

SWARM Autonomy

Optimizing production efficiency with
autonomous mobile robot



Swarm Mobile Robot Series
Swarm Core Platform



As smart manufacturing is booming and continuously evolving, ADLINK, the global leader in edge computing, together with Foxconn, the world's largest electronics manufacturer, have established a joint venture company, FARobot, to develop autonomous mobile robots.

Based in Taipei, FARobot designs, manufactures, and distributes Swarm Autonomy solutions to empower enterprise intralogistics automation.



In-house tech

Strong vertical know-how and technology independence



Custom services

end-to-end customer service capability including special design



1 factory

for high quality production



Certified AMR

CE ISO 3691-4, EN 1175) and EMC (IEC 61000-6, EN 12895)



24/7 testing

design, component, assembly stage, we run precise testing



7 Patents

in HW and SW



SWARM Autonomy

Intralogistics
autonomy for factories
and warehouses



SWARM Autonomy

Agile collaboration from
one universal platform.

Combining RCS and WCS
functionality into one system,
it allows your team to handle
peak activity, shop floor
reorganization and high mix
low volume operations easily
and autonomously.



One platform to rule them all.

Integrate PLCs, controllers, robots,
AMR and synchronize them down
to the milliseconds.



Continuous optimization

Event-based dynamic rescheduling.
Let Swarm Core optimize
decision-making for better
throughput and resource utilization.



AMR Agnostic

Cover all your needs with FARobot
SMR series and specific needs with any
Swarm-ready AMR brand (AMR brands
controllable by Swarm Core).



CT expertise to unify OT and IT

Benefit from FARobot's expertise in
robotic communication technology to
simplify your system, improve its
reliability and combine OT automation
real-time requirements with IT
business requirements.

Your challenges our solution.

Manufacturing and warehousing challenges

Production change

High-mix low-volume

Production ramp-up
relayouting

Process change

Material and worker idle time

Legacy facility

Multi-floor factory with
elevators

Existing AGV and AMR

Workflow interlacing

Safety and operation conflict

OEE dilemma

Single-purpose aging AGV

Repurposing during low
season

Mix of manual and automated

Training needs multiplication

3 steps toward Swarm Autonomy

STEP 3

Integrate MES/WMS/ERP

- Takt time and cycle time integration
- Cross-floor, multi-robot synchronization

STEP 2

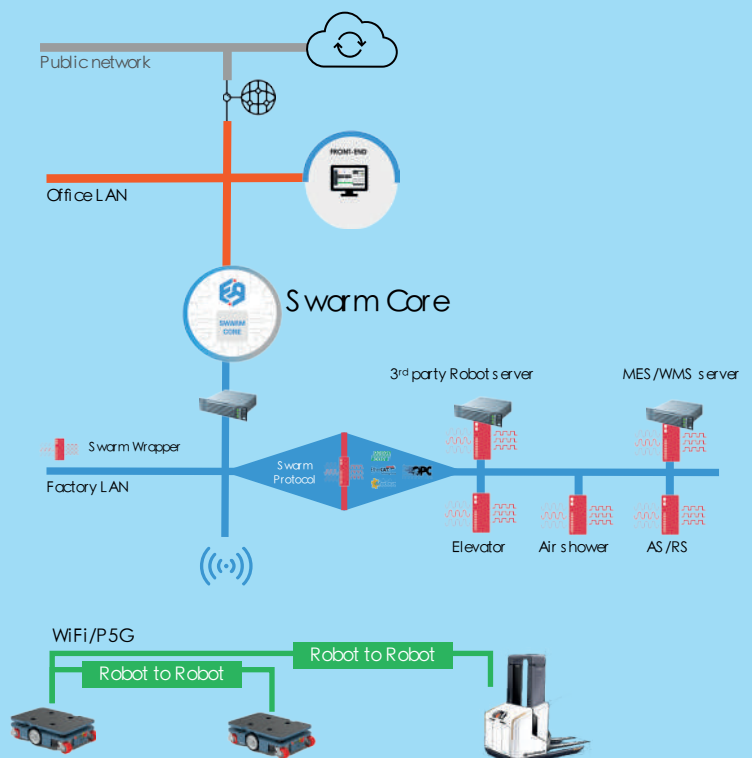
Integrate equipment

- Palletizer and conveyor integration
- Goods-to person and inventory
auto-replenishment

STEP 1

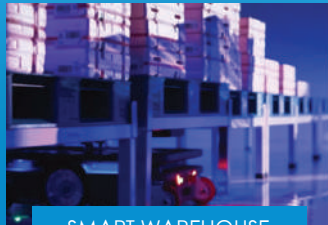
Automate A to B

- Person-to-goods kitting support
- WIP material transport manual trigger



Optimize any processes.

