SEER

Shanghai Seer Intelligent Technology Corporation.

Product portfolio provider for integrators with AMR controllers, mobile robots and digital software.

World Champion

Three Championships of RoboCup

100%
Proprietary R&D

200+
Patent

800+
Trusted Partners

20+
Countries and Regions Covered

SEER

- Shanghai Seer Intelligent Technology Corporation (hereinafter referred to as SEER), founded by the RoboCup world champion team, is an product portfolio provider for intelligent manufacturing integrators with AMR controllers, mobile robots and digital software. The headquartere lies in Shanghai with business operations covered in over 20 countries and regions all over the world.

- Adhering to the brand values of "Benefiting, Achieving, Integrity, Uncommonness, Entrepreneurship Persisting, and Ultimate Pursuing" Guided by its brand values, SEER has assisted 200 + integrators and robot manufacturers to independently build AMRs, covering semiconductor, 3C, lithium battery, photovoltaic, auto parts, PCB, textile, medical and other industries. SEER leads the intelligent process of industrial logistics with its strength.
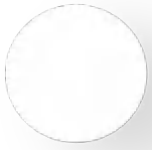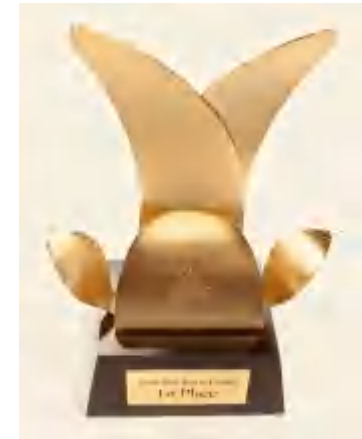
World **Champion** Team

The founding team has lifted three RoboCup world trophies representing China.

Champion Team

RoboCup 2017
Nagoya Japan
Certificate of Award
SRC
1st Place
Small-Size Soccer League

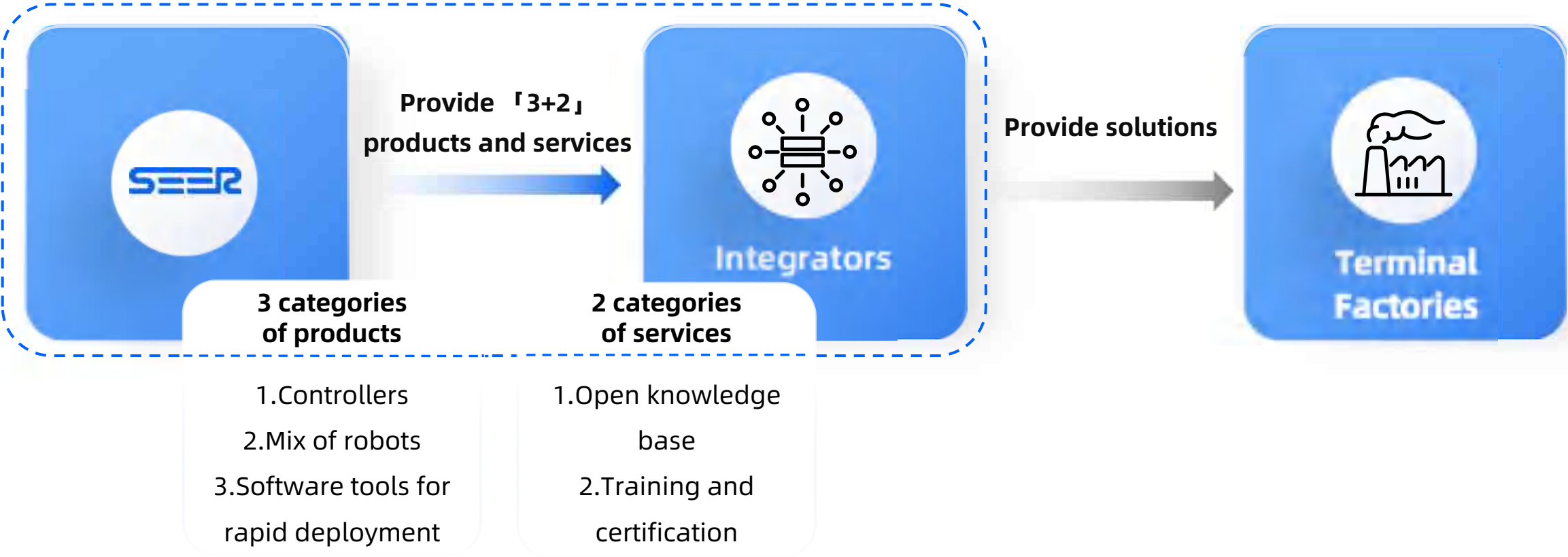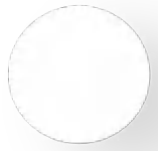July 27-30, 2017

RoboCup Medal

RoboCup Trophy

Industry **Positioning**

A close partner of intelligent manufacturing integrators,
SEER provides product portfolio with AMR controllers and digital software as core competence.

SEER

Provide 「3+2」
products and services →

Integrators

Provide solutions →

Terminal Factories

3 categories of products

1.Controllers

2.Mix of robots

3.Software tools for rapid deployment

2 categories of services

1.Open knowledge base

2.Training and certification

Global footprints in more than 20 countries and regions

SEER

Global Business Coverage

China / Germany / Indonesia / HKG / USA / Philippines / South Korea / Japan / Thailand / Malaysia / India / Vietnam / Brazil / Canada / Turkey / Romania / Italy / Mexico / Spain / Taiwan / Argentina / Singapore / Slovakia ......
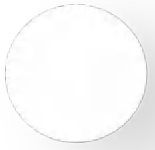
Development Journey

SEER

**Stage of
Project customization**

V1.0

**Stage of
Standard chassis**

V2.0

**Stage of
Standard controller**

V3.0

**Stage of
Solutions with standard**

V4.0

2013
- RoboCup World champion

2015
- The entrepreneurial team was established.

2016
- AMR controller SRC-500 and SRC-1100 hit the market.

2017
- The standard Chassis came into being

2018
- SRD dispatch and operation system hit the market.
- Full-functional AMR controller SRC-2000 hit the market.

2020
- CE certified Safety-functional AMR controller hit the market.
- Set up some home offices.
- International expansion kickoff.
- A round obtains 100,000,000+funds from GLP, ECOVACS , China Growth Capital , HARMONTRONICS AUTOMATION.
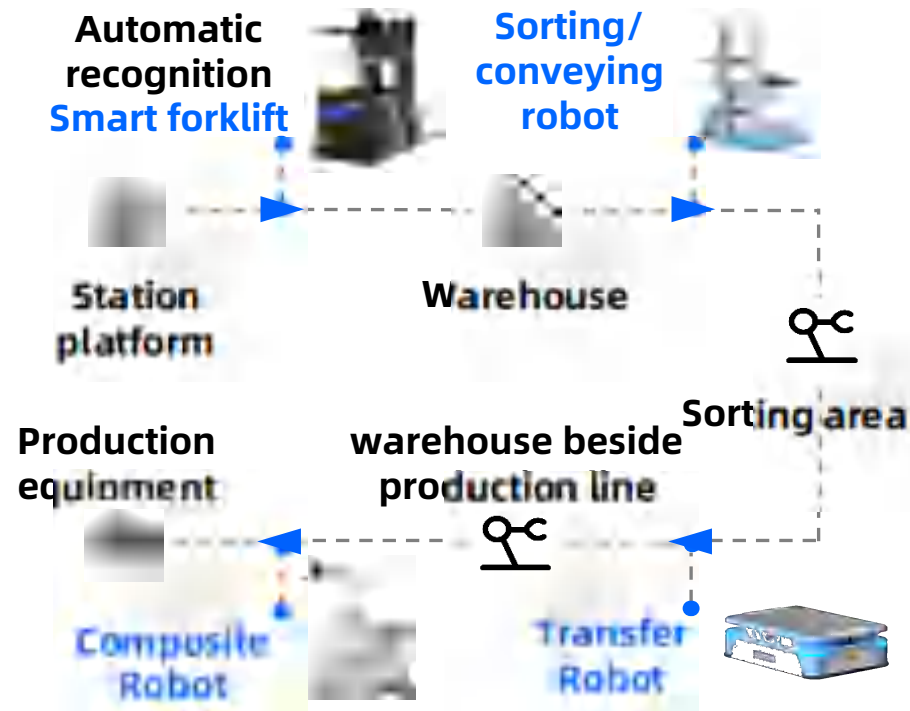- The sales volume breaks 100,000,000.

2021
- A+ round obtains 200,000,000+ funds from IDG.
- Digital system softwares such as MWMS, Meta-V, RoboView hit the market.
- First overseas exhibition in Korea, accelerate overseas layout.
- Set up SEER headquarter.

