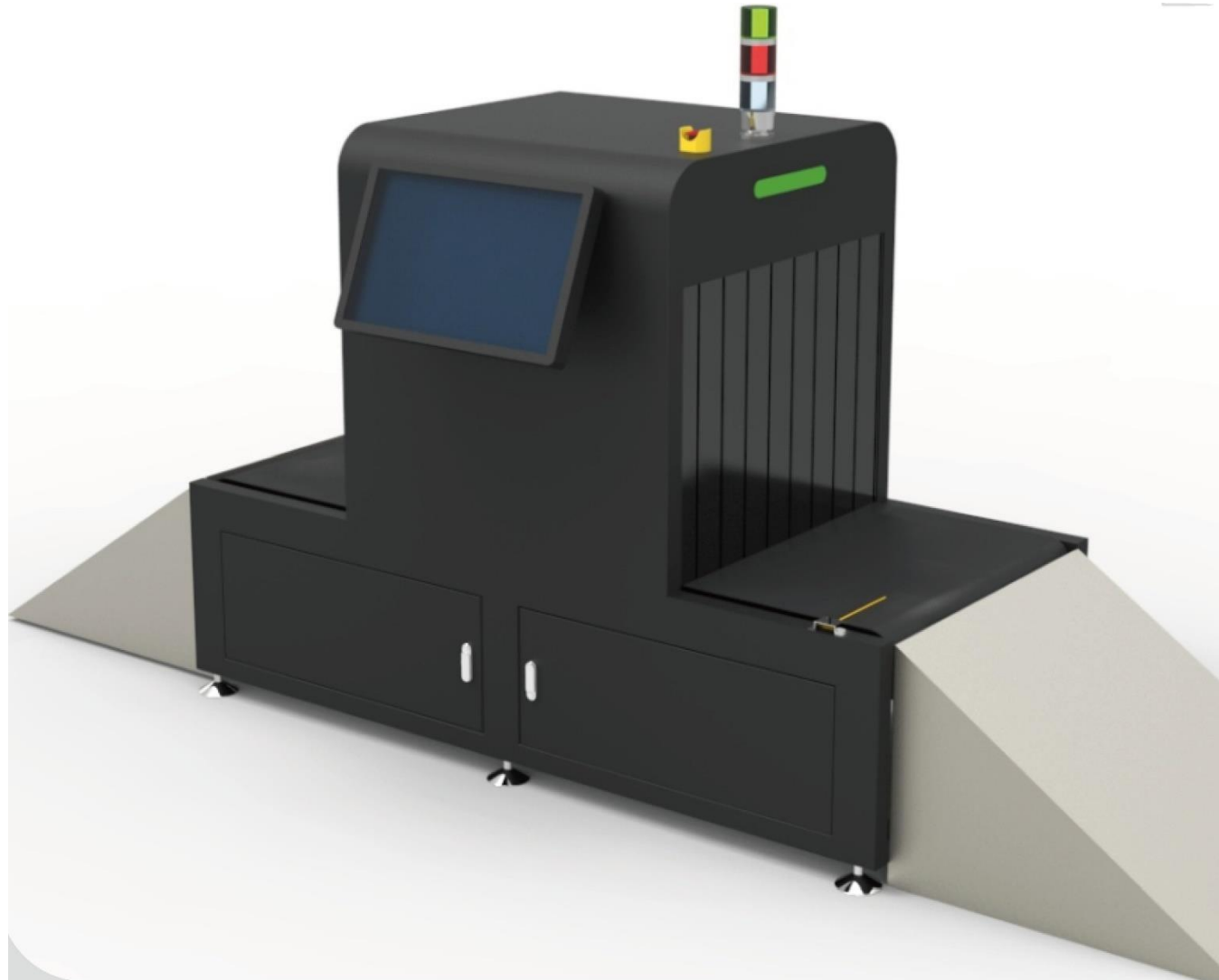
Pick and Go Security Gate

Our Pick and Go Security gate is a library security hardware device embedded with self check out feature target to digital transform traditional school libraries into total self service libraries.
Beeping sound will be created when non-borrowed items pass the gate (with whitelist and headcount feature)