Running on the fields today



SMART WAREHOUSE

World leader in display manufacturing



Multi-brand fleet
Robotic arm coordination
+30% productivity



SMART PRODUCTION LINE

World leader in warning light manufacturing



High-precision navigation
Complex SW-integration
1.5 man + space saving



SMART PRODUCTION LINE

World leader in bike brakes manufacturing



Dynamic environment navigation
PLC and Sensor integration
2 man saving

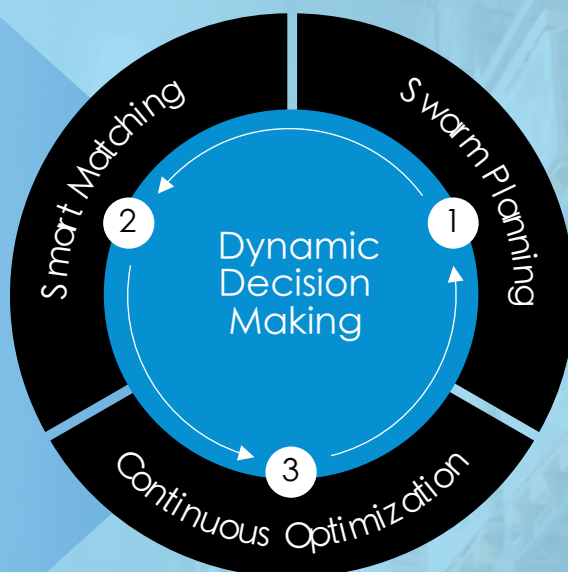


SMART FACTORY

World largest factory campus



High-precision docking
Multi-brand coordination
First hybrid large scale fleet



-40%	Integration time* *Comparing with RCS. The estimated numbers may vary by field and scale of the operation.
+25%	OEE
-50%	Robot maintenance time** **The saving includes the time spent on configurations and updates in networks, factory equipment, and control software.

SMR250 series

Compact, sturdy, and intelligent

Swarm-native AMR powered by Swarm Core
for optimized intralogistics efficiency

- Full Swarm Core integration for easy configuration, operation, and monitoring
- Multi-layer operation safety ranging from sensor level to robot coordination
- Double circuit design for minimized failure rate with performance level C.
- Built-in Swarm protocol enables SMR's interoperability with 3-rd party robots and equipment
- CE (ISO 3691-4, EN 1175) and EMC (IEC 61000-6, EN 12895) certified



SMR250

- Connector for custom-top-modules with power, Ethernet & digital I/Os
- Built-in extendable E-stop

SMR250 Lift

- Low-profile design with only 272 mm height
- Built-in lift height 70 mm



Sturdy and Compact

- 1.5 m/s max speed with 250 kg full loading
- 8-hr full-load runtime in 70-min charging
- Optimized space utilization including navigation in 80 cm wide aisle



Top-Module Compatibility

- Embedded mount points stabilize top-modules and payloads
- Solid chassis and suspension ensure safe operation on uneven floors
- Pre-qualified conveyor and lift modules



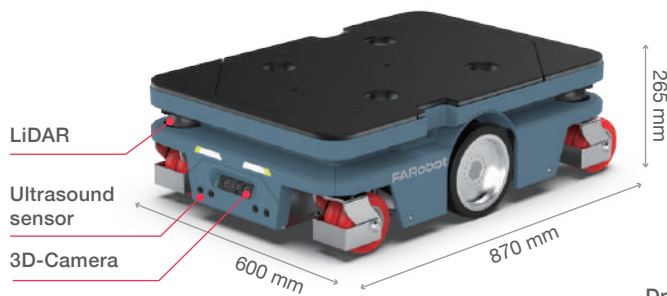
Fast Deployment

- Plug-and-play 1-hr onboarding
- Fast task points coordinates recording
- Embedded robot management tool enables task and layout adaptivity with fast parameter configuration

