Intelligent Warehousing Solution

Focus on Intelligent Warehousing Solutions

Introduction

As an emerging and sustainable development technology, IoT technology has great potential in the field of warehousing. It can help warehouses realize intelligent storage and intelligent management of people, and support warehouse internal warehouse information, warehouse information and personnel information. Digital collection, processing, storage, transmission, and sharing of management information.

In 2016, we began to explore the practical application of warehousing IoT. After three years of practice accumulation, we gradually formed a more mature model and achieved good application results. Guided by the actual demand of warehousing, we have created the most unique warehousing modern management mode for each regional warehouse, and explored a new way to solve the warehouse efficiency improvement.

01

Product Introduction

PTL Wireless Pick Label

1 Operating temperature：0~50℃

3 Display color : black, white

5 Battery life : 2 years

179mm(H)×60(V)×25mm(D)

1s

6 Response time：1S

4 Working humidity : less than 75%

2 Resolution：296(H）*128(V)

Wahaha Mineral Water

Batch: 101-134-11

Inventory: 8888 cases

The period of validity: 2019-12-31
Supplier: wahaha company
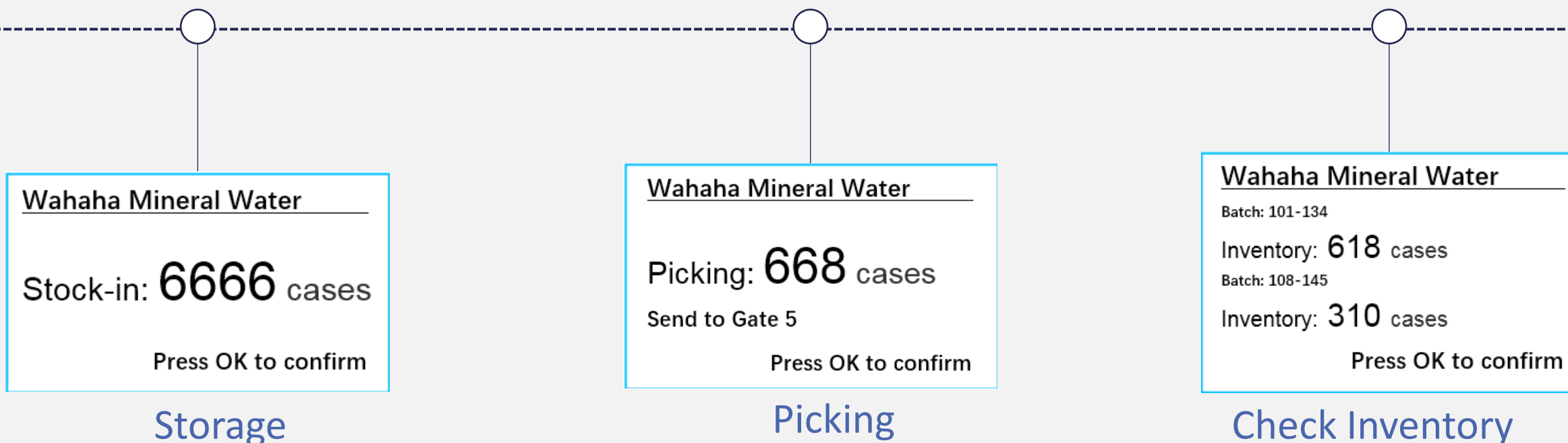
- High-brightness tri-color lamp
- Picking label
- Support for caching 3 pages of data
- Personalized display template