2022
- B round obtains hundreds of millions of funds from SAIF, IDG, Broadstreamcap.
- Expanded to 7 sales areas in China.
- Established overseas bases centered in Japan and Germany and set up German subsidiary and global service outlets in more than 20 countries and regions.
- Set up production center.
- Set up customer-oriented and process-oriented organization of continuous learning.

There are No Two Factories that are the Completely Same in Logistics Automation Demand

Industrial logistics scene varied flows

Automatic recognition
Smart forklift

Sorting/ conveying robot

Station platform

Warehouse

Sorting area

Production equipment

warehouse beside production line

Composite Robot

Transfer Robot

For the warehousing logistics, the products bought in and sold out are various "commodities", while for the industrial logistics, the goods under circulation include raw material, work-in-process, outsourcing product, finished product, tool, mould, etc.; there are numerous links, with large difference

Logistics scenes in different industries Large difference in demand

Internal testing workshop of semiconductors

dust-free workshop, zero fault tolerance, shock absorption treatment.

Automobile component workshop

multi-system communication, forklift passageway only 2m, standard forklift not applicable

Photovoltaic workshop

connection precision ±10mm, cross-floor conveying, required to be connected with elevator.

Electronic heat dissipation workshop

AMR precision ±5mm

Different factories in the same industry large difference in demand

Large differences in software system

There are differences in digitalization development stage and digitalization system of the factory, thus causing numerous connection protocols and interfaces as well as high connection cost.

Large differences in automation degree

The investment cost of the whole-factory automation is relatively high, so most companies decide to realize such automation gradually, and they are forced to meet automation demands at different process stages in the factory by customized development.

Large differences in workshop layout
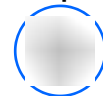
There are differences in the factory environment, passageway, goods rack height, ground material and material rack dimensions.

Standardized Products, Customized Applications

SEER

Standard Products under Routine Context

Notebook

Greatest common divisor

AMR

Not allowed to be modified, Not allowed to be customized

Standard Products Customized by SEER

Word Excel PPT

least common multiple

Roboshop Pro SRC Controllers

Powerful function
Easy application
Open platform
Independent creation

PRODUCT MATRIX OF SEER

SEER

| Customer's business system | ERP | MES | MOS | APS | SCM | SCADA |

Digital system softwares

RDS

Synergistic Resource Dispatch System

MWMS

Manufacturing Warehouse Management System

Meta-V

Data Visualization System

RoboView

Visual AI solutions

AMRs

Laser SLAM Multi-layer Intelligent Picking Robot 「SPK-S30S3」

Laser SLAM Ground Smart Forklift 「SFL-MP10S」

Laser SLAM Small Stacker Smart Forklift 「SFL-CDD14」

Laser SLAM Rotary Jacking Robot 「AMB-800K」

Laser SLAM Automated Guided Vehicles in Warehouse 「AMB-J」

Laser SLAM Omni-directional AGV Robotics 「SJV-W600DS-DL」

Laser SLAM Mobile Robot Chassis 「AMB-150-D」

Laser SLAM Mobile Robot Chassis 「AMB-150-D」

Laser SLAM Mobile Robot Chassis 「AMB-300-D」

Mobile Robot Controllers

SRC-2000(I)S

SRC-2000FS

SRC-800

SRC-3000FS

Configuration and debugging tool

Roboshop Pro

Mobile Robot Controller

SRC

SEER makes building AMR easier

The series core controllers (SRCs) are universal controllers designed for mobile robot (AMR, smart forklift, etc) applications providing mobile robots with core functions such as mapping, positioning and navigation, and model editing. The product integrates the core components of mobile robots and works with our powerful client software (Roboshop Pro) to help users quickly deploy robots. The SRC can also gradually transform into a controller for smart factory infrastructures such as automatic charging stations, automatic doors, elevators, traffic lights, and more. By providing a unified dispatching interface framework, the SRC series core controller facilitates the intelligent transformation and enhanced automation of factories in a comprehensive manner.

SRC-800

Multi-functional
AMR Controller

SRC-2000

Full-functional
AMR Controller

SRC-3000FS

Safety-functional
AMR Controller

High performance-cost ratio

Compact and easy to use

Control over factory

Fully featured

Robust performance

Rich interfaces

Stable performance

Functional safety

High integration degree

SRC Series Core Controllers-Core Advantages

SEER

Rich functions

rich and practical functions

- Map editing
- Model editing
- Localization module
- Navigation module
- Differential motion model
- Shelf recognition
- Laser reflector navigation
- 3D Obstacle Avoidance

Multi-robot dispatching
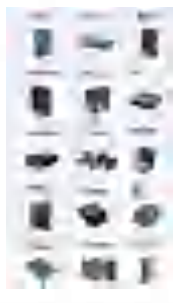Automatic charging
Wifi roaming
QR code navigation...

Easy application

support a variety of motion models through SEER's one-stop implementation software (Roboshop Pro)

- Dual Wheels (Differen
- Four-wheel Drive Differential
- Four Differential
- FWD Mecanum Wheels
- Single-steering wheel
- Dual-steering Wheels
- Quadruple steering wheel

Strong adaptability

we have completed product adaptation with major sensor and driver manufacturers
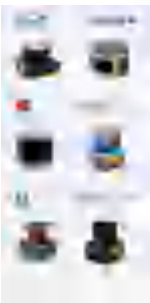
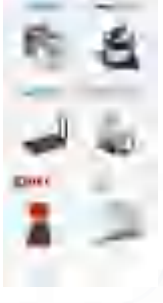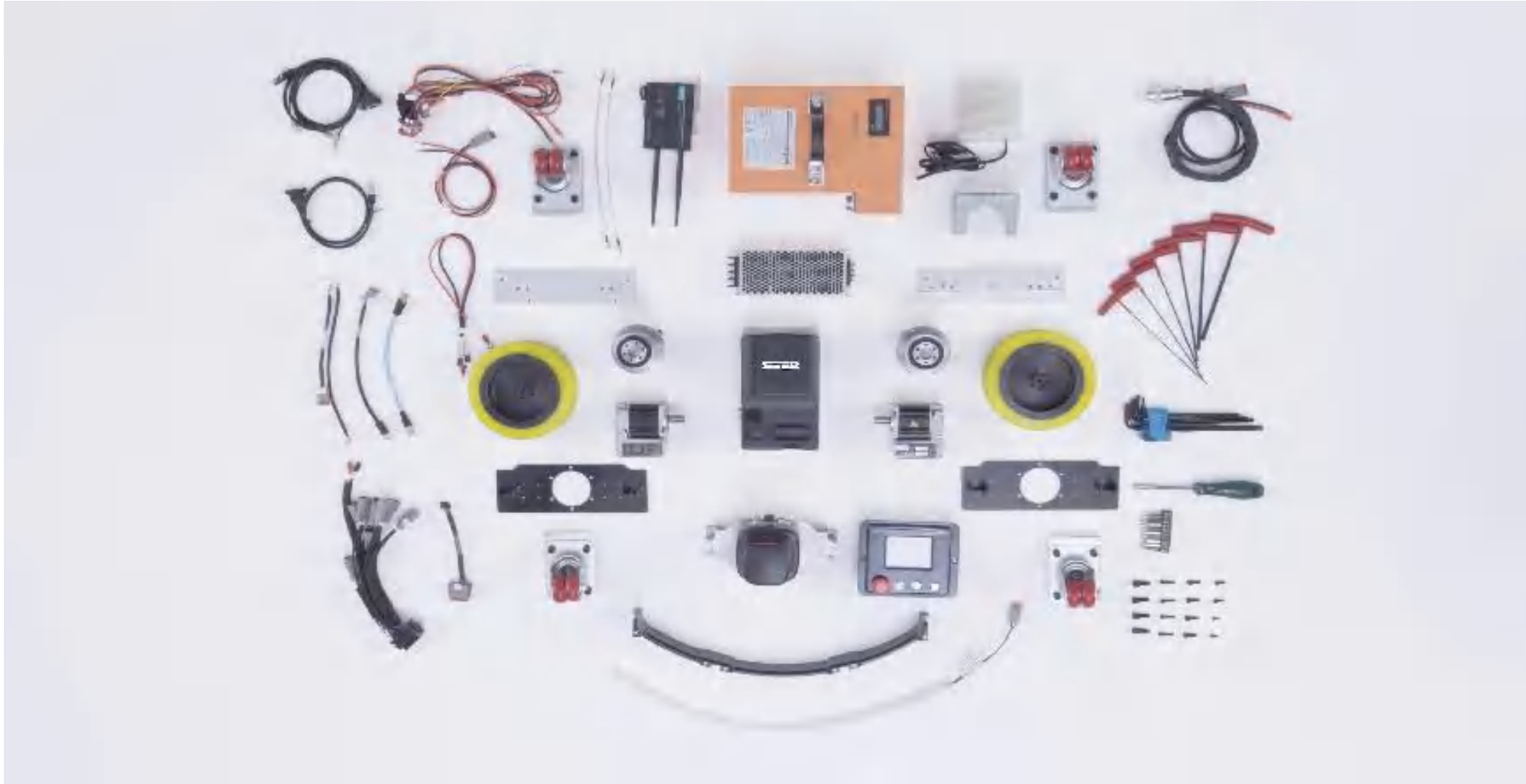| Lidars	Servo Motors	Sensors	Other

Open platform

AMR 「self」-manufacturing list
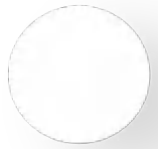
SRC Series Core Controllers
—Nine-Step Method for Automobile Manufacturing

Integrated operating software——Roboshop Pro

SRC Vehicle Building Case

SEER

1. Painpoints & Requirments

Customers need to build various customized vehicle bodies or large cluster-type vehicle building, and the controller needs to have a variety of powerful and rich functions to enable rapid vehicle building.

