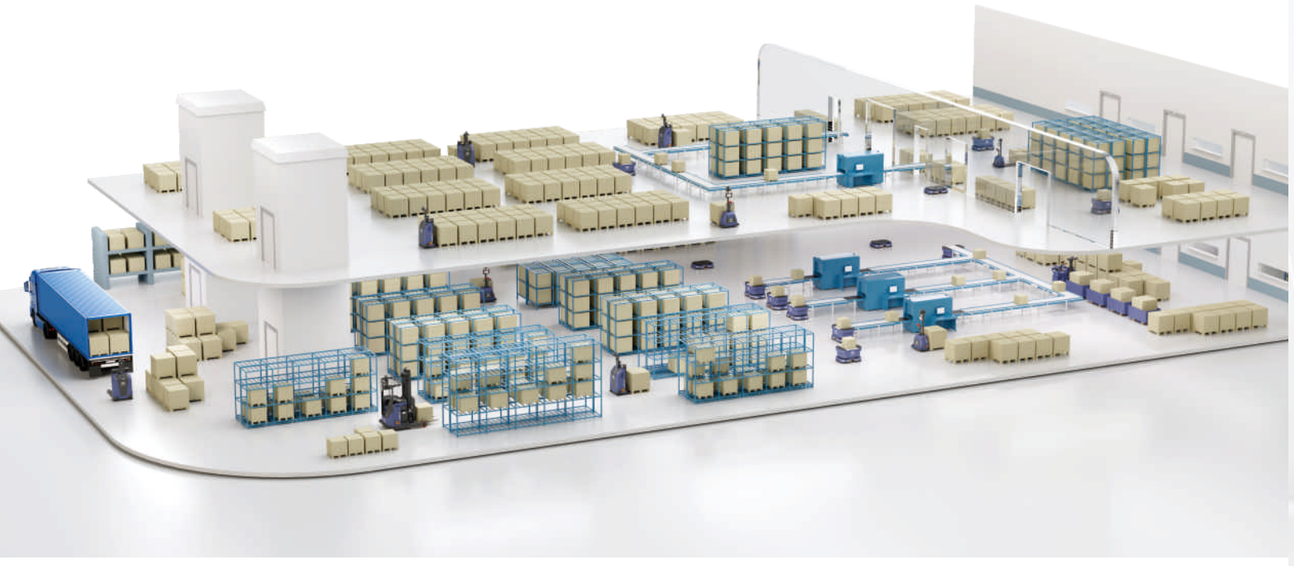
TO PROVIDE YOU WITH WORLD-LEADING INTELLIGENT
LOGISTICS AND WAREHOUSING SOLUTIONS



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BEACON ROBOT

PRECISE MOVEMENT
INTELLIGENT INTERCONNECTION

Reliable AMR Manufacturer and Service Provider with Guaranteed Delivery

Transfer robot
Intelligent forklift truck
RMS system
WMS system
WCS system

https://www.beacon-robot.com/

CONTENTS

01

COMPANY PROFILE

Suzhou Beacon Robot Technology Co., Ltd. was established in 2018 and is a company specializing in the research and development, design, assembly, sales, and installation of AMR mobile handling robots.
Our company has successively won honors such as National High tech Enterprise,Jiangsu Province Science and Technology Enterprise, Suzhou Yangcheng Lake Leading Talent Enterpris, and Gusu Angel. The company has passed ISO9001 quality management system and IEC27001 information security management system certification, as well as dual software enterprise certification. The company is invested by government funds and is also a unicorn storage enterprise in Xiangcheng District,Suzhou City.

Products

Suzhou Beacon Robot Technology Co., Ltd. is committed to providing unmanned , intelligent equipment for factories and the logistics and warehousing industry, while also providing globally leading laser navigation system solutions based on surrounding natural object positioning, smart logistics and warehousing system solutions for these related industries.

The company's current main products are:
Various industrial mobile handling robots AMR, as well as cluster robot central control system(RMS system) WCS system WMS system, etc.

Core Advantages

The company has a stable and reliable independent research and development team. research and development and technical personnel account for 50% of the company, with core developers mainly having master's and doctoral degrees, possessing the research and development and customized development capabilities for robot systems such as algorithms, software, control, and mechanisms. At present, the company has over 70 authorized patents for invention, software, utility model intellectual property rights, and other related fields.

- Core technologies with industry competitiveness
- Independent research and development capability of the entire machine
- High quality research and development team
- Multiple intellectual property patents

Development History

2018
- Company registered
- mobile navigation technology launched to market

2019
- Awarded Suzhou Yangcheng Lake Leading Talent and Jiangsu Science and Technology-Based Private Enterprise titles
- Obtained 16 authorized patents

2020
- Recognized as a National High-Tech Enterprise
- Awarded titles such as Suzhou Angel
- Obtained 18 invention patents
- Completed partner restructuring and secured orders from major domestic enterprises

2021
- Launched an upgraded version of industry-leading robot navigation technology
- Simultaneously completed a cluster robot control system for over 1,000 units
- Passed ISO9001 Quality Management System Certification and IEC27001 Information Security System Certification in February

2022
- Completed Series A financing
- Recognized as a unicorn reserve enterprise in Suzhou Xiangcheng District

2023
- Industry-leading new generation navigation and scheduling system launched
- Awarded the "Cygnets" title in Suzhou's Software and Information Technology Service Industry

2024
- The Southwest Branch was established, accelerating global expansion.
- Independently developed advanced 3D SLAM laser navigation technology is now widely applied in mass production.