Wahaha Mineral Water

Stock-in: 6666 cases

Press OK to confirm

Storage

Wahaha Mineral Water

Picking: 668 cases

Send to Gate 5

Press OK to confirm

Picking

Wahaha Mineral Water

Batch: 101-134

Inventory: 618 cases

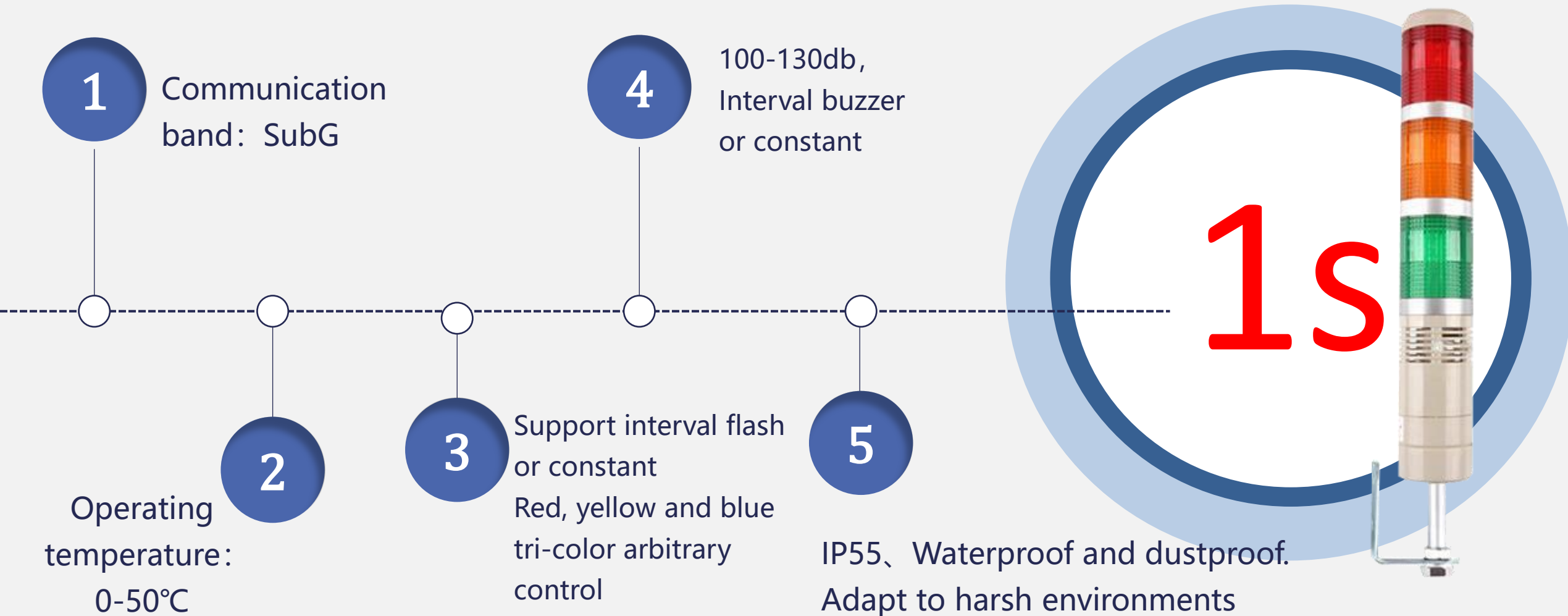Batch: 108-145

Inventory: 310 cases

Press OK to confirm

Check Inventory

➢Size：120*120*30mm

➢Communication band：433MHz

➢Communication time：Less than 1S

➢Operating Voltage：DC (supports POE power supply)

➢Working current： Less than 200mA

➢Communication efficiency： 100 pieces /10 S

➢Price success rate：100%。

➢Transmission technology： SubG (Strong anti-interference ability for mobile phone and other WIFI equipment)

➢Wireless distance：ETAP02W1 30-50 Meters

➢Communication interaction: two-way communication, real-time interaction.