2. SEER Product Portfolio

① SRC

② Standardized software and hardware

③ Complete one-stop solution support

3. Implementation Result

With the support of the complete set of vehicle building solutions, customers can quickly build various AMRs to meet their various vehicle building needs.

SEER SRC Series Controllers help build various AMRs quickly

SRC

SRC core controller

Highlights: The powerful controller combined with comprehensive vehicle building solutions help customers build powerful and high performance AMRs quickly and efficiently.

Laser SLAM
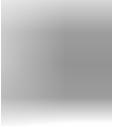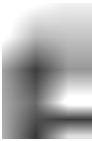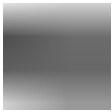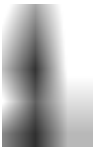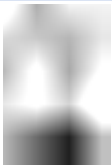
AMR
Mobile robot

SEER offers a wide range of mobile robots based on the highly integrated SRCs, including jacking robots, smart forklifts and picking robots, and continues to expand the range of robots to meet more standard carriers and more scenarios for different customers. All mobile robots have a unified interface and can provide customers with a complete handling and distribution solution when used with SEER intelligent digital system.

How to choose a right AMR in different scenarios?

SEER

Step1. Select the appropriate in accordance with the standard load type.

Step 2. Select corresponding standardized solutions in accordance with application scenarios.

Load Type	Robot Type

Application Scenarios and Solutions

Rack

Standard Latent Jacking Transfer Robot

Application Scenario
Obstacles with pits or other surfaces that cannot be scanned by lasers

Solutions
Optional 3D camera | Obstacle avoidance and detours

Material Box

Picking Robot

Application Scenario
The material cage has no load limit and no fixed posture.

Solutions
Rack laser recognition or Optional 3D camera | Automatic recognition and adjustment

Tray / Pallet

Customized AMRs

Application Scenario
Racks need to remain at a constant angle relative to the ground.

Solutions
Select a jacking robot with spin functionality | Omnidirectional Jacking Robot

Material Cage

Smart Forklift

Application Scenario
Outdoor forklift scenarios

Solutions
Optional 3D camera | Automatic recognition and adjustment

Powerful AMR functions, Ideal for Various Requirements

SEER
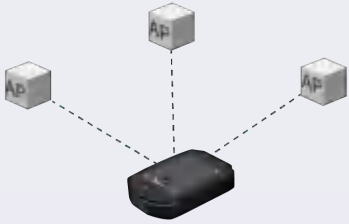
Wi-Fi roaming

Spin-jacking

Skid detection

Depot collaboration

Online SLAM
Solutions for locally high dynamic environments
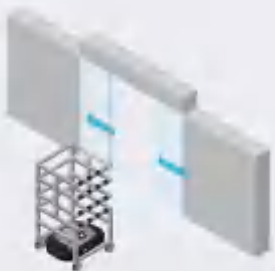
Access to elevators, automatic doors

Battery level management

Intersection traffic control

Multiple AMR brands running in the same plant

Others

Mobile Robot

Laser SLAM

AMB

Standardized Auto Mobile Base

The AMB (Auto Mobile Base) series are universal bases designed for mobile robot applications, providing the core functions of mapping, positioning and navigation for mobile robot applications. The universal base provides rich I/O, CAN and other expansion interfaces for various upper-level mechanisms. Together with the powerful client software and dispatching system, it can help users quickly complete the manufacturing and application of mobile robots.

AMB-150/AMB-150-D

AMB-300/AMB-300-D

AMB-500/AMB-500-D

Product Advantages of AMB

SEER

Advantages ①
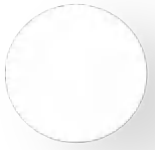
Advantages ②

Advantages ③

Advantages ④

Advantages ⑤

Functionality-rich High availability

It offers complete superior functions as a standard configuration and rich, practical functions as an advanced configuration, helping customers easily achieve intelligent logistics.

Multiple upper mechanisms High scalability

It can be used in multiple applications including robot arm, roller, jacking, latent traction, gimbal, display, etc.

± 5 mm Efficient and accurate

The laser SLAM algorithm that has been optimized for years is ideal for various scenarios, achieves a repeat positioning accuracy of ± 5 mm, and enables seamless connection with mobile robots and equipment, enabling efficient transfer of materials between stations.

Ultra-stable navigation Safe and reliable

It supports laser SLAM navigation, laser reflector navigation, QR code navigation and other navigation methods perfectly and allows for seamless switching between them to ensure stable work of the mobile robot.

Easy to Deploy Visualized Management

A full range of supporting software and digital systems can easily enable the operation, dispatching, and information management of mobile robots, and seamless connection with the factory's MES system to truly achieve smart logistics.

AMB

Mobile Robot

SEER

Laser SLAM

AMB-800K

AMB-150J/300J

SJV-W600DS-DL

Jack-up handling robot

The jack-up handling robot, which is powered by the SRC and equipped with an ultra-low base, can enter the shelf for jacking and handling. It can reach a load of up to 1500 kg and has a repeat accuracy of up to ± 5 mm. It supports Wi-Fi roaming, implementing more robust network data interaction. It enables safety protection through trackless laser SLAM navigation and multi-sensors. The jacking robot can flexibly transport goods between designated locations, such as warehouse sorting, material transfer, call feeding, etc., freeing up manpower and achieving unmanned transportation.

Mobile Robot

SEER

Laser SLAM

Multi-layer picking robot

The multi-layer picking robot is equipped with the SRC and uses laser SLAM navigation. It is based on vision AI and allows precise pick-and-place of materials. Its super-ergonomic design meets a variety of working heights and brings a comfortable working experience. It allows ultra-flexible and flexible docking of work platforms such as rollers, shelves, latent AMRs, and manual workstations. It is the best partner for factory line-side warehouses and enables intelligent manufacturing.

SPK-S30S3

SPK-M30S3

...

SEER

Smart forklift

Laser SLAM

SFL-CDD14、SFL-MP10S、SFL-CBD20、SFL-CDD20、SFL-CPD15

The smart forklifts come equipped with an internal SRC, adopt laser SLAM navigation, without a reflector, along with 360° safety to meet the requirements of loading and unloading, sorting, moving, high-mounted shelf stacking, material cage stacking, and pallet stacking application scenarios. This series of robots features a wide range of models and a large variety of loads to provide powerful solutions for the moving of pallets, material cages, and racks.

Smart Forklift

SEER

SFL-CDD14

Narrow aisle applications | Slim body, small turning radius

Pallet identification | High precision recognition, precision forklifting

SFL-MP10S

Highly customizable laser | More flexible application scenarios

Reliable anti-collision | Increased anti-collision range

| 3D obstacle avoidance | Pallet identification | Laser SLAM | Good applicability | Flexible dispatching | ... |

SEER

Digital System Software

The SEER digital system software is comprised of unified resource dispatching system (RDS), manufacturing warehouse management system (MWMS), visualization system (Meta-V), visionl AI solution (RoboView), etc., which allows for digital industrial logistics.

System Software

System software

RDS

Synergistic Resource Dispatch
of Robotics and Automation Equipment

It can manage a new generation dispatching system for mobile robots and factory automation logistics equipment in a unified manner. **Collaborative planning and smart dispatching.** It provides customers with efficient solutions to quickly build application scenarios through a low-code business process engine, helping business transform and upgrade their intelligent manufacturing.