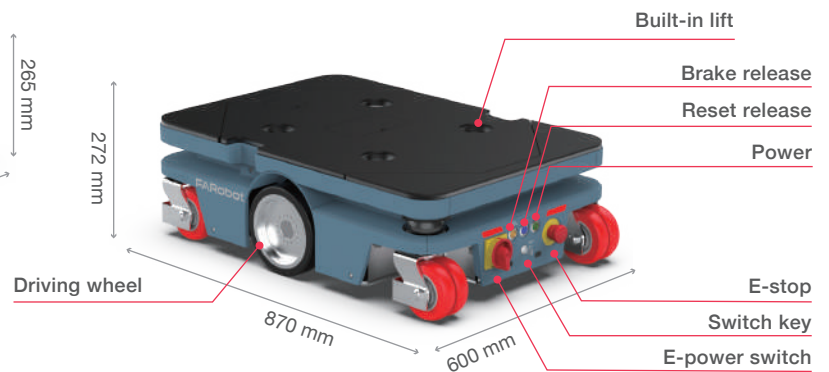


SMR250 series

SMR250



SMR250 Lift



		SMR250	SMR250 Lift
	Dimension (L*W*H)	870 x 600 x 265 mm	870 x 600 x 272 mm
Color availability		Blue, Grey	
	Weight	130 kg	144 kg
Form Factor	payload	250 kg	
power	Battery	Mono-battery: 48V nominal voltage, 37.7Ah nominal capacity	
	Runtime / charge time	8-hr full-load runtime in 70-min charging	
Sensor	Long range	Dual SICK nanoScan3 360°View	
	Short range	Front 3D camera, 2 pairs of ultrasonic sensors and proximity sensors	
Accuracy	Global accuracy	+/- 30 mm *	
	Docking accuracy	+/- 5 mm with landmark *	
Mobility	Motion	Differential drive, forward/backward	
	Speed	Forward up to 1.5 m/s, backward up to 1.5 m/s	
	Stability	Dual suspension for payload stability	
	Slope	5% negative/positive slope	
	Traversable gap/step	Gap: 35 mm/Step: 20 mm	
	Wireless	Wi-Fi IEEE 802.11 a/b/g/n/ac, 2.4GHz and 5Ghz	
Communication & Interface	Button	Power button x 1	
		Reset button x 1	
		Break release button x 1	
		Switch key x 1	
		Emergency stop button x 1	
		Emergency Power switch x 1	
Physical interfaces/Lifter		Physical interfaces : Ethernet adapter (M12, support Modbus TCP/IP) Modbus TCP communication x 4DI/4DO Emergency stop & reset port x 1 48V power output (max.10A) x 1 24V power output (max. 2A) x 1	Built-in lift Payload: 250kg Lift height: 70 mm
	Standard and certificate	TUV certified CE (ISO-3691-4, EN1175) & EMC (EN61000-6, EN12895)	

* In controlled conditions.

SMR1000 series

Compact, sturdy, and intelligent

Swarm-native AMR powered by Swarm Core
for optimized intralogistics efficiency

- Full Swarm Core integration for easy configuration, operation, and monitoring
- Multi-layer operation safety ranging from sensor level to robot coordination
- Double circuit design for minimized failure rate with performance level C.
- Built-in Swarm protocol enables SMR's interoperability with 3-rd party robots and equipment
- CE (ISO 3691-4, EN 1175) and EMC (IEC 61000-6, EN 12895) certified



SMR1000

- Connector for custom-top-modules with power, Ethernet & digital I/Os
- Built-in extendable E-stop

SMR1000 Lift

- Low-profile design with only 285 mm height
- Built-in lift height 70 mm



Sturdy and Compact

- 1.5 m/s top speed, with dual-battery system
- 8-hr full-load runtime in 90-min charging
- Optimized space utilization including navigation in 103 cm wide aisle



Top-Module Compatibility

- Embedded mount points stabilize top-modules and payloads
- Solid chassis and suspension ensure safe operation on uneven floors
- Pre-qualified conveyor and lift modules