➢Data interface: standard network cable interface

1s

PTL Wireless Picking Guide Lighthouse

1 Communication band：SubG
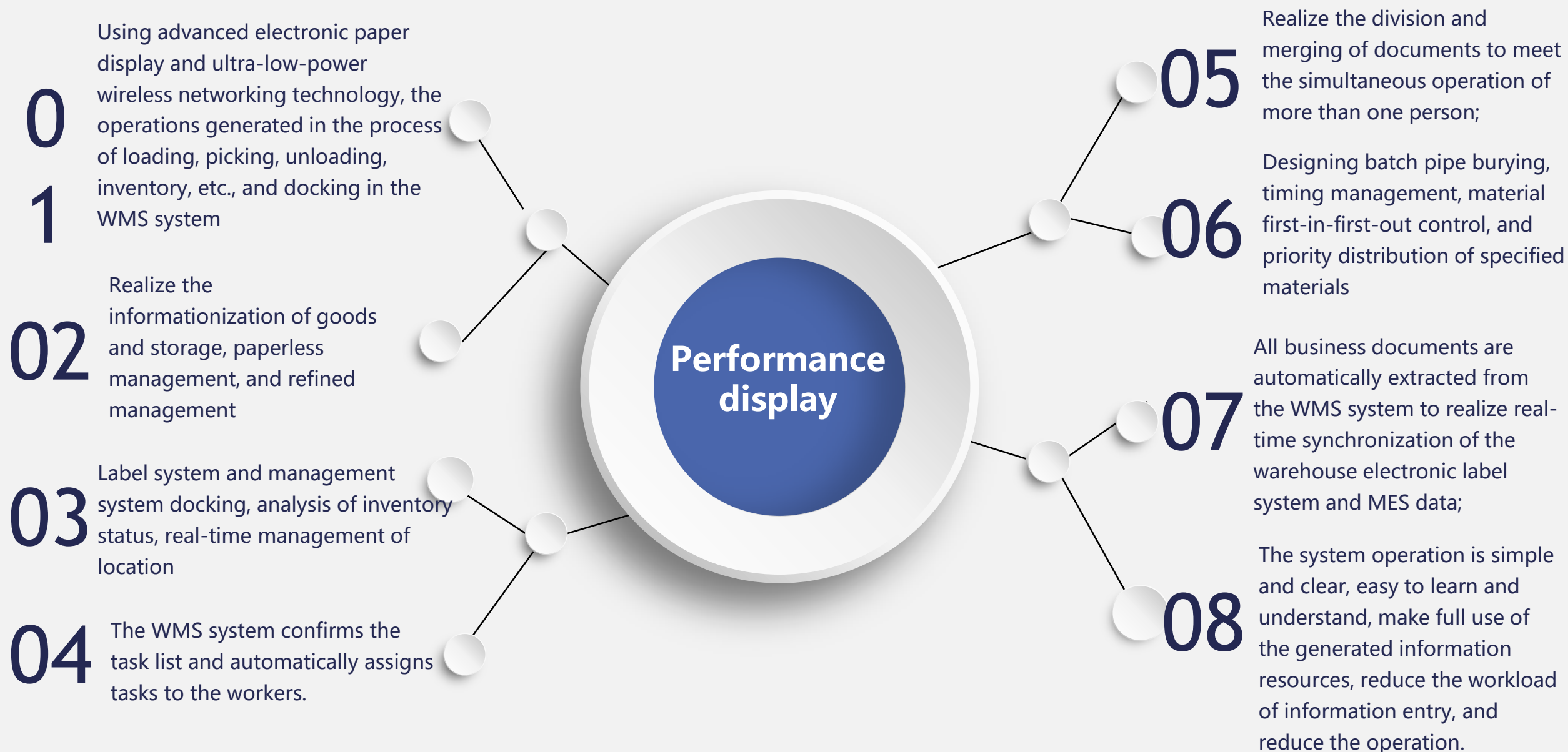
2 Operating temperature： 0-50℃

3 Support interval flash or constant Red, yellow and blue tri-color arbitrary control

4 100-130db， Interval buzzer or constant

5 IP55、Waterproof and dustproof. Adapt to harsh environments

1s

02

System Plan

Performance Display

Performance display

01 Using advanced electronic paper display and ultra-low-power wireless networking technology, the operations generated in the process of loading, picking, unloading, inventory, etc., and docking in the WMS system

02 Realize the informationization of goods and storage, paperless management, and refined management

03 Label system and management system docking, analysis of inventory status, real-time management of location

04 The WMS system confirms the task list and automatically assigns tasks to the workers.

05 Realize the division and merging of documents to meet the simultaneous operation of more than one person;

06 Designing batch pipe burying, timing management, material first-in-first-out control, and priority distribution of specified materials

07 All business documents are automatically extracted from the WMS system to realize real-time synchronization of the warehouse electronic label system and MES data;

