PART 01
About Us

Company Introduction

Anhui Qiande Intelligent Technology Co.,Ltd

Anhui Qiande Intelligent Technology Co., Ltd. was founded in 2015 and is located at 1499 Zhenxing West Road, Shushan District, Hefei City. The factory is located at the north intersection of Zhenxing Road and Pingqiao Avenue in Yu'an District, Lu'an City, Anhui Province; Comprehensively upgrade and build an "Industry 4.0 Intelligent Manufacturing Equipment Integration Application Solution Provider" with digital integration, business integration, and integrated R&D technology as the core, leveraging technologies such as the Internet of Things, big data, artificial intelligence, and 5G.

Anhui Qiande Intelligent Technology Co.,Ltd. is based on high-speed three-dinensional material storage,transportation,sporting automation and the corresponding intelligent management,focusing on standardized, modular, digital integrated software systems and equipment.The company adheres to the corporate culture of "working hard all day, thriving with virtue", always maintaining the concept of self-improvement and continuous innovation, and continuously creating value for customers.

The company has strong independent research and development technology and has been engaged in various fields such as semiconductor, TFT/LCD/LCM electronic LCD panel process equipment, intelligent warehousing, logistics distribution, logistics sorting, automotive manufacturing, chemical plants, food factories, medical and pharmaceutical industries, brewing industry, library, household appliances, intelligent smart factory equipment, and mechanical manufacturing for many years. Qiande Intelligence will continuously provide high-speed, high stability, and cost-effective material management products, helping you quickly embrace the future of digitization and intelligence.

Cultural concepts

location — **Intelligent Container Expert**

idea — **Integrity, professionalism, pragmatism, and innovation**

target — **Internationalization, branding, and specialization**

mission — **Achieve customers, brands, and employees**

QDITC

Shushan District, Hefei

Anhui Qiande

Pukou District, Nanjing

Jiangsu Qiande

Yu'an District, Lu'an City

Manufacturing factory

Company Honors

QDITC

Qualifications and honors

These honors and certificates not only affirm the organization, but also serve as a spur and motivation for the organization. The acquisition of honorary qualifications is not only an honor, but also a responsibility and mission.
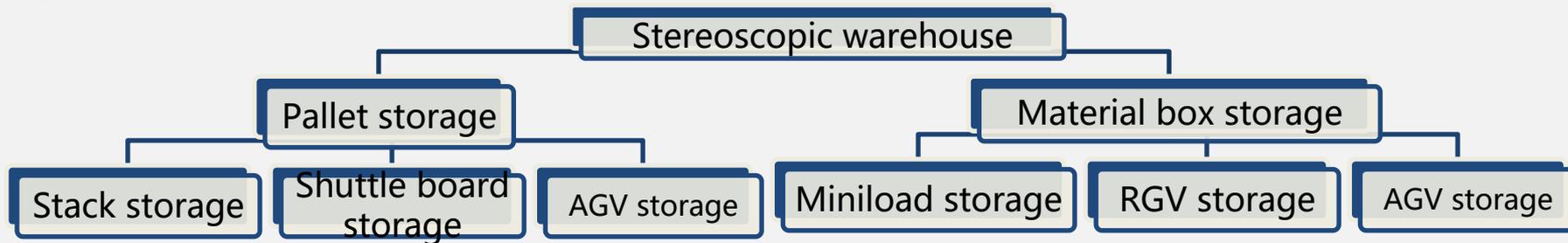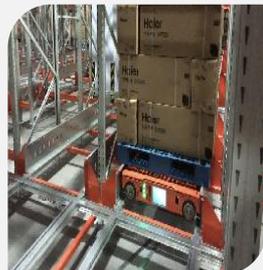
Intellectual properly

QDITC

Competitive edge

QDITC

Competitive edge

01 Independent intellectual property

02 Professional installation team

03 High cost performance products

04 Comprehensive pre-sales, in sales, and after-sales services

05 Quick response

PART 02
Hardware products

Stereoscopic warehouse

Pallet storage

Material box storage

Stack storage

Shuttle board storage

AGV storage

Miniload storage

RGV storage

AGV storage

tray
300KG~5000KG
100~180m/min
36m
many SKU

tray
500KG~1500KG
50~90m/min
15m
less SKU

tray
500KG~1500KG
30~90m/min
5m（max：9m）
many SKU

Material box/carton
30/50/100KG
120（max：360）
m/min
20m
many SKU

Material
box/carton
30/50/100KG
100~360m/min
22m
many SKU

Material
box/carton
10~50KG
30~90m/min
5（max:11）m
many SKU

Stacker Crane

Logistics equipment

An excellent solution is built on a combination of devices with stable performance, reliable quality, and strong functionality; Based on accurate and detailed research, an intelligent logistics solution suitable for practical needs is constructed through the organic combination of logistics equipment with different functions.

- Stacker crane is the core lifting and transportation equipment of automated three-dimensional warehouse, which runs along the track in the aisle of high-rise shelves to achieve the function of picking up and delivering goods.

- A complete stacker crane is composed of a **mechanical structure body** (upper and lower crossbeams, cargo platforms, columns, power, forking systems, and safety devices, etc.), **an electrical system** (electrical components, ranging and addressing systems, communication systems, detection systems, and control systems, etc.), **and auxiliary systems** (power supply systems, sky and earth rails, etc.).

