



MARS

Smart Restaurant Robot

Autopilot Chassis | Multi-Point Delivery | Multi-Bot Collab | Smart IoT | AI Platform

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Smart Restaurant Robot

Smart, efficient, collaborative, innovative robot

- Large HD screen; delivery, promotion and hospitality all-in-one
- Independent suspension, stable movement
- 4 large smart trays, independent and high efficiency
- 3D obstacle avoidance, no blind area, ultimate passibility
- 5 delivery modes, suit your scenario
- IOT smart connection, remote calling, dynamic table locator

Applicable scenes

Restaurant

Hotel

Conference

Factory

Office Building



New Upgraded Technology, New Smart Delivery Experience

3D Obstacle Avoidance

Up and down RGBD cameras
No blind spot, 360° flexible obstacle avoidance

Large HD Screen

Large size, max resolution, ultra high definition
Display your marketing AD

Powerful LiDAR

360° detection
Ultra far range, ultra high precision



Smart IoT System

Automatic take lift, pass through auto gate and auto door
Robot calling system
Smart table locator system

Smart Tray

Smart payload sensor, improve delivery efficiency
AI light belt reminder
Flexible and adjustable trays

Independent Suspension

Car-grade independent suspension of chassis
Flexible adjustment, effective damping

*Smart tray, smart lighting indication, smart IoT systems are optional units

Multi-Functional Large Screen, Eye-Catching Marketing

Ultra-Large HD Screen Smart Specialist Marketing

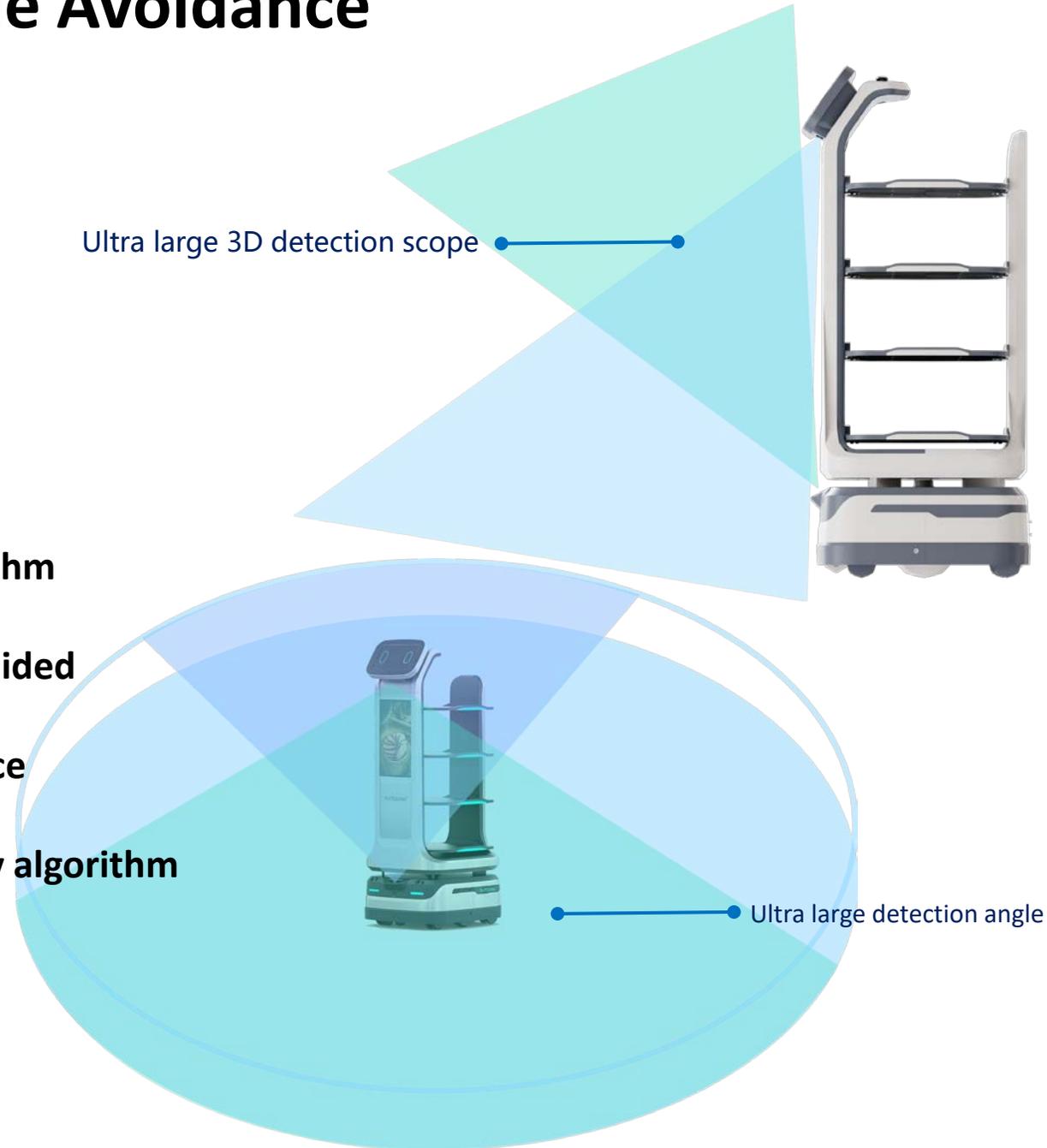
- 15.6 inch
- HD dpi 1920*1080
- Picture/video/GIF/Music, various format support
- Fixed-time/festival/birthday, flexible time setting
- Robot/phone/PC end resource management