08 The system operation is simple and clear, easy to learn and understand, make full use of the generated information resources, reduce the workload of information entry, and reduce the operation.
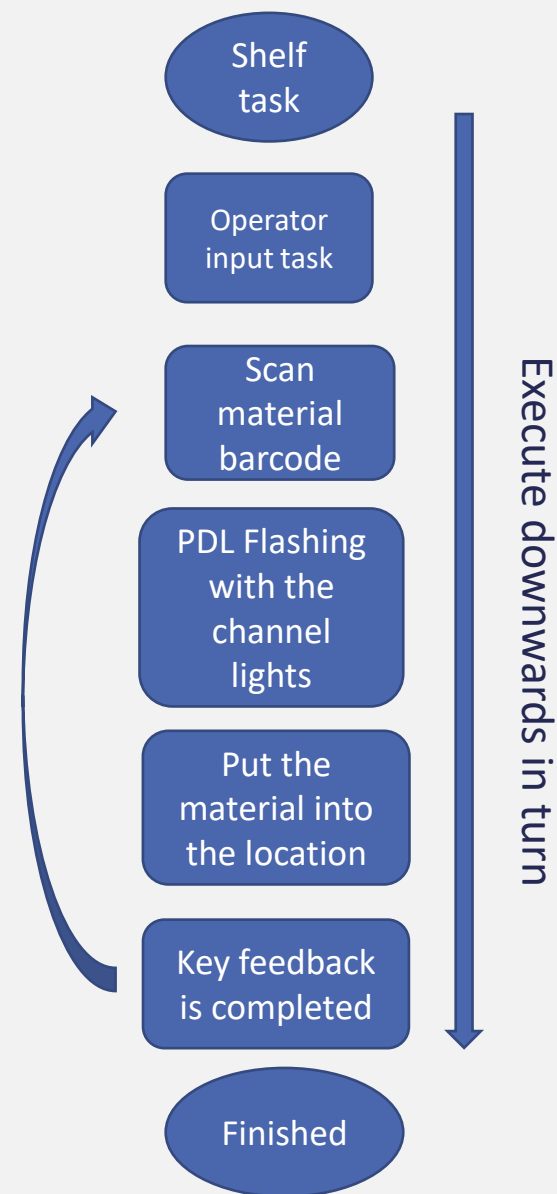
1 The electronic tag is bound, and the electronic tag is bound with the location information. Each location is placed according to the system specification, and each electronic tag is a storage location.

2 The supplier delivers it. After the IQC inspection, the WMS/MES system generates the batch number and automatically generates the location information according to the first-in-first-out method. The staff uses the PDA to bind the batch product to the location, according to the system. The prompt prompts the materials, scans the location, and the system automatically updates the inventory and location data.