WHAT — What to do
- Smart logistics industry professional customization platform
- One stop mobile robot solution expert
- Connect the Last Kilometer of Industrial Interconnection Smart Factory

WHO — Who to serve
- Provide intelligent logistics and warehousing system solutions for scenarios such as factories/logistics/airports/hospitals/schools/warehouses

HOW — How to do
- Project requirement docking
- Product design and development
- After sales maintenance
- On site deployment
- Production assembly

ENTERPRISE QUALIFICATION&CERTIFICATE

BEACON ROBOT

Suzhou Beacon Robot Technology Co., Ltd. is invested by government funds and is also a unicorn warehousing enterprise in Xiangcheng District,Suzhou City.
lt has successively won the honorary titles of National High-tech Enterprise,Jiangsu Science and Technology Enterprise,Suzhou Yangcheng Lake Leading Talent Enterprise, Suzhou Angel, etc.The company has passed THE IEC27001 information management security system certification and dual software enterprise certification.

NATIONAL HIGH-TECH ENTERPRISE

SCIENCE AND TECHNOLOGY ENTERPRISES IN JIANGSU PROVINCE

LEADING TALENT ENTERPRISE IN YANGCHENG LAKE, SUZHOU

PATENTS & SOFTWARE WORKS

The company's high-quality R&D team has been dedicated to the development and application of multimode-integrated navigation technology based on laser navigation.It has a core technology with global competitiveness and has applied for more than70 authorized patents.

30 UTILITY MODEL PATENT

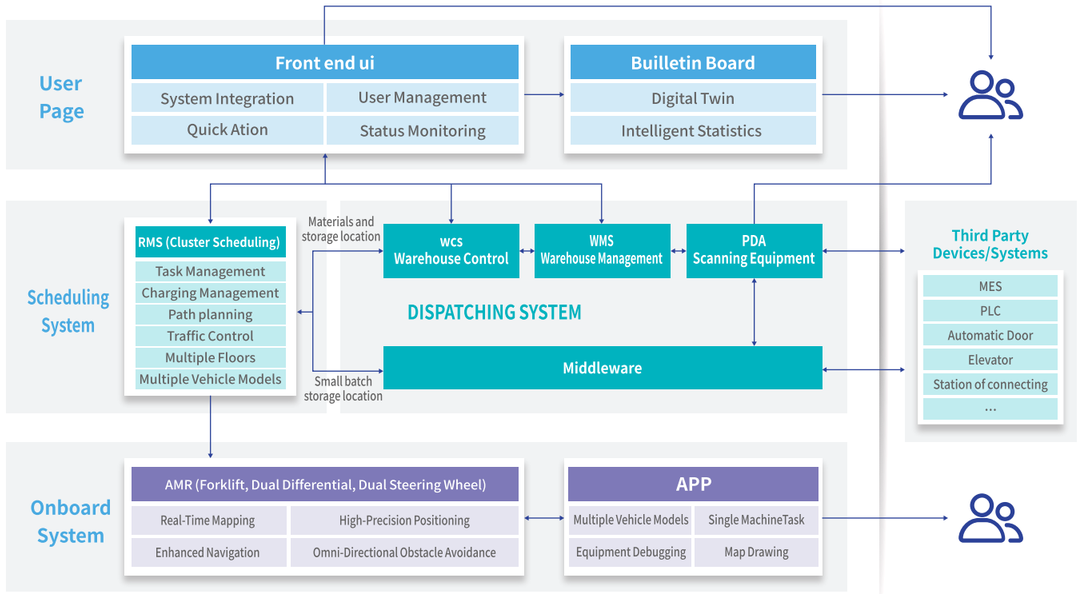
11 APPEARANCEPATENT

20 NVENTION PATENT

12 SOFTWARE COPYRIGHT

SOFTWARE SYSTEM INTRODUCTION

·Software System Architecture Diagram



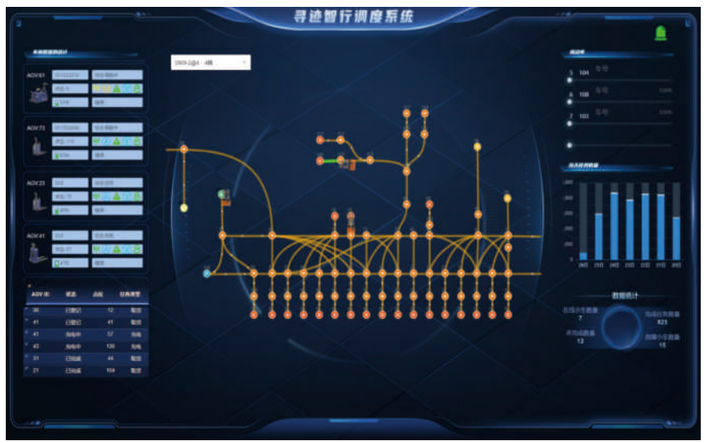
WORKING ON ALL SYSTEMS
Unified software system, supporting multiple vehicle configurations

COMPLETE PLAN
Single machine, scheduling, PDA, WMS and other systems are all self-developed
Internal communication is smooth, fast, and secure

SIMPLE OPERATION
Guided operation, easy to learn

DEPLOY QUICKLY
Two weeks to complete the overall scheme deployment, with complete functions and stable operation

·Robot Management System(RMS)