Industry Leading 3D Smart Obstacle Avoidance

3D Perception Precise and Safe Movement

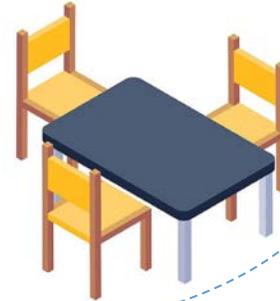
- 2 excellent 3D perception RGBD cameras
- 180° large detection angle, no blind spot
- AX-Chaos multi-sensor fusion obstacle avoidance algorithm
- Suspension/low/irregular shape obstacles can all be avoided
- Support foot detection, chair leg detection and avoidance
- Self-developed AX-Memory obstacle avoidance memory algorithm



Flexible and Swift Passing Capability

Swift Reaction in Crowded Place

- Strong passing capability in narrow path
- H-shape body is both flexible and stable
- Easy to pass through complex environment and crowded place



Smart Tray, Higher Automatic Efficiency

Automatic and Efficient Delivery Pickup Perception System

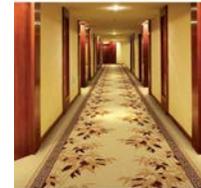
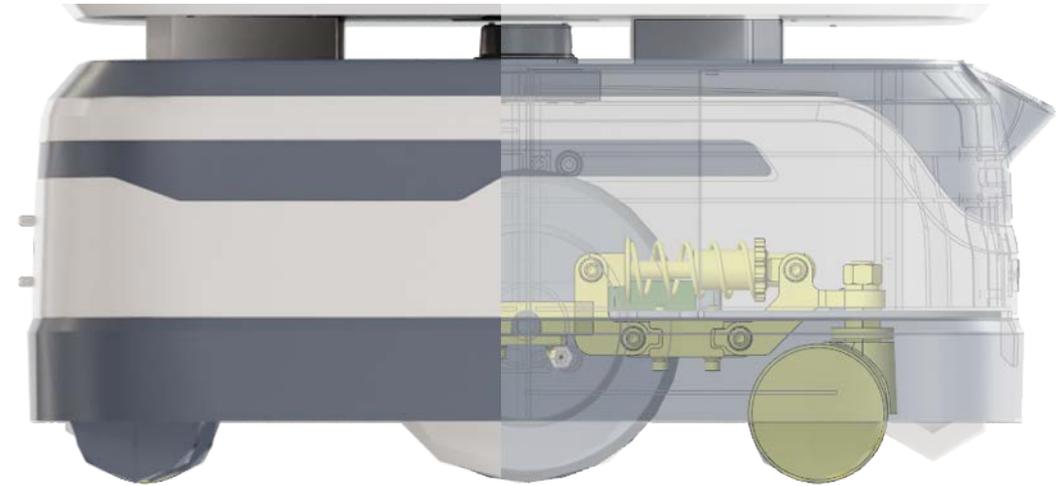
- Infrared sensor tray (optional)
- Modular detachable structure
- Smart light belt, multiple lighting indication modes



Adjustable Independent Suspension, Smooth Delivery

Precise Speed Control Fast and Steady Movement

- Car-grade suspension
- Adjustable damper based on payload
- Smart damping, stable speed control
- Thick carpet, wooden floor, marble splicing, up and down slopes can be passed
- Precise speed control, smooth start and brake
- Fast, stable, multi-mode switch based on scenes



Carpet



Cement



Floor



Marble

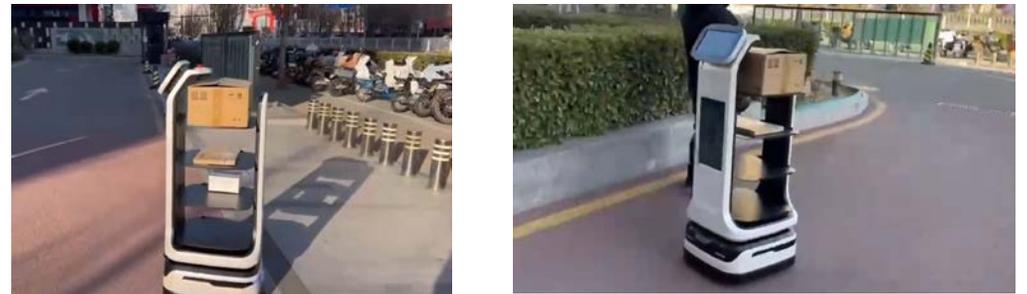
Self-Developed Powerful Positioning Perception Algorithm

Stable and Never Lose Positioning Compatible with All Scenes

- No need for QR code marker
- More stable self-developed SLAM solution
- Senseless incremental mapping
- Dynamic perception of environmental changes
- Multi-sensor fusion algorithm



Never lose positioning in all situations:
violent interference/pushing/moving/shaking/change
location/slippery road...