- The stacker crane is not an isolated device and needs to rely on three-dimensional shelves; Unlike conventional shelves, three-dimensional shelves have **stricter precision requirements** for the processing and assembly accuracy of shelves.

- According to the mechanical structure, it can be divided into single column, double column, and multi column stacker cranes; According to the characteristics of forks, they are divided into single depth, double depth, multi depth, single cargo, double cargo, and multi cargo stackers; According to the characteristics of the track, it is divided into straight track, curved track, and variable track stacker cranes; According to application scenarios, stacker cranes can be classified into room temperature, low temperature, high temperature, explosion-proof, and anti-static types; According to the characteristics of loaded goods, stackers are divided into container type, pallet type, cylindrical type, slender bar type, and wide plate type; According to the weight of the cargo, it is divided into micro stackers (<=10kg), light stackers (10-100kg), heavy stackers (100kg-2000kg), and super heavy stackers (>2000kg); **The most commonly used are the room temperature bin type single column light straight rail stacker (miniLoad) and the room temperature pallet type double column heavy straight rail stacker.**
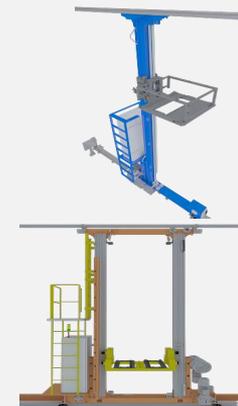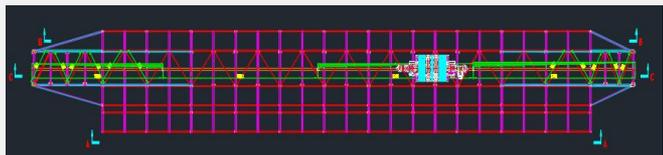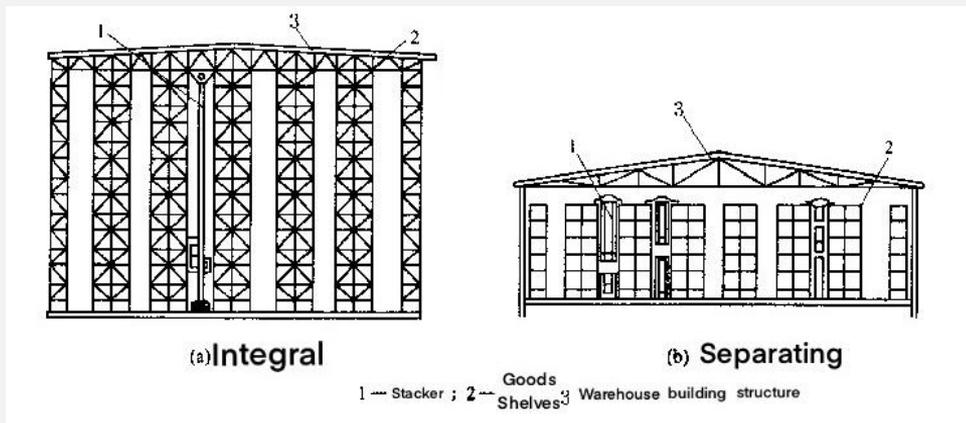
The overall structure has high transmission accuracy, high load-bearing capacity, and small deflection under full load, which is reliable and stable.

Stacker Crane

(a) Integral (b) Separating

1 — Stacker ; 2 — Goods Shelves ; 3 — Warehouse building structure

2-way fork

4-way fork

Pallets must be standard 4 way-access pallets

Loaded Pallet Dimensions and Weight

Comparison	Wooden pallets	Steel pallets	Plastic tray
Chemical resistance	★★★	★	★★★★★
Moisture resistance	★	★★	★★★★★
The possibility of inset infestation	★★★★★	Impossible	Impossible
Tray weight	Heavy	Very heavy	Light
Protection of loaded objects	★★★	★	★★★★
Protection of automatic packaging machines	★★★	★	★★★★
Recyclable	Support	Support	Support
Life expectancy	★	★★★★	★
Integration	★	★★★★	★★★
Usage performance	★	★★★	★★★
Pallet price	★★★★★	★★★	★★★★
Cost performance	★	★★	★★★
Comprehensive evaluation	★★	★★	★★★★