Product Advantages

RDS

Synergistic Resource Dispatch System

- Dynamic global collaborative planning despite environmental changes
- What you see is what you get, overall policy for business and dispatching
- Free ride, pre-order, free of "no-load anxiety"
- Low code engine + online scripting, customize your own system
- Intuitive, interactive, user friendly

Digital system software
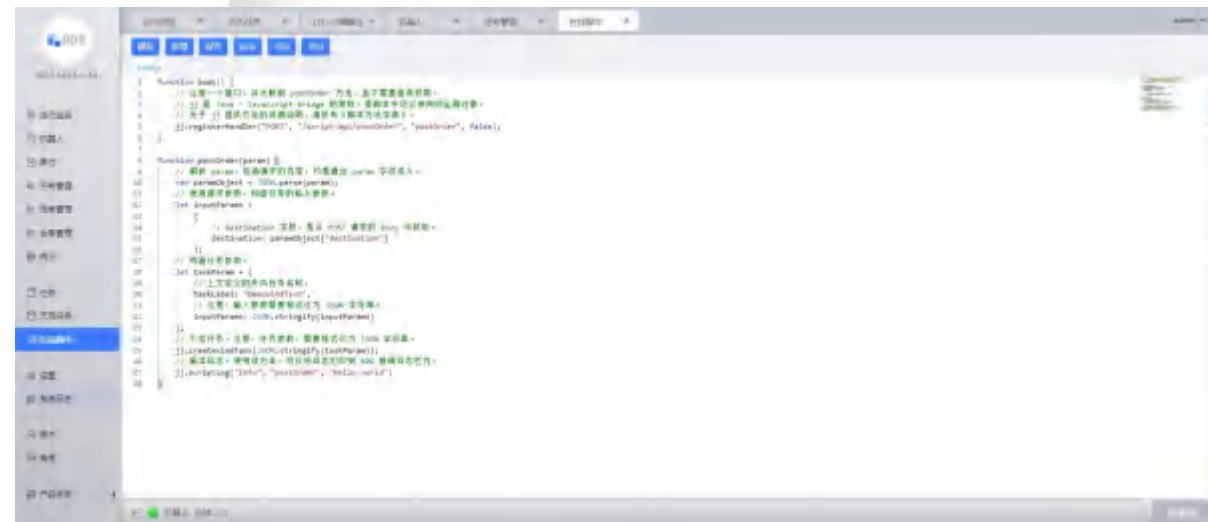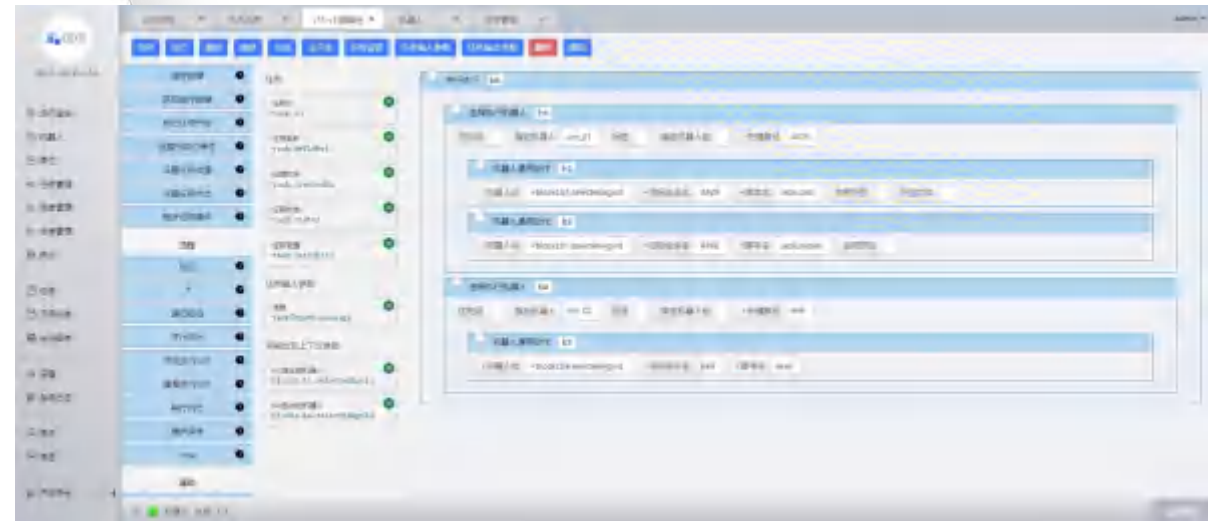
System Software

System software

MWMS

Manufacturing Warehouse Management System

It is one of the few dedicated systems in China that truly supports industrial-grade complex warehousing and logistics scenarios. It underpins intelligent devices such as mobile robots from the core layer. It addresses the pain points of similar systems, outdated processes, difficulty in customizing and other problems, adapts to different processes of different customers, and even different businesses of customers. It allows free addition and deletion of fields on the interface. The system can be operated on a mobile device. It has completely independent intellectual property rights. **It has an advanced technological framework that will not become obsolete in ten years.** When used with SEER and external hardware products, we provide a complete software and hardware solution.

Product Advantages

MWMS

Manufacturing Warehouse Management System

- Developed using advanced user interface (UI) technology
- True responsive design
- All UI pages perfectly fit the mobile terminal to meet fully mobile working requirements
- It automatically fits four screen sizes: computer, industrial control screen, tablet, mobile phone (PDA). In addition, it optimizes buttons, text size, and input method, and supports manual adjustment
- B/S architecture can be used on the computer, eliminating the need to install the client
- It supports web pages or apps on a mobile device
- It supports cloud deployment, allowing anytime, anywhere access. It is highly secure with full https and end-to-end encryption
- It offers high performance, can accommodate millions of materials, tens of thousands of storage locations, hundreds of orders per day, etc. and does not stutter while being used

Digital system software

MWMS = Traditional WMS + On-site Logistics Management System
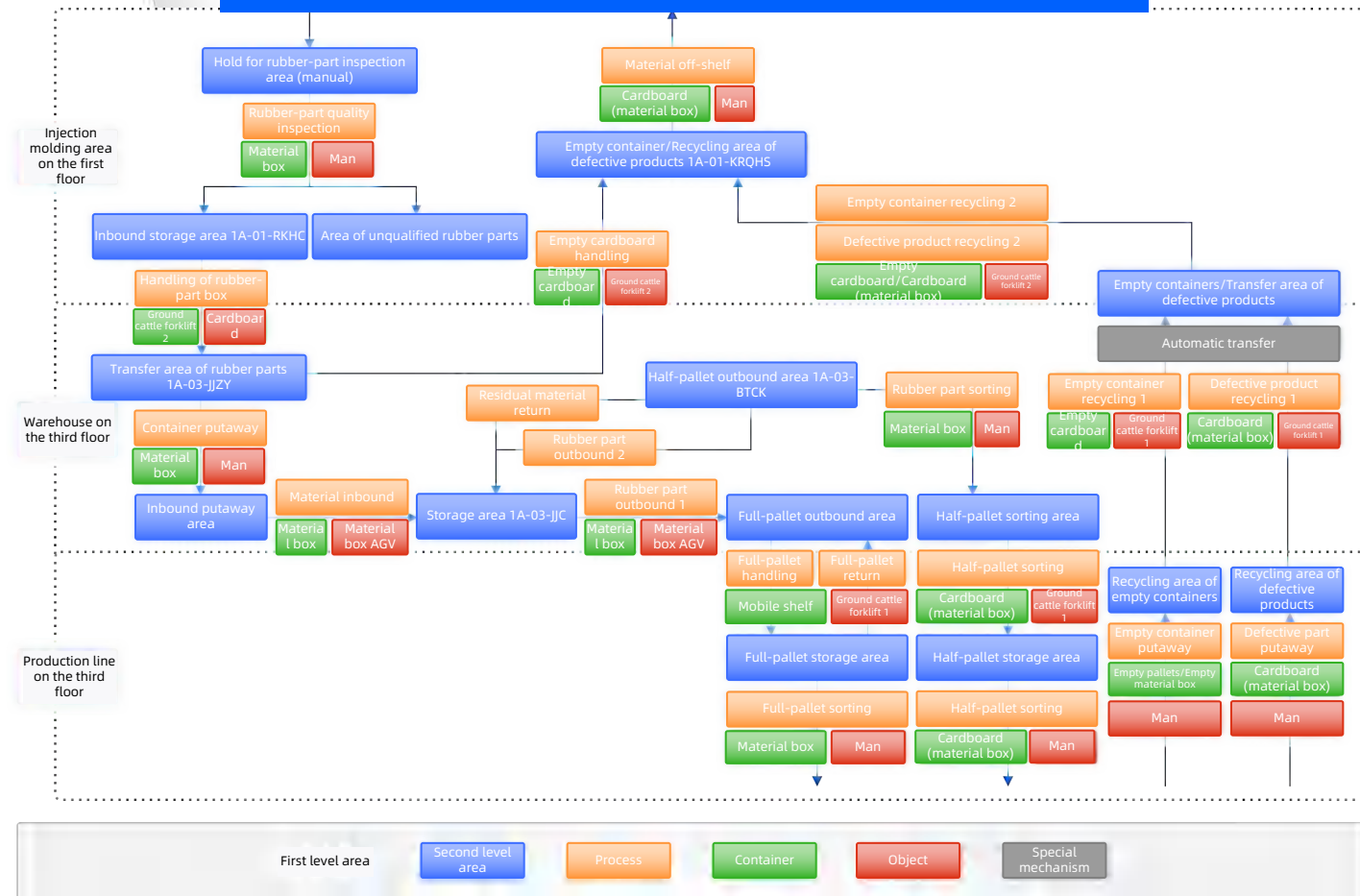
System Software

System software

RoboView
Vision AI solution

RoboView integrates many cutting-edge AI machine vision algorithms. It collects real-time 2D video and 3D point cloud data to classify, identify, locate, and segment objects, with high precision, high stability, and multi-dimensional rich information. It conducts production management, storage location management, vision AI safety management, etc., and ensures **stable and reliable perception capabilities for vehicle and factory collaboration**. This way, it makes the factory more intelligent.