Support extreme environments:
bright light/foggy/open large area/outdoor...

Smart IoT System Connects to Smart Restaurant

Remote Call Smart Locator Cross-Area Delivery

- Plate collection, remote calling
- Wireless waiter calling system (optional)
- Smart table tracker and calling system (optional)
- Cross-floor and cross-area delivery

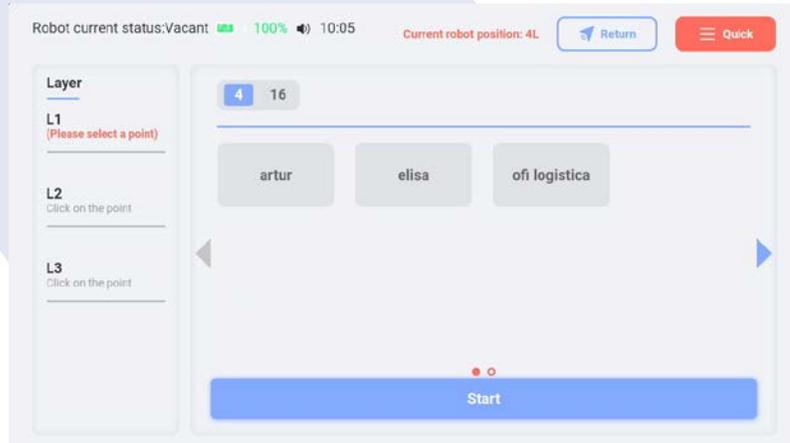


Remote Calling

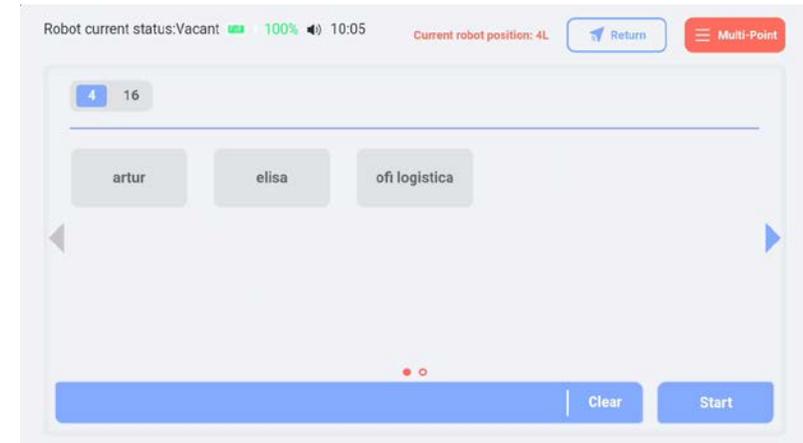


Table Tracker

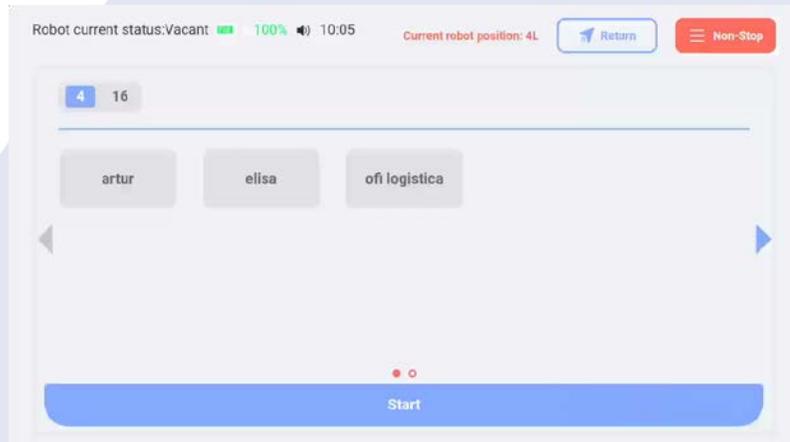
Multiple Delivery Modes



Deliver based on tray layers



Multi-destination delivery



Go to destination directly



Cruise route

Various Interaction Modes

Various Operation Modes Simple and Convenient

- PAD/phone and more interaction modes, user friendly operation
- AI voice assistant, support scene-based dialogue
- 10+ light indications
- Facial expression design, perceptual robotics service
- Smart tray, smart reminder and automatic process



