ATOMIX | Unlimited Warehouse Automation

marketing@atomix.sg

Headquarter:
6 Raffles Quay, #14-02,
Singapore

www.atomix.sg

Branches:
3-32-10, Ikebukuro, Toshima-ku, 171-0014
Tokyo, Japan

Lindekkouterstraat 28, 9030,
Mariakerke, Belgium

301, Building C10, No.77 Hongcao Road,
Shanghai, China

ATOMIX

Unlimited Warehouse Automation

ATOMIX

Table of Contents

01 COMPANY OVERVIEW

About Us	03
Why Atomix	04-05
Our Coverage	06-07

02 CORE PRODUCTS

Storage Mix	08-09
Handling Mix	10-11
Picking Mix	12-13

03 CORE TECHNOLOGIES

Atomixer Software	14-15
Pallet Shuttle	16-17
Pallet AMR	18-19
Bin Shuttle	20-21
Bin AMR	22-23

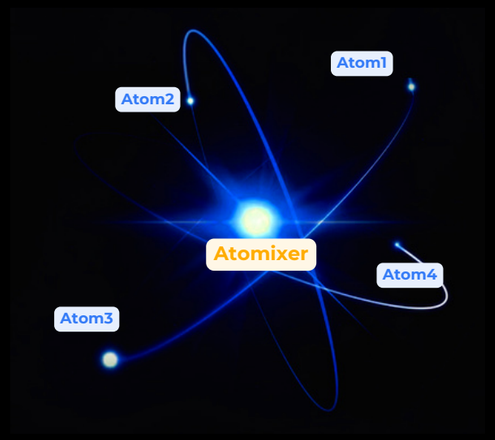
ATOMIX

Unlimited Warehouse Automation

Our Journey Begins with a Challenge

How can we address the diverse demands of warehouse automation with simple, standardized material handling solutions?

By integrating standardized heterogeneous robots with intelligent software, we deliver flexible, scalable and smart solutions tailored to different warehouse scenarios, breaking the boundaries of warehouse automation.



Core Technology - Atoms

At the heart of our innovation are four series of standardized robots - **Atoms**. These robots are powered by our self-developed control module, which combines multi-core processors with industrial control coprocessors to support deep learning and execute complex tasks with precision.

To enhance their performance, we've embedded more than 50 advanced strategies and algorithms into our intelligent software - **Atomixer**, enabling efficient, accurate and intelligent management of robots, containers and orders.

Core Product - Mixed Subsystems

Different combinations of standard robots make up our three core products - Storage Mix, Handling Mix and Picking Mix. Each product can operate independently or collectively to automate your warehouse for specific needs such as storage, handling, and picking.

With a flexible and discrete system, our solution is scalable to meet evolving demands, unlocking the potential for unlimited warehouse automation.

WHY ATOMIX?

At the heart of our company lies a team of exceptional talents with from diverse backgrounds, such as system integrators, robot developers, and AI innovators, each bringing expertise and passion to redefine the possibilities of logistics and automation. We differentiate ourselves through innovative solution, revolutionary products and cutting-edge technologies.

01 INNOVATIVE SOLUTIONS

Our talents from System Integrators **(SI)** have deep understanding of customer's pain points from different industries. Their Integration experience, global mindset and solution expertise make our solution being value-driven and result-oriented.

Scalable and Flexible

Our modular systems adapt seamlessly to your evolving warehouse needs.

Space Optimization

Maximize storage capacity and minimize operational costs with efficient space utilization.

Easy Integration

We revolutionize our solutions to be standard and modularized, easy-integrated and implemented.

02 REVOLUTIONARY PRODUCTS

With industry top product minds, our core products - storage mix / handling mix / picking mix, consisting of standard heterogeneous robots, can solve most of the requirements of warehouse automation in different scenarios.

Storage Mix

Supports automated storage of various container types such as totes, pallets, shelves, and cages within a single system.