Product Advantages

RoboView

Vision AI solution

- Integrated with rich vision algorithms, systematic and intelligent coverage of the entire site
- AI pedestrian management, AI storage location management, rich APIs for open sharing
- Accurate, delicate and rich, perception collaboration across the platform
- Centimeter-level positioning information capture, perception of large scene of tens of thousands of square meters

Digital system software

Intelligent production

SEER

Meta-V

Data Visualization System

Meta-V is a service leveraging data visualization technology, which analyzes and integrates data obtained from enterprise information systems or business systems through low-code and graphical editing tools. Meta-V processes the data for use in software applications such as **digital screens, 3D digital twins, and 3D simulation**.
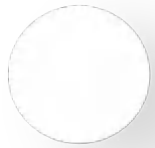
Product Advantages

Meta-V

Data Visualization System

- Immersive visualization experience, full decision support

- Precise modeling, 1:1 replica of scenarios

- Game-like interactive experience in the virtual digital world

- Data dynamic difference algorithm, fine action, responsive

Digital system software

SEER

Comprehensive analysis

SEER
CORE ADVANTAGES

Customer-oriented and Process-oriented Organization of Continuous Learning

SEER

World Champion Team

Three championships of RoboCup with world-class intelligent control and digital technology

World-leading core products

The world's most powerful controller products make building AMR easier.

Industry technical benchmark

Multi-sensor based laser SLAM navigation technology

Customer-oriented and process-oriented organization

Set up customer-oriented and process-oriented organization of continuous learning.

Company Culture

SEER
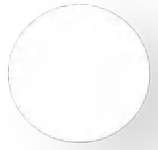
Values

Benefiting, Achieving, Integrity, Uncommonness, Entrepreneurship Persisting, and Ultimate Pursuing

Vision

Construct the core control infrastructure

Current Objective

Standardized Products, Customized Applications

Industry Positioning

Product Portfolio Provider for Integrators with AMR Controllers, Mobile Robots and Digital Soft_x0002_ware
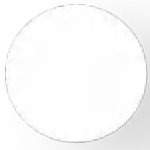
Line of Business

SEER

With customers involved in semiconductors, 3C (Computer, Communication, and Consumer Electronics), lithium batteries, photovoltaics, auto parts, PCB, textile, medical treatment and many other fields.

Semiconductors

3C

Lithium batteries

Photovoltaics

Auto parts

PCB

Textil

Medical treatment
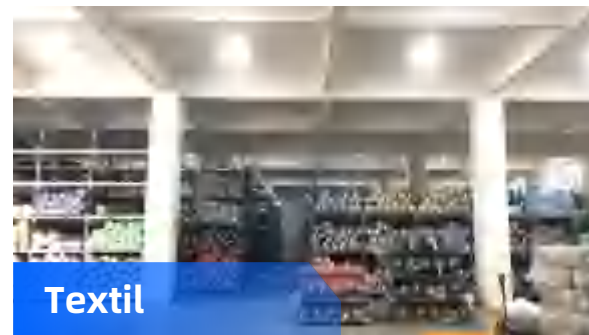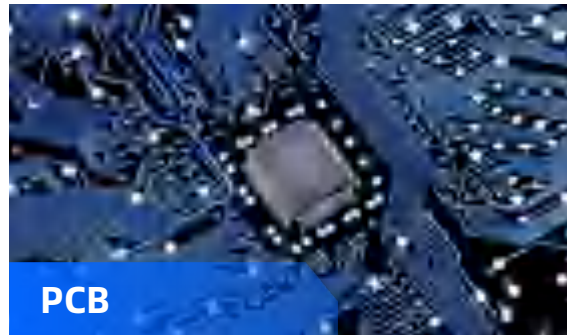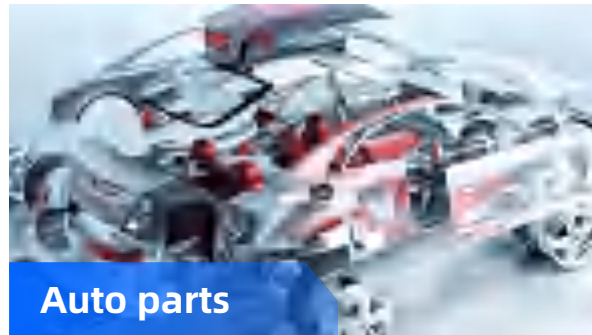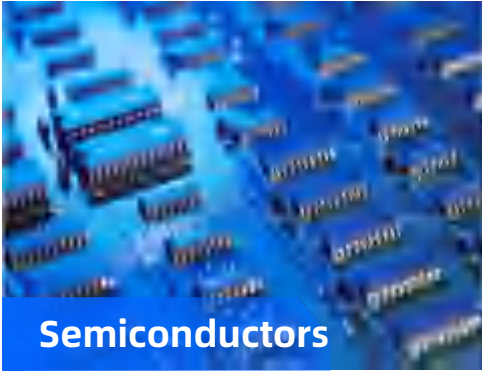
SEER Partners

SEER

The world's top enterprises' preferred partners for the industrial logistics upgrade

800+ Global Partners

ABB　FANUC　FESTO　Haier　molex　ERICSSON

GREE 格力　一汽-大众　KINGFA 金发科技　CETC 中国电科　ECOVACS　FOXCONN

GoerTek　WEICHAI 潍柴　SINOMACH　SMEE　中国商飞 COMAC　muyuan 牧原

intel　PHOENIX CONTACT　PHILIPS　NSK　Schneider Electric　HUAWEI

SIEMENS　SHINVA 新华医疗　中国烟草　中国兵器装备集团公司　长虹 CHANGHONG　京东方 BOE

GLP　SICK　Linde　HARMONTRONICS　HELI　......

200+ Certifications and Patents | Honors

SGS TüV SAAR functional safety certification

Certifications | Patents | Honors

SEER

- As the first and only company in the industry to launch functional safety AMR controllers, SEER has more than ten safety experts who have passed the SGS assessment and hold 200+ patent certifications.

- SEER's SRC-3000FS has passed the SGS TüV SAAR functional safety certification, meets the SIL2 safety requirements of the IEC 61508 standard, the safety level of ISO 13849-1 Cat.3 PLd, and the IEC 62061 standard;