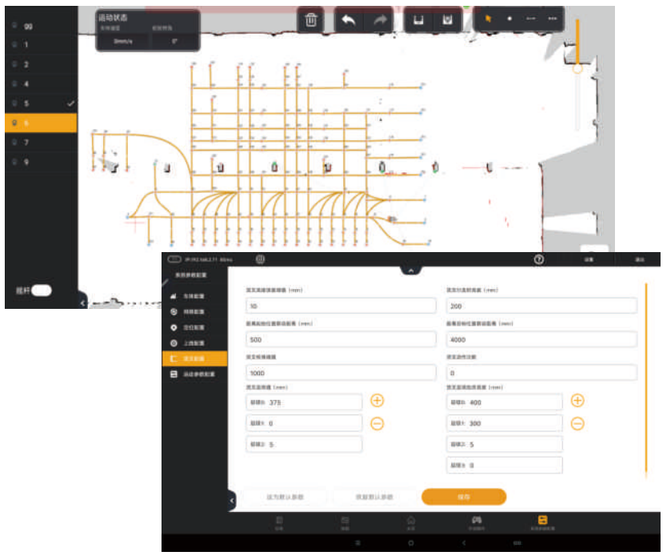
RMS Features

Flexible avoidance
Based on real-time monitoring and using static and dynamic avoidance and other strategies to dynamically adjust the path, ensuring AMR safe driving to the greatest extent.

Mixed running of multiple vehicle models
Support multiple AMRs to work together in the same area,improving work efficiency.

Optimal path
Integrate various functions such as status monitoring, collisi on detection, dynamic path, static traffic management, temporary standby, special areas,etc., allocate resources reasonably, and plan the optimal route.

·Teaching software(APP)



APP Features

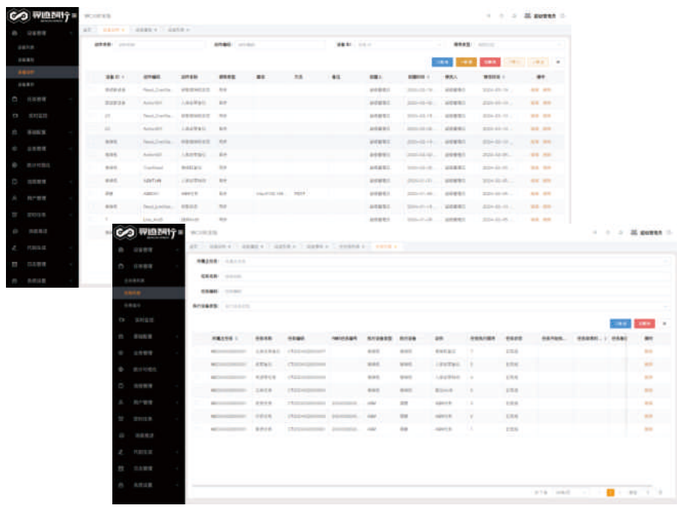
Multi-model compatibility
Suitable for all vehicle models, corresponding functions, status,and parameters can be displayed according to the vehicle model.

Comprehensive debugging
Provides comprehensive system debugging functions, including parameter debugging and dynamic validation of sensors, maps, paths, tasks, etc.

Real time monitoring
Real time monitoring of the status, location, and operation conditions of AMR to help users discover and solve problems.

·Warehouse Control System(WCS)

Equipment Management/Task Management



WCS Features

Equipment control
Control and dispatch the equipment in the warehouse to realize the material flow and the automation of the operation.

Communication interface
Communication and data exchange with various equipment and systems to realize information sharing and integration.

Operation monitoring
Monitor the operation progress and status in the warehouse in real time to ensure the smooth progress and feedback in time.

·Warehouse Management System(WMS)

Receipt Management / Task Management

WMS Product Features

Standard interface specification
Restful style which is flexible, saleable, and easy to maintain.

Fast response
Core interfaces for concurrent requests respond within 100ms.

Compatibility
Backward compatibility with third-party integration.

Agile development
Low-code architecture, enabling rapid development.

High functional reuse rate
Plugin-based implementation, fast integration.

3D visualization of storage locations
Data twin for new implementations in the production workshop.

·Product Naming Rules

Example products

BR-F12SL-LD

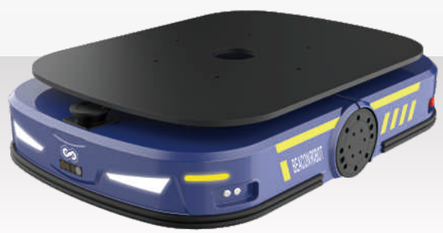
·Product Naming Rules Reference Table

COMPANY	MODEL	LOAD	SERIES	OTHER
BR Abbreviation of BEACON ROBOT	D Differential Drive Vehicle	10 1000kg	SL Stacker truck SL series	S Sheet Metal Non-Standard Customization
	M Omnidirectional Vehicle	12 1200kg	P Pallet Truck P Series	S Series
	F Forklift	16 1600kg	G Tractor G Series	Brand
		20 2000kg	R Reach Truck R Series	
		30 3000kg	E Counterbalance Forklift E Series	
			T Three-Way Forklift T Series	
			R Roller AMR	
			B Belt Conveyor AMR	
			A Robotic Arm AMR	

BR	F12SL	LD

LATENT LIFTING AND ROTATING ROBOT

Image BR-D05/BR-M05
BR-D10/BR-M10
BR-D15/BR-M15



Latent Lifting and Rotating AMR - Standard Chassis

Note: Supports peripheral device integration, customization of chassis height, and other requirements.