Handling Mix

Schedules heterogeneous robots of different sizes, navigation methods, and suppliers to work collectively.

Picking Mix

Manages SKUs of various specifications intelligently and enables efficient order picking, regardless of structural complexity.

03 CUTTING-EDGE TECHNOLOGIES

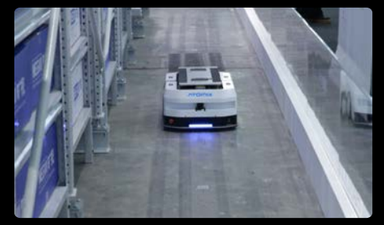
Our core technologies—Pallet Shuttle, Bin Shuttle, Pallet AMR and Bin AMR—are built on a unified platform. This shared foundation allows for seamless integration of data, experience, algorithms and capabilities, ensuring we remain at the forefront of the rapidly evolving industry.

Excellent Performance

Fast travel speeds, precise transitions, and accurate positioning are achieved through highly reliable and finely tuned components.

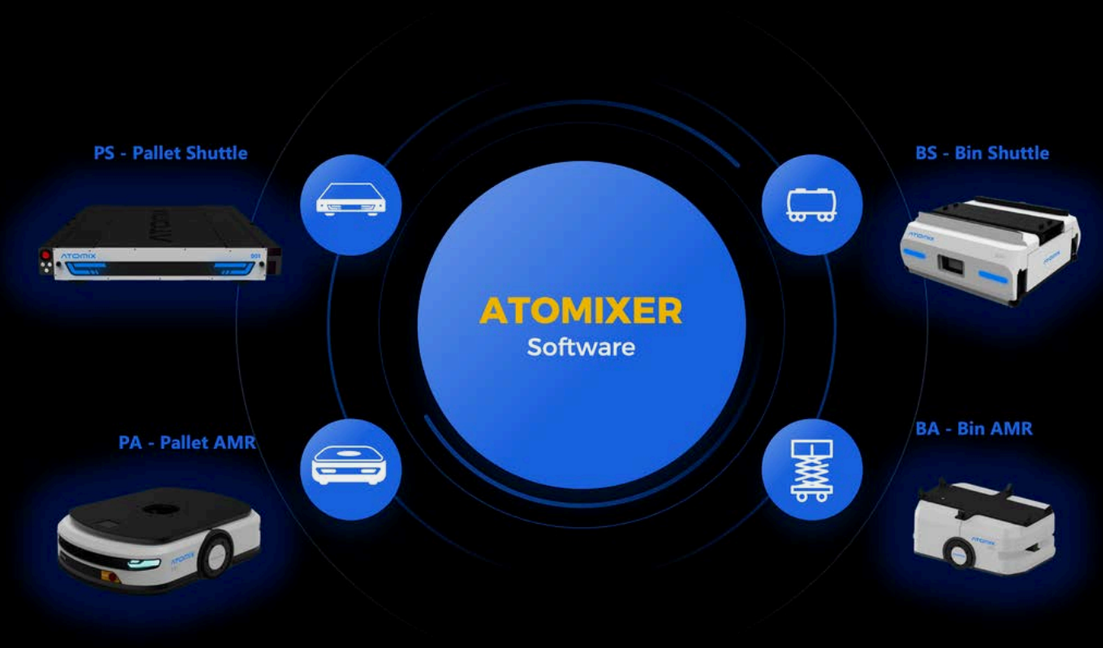
Outstanding Control

Self-developed control modules, combined with advanced control algorithms, empower robots to operate reliably and intelligently.