Tagging Station

Amend tag information in easy manner

Front Desk Work Station

Mainly designed for librarians to manage books borrowing /returning / renewal functions
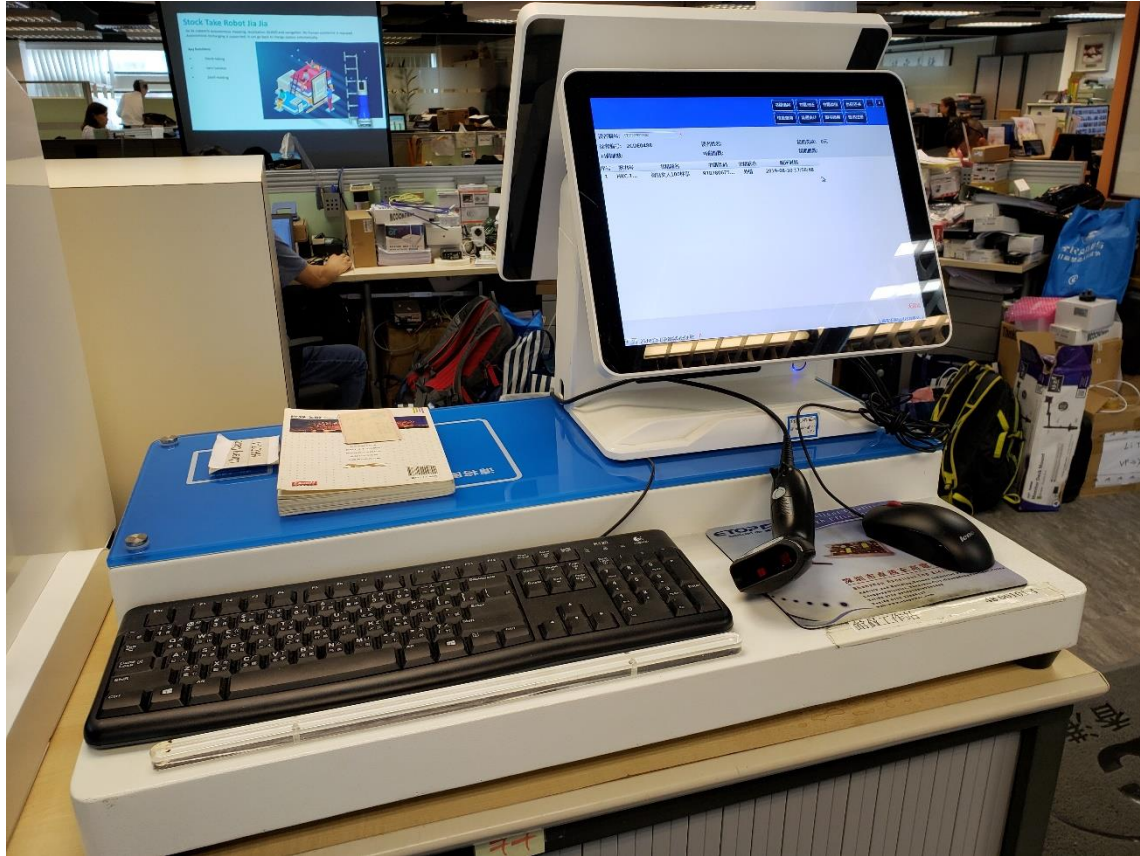
Mobile Stock Take Trolley

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

Software Applications

AMS (Administration and Monitoring System)

A Centralized Management System to remotely monitor and receive all hardware equipment status and record all Equipment Activity Log, Payment Transaction Log, Visitor Count Log, Alarm and Audit Trail reports

Features

- Web / Cloud based software

- Modular design, easy to expand

- User Interface support multiple themes and languages

- Receive all equipment status and trigger abnormal alert. Alert notifications will send to admin by email or mobile

- User Management and support multiple user roles & permissions

- Remote manage all equipment ON/OFF status and schedule working time

- Generate reports in centralized view such as check in and out report , alert and maintenance report