Collaborative Robotic Arm AMR

Roller AMR

Belt conveyor AMR

Advantages

- Mobility: Flexibility to traverse low and narrow spaces
- Application adaptability: Supporting lifting and turning, with a lifting range of 5cm, suitable for docking at different heights
- Scene adaptability: Multi sensor fusion positioning, Supporting to add reflector column, anti Light plate and other features
- Easy to maintain: Modular design, One-click reset
- High degree of flexibility: Can carry commonly used peripheral mechanisms such as rollers,mechanical arms, belts, etc

Application scenarios

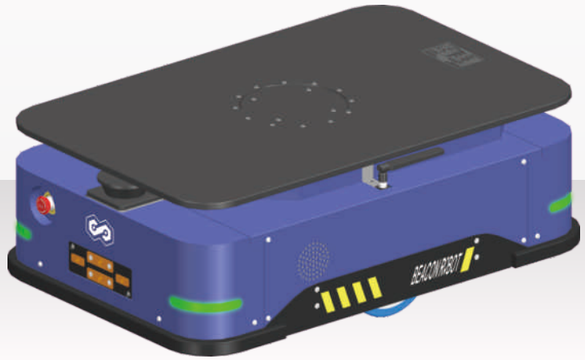
- Logistics Center and Warehouse: Used for automatic carrying, transportation, and sorting of goods,improving the transp ortation efficiency of warehouses and logistics centers
- Material transfer on the production line: Used to transfer raw materials or Finished and semi-finished products on the production line, assisting in automated production processes

Specifications

Model	Vehicle size (mm)	Rated load (kg)	Lifting Height	Climbingability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	Motion model	Running speed
BR-D05/BR-M05	950*650*250	500kg	60±5mm	5/10	1151mm	Differential wheels/doubl helm	1.5m/s
BR-D10/BR-M10	980*680*250	1000kg	60±5mm	5/10	1192mm	Differential wheels/doubl helm	1.5m/s
BR-D15/BR-M15	1080*720*250	1500kg	60±5mm	5/10	1298mm	Differential wheels/doubl helm	1.5m/s

Latent Lifting and Rotating Robot

Image BR-D05-S/BR-M05-S
BR-D10-S/BR-M10-S
BR-D15-S/BR-M15-S



Advantages

- Can carry commonly used peripherals such as rollers,robotic arms,and lifting and rotating mechanisms
- All-weather smooth operation,precise positioning
- The end supports a variety of positioning methods such as reflector,QR code,code tape,etc,with an accuracy of±2mm.It can be connected to terminal equipment such as machines,trigger devices,and vertical warehouses
- Strong flexibility and adaptability to narrow passages

Application scenarios

- Logistics Center and Warehouse:Used for automatic carrying,transportation,and sorting of goods,improving the transportation efficiency of warehouses and logistics centers
- Material transfer on the production line:Used to transfer raw materials or Finished/semi-finished products on the production line,assisting in automated production processes

Specifications

Model	Vehicle size (mm)	Rated load (kg)	Climbing ability	Turning Diameter (Unloaded)	Full Load Operating Time	Self-Weight	Accuracy
BR-D05-S/BR-M05-S	850*580*306	500kg	55±5mm	990mm	6-8h	175kg±5%	±10mm
BR-D10-S/BR-M10-S	950*600*306	1000kg	55±5mm	1050mm	6-8h	195kg±5%	±10mm
BR-D15-S/BR-M15-S	990*620*306	1500kg	55±5mm	1168mm	6-8h	225kg±5%	±10mm

FORKLIFT SERIES COMPACT PALLET STACKER TRUCK

Left BR-F12SL-LD
Right BR-F14SL-MM

Advantages

- Vertical stacking capacity:Efficiently stack goods in the vertical direction,maximizing the utilization of warehouse or storage space
- High load-bearing capacity:capable of handling heavy goods
- Narrow channel operation:suitable for limited spaces,such as narrow channels and crowded work areas
- Adapt to different goods:Suitable for goods of different types,sizes,and shapes,providing greater flexibility

Specifications

Model	Vehicle Dimensions (Length x Width x Height)	Rated Load	Lifting Height	Climbing Ability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	Motion Mode	Operating Speed
BR-F12SL-LD	1750*915*1950mm	1200kg	1844±5mm	5%	2566mm	Single Steering Wheel	2m/s
BR-F14SL-MM	1740*970*1925mm	1400kg	2500±5mm	5%	2312mm	Single Steering Wheel	1.3m/s
BR-F15SL-LD	1707*864*1960mm	1500kg	2344mm	6%	2506mm	Single Steering Wheel	1.6m/s
BR-F16SL-LD	2130*1040*2275mm	1600kg	2844±5mm	5%	3412mm	Single Steering Wheel	1.7m/s
BR-F20SL-MM	2100*1105*2050mm	2000kg	3000±5mm	5%	3408mm	Single Steering Wheel	1.7m/s

*The actual product appearance is subject to the company's latest technical specifications.

FORKLIFT SERIES HANDLING FORKLIFTS

Left BR-F15P-ZL
Right BR-F20P-MM

Advantages

- Efficient Handling: Efficiently transport large volumes of goods, improving the efficiency of logistics and warehousing operations
- Increased Production Efficiency: Helps accelerate material flow and enhance the overall efficiency of production lines
- Strong Adaptability: Suitable for handling different types, sizes, and shapes of goods, providing greater flexibility

Specifications

Model	Vehicle Dimensions（mm）	Rated Load	Lifting Height	Climbing Ability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	Motion Mode	Operating Speed
BR-F15P-ZL	1640*935*1955mm	1500kg	95±5mm	5%	3000mm	Single Steering Wheel	1.5m/s
BR-F20P-MM	1685*1015*1910mm	2000kg	110±5mm	5%	3350mm	Single Steering Wheel	1.4m/s
BR-F30P-LD	1988*987*2035mm	3000kg	125mm	10%	3640mm	Single Steering Wheel	1.6m/s
BR-F40P-MM	2060*1105*1935mm	4000kg	200±5mm	5%	2400mm	Single Steering Wheel	1.4m/s

*The actual product appearance is subject to the company's latest technical specifications.