Legend: ★-Inferior ★★-Differ from ★★★-Median ★★★★-Good ★★★★★-Excellent

Stacker Crane

QDITC

Celestial orbit

Upward movement

Safety ladder

Control panel

Going down
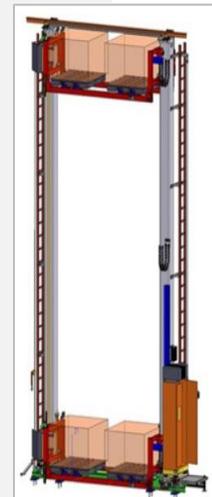
Ground track

load platform

C
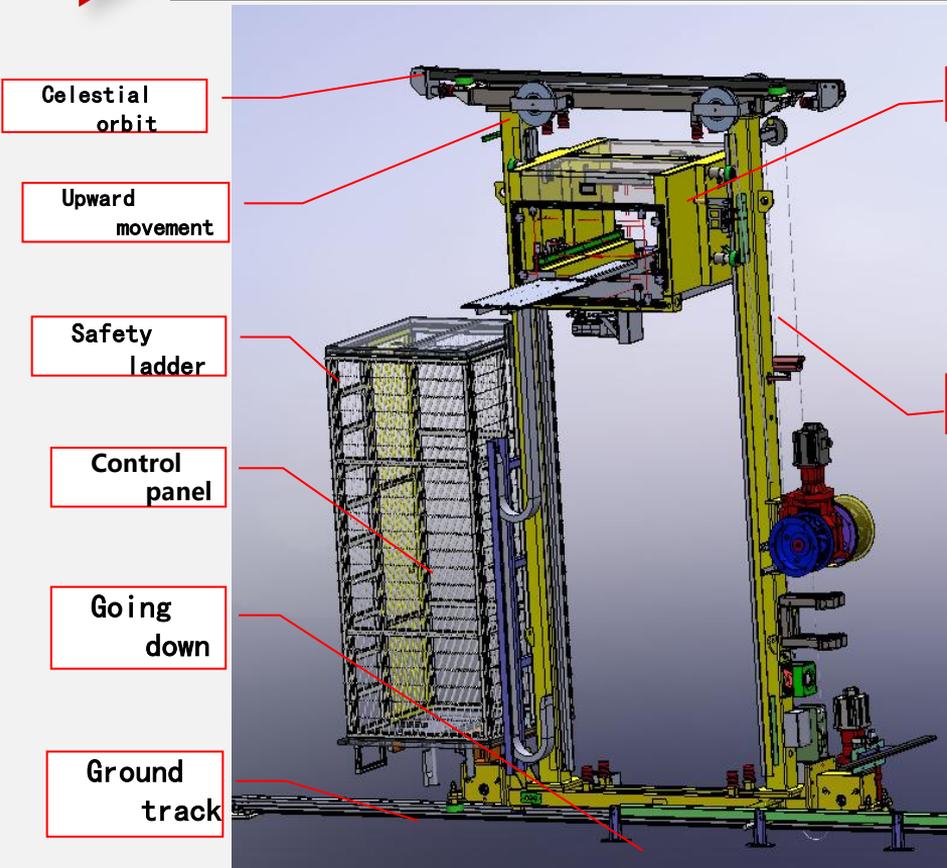
Single column stacker crane

单立柱堆垛机

Double column stacker crane

双立柱堆垛机

Single station stacker crane

Dual station stacker crane
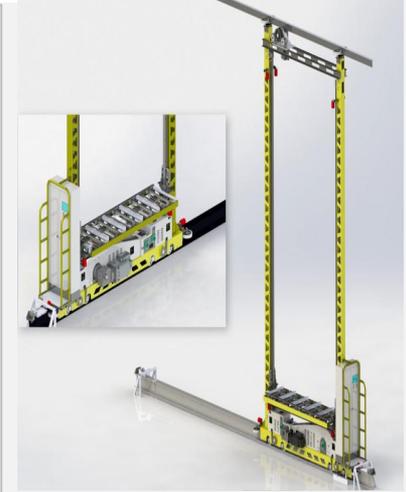
Multi station stacker crane

AGV

Laser navigator
Wireless receiving device
Standard gantry
Digital display
Operation control panel
Lithium battery compartment
Laser safety collision prevention
Mechanical safety collision prevention

- AGV refers to a transport vehicle equipped with guidance sensors such as light, electromagnetic, and laser, capable of driving along designated paths, with safety protection and various load transfer functions. In industrial applications, it is a transport vehicle that does not require a driver and uses rechargeable batteries as its power source.

- A complete AGV generally consists of **mechanical structures** (vehicle body, wheel system, transfer equipment, safety devices, and steering devices, etc.), **navigation sensors** (magnetic stripes, magnetic nails, QR codes, color bands, lasers, images, inertia, etc.), **power systems** (operating motors, steering motors, transfer motors, batteries, and charging stations, etc.), **control systems** (information transmission processing, drive control, steering control, transfer control, and safety control, etc.), and **auxiliary systems**.

- AGV is not an isolated device and requires the coordination of scheduling and production management systems, involving production processes, logistics solutions, and management processes.

- According to the mechanical structure, it can be divided into **forklift type, lurking type**, etc; According to the wheel system, it can be divided into **rudder wheel type, differential type, and McNaam wheel type**; According to the transfer equipment, it can be divided into **drum type, hydraulic lifting type, chain type, plug-in type, grabbing type**, etc; According to navigation methods, it can be divided into **magnetic stripe navigation, magnetic nail navigation, ribbon navigation, SLAM navigation, QR code navigation, laser navigation, inertial guidance**, etc. In special scenarios, multiple navigation methods may be mixed; **Navigation** is the most commonly used method of partitioning.

Other auxiliary equipment

RGV, rail guided transport vehicle. A transport vehicle that can travel along specific tracks, has safety protection and various load transfer functions, and can be powered by batteries, sliding contact wires, low-voltage tracks, etc.