Smooth AI Voice Interaction Experience

Smart Voice Recognition Technology

- Big data emotion speech synthesis technology
- Supports user-defined scene-based dialogue
- More convenient and interesting interaction



AI Speech Chip

- Smart speech synthesis technology
- 99%+ wake up rate
- 5m far-field speech recognition rate
- 96%+ NLP accuracy

Mic Array

- All-round sound reception
- 360° near and far field full coverage
- 100 million times wake-up practices

Large Volume and Payload

4 trays

Ultra Large Volume and Payload

- 4 trays design, more tasks handled simultaneously
- Detachable trays, free combination of spaces, larger transport capacity
- Multi-point delivery and more powerful functions

1 layer load: 10KG

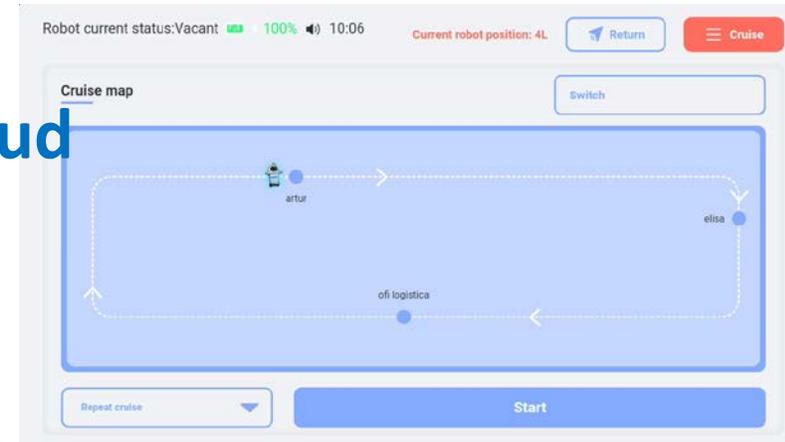
1 layer volume: 12L



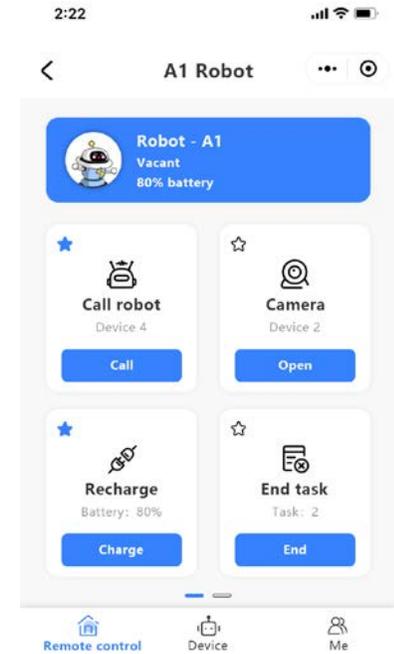
Full Solution: Hardware + APP + Platform + Monitoring

Terminal+Management Platform+Cloud Full Integration Solution

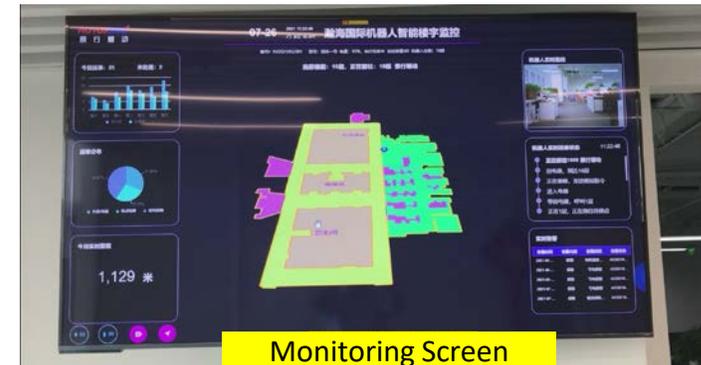
- Operable on robot, phone, PAD, PC, etc.
- Real-time remote monitoring and dispatch
- Big data analysis, standard management, trackable work process
- Remote task dispatch, unattended working, contactless delivery
- Open API/SDK, access to business systems