Shelf task

Operator input task

Scan material barcode

PDL Flashing with the channel lights

Put the material into the location

Key feedback is completed

Finished

Execute downwards in turn

1

Picking: The warehouse operator receives the Stock-out task list. The operator uses the PDA to click the Stock-out task list and submit it to the back office system. The system automatically generates the picking order according to the principle of first in, first out. At this time, the electronic label of the corresponding material will be automatically Lights up, and displays the material information, batch number and quantity of the goods to be picked. The picking personnel picks the goods according to the reminder of the system. After the picking is completed, the code is confirmed. The system automatically prompts the background picking to complete, and then the materials are released from the warehouse. Zone, pick up the materials in a location until all the materials are sorted.
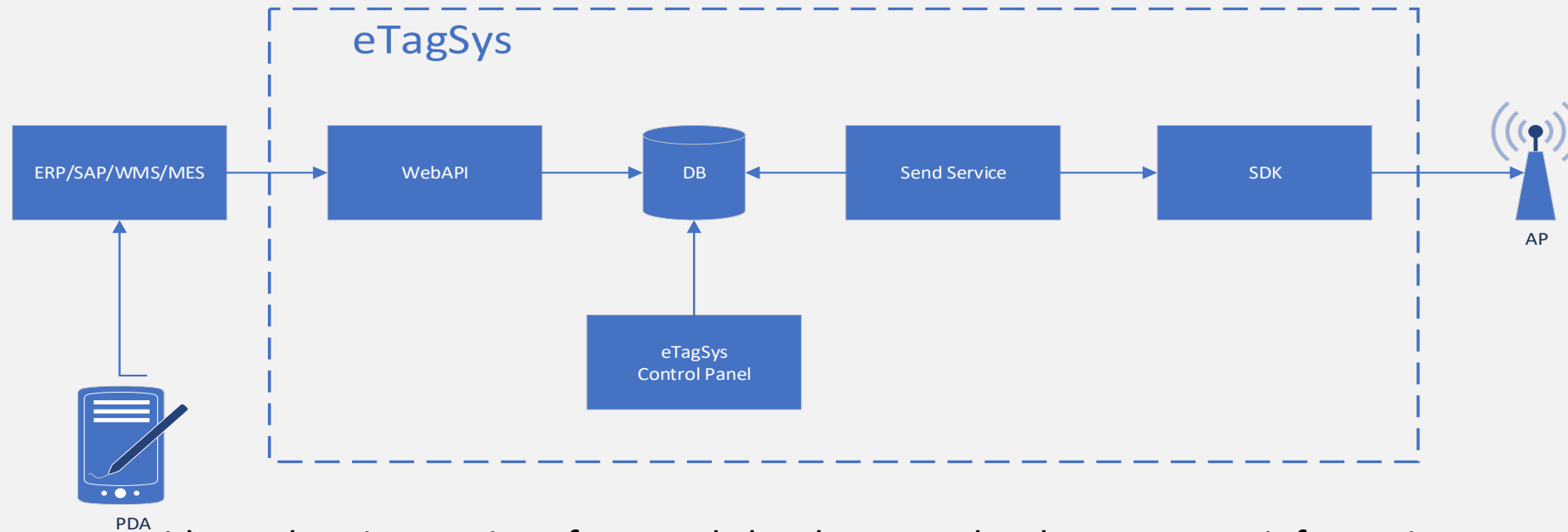
2

Stock-out: The warehouse operator uses the PDA to scan the material out of the warehouse, and the system automatically updates the inventory data.

Stock-out task → Operator input task → Click the Stock-out task to submit the background → System production delivery note → PDLFairway light flashes → Pick up the material → Press OK to confirm the picking is complete → completed