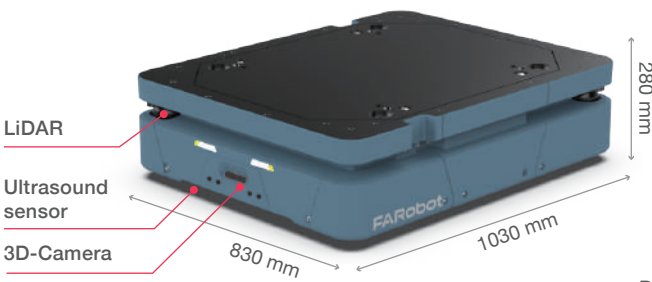
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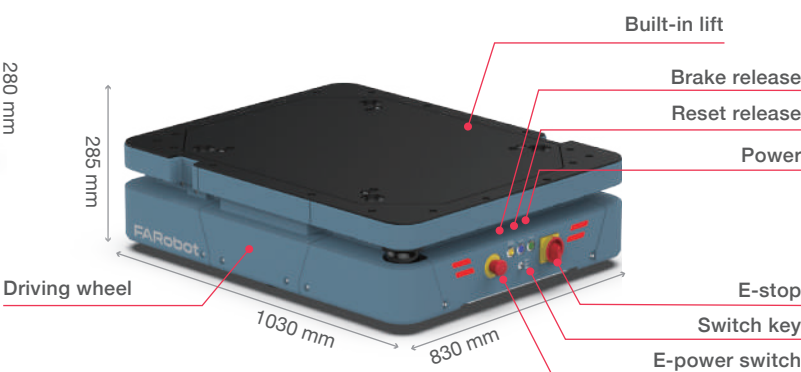


SMR1000 series

SMR1000



SMR1000 Lift



		SMR1000	SMR1000 Lift
	Dimension (L*W*H)	1030 x 830 x 280 mm	1030 x 830 x 285 mm
Color availability		Blue, Grey	
	Weight	281 kg	327 kg
Form Factor	payload	1000 kg	
power	Battery	Dual-battery: 48V nominal voltage, 65.4Ah nominal capacity	
	Runtime / charge time	8-hr full-load runtime in 90-min charging	
Sensor	Long range	Dual SICK nanoScan3 360°View	
	Short range	Front 3D camera, 2 pairs of ultrasonic sensors and proximity sensors	
Accuracy	Global accuracy	+/- 30 mm *	
	Docking accuracy	+/- 5 mm with landmark *	
Mobility	Motion	Differential drive, forward/backward	
	Speed	Up to 1.5 m/s, full load up to 1 m/s	
	Stability	Triple suspension for payload stability	
	Slope	5% negative/positive slope	
	Traversable gap/step	Gap: 35 mm/Step: 20 mm	
	Wireless	Wi-Fi IEEE 802.11 a/b/g/n/ac, 2.4GHz and 5Ghz	
Communication & Interface	Button	Power button x 1	
		Reset button x 1	
		Break release button x 1	
		Switch key x 1	
		Emergency stop button x 1	
		Emergency Power switch x 1	
Physical interfaces/Lifter		Physical interfaces : Ethernet adapter (M12, support Modbus TCP/IP) Modbus TCP communication x 4DI/4DO Emergency stop & reset port x 1 48V power output (max.10A) x 1 24V power output (max. 2A) x 1	Built-in lift Payload: 1000kg Lift height: 70 mm
	Standard and certificate	TUV certified CE (ISO-3691-4, EN1175) & EMC (EN61000-6, EN12895)	

* In controlled conditions.

SWARM Core



1000
robots

Up to 10 fleets and
100 robots per fleet

RCS + WCS
orchestration

All in one RCS and
WCS for end-to-end
decision making

2 license
types

Perpetual license or
yearly license

Any
Connect

Easily connect
equipment
and robots



PLC/Gateway



3rd party AMR



Machines



Agile Integration.



Easier integration and control

- ✓ Integration toolkit for equipment
- ✓ One interface for SI, manager, operator
- ✓ Cycle time integration through MES/ERP



Easy workflow integration

- ✓ Workflow template approach
- ✓ Precise event integration interface
- ✓ Task execution failure design

Integration tools.



Swarm Wrapper



- ✓ Integrate any devices and their protocols

Limitless scalability

PLCs, motors, conveyors, doors, elevators and alarm systems.