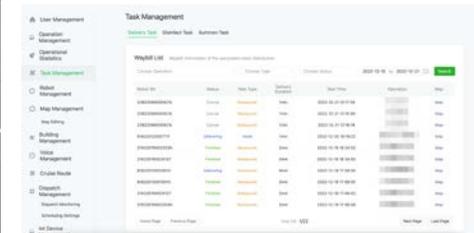
Robot



Phone



Cloud



Cloud Smart Multi-Robot and Multi-Task Dispatch

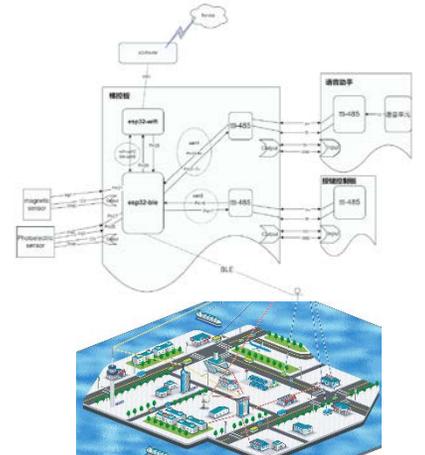
Scheduling and Queuing: V2X Near Field Dispatch + cloud MFQ Dispatch

- Fleet driving and queueing up for task execution
- Flexible multi-task allocation
- Multi types of robot in hybrid tasks
- Schedule IoT movement: lift taking, auto gate, auto door, etc.

Lift control

V2X near field
schedule

MFQ cloud schedule



The 1st in the Industry: Remote Rapid Mapping Deployment

Whole process remote deployed

No on-site standby, no contact

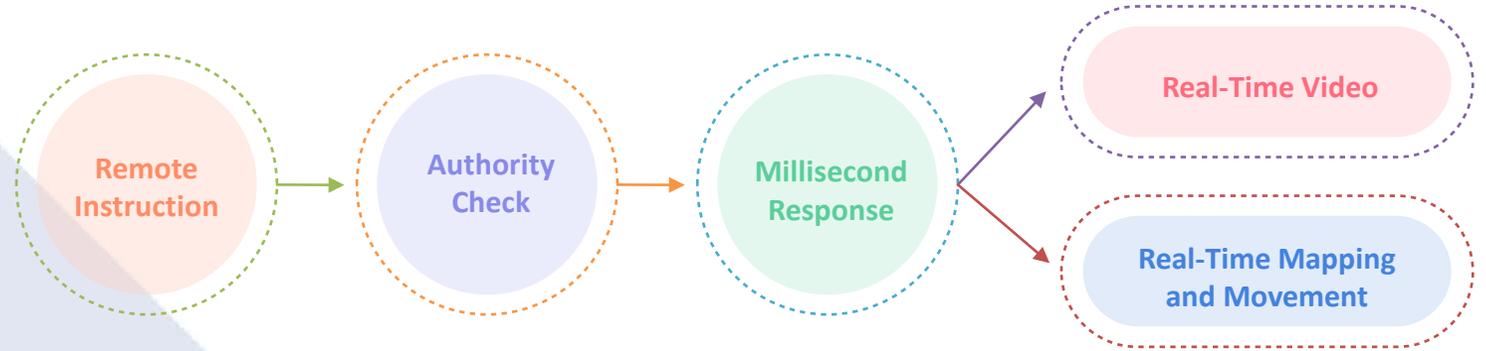
Ready-to-use in 10 min

Remote VR map building

PAD, mobile phone, PC

Lidar+RGBD + IMU
Dual-mode map building

Simple operation



Cross-Platform Building Block Secondary Development

Quickly Build Customer Application

Auto Driving OS API+SDK

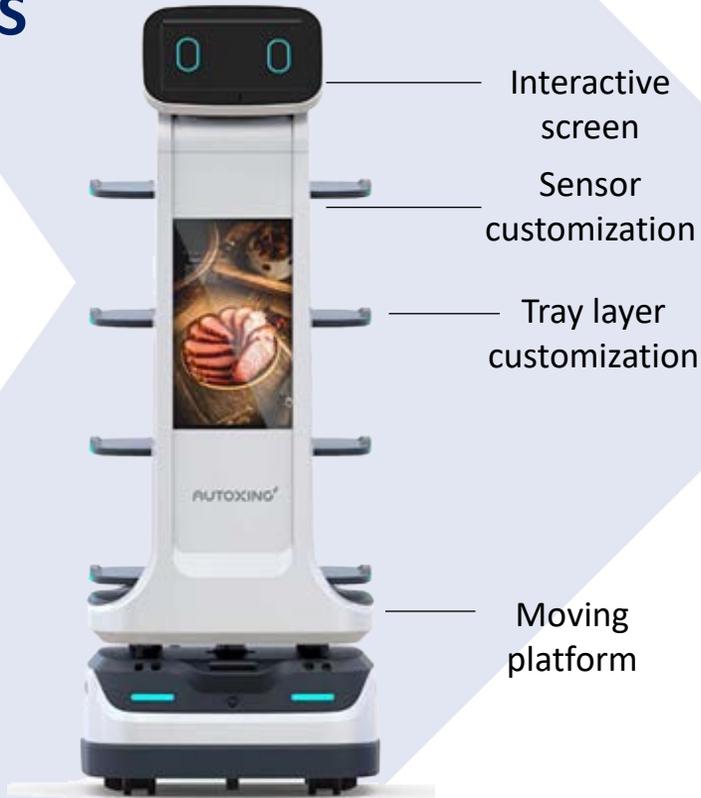
Cross-platform and
cross-language

Remote control

Cloud-based,
private

Data visualization

Virtual robot



Software customization interface



Partner customization:
UI, business

API+SDK

Autonomous driving
algorithm engine

Hardware structure Modular building blocks



Combination of
sensors

Classification of
suspension structures

Electronic interface
module

Appearance and box
structure

- Easy to access
- Cross platform
- Rich interface (API/SDK)
- Bottom control layer
- Business logic
- Strong extension capability