SERTAG
SMART TAG LEADER

eTagSys

ERP/SAP/WMS/MES → WebAPI → DB ← Send Service → SDK → AP
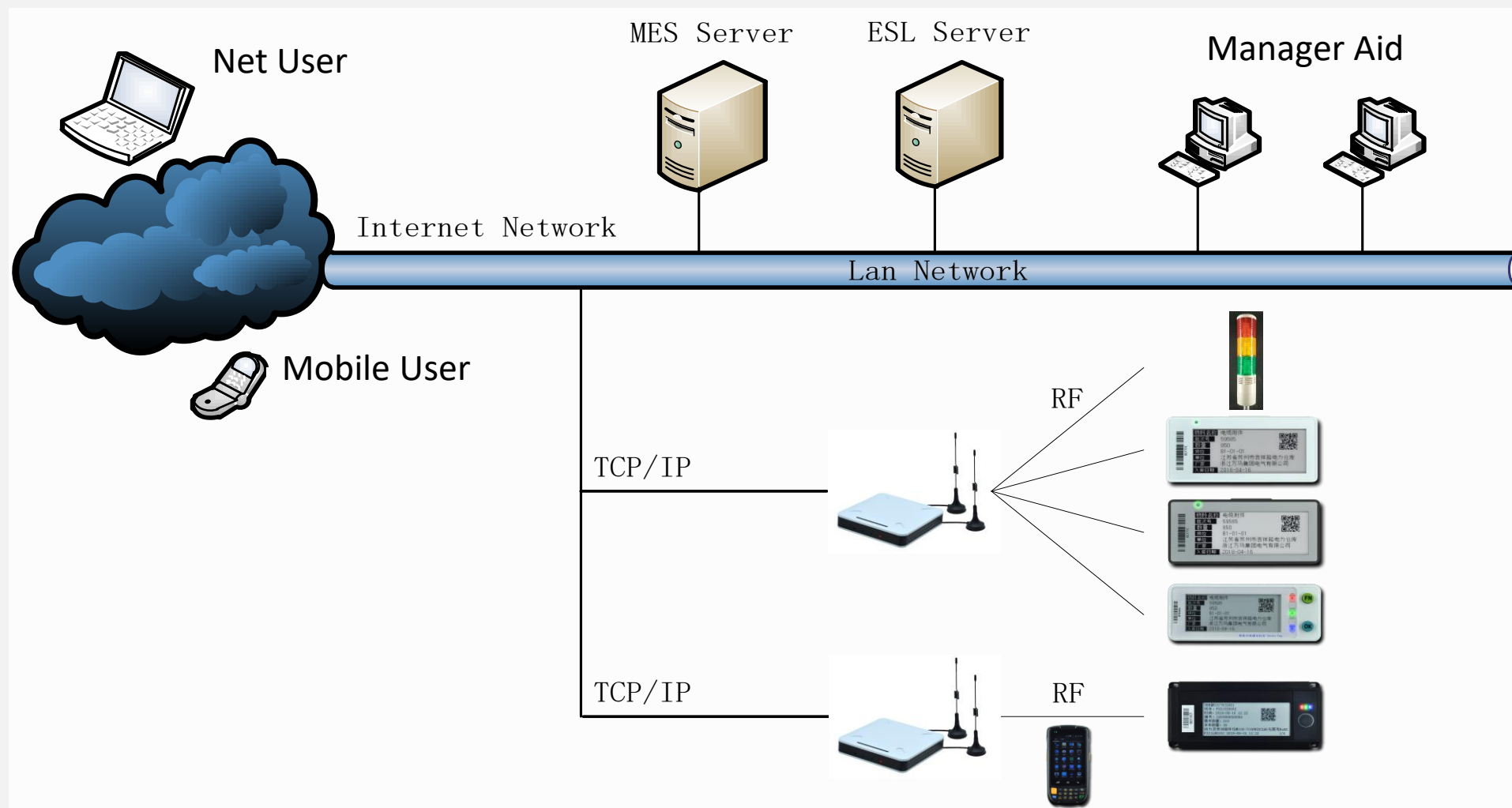
eTagSys
Control Panel

PDA
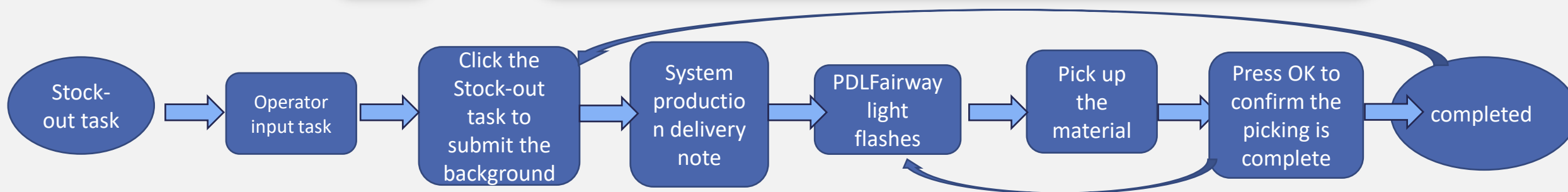
1. The Web API provides a data import interface, and the data sent by the customer information system is imported into the database of the electronic label software system for delivery. The default WebAPI uses the HTTP protocol to support multiple data transfer methods, such as JSON, XML or custom format data transfer;

2. eTagSys Control Panel for the control panel of the entire electronic label software system, the system operation and maintenance personnel can view the real-time operation status of the system, retrieve historical data and the entire system operation performance analysis view;

3. SendService is a Windows service that schedules and monitors the operation of the entire electronic tag system in the background of the server;

4. The electronic tag system eTagSys uses the SQL Server database;

5. The system communicates with the base station hardware through the SDK driver.

Among them, WebAPI is a general term for importing data from the outside to the entire eTagSys system.

Network Architecture

Net User

MES Server

ESL Server

Manager Aid

Internet Network

Lan Network

Mobile User

RF

TCP/IP

TCP/IP

RF

03

Plan Advantage

Product Advantages

1 Warehouse production site internal management realizes paperless operation

2 The time for entering and leaving the warehouse is greatly shortened, the error rate is reduced, and the comprehensive labor cost is reduced.