Swarm SDK



Equipment connector templates



- ✓ Low-code application programming

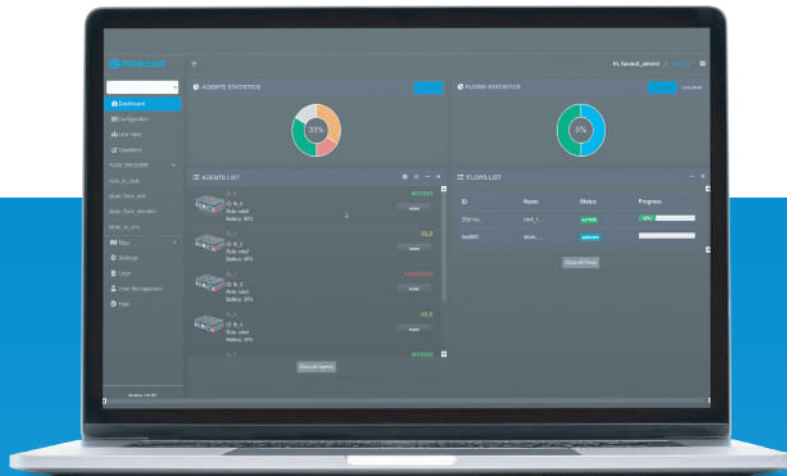
Agile logic design

Definable event trigger, workflow integration, fail-safe mechanism and protocols handshakes.

Agile integration

Simple I/O integration
Integrated industrial protocol

Easier monitoring and decision making



Comprehensive monitoring

- AMR and Equipment real-time monitoring

- Useful productivity analytics

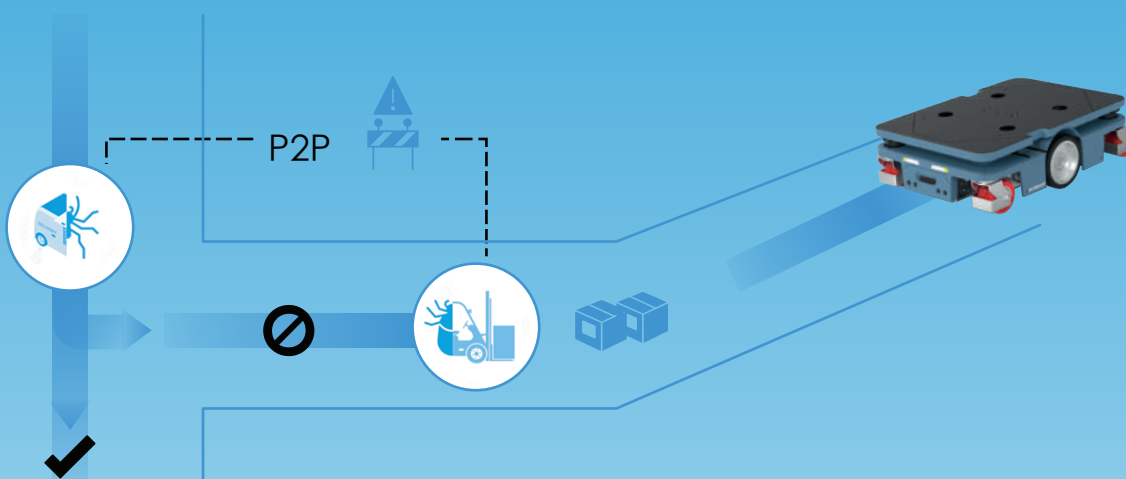
Capability & Workflow operation

- Universal workflow logic or trigger

- Robot capability based auto take-over

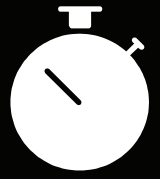
Traffic management

- Easily customizable rule engine: specific zone, robot speed, robot path, robot audible warning



Agile Optimization.