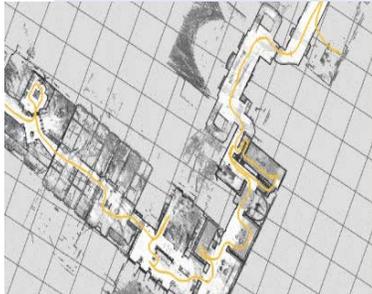
Specs



Items	Specs
Robot size	58*49*129 (cm)
Tray size	43*40 (cm)
Max payload	40Kg
Velocity	0.3~1.2m/s
Min passing space	65cm
Slope	≤ 10°
Obstacle	20mm
Gap	65mm
Position precision	cm
Network	4G/wifi
Battery	15Ah
Screen size and dpi	Operational screen: 10.1 inch, 1280*720 Display screen: 15.6 inch, 1920*1080
Operation time	Continuous working > 10h
Charging hours	3h

Tech Innovations with Autopilot Driving as the Core

Initiated **unmanned** automatic deployment



Break the bottleneck of on-site deployment

Minute-level mapping

Cm-level HD 3Dmap

Small data

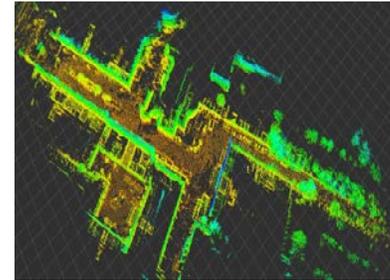
Unlimited area

Remote and unmanned

No need for markers

Exclusive **Autopilot Fast Mapping** Technology

Disruptive multi-sensor **fusion positioning** technology



Location reliability **99%**

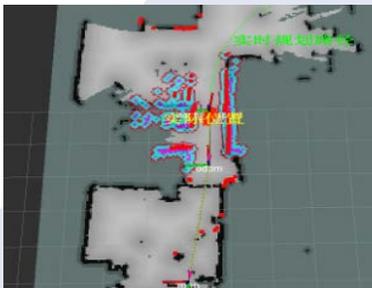
Environment fingerprint location

100% automatic correction

Perfectly handle skidding, violent pushing, and environmental change

Self-R&D **Cartographer Enhanced Sensor Fusion** Algorithm

Cross **indoor and outdoor** complex environment operation



Multi-level dynamic path

Identification of low obstacles

Millisecond sensitive obstacle avoidance

Memory motor control

Car-grade L4 autonomous driving perception, decision-making, control engine



Cloud Intelligent robot brain



Big data platform



AI SaaS platform



Phone



Elevator



Gate



Door



Daily monitoring



maintenance information



Fault message



OTA



Global scheduling

AIOT

Full life cycle OTA

Smart remote control, global scheduling, full life cycle OTA, AIOT

Robot Remote Monitoring Platform



Remote monitoring control

The monitoring platform monitors various real-time status of the robot and report faults, such as faults in positioning, current, voltage, speed, acceleration, angular velocity, point cloud data, IMU, abnormal warning, etc.

Remote robot control, robot status management and other operations can be achieved.

Light

Features: POINT CLOUD COSTMAP OBSTACLE MAP MAP INFO GRID

718220110000202 (世纪天鸿) TRIP 989 1.75 1层

AUTO MANUAL REMOTE

DOCK STOP

CHANGE MAP

CALIBRATE IMU SAVE BAG

WHEEL RESET COSTMAP

LOG MOTION METRICS BATTERY

REALTIME LAST HOUR LAST DAY LAST 3 DAYS

Timestamp	code	level	part	msg
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Remote Map Building Platform



Remote Map Building

It supports quick map building on mobile phone/computer and can connect the robot remotely across regions, display the robot surrounding environment in real time through the camera, and assist to build navigation map remotely, which saves time and enhances efficiency.

Robot Management Platform

Robot Screen 中文 | EN 我

Business: qq大楼 Area: 19 Copy Create Cloud Sync Tracking Continue Upload Delete SN: 71822043000350z Powe...