3 Remote document download via e-commerce platform, the distribution center does not need 2 inputs

4 The operator does not need professional induction training, and the control software can directly import the data file to carry out the picking operation.

5 Labels can display barcodes and manage them with barcodes

6 Counting jobs automatically generate inventory profit and loss statements and checklists

01 According to various manual document business operations

02 Complex, looking for materials Time-consuming

03 Record goods storage data and batch

04 Manual input of EXCEL table, large quantity

05 WMS Real-time docking, only manual hand loss

Disadvantage

Warehouse operators manually record data such as warehousing, delivery, inventory, etc., and manual checklists are prone to human error, causing irreparable damage to the enterprise;

There are many kinds of materials, many specifications, many batches, a wide range of warehouses, and the location is not fixed. It takes a lot of manpower when looking for materials, and the labor cost is high;

Due to the high turnover rate of the warehouse, large throughput, manual recording, the data cannot be entered into the system and shared in time, and the management personnel cannot accurately and accurately know the data information of the warehouse in a short time;

Unable to record the specific working time of the personnel, unable to count the workload and work efficiency；

Unable to interface with WMS system, the material information of shipment is not clear.

System Effect Comparison (after)

01 The operator can follow the instructions of the system and have the basis for the warehouse operation.

02 The system automatically assigns the task order job data to be automatically uploaded to the background system in real time.

03 Use tags to accurately locate locations, improve job efficiency

04 Manage suppliers and their own factories through the system to effectively improve the efficiency of warehouse operations

05 Automatic batch management for warehousing and Stock-out picking with electronic tags

06 Data sharing in real time, providing a basis for corporate decision-making

advantage

Use electronic picking labels to automatically, real-time, and accurately collect information such as warehousing, delivery, inventory, etc. of materials to reduce and avoid human error, reduce manpower burden, and improve work efficiency;

The identification batch management is clear, and the information of the materials can be quickly and accurately searched, and the time for checking the information is reduced;

Realize automatic segmentation and combined delivery of documents, and automatically prompt picking, good picking, no missing, no re-sorting, improve picking and sending efficiency;

Material tracking, batch management, first-in, first-out, effective prevention of materials and finished products in the library for too long, leakage delivery, material quality traceability, etc.;

Material information, batch information, inventory information, etc. are updated in real time to improve the transparency of warehouse management;

All warehouse operation data is uploaded to the server in real time and seamlessly connected with the MES.

System Benefit Table

Artificial reduction

40%

Bar code automation, electronic documents, cancel the delivery of paper documents, save the record clerk, reduce the intensity of labor, greatly reduce labor costs

Management refinement

60%

Material batch management, follow the principle of first-in-first-out, effective error prevention and anti-detention; batch specification and detailed management, and effectively improve warehouse space utilization; material batch alarm prompt; workload real-time query; employee performance appraisal Statistics; traceability and clarity of responsibility

Work efficiency

70%

Electronic document flow, realize multi-person and single-single simultaneous operation, improve the efficiency of receiving and sending materials; design the best picking method, shorten the time for finding materials, improve the efficiency of material preparation; support the dynamic inventory of non-stop production, without affecting the normal operation of the warehouse

Data instant

90%

Due to the use of wireless network real-time communication, the original manual entry MES system is upgraded to scan code confirmation, realizing seamless real-time connection between electronic tags and servers, updating MES system inventory in real time, and querying material inventory and document operation progress in real time.