FORKLIFT SERIES Counterbalance Forklift

Left BR-F20E-IN-MM
Right BR-F20E-OUT-MM

Advantages

- High load-bearing capacity:With a rated load of 2000kg,it has a high load-bearing capacity and can handle large and heavy goods,improving carrying efficiency
- Long term operation:Equipped with a large capacity battery,it can work continuously for a long time,improve production efficiency,and run for up to 8 hours
- Adaptability:Suitable for various environments,including indoor and outdoor.It can running on different surfaces,such as flat warehouse floors or uneven construction site floors

Specifications

Model	Vehicle Dimensions (mm)	Rated Load	Lifting Height	Climbing Ability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	End Precision	Motion Mode
BR-F20E-IN-MM	2965*1090*2110mm	2000kg	3000±5mm	5%	3504mm	±10mm	Differential Drive + Steering Wheel Steering
BR-F20E-IN-YT	2235*1165*3005mm	2000kg	3000±5mm	5%	3486mm	±10mm	Single Steering Wheel
BR-F35E-IN-LD	3870*1350*2500mm	3500kg	3000mm	16%	5260mm	±10mm	Differential Drive + Steering Wheel Steering
BR-F20E-OUT-MM	3210*1275*2360mm	2000kg	3000±5mm	13%	3710mm	±10mm	Differential Drive + Steering Wheel Steering

*The actual product appearance is subject to the company's latest technical specifications.

FORKLIFT SERIES Reach Truck

Left BR-F15R-MM
Right BR-F16R-LD

Advantages

- Narrow passageway operation:Flexible passage through narrow spaces
- High lifting capacity:It can handle high stacking tasks and improve vertical storage efficiency
- Adapt to different terrains:Adapt to different terrains,Including different floors indoors and outdoors ground

Specifications

Model	Vehicle Dimensions (mm)	Rated Load	Lifting Height	Climbing Ability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	Motion Mode	Operating Speed
BR-F15R-MM	2335*1150*2125mm	1500kg	2500±5mm	5%	3564mm	Single Steering Wheel	1.5m/s
BR-F16R-LD	2470*1390*2550mm	1600kg	5755±5mm	5%	3550mm	Single Steering Wheel	2m/s
BR-F20R-YT	2455*1250*2410mm	2000kg	2500±5mm	5%	4104mm	Single Steering Wheel	1.4m/s

*The actual product appearance is subject to the company's latest technical specifications.

FORKLIFT SERIES Tow Tractor

Image BR-F30G-MM

Advantages

- High load-bearing capacity:rated load of 3000kg,capable of carrying large and heavy goods,improving carrying efficiency
- Improving logistics efficiency:carrying large amounts of goods, accelerating logistics processes,improving logistics and warehousing efficiency,with a running speed of up to 1.8m/s
- Flexibility:Suitable for different sizes and types of goods,able to adapt to diverse logistics tasks

Specifications

Model	Vehicle Dimensions (mm)	Rated Load	Lifting Height	Climbing Ability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	Motion Mode	Operating Speed
BR-F30G-MM	1580*980*1850mm	3000kg	/	3/3	2530mm	Single Steering Wheel	1.8m/s

FORKLIFT SERIES THREE-WAY FORKLIFTS

Image BR-F16T-MM

Advantages

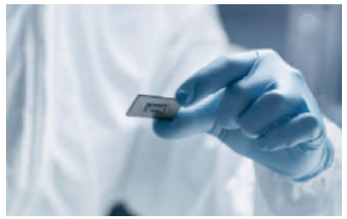
- Extremely Narrow Aisles:Able to operate within 1.5 meters of aisle width,reducing typical forklift aisle distances by 55%.
- High-density Storage:Supports a maximum shelf height of 14.2 meters,increasing storage capacity by 200%.
- Energy Efficiency:180-degree side-shifting of forkseliminating the need for steering adjustments.

Specifications

Model	Vehicle Dimensions (mm)	Rated Load	Lifting Height	Climbing Ability (Full Load/Unloaded, S2-5min)	Turning Diameter (Unloaded)	Motion Mode	Operating Speed
BR-F16T-MM	3795*1505*6655mm	1600kg	11200±5mm	5/10	5376mm	Single Steering Wheel	2m/s

RANGE OF SERVICES

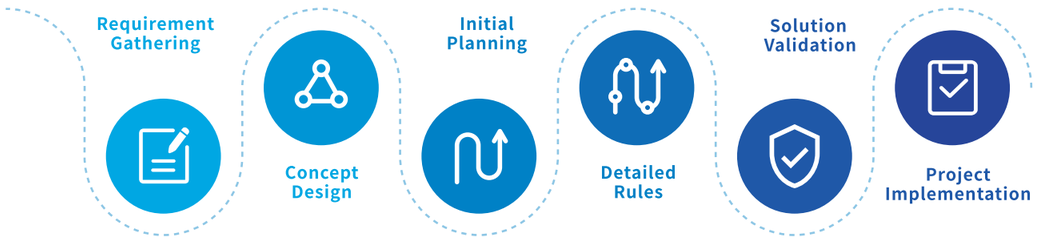
The areas of our service ranges include electronics manufacturing,semiconductor, photovoltaic,automotive parts,new energy,cross-border e-commerce,bio-medicine,3PL.....