Custom Made UI

BENIFITS

1. Increase efficiency and productivity

2. Instantly receive all equipment status and abnormal alert

3. Remotely schedule equipment working time
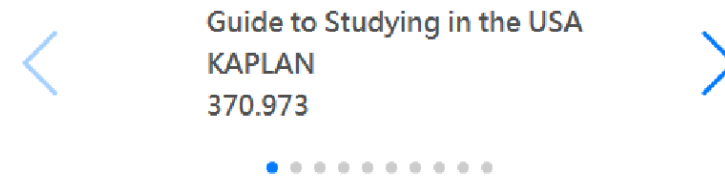
4. Organized and accurate management

Books recommendation system

Users can receive book recommendation upon borrowing
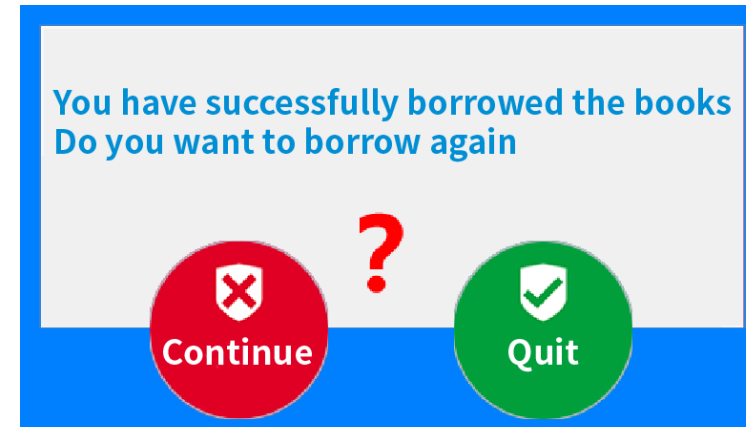
You have successfully borrowed the books
Do you want to borrow again

?

Continue

Quit

Recommendation of books you may like

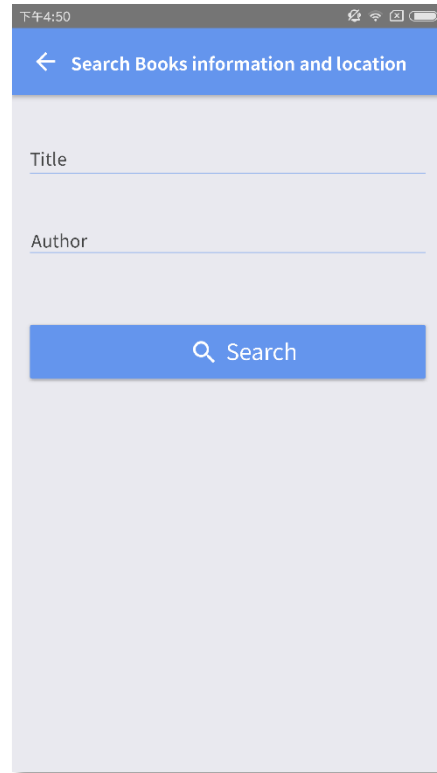Guide to Studying in the USA
KAPLAN
370.973

Self Check in and Out Station
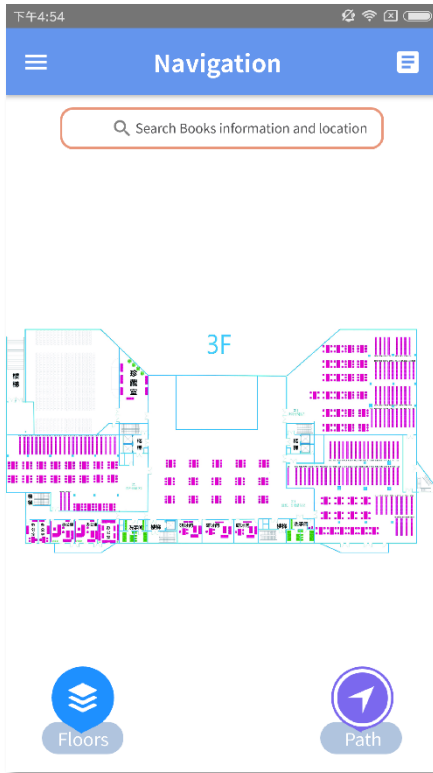
- Recommends books based on user preferences
- Identifies user's previous records. Content-based or/and collaborative filtering