EMS, aerial suspended guided transport vehicle. A transport vehicle that can travel along a specific track suspended in the air, with safety protection and various load transfer functions, can be considered an RGV small car suspended in the air through batteries, sliding contact lines, wireless, etc.
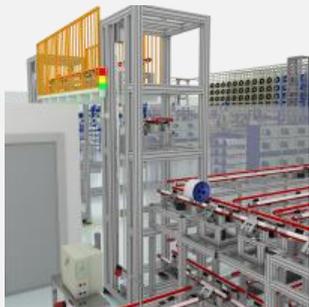
- **Elevator**: Height adjustment for material conveying process;
- Generally classified according to load capacity: light, heavy, and super heavy.
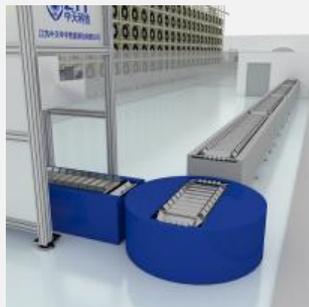
- **Conveyor**: Height adjustment for material conveying process;
- Generally classified according to load capacity: light, heavy, and super heavy.
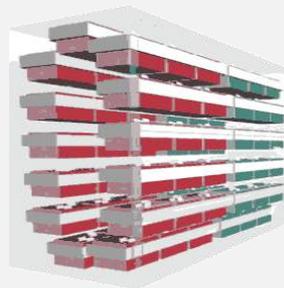
- **Carousel Storage**: Intense storage for small materials;
- Divided by job characteristics: vertical and carousel rotary libraries.

- **Packaging line**: Used for automatic packaging of materials;
- Divide according to the type of outer packaging: cardboard box, plastic, film, etc.

- **Dismantling and stacking**: Used for material stacking and unstacking, commonly used with four axis or three coordinate robotic arms.
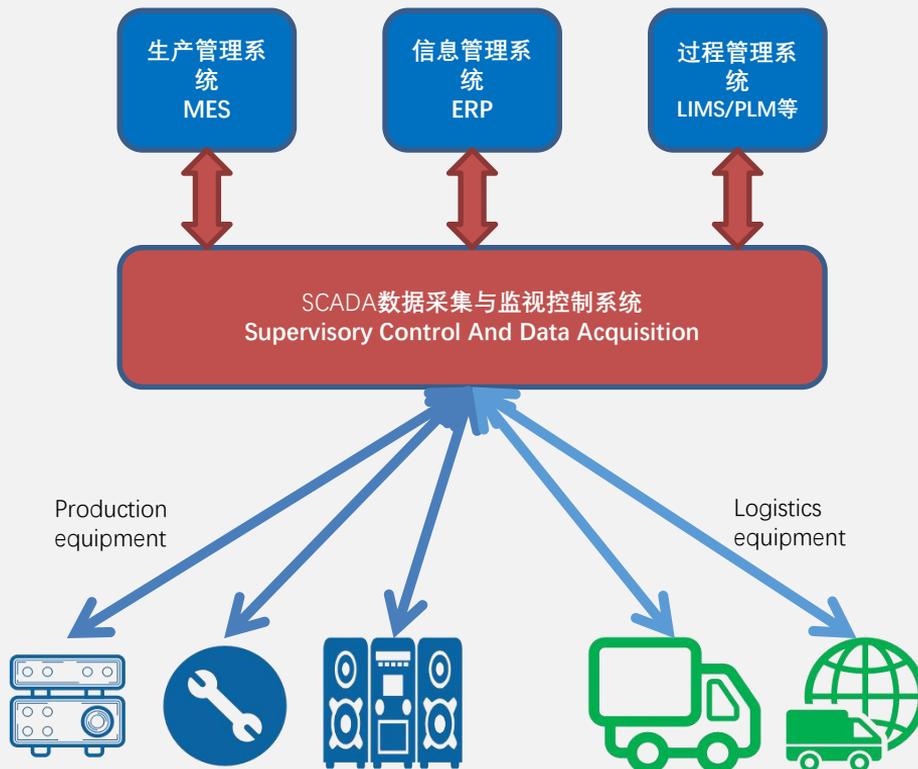
PART 03

software product

Talents come from diligence,madeytfcel
and knowledge is gained by accumulation.