- The quality and environmental management of SEER has passed ISO 9001:2015 and ISO 14001:2015 system certification. Many robot products of SEER have passed CE-MD (ISO3691-4:2020, EN 1175:2020, ISO 12100:2010, EN 60204-1:2018) the latest standard certification of industrial unmanned vehicles and certifications in China, the United States, Japan and other countries.
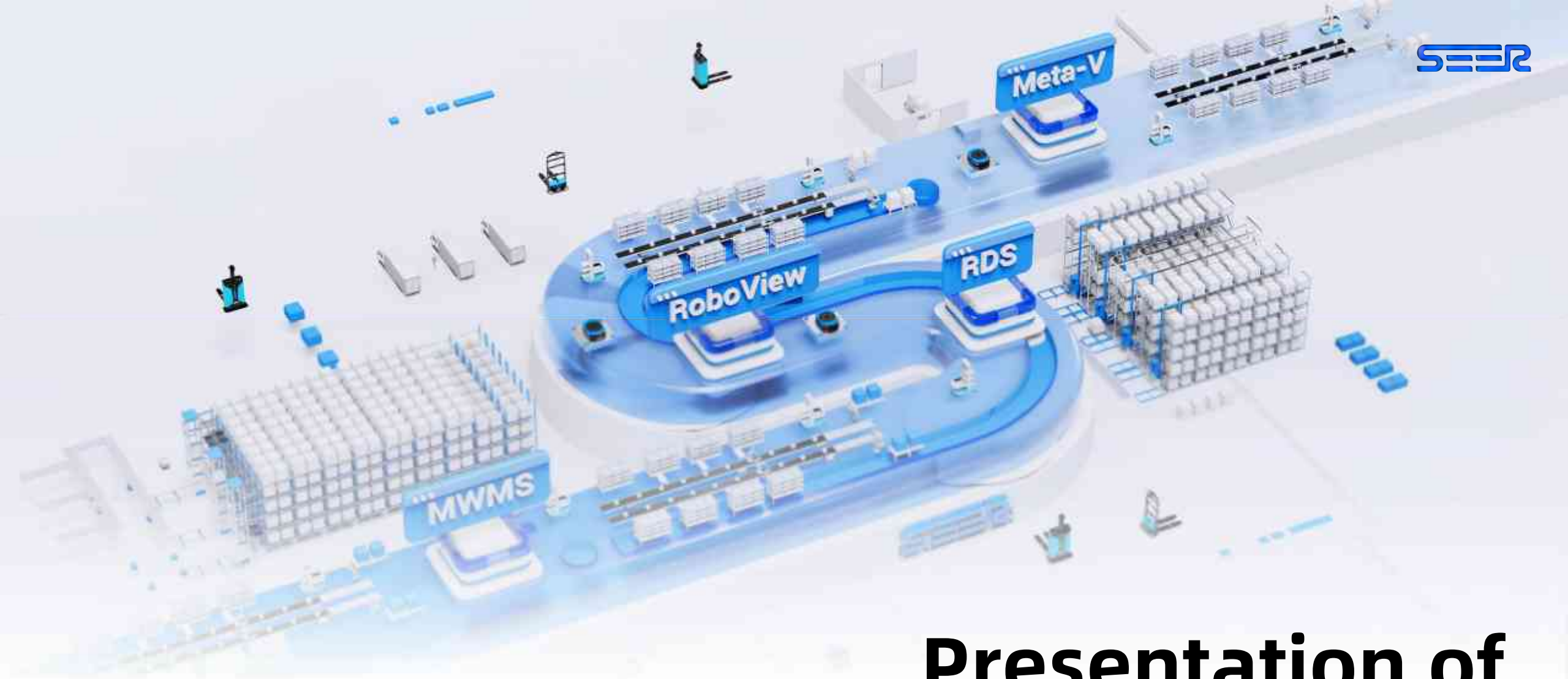
Presentation of Project Cases of Integrators

Solution for **3C Electronics Industry**

SEER helps 3C electronic manufacturing production line realize automatic transfer

Challenge: There is a magnetic strip vehicle on site, and heavy modification will greatly affect the production efficiency. There are many complicated logistics handover processes such as inbound, outbound, and transfer between different production lines.

Solution: Conduct systematic planning according to site conditions and upgrade in several phases at the plant level.

1. Painpoints & Requirments

A handling method that replaces manpower + magnetic strip vehicle. It solves the problems of high labor cost and low handling efficiency faced by enterprises, and the production line is more intelligent and flexible.

2. SEER Product Portfolio

① ABM-300J latent jack-up handling robot
② RDS uniform resource dispatching system
③ Elevator control module
④ Roboshop Pro: one-stop implementation tool

3. Implementation Result

The intelligent upgrade of the factory is achieved at a lower cost and a shorter project cycle, while ensuring the original production efficiency. Enable more intelligent management across the factory, while significantly reducing costs and increasing efficiency.

Solution for **3C Electronics Industry**

1. Painpoints & Requirments

The composite robot is needed for building the exhibition hall of Siemens Industrial Innovation Center, where a variety of products such as Siemens smart speaker and driving recorder are displayed.

2. SEER Product Portfolio

① Laser SLAM mobile robot chassis
② Roboshop Pro one-stop implementation tool
③ Automatic Charging Pile
④ RDS Unified Resource Dispatching System

3. Implementation Result

The arm and base work together flexibly and precisely with each station to automate the whole process, which avoids the risk of manual misoperation and demonstrates Siemens' efficient and intelligent technology.

Highlight: SEER's AMB + RDS work with intelligent arm + MES system, providing an intelligent, integrated solution for the exhibition hall of Innovation Center, building a digital showcase platform that is easy to deploy and fast to implement.
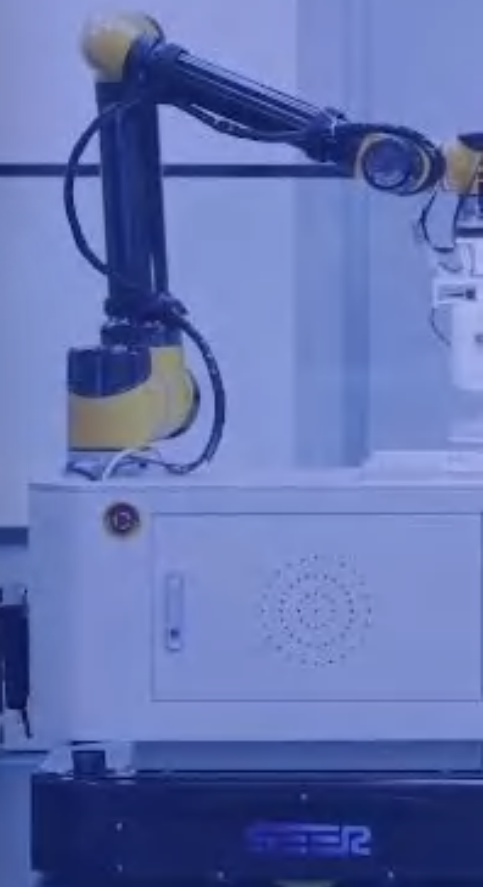
Solution for **Electronic Communication Industry**

1. Painpoints & Requirments

Complex and dense stereoscopic warehouse is a great burden for operators, resulting in low efficiency and error-prone. Customers are in urgent need of intelligent stereoscopic warehouse transformation to achieve an intelligent and information-based warehouse, thereby enhancing operational efficiency.

2. SEER Product Portfolio

① SPK-HAI-A42-7 laser SLAM multi-layer picking robot
② Warehouse management system (MWMS)
③ Automatic charging pile
④ Roboshop Pro one-stop implementation tool

3. Implementation Result

It records warehouse material information in real time, allows for instant, flexible outbound and inbound, has access to the warehouse, line-side, and automates the entire process, avoiding the risk of manual misoperation.

Challenge: Basically no network coverage on site; densely arranged storage locations; high accuracy requirements for delivery in place.

Solution: Connect the picking robot to the MWMS through DMS optical communication, which reduces the size error of the stereoscopic warehouse building and finely adjusts the site. Meanwhile, AMR technology will be upgraded to the industry's first four-way forklift to increase the freedom of robots to pick and place containers.

Solution for Auto Parts Processing Industry

1. Painpoints & Requirments

A well-known multinational company engaged in the R&D and manufacturing of automotive electronic products and components urgently needs to solve the problem of material transportation in warehouses and workshops.

2. SEER Product Portfolio

① Laser SLAM smart handling forklift
② Roboshop Pro one-stop implementation tool
③ Automatic Charging Pile
④ RDS Unified Resource Dispatching System

3. Implementation Result

Robots replace manual handling, freeing up manpower and greatly reducing the labor cost of the enterprise. It is effectively connected with the MES system to promote the automation and intelligence of the workshop.

Challenge: The laser sensor used for navigation is installed at a high position, and it is difficult to detect an obstacle in a low position.