Project Lifecycle Services

We offer localized services nationwide,covering the entire lifecycle of projects from initial consultation and simulation to application design and support,onsite testing support, operational and maintenance support,and system upgrade support,providing comprehensive coverage throughout the project lifecycle.



- Core Capability Solutions Provider
- Visual Data Analytics
- Turnkey Service Assurance
- Supply Chain Delivery Thinking
- Fast,Flexible,and Reliable
- 24/7 Service and Support

SELECTED CASES

- PCB INDUSTRY
- 3C ELECTRONICS INDUSTRY
  (COMPUTER,COMMUNKATION AND CONSUMER ELECTRONICS)
- PRECISION INSTRUMENT INDUSTRY
- NEW-ENERGY INDUSTRY
- AUTOMOTIVE INDUSTRY
- LOGISTICS INDUSTRY
- CABLE INDUSTRY

PCB INDUSTRY

The user mainly produces high-density interconnect printed circuit boards(PCBs).In order to improve production efficiency and meet business development needs,they have adopted a comprehensive solution using intelligent robots for handling,achieving process optimization and efficiency enhancement.

Customer Requirements:

①The docking precision within±5mm;
②The distance between the two sides when entering a machine is 30mm;
③Compatible with both fork lift and roller conveyor docking methods for the board loading machine;
④Double -layers AGV design,meeting the requirements of upper full pallets carrying and lower empty pallets return during transporting.

Scan code to watch industry application videos

PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

PRECISE MOVEMENTINTELLIGENT INTERCONNECTION

The Beacon Robot Slam Lidar navigation AME achieves an accuracy of ±10mm.By adding a QR code at the platform to assist positioning of the AMR which improves the docking accuracy to ±5mm,thereby addressing the issue of narrow gaps between the platform and AMR.
Introducing The Beacon Robot two-tier roller-type AMR design,the rollers are coated to increase friction and sensors are added on the vehicle to detect goods. Meanwhile,additional blocking blocks are installed to prevent trays from flying out during sudden braking,ensuring material safety.
The double-layer design enables simultaneous handling of full and empty pallets,thereby improving efficiency.

Before and After

BEFORE	VS	AFTER
Complex transport processes for different material distribution in the plant		Transportation with multiple vehicle types of AMR,docking with different production lines, high level of automation
Labor-intensive, high costs		Integration with WMS,RCS systems,achieving digital management
Narrow gaps in material storage, posing safety hazards for personal handling		Conveyor bel design, coupled with double layer design,achieving process optimization

Summary Of Advantages

Docking accuracy at workstations
±5mm

One-way transport process in
5min

Double-layer design increases efficiency by
4 times



3C ELECTRONICS INDUSTRY

(computer,communication and consumer electronics)

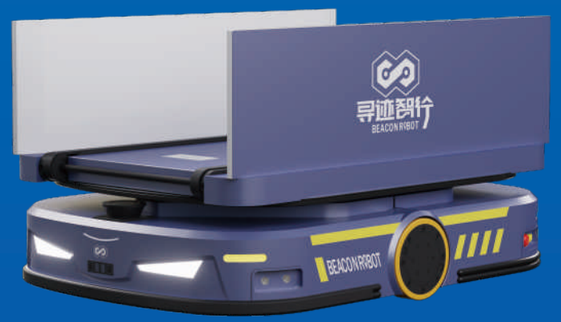
With continuous innovation in electronic products such as smart wearable devices and smart home appliances,and a steady rise in residents' consumption levels,there is a growing demand among residents for emerging electronic products,thereby driving the robust development of the 3C(computer,communication and consumer electronics)consumer electronics industry.

Customer Requirements:

①The production layout is compact with frequent material tum over and long production line spans.This makes difficult for current staff to meet the timely material handling requirements after expanding production,leading to compromised production pace and limited efficiency;

②Rapid product updates necessitate frequent changes in production line layout;

③Disorderly stacking of materials alongside production lines leads to errors and makes management difficult.



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PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

Solution

This project introduces ten customized laser SLAM navigation belt conveyor AMRs from Beacon Robot, paired with the RMS scheduling system. These robots automatically connect with loading and unloading machines, transporting raw materials, semi-finished products, and finished goods. To ensure smooth operations and production balance, Beacon Robot plans intelligent buffer lines and vertical storage, solving issues like low efficiency and disorganization caused by manual handling, and achieving automation and standardization in the workshop.

BEFORE AND AFTER

BEFORE	VS	AFTER
Manual production,low efficiency		AMR automated flexible handling
Frequent material turnover long-distance manual handling		Automatic docking with loading and unloading stations for raw materials,semi-finished products,and finished goods across all production stages
Disorderly material stacking,difficult management		Integration with WMS and RCS for standardized management

SUMMARY OF ADVANTAGES

Efficiency increased by **30%**

Maximum speed of **1.5m/s**

Management upgrade achieves process optimization

PRECISION INSTRUMENT INDUSTRY

In contemporary technology and industrial areas,high level precision measurement technology and the capability to manufacture precision instruments are important indicators of a country's scientific research capabilities and overall industrial leadership.They are also essential prerequisites for developing high-end manufacturing industries.Precision instruments refer equipment and devices used for generating and measuring precise quantities.This includes observing,monitoring,measuring,verifying,recording,transmitting, transforming,displaying,analyzing,processing,and controlling precise quantities.

Customer Requirements:

①Dust-free environment which ensures that AGV equipment does not generate static electricity or dust during transportation;
②Achieve unmanned operation to improve production efficiency.