Autonomous execution



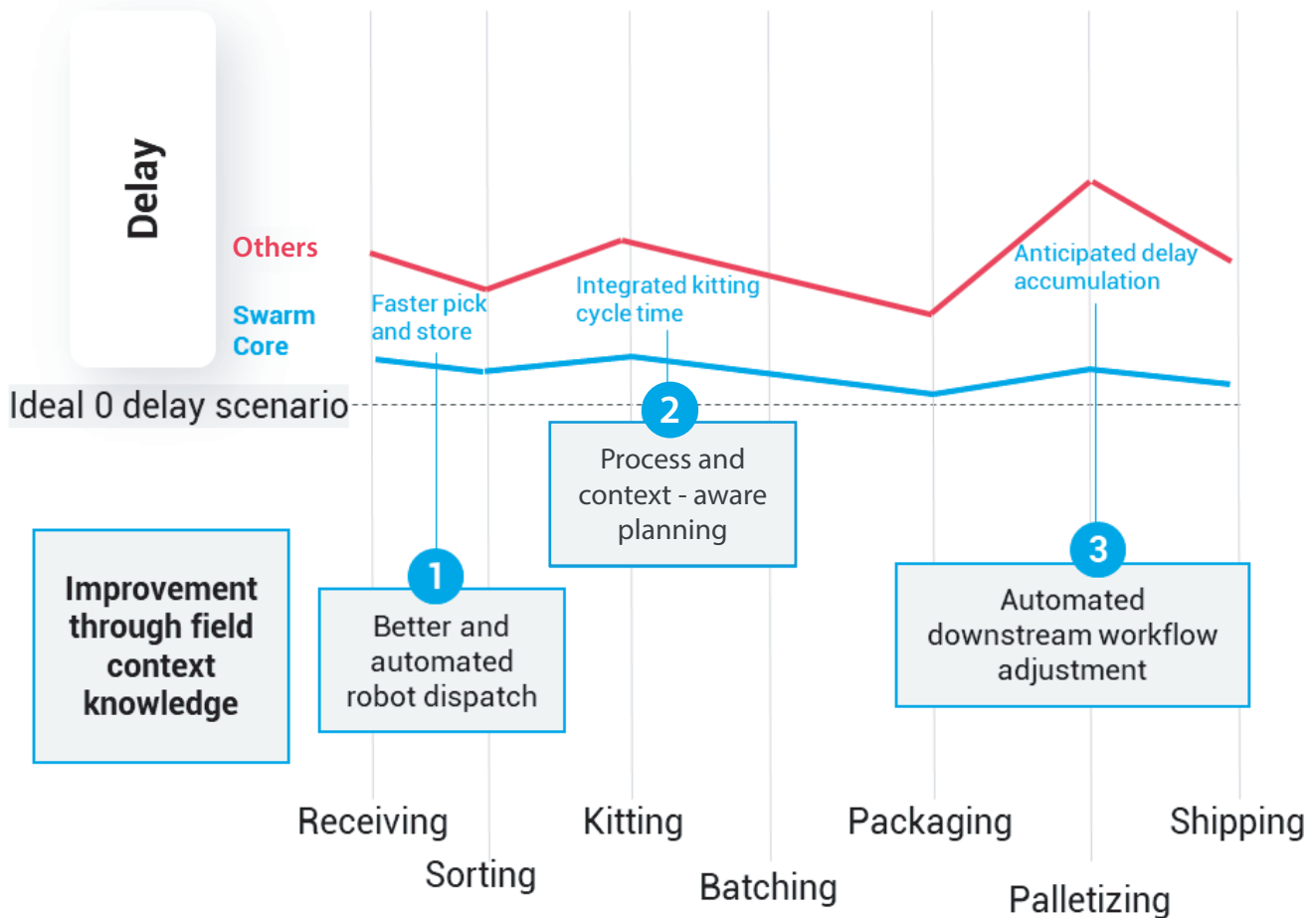
Swarm Core end-to-end task sequencing takes over logistic equipment control to reduce delays and idle time.

Thanks to its dynamic rescheduling capability, the fleet is reorganized and reassigned to the most needed area.

✓ Less material waiting time

✓ Less fleet supervision

Guaranteed minimum delay and maximum OEE.





All-in-one 5G private
network solution

A slim ,secure and
universal turn-key solution
for small and medium-sized
enterprises



Designed for Small-Mid
Enterprise



Secured Data



Reliable Mobility



Low TCO & High ROI

Why 5G for AMR

5G

Secured by SIM

Seamless

eMBB: 4 ms
uRLLC: 0.5 ms

Security

Handover

Latency

Wi-Fi 6

Non-Secured

Not Smooth

Average 20 ms



Use Case



AMR, AGV Swarm Autonomy



Real-Time AI Vision Analysis : pallet pick up

Note



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Allow your factory
and logistic warehouse
to onboard

any robot
any time.