Solution: Add additional laser scanners at low positions for safety protection through multi-sensors.
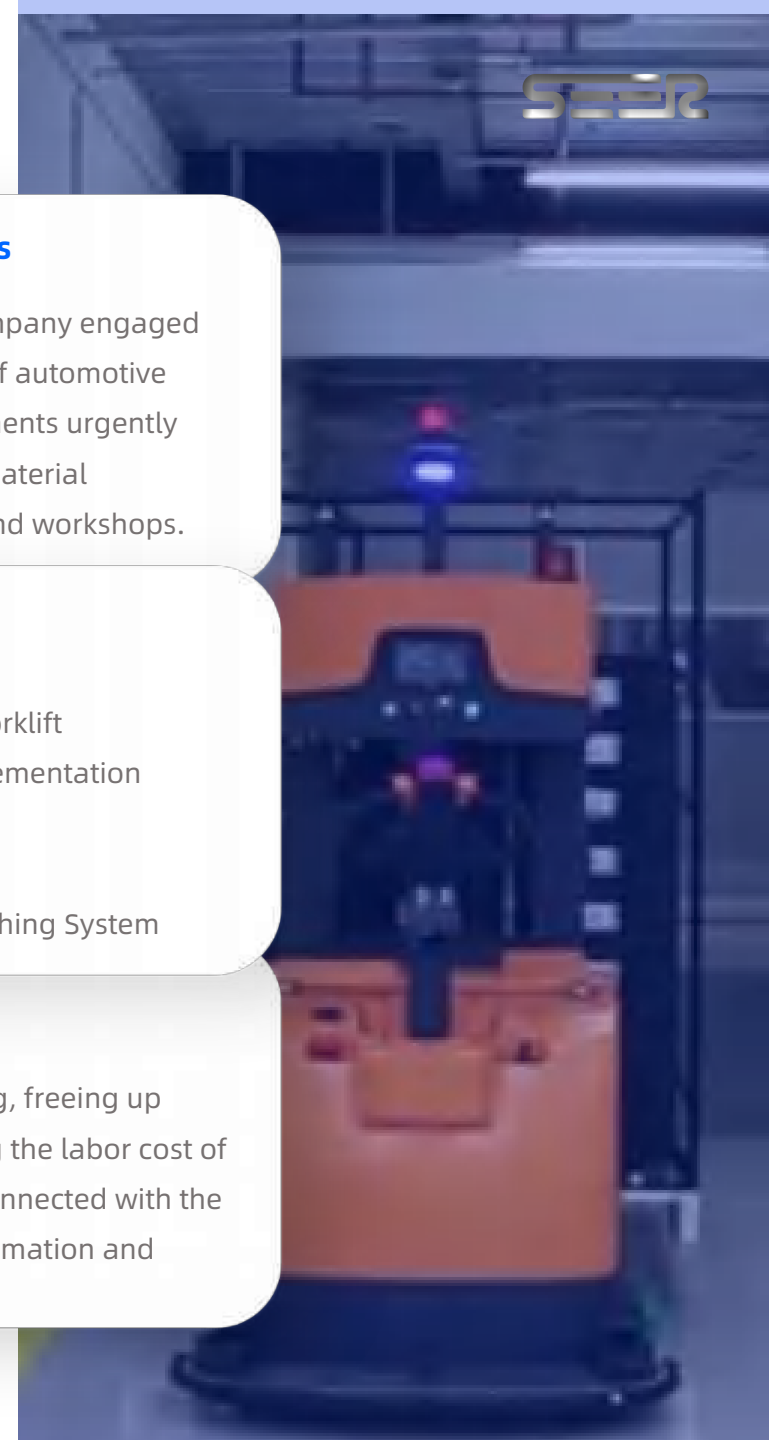
Solution for Auto Parts Processing Industry

1. Painpoints & Requirments

The auto parts manufacturer plans to introduce mobile robots and smart logistics solutions to create smart logistics in the workshop and reduce labor costs.

2. SEER Product Portfolio

① Laser SLAM rotary jacking robot
② Dispatching server
③ RDS uniform resource dispatching system
④ Roboshop Pro one-stop implementation tool

3. Implementation Result

Replacing manual handling with robots reduces labor costs while improving logistics and transportation efficiency, and improves lean production and management capabilities through intelligent equipment and smart logistics.

Challenge: The user does not have a storage location management system for multiple production line stations and warehouse storage locations.

Solution: RDS provides production line station and storage location management module.

Solution for Pneumatic Component Processing Industry

1. Painpoints & Requirments

A multinational company engaged in the production and processing of pneumatic components wants to free up manual labor with robots to address the challenge of having to frequently transfer semi-finished products from one processing site to another.

2. SEER Product Portfolio

① Jacking robot ② Jacking roller robot
③ Automatic charging pile ④ Ground roller line
⑤ RDS uniform resource dispatching system
⑥ Roboshop Pro one-stop implementation tool

3. Implementation Result

It frees up manpower, gives technicians more time and energy to invest in product development and testing, improves workshop productivity, reduces error rate, and enhances workshop automation.

Challenge: Different roller line heights in the workshop; high turnover rate of personnel in the workshop; prone to collisions.

Solution: Use AMB-based jacking roller robot to adjust roller height and complete connection between production lines; use dual laser mobile robots for 360° inspection to prevent collisions.

Solution for **Tool Manufacturing Industry**

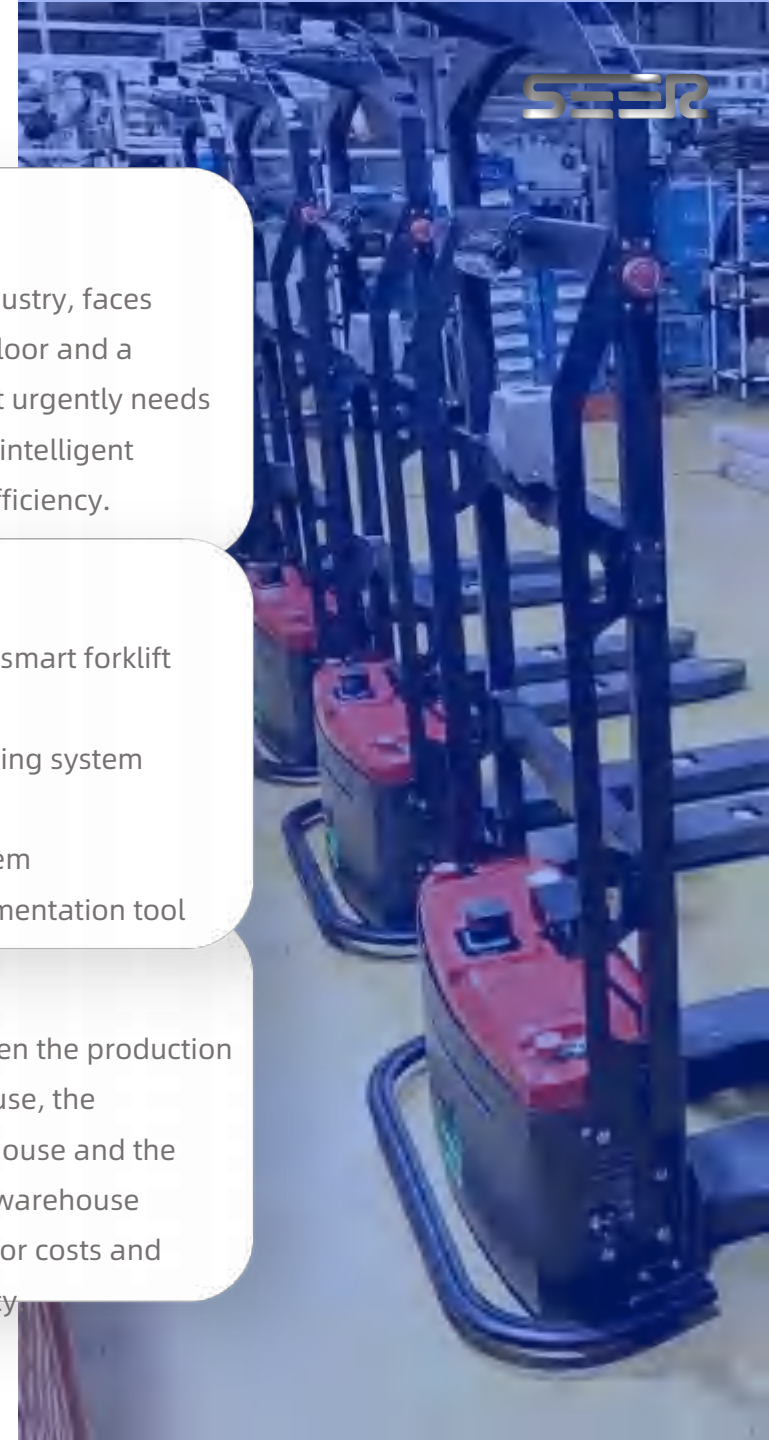### 1. Painpoints & Requirments

Hilti, a giant in the power tool industry, faces limited space on the production floor and a variety of complex materials, so it urgently needs to replace manual handling with intelligent logistics to improve production efficiency.

2. SEER Product Portfolio

① SFL-MP10S laser SLAM ground smart forklift
② Automatic charging pile
③ RDS uniform resource dispatching system
④ Dispatching server
⑤ Meta-V data visualization system
⑥ Roboshop Pro one-stop implementation tool

3. Implementation Result

It allows the transportation between the production line storage area and the warehouse, the transportation between the warehouse and the shipping port, and the automatic warehouse management at night. Reduce labor costs and greatly improve handling efficiency.

Challenge: Small space between stations, single executable track, diverse materials, complex call task logic.

Solution: Plan the optimal station layout and AMR travelling routes systematically and in detail to maximize efficiency; use the logic of the RDS system to prioritize tasks, and customize a call system for scenarios to achieve complex call tasks with the easiest human-machine interaction.