Navigation

Assist users to locate books via mobile apps
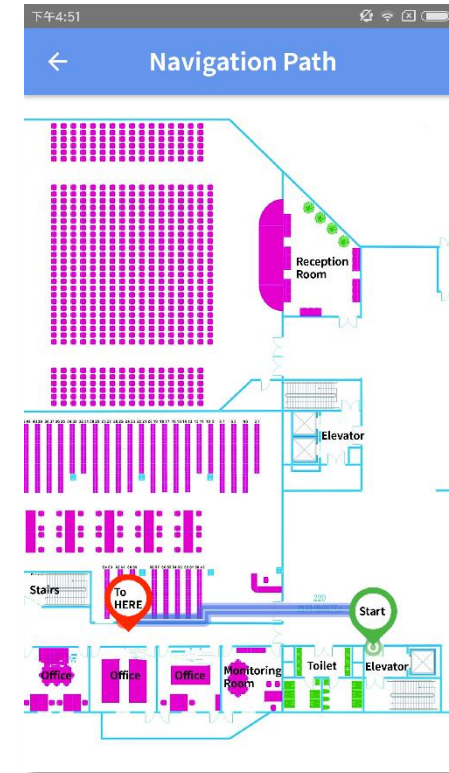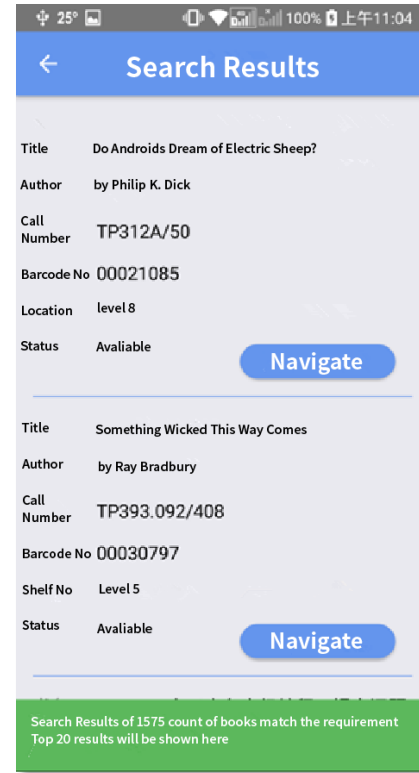
- Supports real time location indication
- Supports multiple floor indication
- Convenient searching
- Library map and guide
- Integrated with recommender