SCADA/WCS System

QDITC

生产管理系统
MES

信息管理系统
ERP

过程管理系统
LIMS/PLM等

SCADA数据采集与监视控制系统
Supervisory Control And Data Acquisition

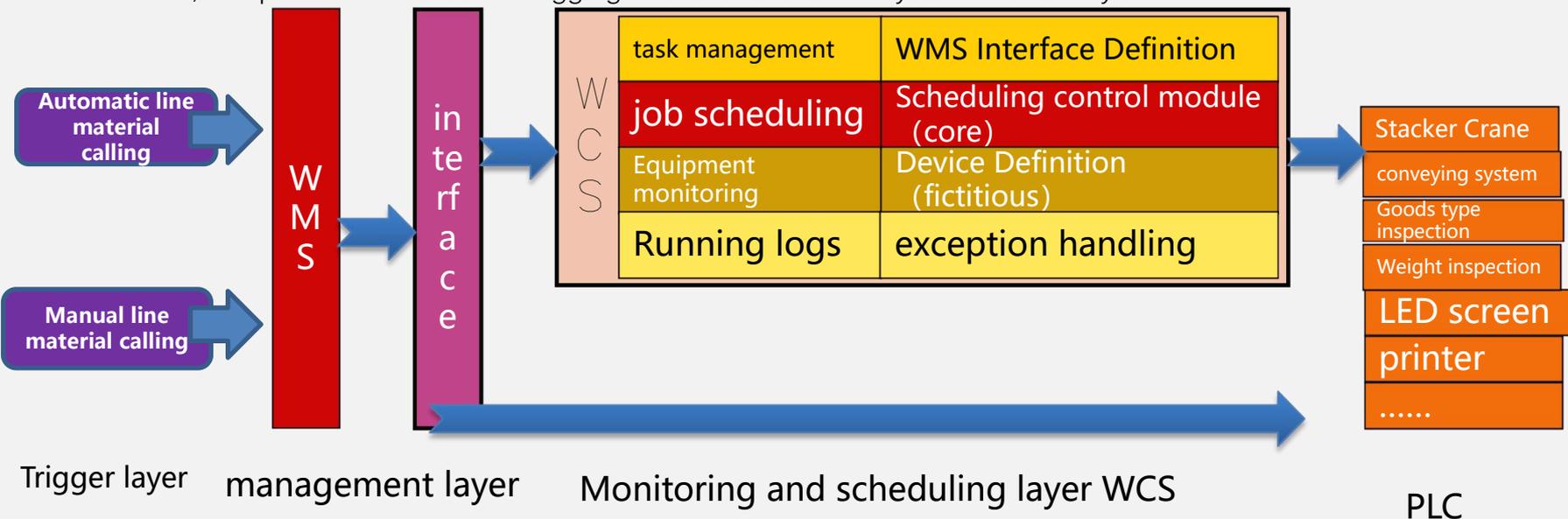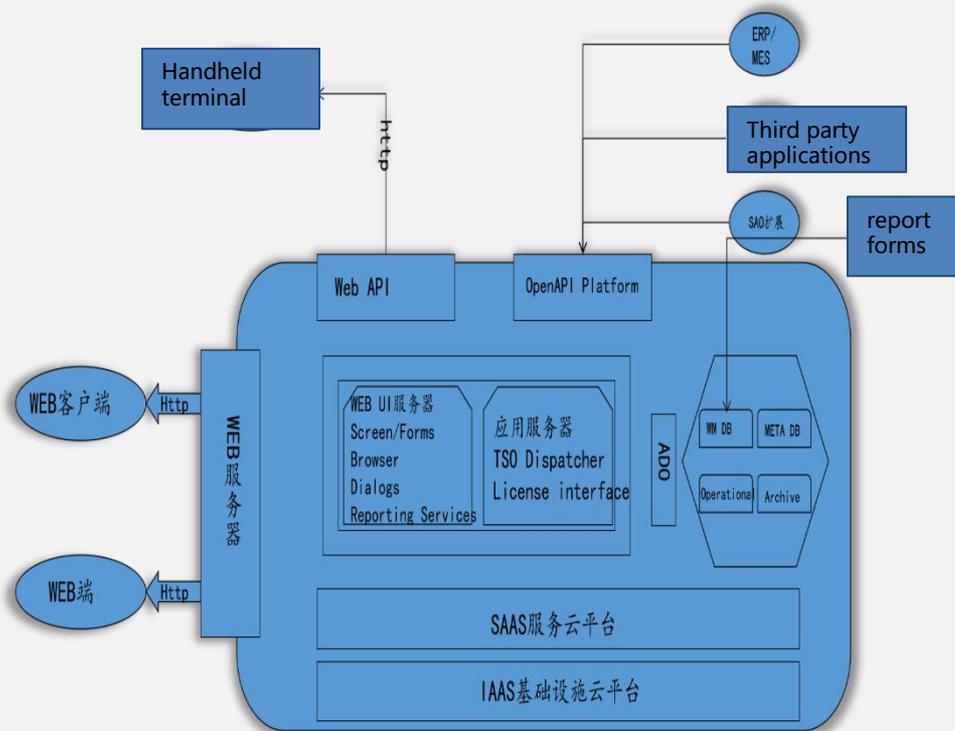Production equipment

Logistics equipment

The SCADA system independently developed by Qiande is based on rich experience in equipment integration and control, evolved from the WCS warehouse equipment management system, and provides data collection, analysis, and visual monitoring for various equipment on the production line.

- Seamless access to mainstream communication protocols, such as OPC, Modbus/Modbus TCP, RS-232/RS-485, TCP/IP, S7, EtherCAT, and other mainstream protocols；
- 2D/3D human-machine monitoring interface, user-friendly visual operation；
- Quickly connect to all mainstream PLCs (Siemens, Mitsubishi, Omron, ABB, Huichuan, etc.) without the need for secondary development；
- A friendly API open platform that provides a series of interface technologies such as HTTP, WebService, TCP/IP, etc., making it easy for third-party integration；
- The ASUN industrial cloud platform, established in close cooperation with Huawei Cloud, provides SCADA with millisecond level response speed and efficient data storage methods, enabling precise and effective remote operation and intelligent diagnosis.

SCADA/WCS System

WCS stands for Warehouse Control System. WCS is a management and control system that lies between the WMS system and the PLC system. On the one hand, it interacts with the WMS system, receives instructions from the WMS system, and sends them to the PLC system, thereby driving the vertical storage and conveying equipment to generate corresponding mechanical actions. On the other hand, it reflects the status and data of the PLC system in real-time on the interface, and provides a manual debugging interface for the PLC system and conveyor line.