Solution for Electric Vehicle Manufacturing Industry
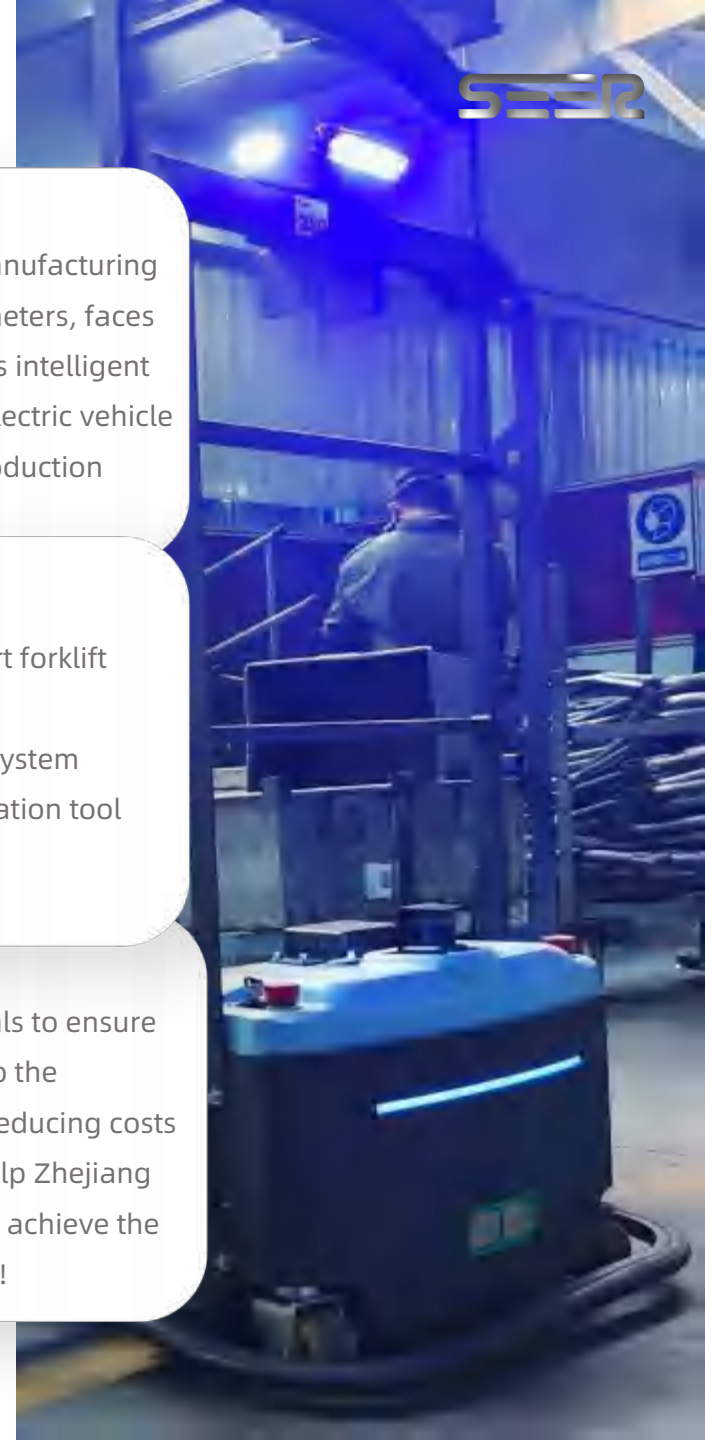
SEER

1. Painpoints & Requirments

Luyuan Zhejiang complete-vehicle manufacturing base, with an area of 53,000 square meters, faces scattered parts distribution, and needs intelligent logistics to help this nation's largest electric vehicle assembly workshop reach its daily production target of 10,000 units!

2. SEER Product Portfolio

① SFL-MP10S laser SLAM ground smart forklift
② Automatic charging pile
③ RDS uniform resource dispatching system
④ Roboshop Pro one-stop implementation tool

3. Implementation Result

Quickly handle corresponding materials to ensure accurate, on-time, and safe delivery to the corresponding stations, significantly reducing costs and improving handling efficiency. Help Zhejiang complete-vehicle manufacturing base achieve the annual output target of 2 million units!

Highlight: Luyuan, which has development capabilities, uses the independent development and independent implementation mode to have its engineers complete the entire secondary development of the upper system, the entire deployment, debugging and implementation of the project, with remote assistance by SEER engineers.

Solution for **Textile Industry**

1. Painpoints & Requirments

It is labor-intensive, difficult to employ, and highly costly. It is pressing to upgrade intelligent logistics. However, the finished fabric is soft, heavy, and irregularly stacked, which is not easy to handle, and the use environment is harsh, with debris and dust everywhere on the ground.
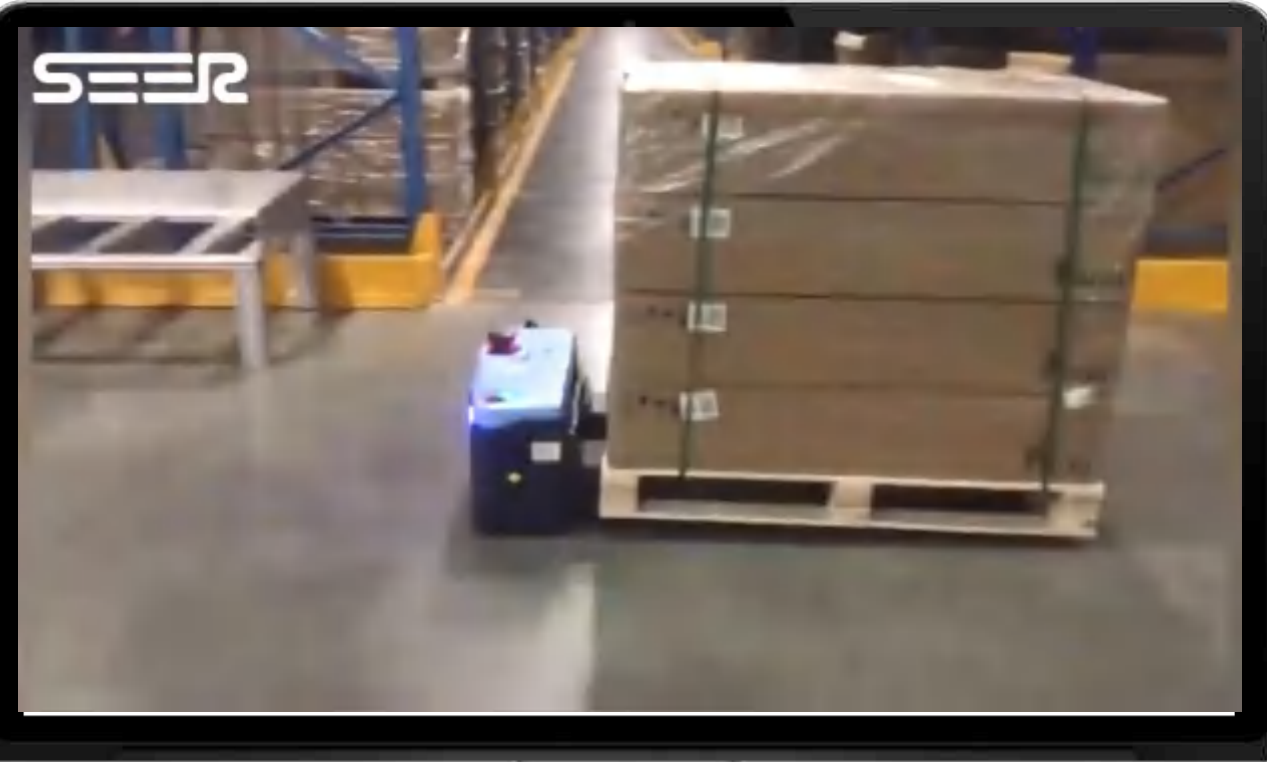
2. SEER Product Portfolio

① SFL-MP10S laser SLAM ground smart forklift
② Automatic charging pile
③ RDS uniform resource dispatching system
④ Dispatching server
⑤ Roboshop Pro one-stop implementation tool

3. Implementation Result

It allows the transportation between the production line storage area and the warehouse, the transportation between the warehouse and the shipping port, and the automatic warehouse management at night. Reduce labor costs and greatly improve handling efficiency.

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Challenge: Site space is narrow, storage is dense, and route planning is complex.

Solution: Optimal route creation and RDS route management prevent robot deadlocks and realize two-way transportation across all workstations.

Solution for **Instrument Processing Industry**

1. Painpoints & Requirments

A large state-owned enterprise engaged in the R&D and manufacturing of instrumentation needs to free up manual labor with mobile robots to eliminate the need to frequently transfer semi-finished products from one processing station to another.

2. SEER Product Portfolio

① Laser SLAM rotary jacking robot
② SFL-MP10S laser SLAM ground smart forklift
③ RDS uniform resource dispatching system
④ Roboshop Pro one-stop implementation tool

3. Implementation Result

It frees up manpower, gives technicians more time and energy to invest in product development and testing, improves workshop productivity, reduces error rate, and enhances workshop automation.

Challenge: Limited space in the workshop and only one aisle for robot operation.

Solution: Dispatch through the RDS system. Divide areas so that when one robot enters the area, other robots have to wait outside.

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