Undo Absorb Edit Angle Charging Pile

玻璃门 消毒点2 消毒点1 充电桩 WC WC

Rear

Start Mapping Clear The Map Remote Image Remote Control

The screenshot displays the Robot Management Platform interface. On the left is a sidebar menu with categories: User Management, Operation Management, Operational Statistics, Robot Management, Map Management (highlighted with 'Edit Map'), QR Code Management, Building Management, and Dispatch Management (with sub-items: Dispatch Monitoring, Scheduling Settings). The main area features a map of a building layout with various points labeled in Chinese: '充电桩' (charging station), '消毒点1' (disinfection point 1), '消毒点2' (disinfection point 2), and '玻璃门' (glass door). A robot icon is positioned on the map. Above the map is a toolbar with 'Undo', 'Absorb', 'Edit', 'Angle', and 'Charging Pile' options. To the right of the map is a control panel with a 'Rear' camera view and buttons for 'Start Mapping', 'Clear The Map', 'Remote Image', and 'Remote Control'. The top of the interface includes a header with 'Robot Screen', language options '中文 | EN', a user profile '我', and a status bar with 'Business: qq大楼 Area: 19', action buttons 'Copy', 'Create', 'Cloud Sync', 'Tracking', 'Continue Upload', 'Delete', and 'SN: 71822043000350z Powe...'.

Robot Remote Dispatch Platform

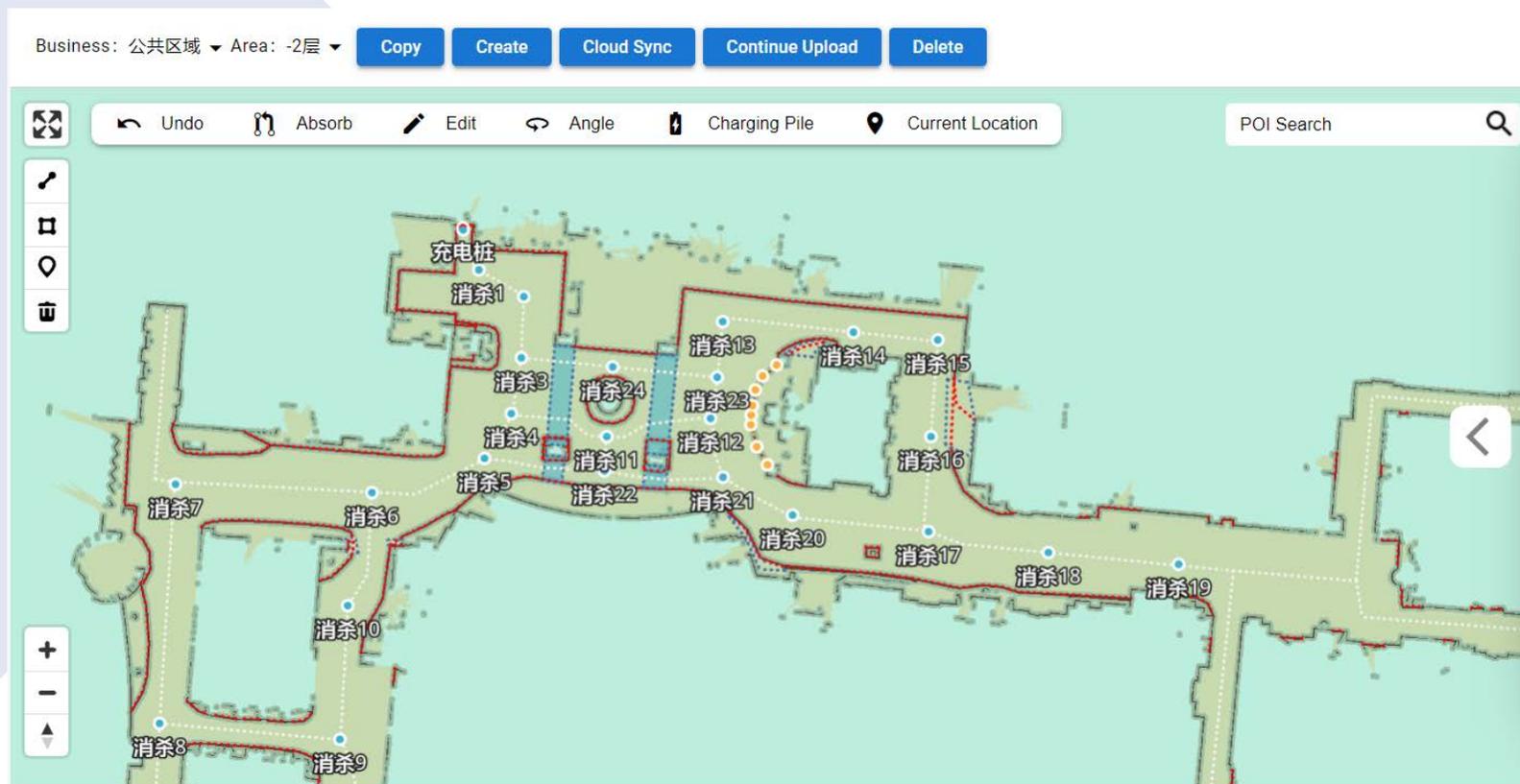
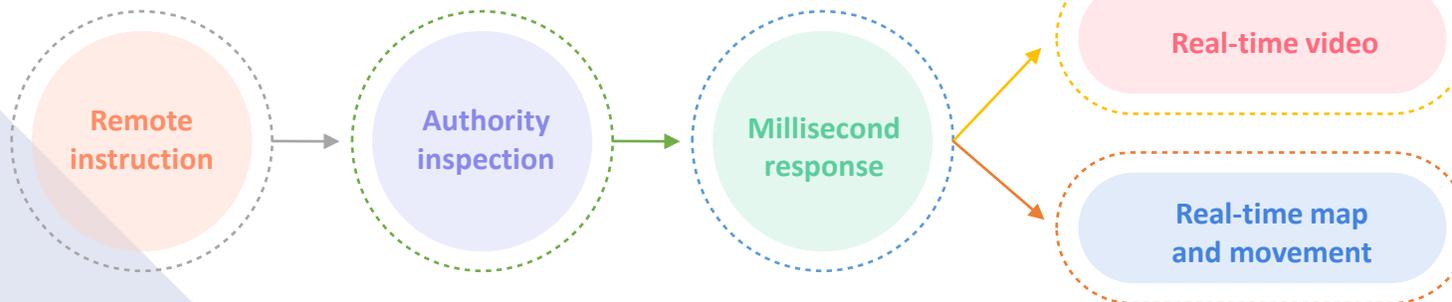
Virtual field scheduling