Booking System

- Online booking of library facilities such as function rooms and multimedia equipment
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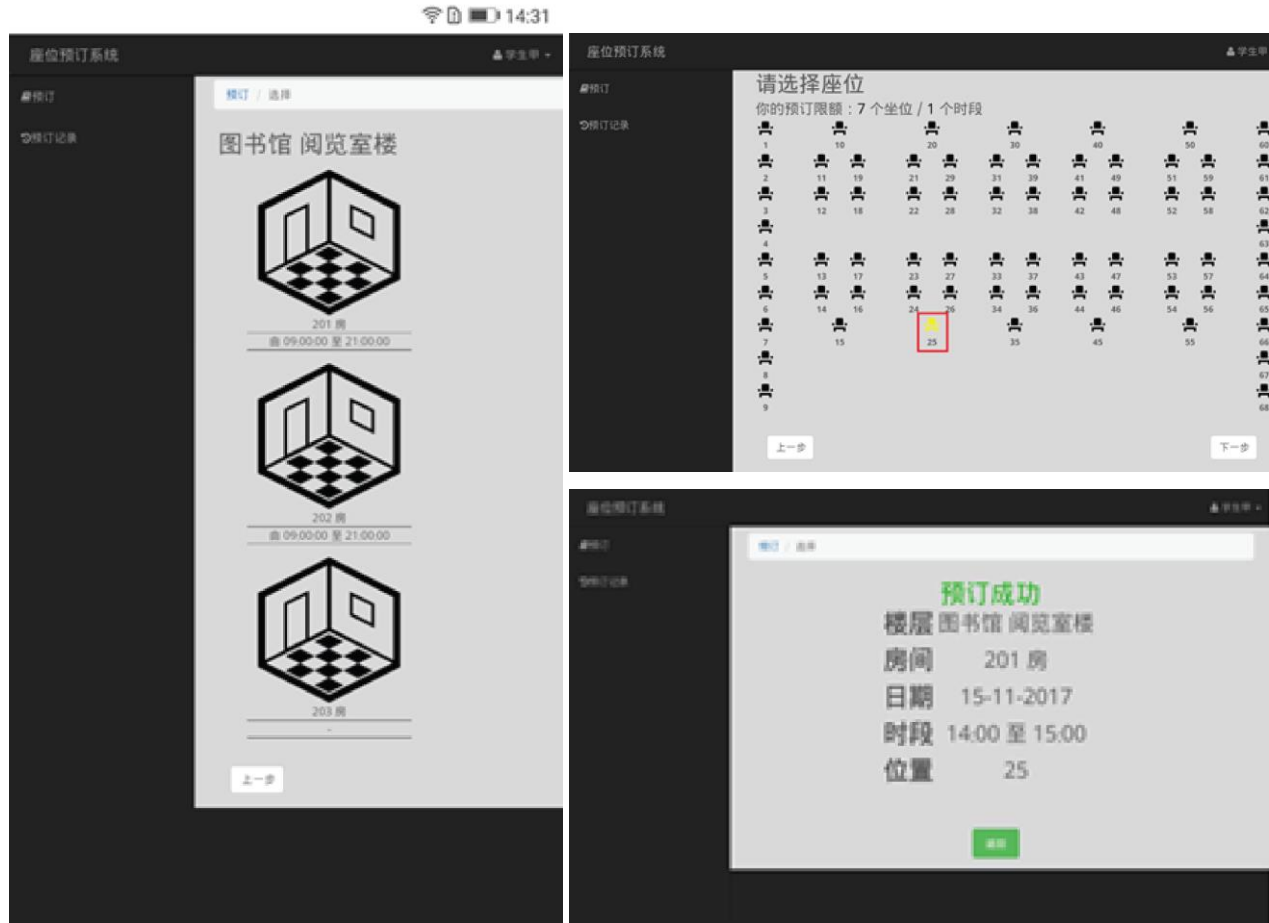
RFID localisation

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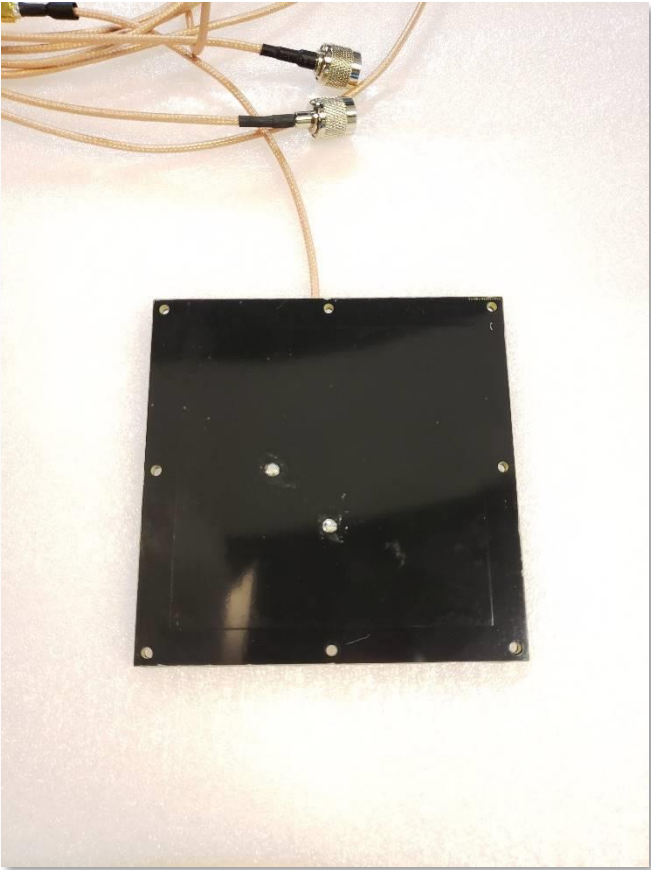
Reading List

"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

Hong Kong Public Libraries
of the Leisure and Culture
Services Department

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

HKC 香港通訊

Awards and Recognition

Thank You

We appreciate your consideration of our entry

HKC Marketing

HKC 香港通訊

contact_hkcgroup@hkc.net