Scan code to watch industry application videos

PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

Solution

In this project,Beacon Robot customizes the AMR chassis and tires to meet the transportation needs of different production lines and products for enterprises.The dust-free AMR transport vehicle utilizes dual wheel steering and achieve omnidirectional movement,as well as lift access for material retrieval.
We independently developed an RMS scheduling system that integrates with the enterprise's ERP to personalize functional configurations.
Beacon Robot also integrates multiple safety measures and systems,including setting up safety barrier ranges,360°safety protection,flexible bumpers,emergency stop buttons,3-levelwarnings,fault reporting,and other software or hardware optimizations to ensure stable and efficient operation of the dust-free AMR robots.

Before and After

BEFORE	VS	AFTER
High cost and low efficiency of manual dust-free packaging		Support inter-floor and inter-factory area material distribution,ensuring timely delivery
Difficulty in maintaining a dust-free environment in the workshop		AMRs support mixed scheduling of multiple vehicle types within the same scene
Low accuracy in completing transp ortation tasks on schedule		Improved deadlines environment level, ensuring and efficient operations

Summary of Advantages

Efficiency increased by **40%**

Saved 50%in labor costs **50%**

Reduced maintenance costs of dust-free environment by **50%**



NEW ENERGY INDUSTRY

As global energy demand continues to rise,the importance of solar photovoltaic power will grow significantly.Solar photovoltaic energy is a green and clean energy source that does not generate pollution or greenhouse gases.It helps reduce reliance on fossil fuels and is poised to become a significant source of future energy.However,there are still some issues and challenges that need to be addressed.

Customer Requirements:

①Requires a maximum load capacity of 2 tons;
②Achieve automatic docking with gantry robots;
③Achieve simultaneous docking with elevators during heavy-duty material handling.

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PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

Solution

The project introduces a2-ton intelligent unmanned forklift anda50kg payload belt-type AMR.It utilizes an intelligent scheduling system to interface with different production line on-site deployment and path planning,configuring traffic strategies including waiting,yielding,rerouting,and reversing.It includes status monitoring and automatic charging management to automatically transport materials to specified locations.Terminal high-precision positioning is achieved with an accuracy of± 2mm,supporting mixed scheduling of various vehicle types within the same environment.Real-time integration with WMS enables retrieval of handling instructions and logistics information,ensuring real-time monitoring and guaranteeing the visibility and efficiency of inbound and outbound material operations.

Before and After

BEFORE	VS	AFTER
Manual operations,slow handling of goods		AMR interfaces with different production line smoothly, with smooth acceleration and deceleration process,no stuttering,no missing, operating at a high speedof15m/5
High precision required for docking,which cannot be standardized		Precision alignment,high-accuracy positioning within±2mm
Manual docking with multiple devices poses high safety risks		AMR operations,inteligent obstacle recognition, 360-degreesafety protection

Summary of Advantages

Automated handling with minimal cargo damage

Optimal layout to reduce warehouse storage space usage

Flexible deployment that can be planned according to production lines and business needs,ensuring optimal operational efficiency

AUTOMOTIVE INDUSTRY

The assembly of engine, rear axle, gearbox, chassis, and other components, as wel l as manual handling of parts feeding during the production, which are in efficient, and the picking tasks are enormous and complex. Moreover, the automot ive industry's production processes are fixed, providing convenience for flexible and intelligent upgrades.

Customer Requirements

Traditional logistics picking system, which are warehouses for storing and picking complaints, involve workers picking items based on documents while walking back and forth within the logistics line area. faced with such immense picking workload and complexity, automobile factories need to introduce flexible and efficient customizedproduction systems to ensure precise distribution and high-quality components for millions of vehicles.

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PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

Solution

The project solution consists of a combination of roller-type AMRs and stealth lift AGVs,complemented by a proprietary RMS scheduling system for information processing and command control of AMRs.This system interfaces and exchanges data with other automated equipment,continuously optimizing paths to enhance operational efficiency.Through the Post-delivery after-sales visits,customers have indicated that the system is stable,operates smoothly,and significantly enhances the overall standardization and intelligence level of the production line.

Before and After

BEFORE	VS	AFTER
Low production completion rate and efficiency		Automatically and efficiently fulfill transportation requirements
Low level of automation		Flexible manufacturing to meet personalized customization needs
Manual handling poses safety risks, high labor costs		Automatically deliver massive materials to the workstation

Summary of Advantages

Optimize and reduce staff by **20%**

Outbound accuracy improved by **100%**

Production on-time rate Increased by **60%**

LOGISTICS INDUSTRY

The logistics industry is a complex or aggregated industry formed by the industrialization of logistics resources.Logistics resources include transportation,warehousing,loading and unloading,handling,packaging, circulation processing,distribution,information platforms,etc.The industrialization of these resources forms sectors such as transportation, warehousing,loading and unloading,packaging,processing and distribution, logistics information,etc.What's more,Intelligent and digital transformation and upgrading are essential pathways for the logistics industry to reduce costs and increase efficiency.

Customer Requirements:

①Narrow pathways suitable for carrying out handling work;
②Fast handling to improve efficiency;
③High precision and the capability to ensure safety during handling.