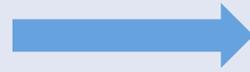
Maintain cross-space & cross-time support



Sense of user control and sense of games

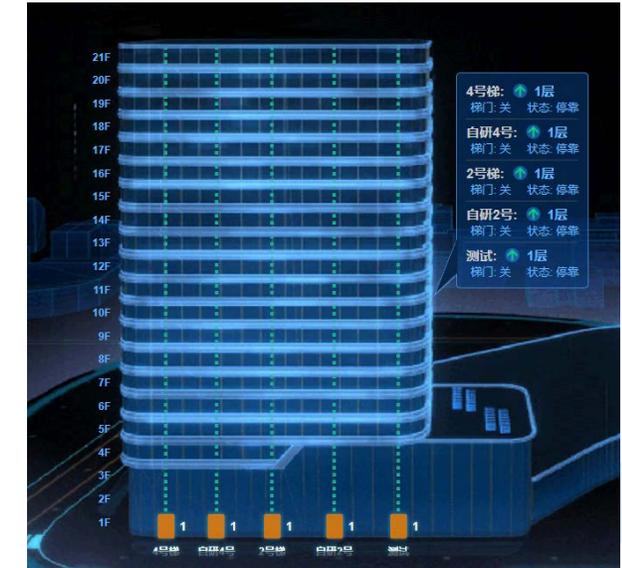


Robot Data Visualization



Robot state
visualization

Task visualization



IOT device (elevator, gate)
Operational visualization

Data platform

Single area data

Robot Operation Management Platform

ingzhou cloud platfo

Home / store management / Store list administrator

front page Organize an overview Store list X

new Check brand please choose building please choose shop name search reset

shop name	brand	building	address	Deployment time	administrator	enable	operate
qq building	qq	qq building	Hanghai International Building	2022-06-08 16:36:02		<input checked="" type="checkbox"/>	Details edit Device management Map management delete
bussiness-test	brand-test	building-test	No. 13 Jiuxianqiao Road	2022-05-24 12:54:41		<input checked="" type="checkbox"/>	Details edit Device management Map management delete
South Restaurant	South Restaurant	South Building	jiuxianqiao16	2022-05-22 17:53:35	winnie	<input checked="" type="checkbox"/>	Details edit Device management Map management delete
Michelin Restaurant	Michelin Restaurant	Michelin BD	london avenue	2022-05-20 11:29:52	He Ping	<input checked="" type="checkbox"/>	Details edit Device management Map management delete
Panajiota	Delicious Western Restaurant	Autoxing	Room402,Unit4,Building3, No.34,LuoyangRoad,sifangDistrict,QingdaoCity,Shandong Prov,China	2022-05-19 12:45:47		<input checked="" type="checkbox"/>	Details edit Device management Map management delete
Drawing test 1	Autoxing clique	Autoxing	london avenue	2022-05-05 16:29:00		<input checked="" type="checkbox"/>	Details edit Device management Map management delete
Drawing test	Build tests	Michelin BD	london avenue	2022-04-27 15:59:43		<input checked="" type="checkbox"/>	Details edit Device management Map management delete

A total of 49 20条/页 < 1 2 3 > go to 1 Page

**Authorization management
(building, places, device management)**

Robot Big Data Cloud Computing Management Scheme