The data is correct

90%

According to the electronic label to remind the picking, the quantity is accurate reminder, reduce the probability of manual error, and at the same time realize error proofing, error reporting, error correction, and greatly improve the accuracy of the data.
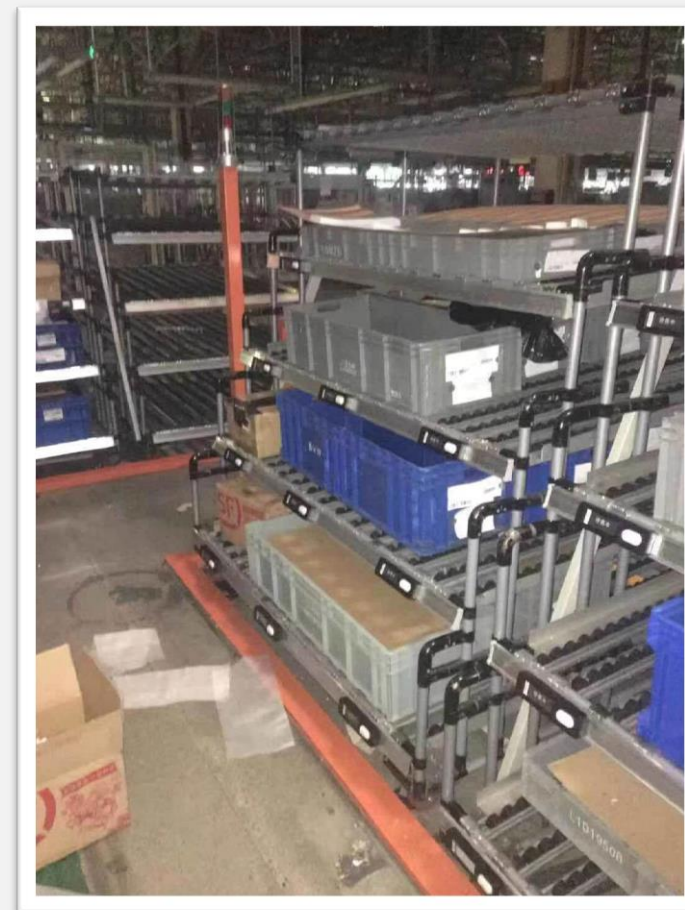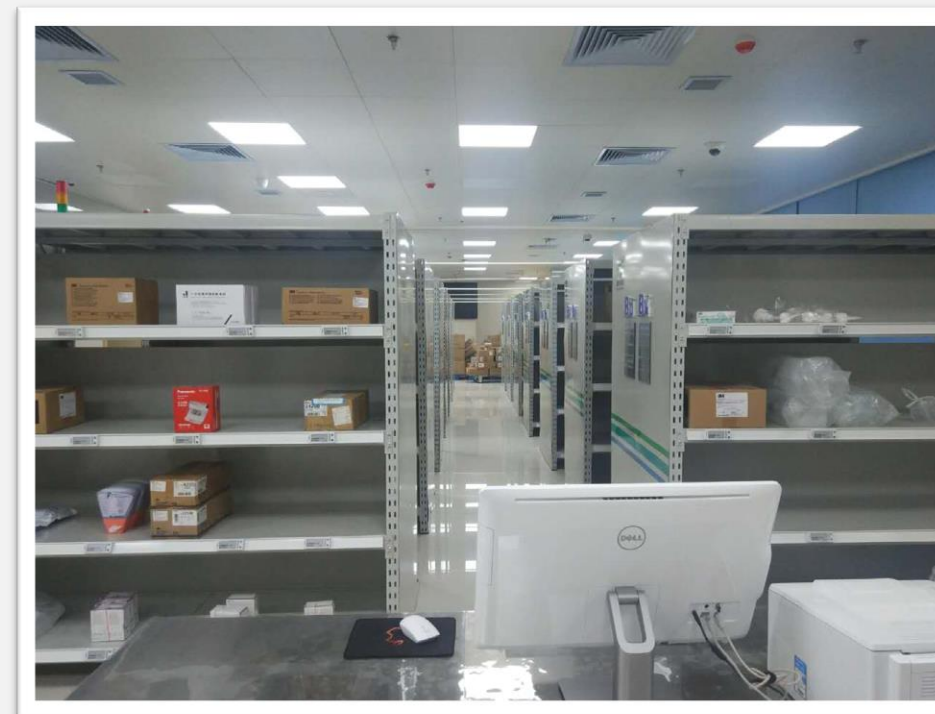
04

Case Sharing

Our warehouse and production line customers include: Japan Hitachi, State Grid, Sinopharm Group, Yipin Technology, SAIC Volkswagen and many other companies.

Thanks

13664268735 / 13124130003

www.sertag.com
www.eslmfg.com

sales@sertag.com

NO.17 Gonghua Street , Shahekou District ,Dalian,Liaoning ,China

Focus on Intelligent warehousing solutions