Automatic line material calling

Manual line material calling

WMS

interface

WCS

task management	WMS Interface Definition
job scheduling	Scheduling control module (core)
Equipment monitoring	Device Definition (fictitious)
Running logs	exception handling

Stacker Crane

conveying system

Goods type inspection

Weight inspection

LED screen

printer

......

Trigger layer

management layer

Monitoring and scheduling layer WCS

PLC

WMS

QDITC

Handheld terminal

http

ERP/MES

Third party applications

SAO扩展

report forms

Web API

OpenAPI Platform

WEB客户端 Http

WEB服务器

WEB UI服务器
Screen/Forms
Browser
Dialogs
Reporting Services

应用服务器
TSO Dispatcher
License interface

ADO

WM DB   META DB

Operational   Archive

WEB端 Http

SAAS服务云平台

IAAS基础设施云平台

9

01 Full lifecycle inventory management

02 Full process barcode control

03 Inventory visualization

04 B/S, C/S, hybrid architecture Open data dictionary, easy for secondary development

05 Compatibility API for deep integration of MES/ERP

06 Cloud services reduce costs and increase efficiency

W M S

Develop standardized interfaces that comply with relevant technical specifications, seamlessly integrate the equipment control system with the business operating system, and achieve the integration of main data, inventory information, business documents, and document execution results between the QD_WMS system and ERP (MES/SAP/WMS) systems. This achieves encrypted protection of transmitted data and ensures information security.

系统管理

良好的接口，实现
ERP/MES 系统的无缝对接

普通仓、自动仓、智能仓都可以在统一的
QD-WMS系统下实现物料的无忧管理

The system interface methods include: SOAP (Web service), a combination of SOAP (Web service) and intermediate libraries, SOCKET communication, database views, OPC protocol, and require encryption of transmitted data. The communication with the production scheduling platform adopts the methods of Web service or Web service+intermediate library interface, and the internal control system of the lower level can use methods such as Socket or OPC communication.

PART 04

Application scenarios
And typical cases

Typical case——New energy
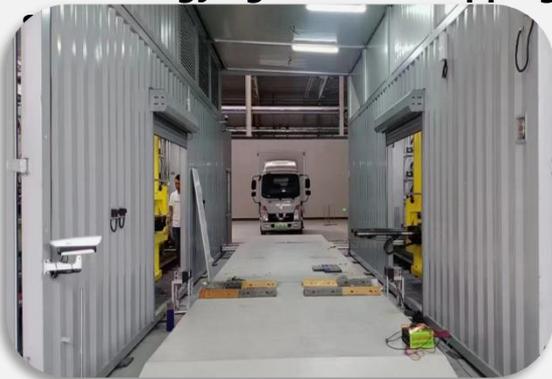
QDITC

JEVE

MGL

HNGF

EVE

CATL

BatteroTech

Typical case——New energy

New energy light truck swapping

CATL

FEF

SVOLT（Yancheng）

**SVOLT（Nanjing）**

Passenger car exchange station

Typical case——Large disk

This project is the first and second phases of Changzhou Lighting Automation Warehouse, mainly used to store lighting cables, lamps, and lamp accessories.The project client is a public institution under the Changzhou Housing and Urban Rural Development Bureau, responsible for the construction, maintenance, and daily management of urban lighting facilities.The overall efficiency of warehouse entry and exit shall not be less than 30 pallets per hour, with a daily working time of 8 hours. For software information systems, they shall work 24/7, 365 days a year.

Typical case——Material box

- Application scenarios：Suitable for storage and logistics transportation of products with a single variety and a mass not exceeding 100kg.It can also be used to store products of various specifications in standard bins,in general, scenarios with a weight not exceeding 100kg and frequent inbound and outbound operations.
- Application products: new energy lithium batteries, electricity meters, transformers, wires and cables, hardware, electronic products, etc.
- Typical Customers：**Air China、ZTT、BEKO、中讯档案、713、STARRY MOON,etc.**The JCET project requires the stability and reliability of the entire system to have a failure rate of less than 1/5000, as well as special requirements such as anti-static and high cleanliness.