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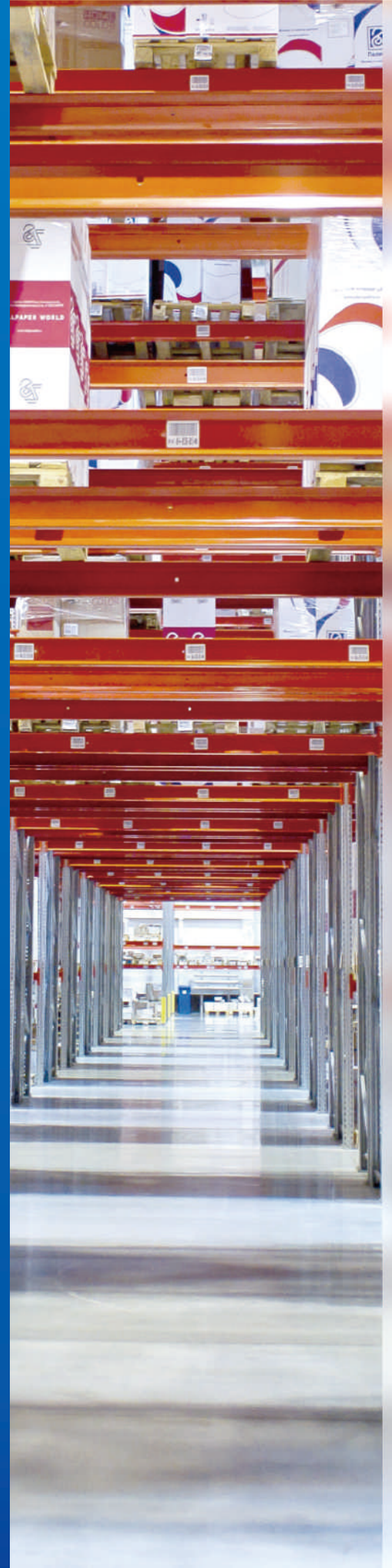

PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

Solution

The project is executed by combining unmanned guided compact stackers,handling forklifts,in-house RMS scheduling system,and WMS intelligent warehouse management system.The compact stackers and handling forklifts are equipped with self-developed automated laser navigation technology by the Beacon Robot,enabling autonomous navigation within the warehouse and performing various tasks such as handling and storing pallets,achieving warehouse information visualization.

Before and After

BEFORE	VS	AFTER
High-altitude operations,high risk factor		Operating speed 2m/s,positional accuracy ±10mm in all directions
Dependence on manual labor, high cost investment		Compact body,suitable for transportation in narrow spaces
Wide aisles, low warehouse space utilization rate		Achieve warehouse data monitoring and tracking

Summary of Advantages

Reduce equipment and labor costs

Improved accuracy of warehouse data for

Enhance safety in goods transportation easier statistical analysis

CABLE INDUSTRY

As one of the largest supporting industries in the national economy,cables are widely used in various fields.The intelligent upgrading of industries have become inevitable trends to further optimize the industrial structure of the cable industry,enhance the modernization of the industrial chain,and promote digital transformation.

Customer Requirements:

①Heavy manual handling workload;
②High requirements for docking accuracy;
③Low handling efficiency.

Scan code to watch industry application videos

PRECISE MOVEMENT INTELLIGENT INTERCONNECTION

Solution

This project is mainly for the logistics handling of ultra-high-strength fine steel cord,with a load requirement of over 1 ton and precision requirements of ±10mm.It includes automatic correction of angle deviation and prohibits the addition of secondary positioning materials on-site.

1.Introduce the BR-F12SL-H series compact stacker forklift with customized ultra-wide forks and equipped with automatic charging stations.

2.SLAM laser navigation system based on natural object positioning the surroundings,eliminating the need for QR codes,tapes,or other auxiliary positioning aids.

3.Installation of 3D vision cameras for end-point positioning,automatic error correction,and improvement of docking accuracy.

4.Supporting software systems:RMS Central Dispatch System,WCS Warehouse Control System,WMS Warehouse Management System.

Before and After

BEFORE	VS	AFTER
Frequent material tum over,long-distance manual handling		Improvement in shaft alignment accuracy
Difficulty in handle,high risk		Automated material handling achieved

Summary of Advantages

Efficiency increased by **40%**

Docking accuracy **±5mm**

Docking accuracy improved to **100%**



INNOVATION COOPERATION

·Support vehicle customization and open scheduling protocols

NON-STANDARD AUTOMATION ENTERPRISE
Support vehicle customization and provide various modification interfaces,open scheduling protocols

INDUSTRIAL SOFTWA REDEVELOPMENT ENTERPRISE
Support customer-driven flexible scheduling, open scheduling protocols

LOGISTICS ROBOTICS ENTER-PRISE
Support vehicle customization, offer multiple retrofit interfaces, open scheduling protocols

LOGISTICS AUTOMAT IONINTEGRATION ENTERPRISE
Support customer-driven flexible scheduling, open scheduling protocols,seamlessly integrate with multiple automation integration systems

·Provide AMR/AMR controllers/WMS/WCS/RMS central dispatch system products to empower partners

BEACON ROBOT → **Partners** (BEACON ROBOT Hardware & Software Products) → **End users** (Technical Support Added value)

3C/ Semiconductor	聪嘉控股 AVARY HOLDING, AT&S, LENS 蓝思科技, FOXCONN 富士康科技集团, dynamic, 领益智造 LY ITECH
Automotive Industry	广汽丰田, LAND ROVER, NISSAN 东风日产, BOSCH, NOK-FREUDENBERG(CHINA) 恩福（中国）, SAIC 上汽集团 SAIC MOTOR, DZ
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Aerospace	CASIC 中国航天, 中国航发 AECC, 寶勝, 中航锂电 CALB-BATTERY, 航天星航
New Energy & Photovoltaics	吉利硅谷 GEELY SIHVALLEY, 德福新材 DEFU NEW MATERIALS, 捷泰来 JUTAILAI, ZEISS
Medical Industry	
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