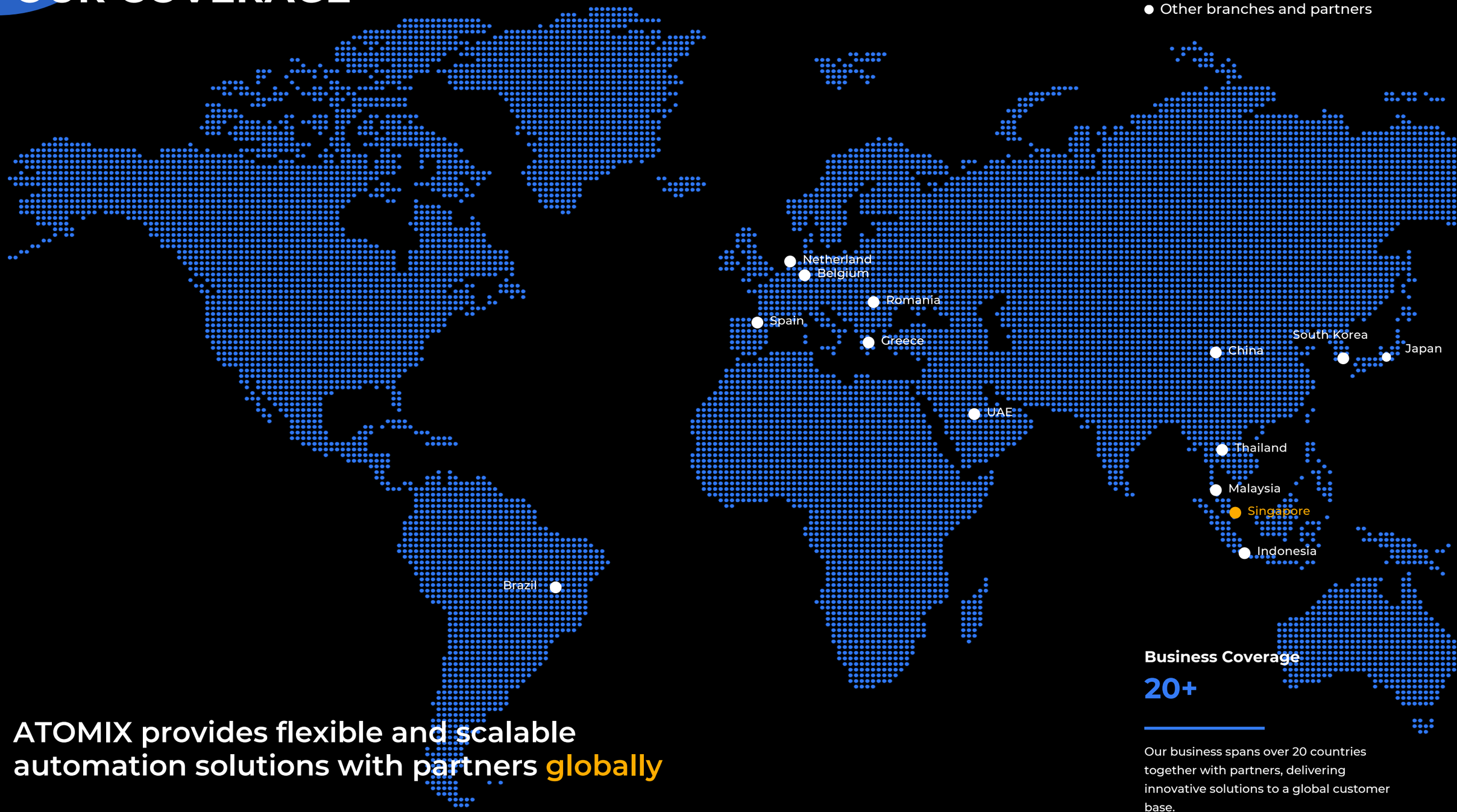


Strong Computing Power

The control module's 1 TOPS NPU enables deep learning and motion control, while the camera's 2 TOPS NPU ensures fast decoding and predictive actions.



OUR COVERAGE



ATOMIX provides flexible and scalable automation solutions with partners globally

Business Coverage

20+

Our business spans over 20 countries together with partners, delivering innovative solutions to a global customer base.