Typical case——Semiconductor
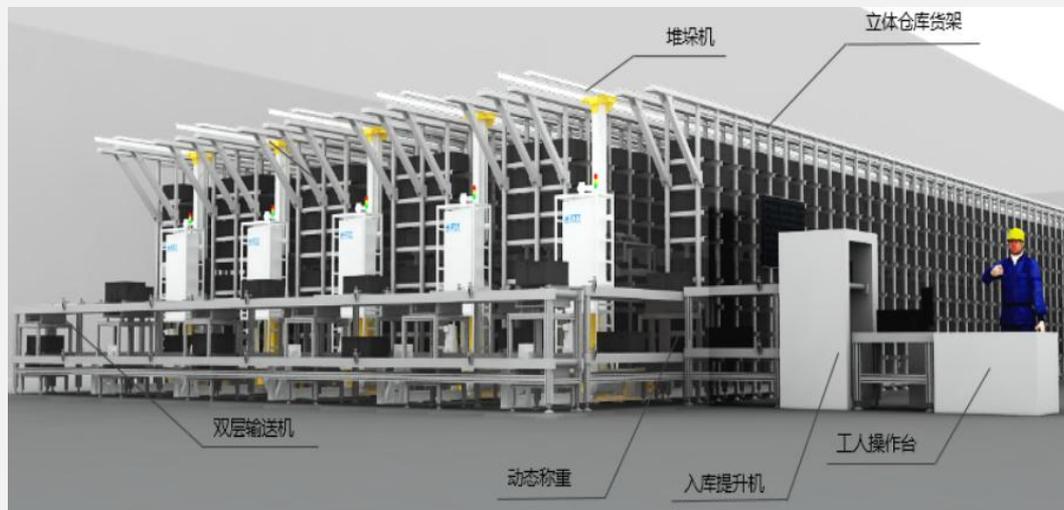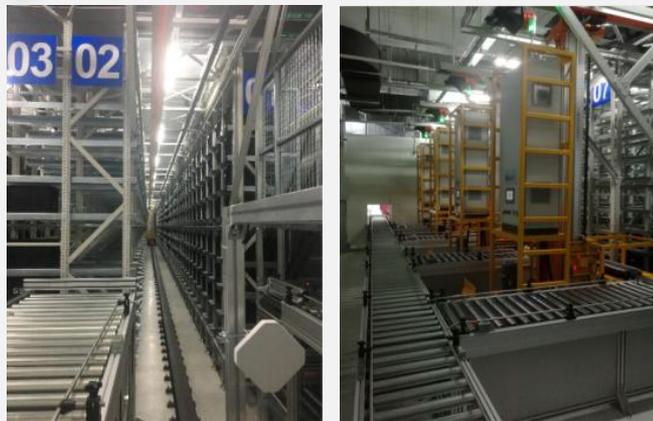
◆ An intelligent warehousing and logistics system designed for JCET, the largest chip packaging enterprise in China. Realize intelligent operation of automatic material storage, transportation, borrowing and returning, and empty box rotation during chip production process.

◆ Based on the characteristics of the chip industry, special treatment is adopted for shelves, forks, and conveyors to achieve extremely high dust and anti-static requirements.

Typical case——Pallet Storage
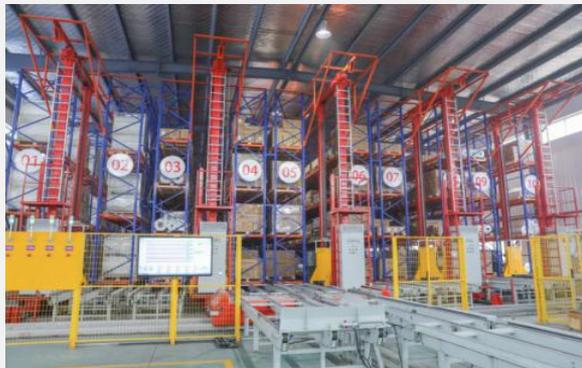
- Application scenarios：Suitable for storage and transportation of materials on standard pallets. (Chuan Zi Ge pallets, plastic pallets are optimal).Generally, the load capacity is 0.5-6T/disc.物料托盘有误差的情况适用子母拖或者改进货架方式实现；
- Application products：The widest range of applications, widely used in pharmaceuticals, chemicals, textiles, photovoltaics, new energy, agriculture, military industry, etc.
- Typical Customers：**FiberHome、BICON、CP Food、 Paishing Technology、TENPOWER、ZTT、HUALI GROUP、etc.**The warehouse height can reach 40 meters.

QDITC

- Application scenarios: 1. Cold storage: suitable for three-dimensional storage of materials in cold storage, can be used in scenarios above -45 ℃, and common cold storage is around -20 ℃.Cold storage intelligent logistics is sensitive to condensate water.2. Explosion proof warehouse: Special explosion-proof requirements are required, and electrical selection should be given special attention3. Special gases: Focus on the reaction between gases and equipment raw materials 4. Fire storage: The focus is on the design of fire protection.Application products: Food, vegetables, seafood, river fresh, etc.
  - Typical Customers：CNNC,PLAAF,CPGROUP,XAAI,CSSC,ZTT,TENPOWER,etc.

Partners

Partners

QDITC
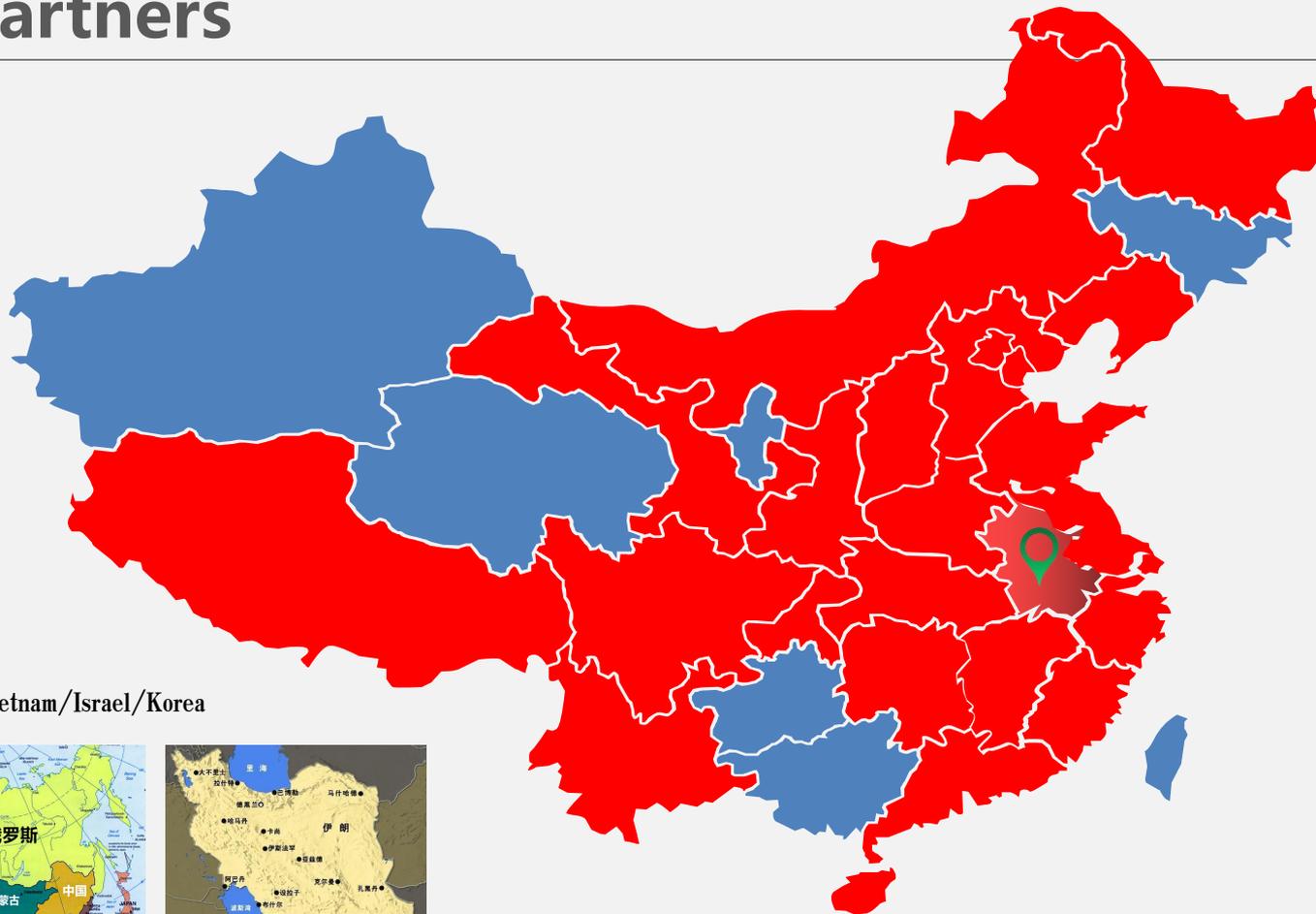
Russia/Iran/Vietnam/Israel/Korea

After-sale Service

Quick response mechanism

- 24/7 service
- 10 minutes to connect with after-sales engineers
- 2-hour on-site service（Hefei）
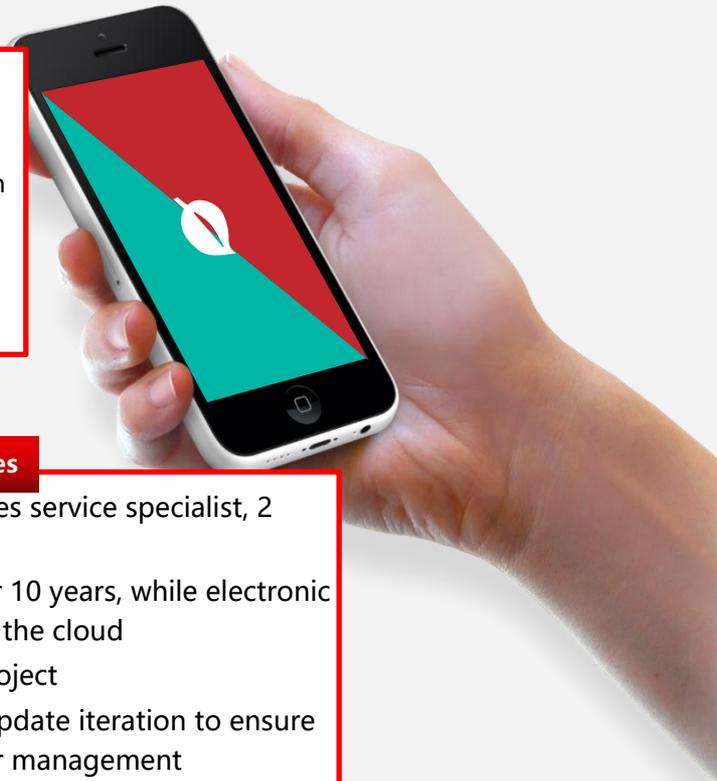- 12 hour on-site service（<1000km）

Patrol maintenance service

Monthly online inspections
Conduct on-site inspections every season
Partial maintenance every six months
Annual full maintenance

Spare parts system

- Classification and filing of spare parts
- Online availability of spare parts
- Long cycle spare parts, maintaining a reasonable proportion throughout the year
- Maintain 5-year inventory of electrical components
- Vulnerable and consumable parts can be called up at any time

Designated personnel and services

- "1+2" mechanism：1 after-sales service specialist, 2 after-sales engineers/projects
- Paper information are stored for 10 years, while electronic information are stored online in the cloud
- Create separate files for each project
- Regularly implement software update iteration to ensure the progressiveness of customer management