STORAGE MIX

Full-Material Storage

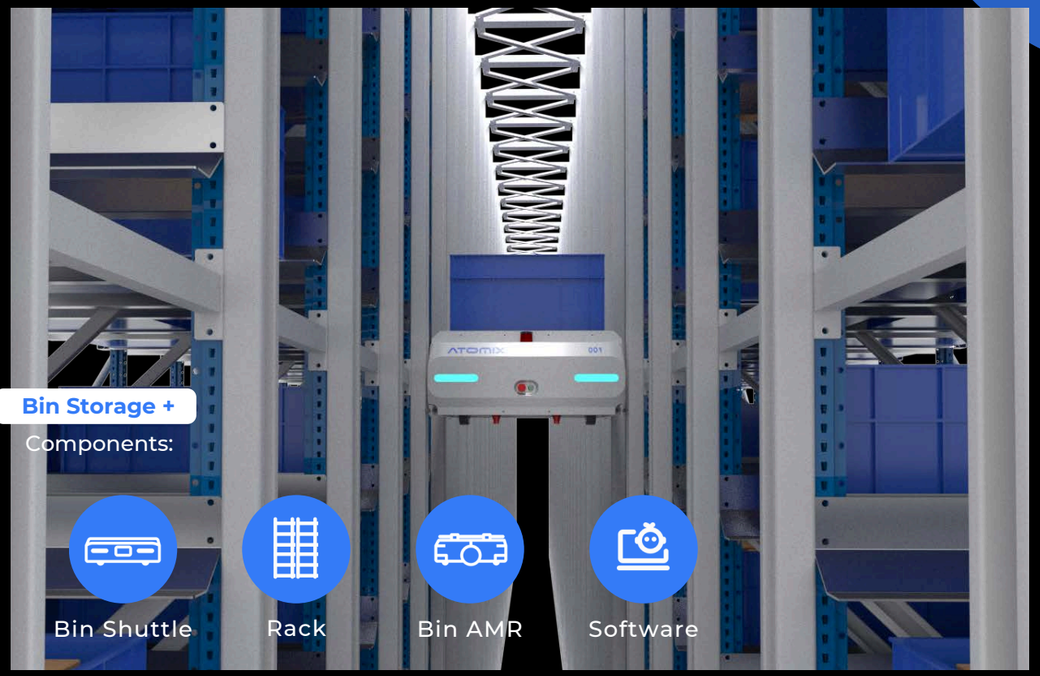
Storage Mix is composed of Bin Storage+ and Pallet Storage+ which provides automated solution for mixed storage of pallets, bins and shelves, maximizing storage space and optimizing material handling.

PALLET STORAGE+

Pallet Storage+ is composed of four-way pallet shuttles, pallet AMRs and Atomixer Software, being used to store and handling the pallets effectively and efficiently.

BIN STORAGE+

Bin Storage+ is composed of six-way bin shuttles, bin AMRs and Atomixer Software, being used to store and handling the bins effectively and efficiently.



Advantages

Seamless Integration

- Combines various storage formats into a flexible, scalable solution that adapts to changing needs.

Enhanced Efficiency

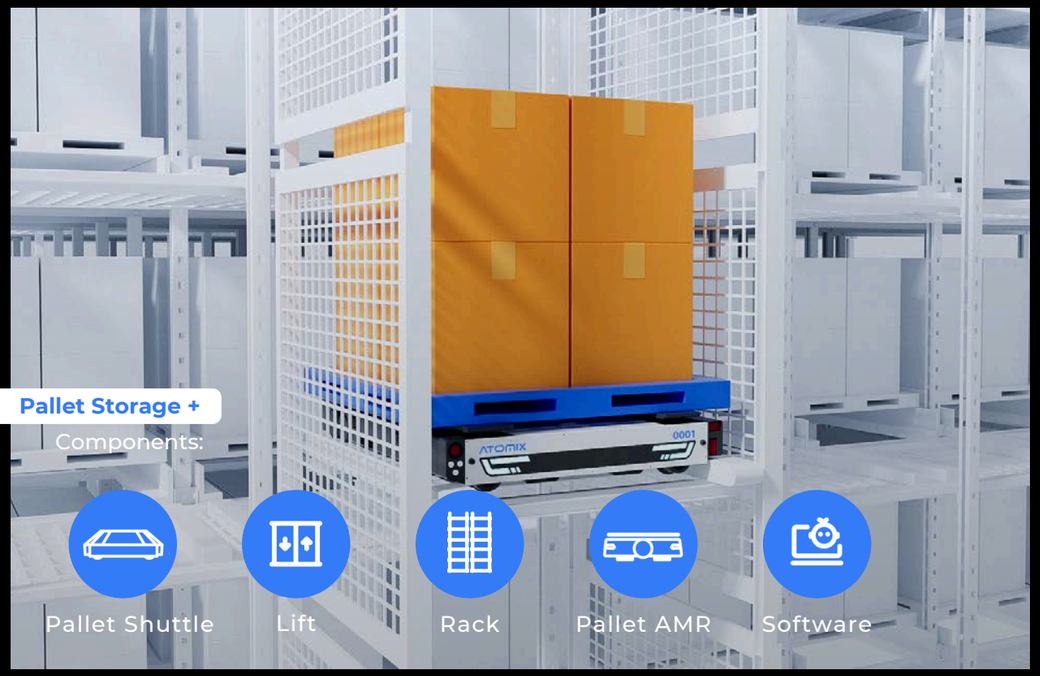
- Streamlines material handling processes, reducing time and labor costs.

Maximized Storage Space

- Utilizes advanced robots and software to enable high-density storage, improving capacity.

Optimized Workflow

- Maximizes throughput and minimizes delays, ensuring smooth warehouse operations.



HANDLING MIX

Full-Container Handling

Handling Mix is designed to address the challenges of transporting various container types within warehouse and factory environments. Its hardware system primarily comprises pallet AMRs and bin AMRs, enabling seamless mixed handling of pallets, shelves, cages and bins.

Handling Mix supports inbound and outbound warehouse transportation as well as intra-factory material movement, offering a reliable and efficient solution for diverse logistics and industrial scenarios.


Between warehouse handling

Inbound & outbound handling


GTP handling

Production line handling

Advantages

Mixed Robots

- Supports various sizes and navigation methods
- Compatible with both Atomix and third-party robots

Mixed Containers

- Handles various container types
- Supports loads up to 1,500 kg

Mixed Scenarios

- Adaptable to warehouse and factory handling scenarios
- Enables point-to-point, point-to-region and area-to-region transportation

High Throughput

- Speeds of up to 4 m/s
- Smooth and efficient control system powered by a self-developed controller

Adaptable Container

Pallet | Bin | Shelf 1 | Shelf 2 | Cage

PICKING MIX

Full-Category Picking

Picking Mix enables flexible picking from diverse containers, including pallets, bins and shelves. Configurable to meet specific demands, it provides one-stop picking solutions for all categories.

Advantages

High Storage Density

- 10% higher bin density enabled by narrow aisles for bin shuttles
- 25% higher pallet density achieved with deep storage aisles for pallet shuttles

High Handling Flow

- 50% higher picking efficiency through the combination and relay working mode of shuttles and AMRs
- 1,000 pallets/hour high throughput validated by active projects

High Expandability

- Zero system waste: The discrete system ensures that density and throughput are independent, allowing for separate expansion of storage or throughput as needed

High Flexibility

- 99% space utilization: Adapts to varying heights and irregular layouts
- 30% footprint savings thanks to its mixed storage structure

High Adaptability

- 360° flexibility: Shuttle robots can cross levels, aisles, and areas without physical limitations due to omni-directional flexibility
- Heterogeneous AMRs can travel freely within the same area

High Efficiency

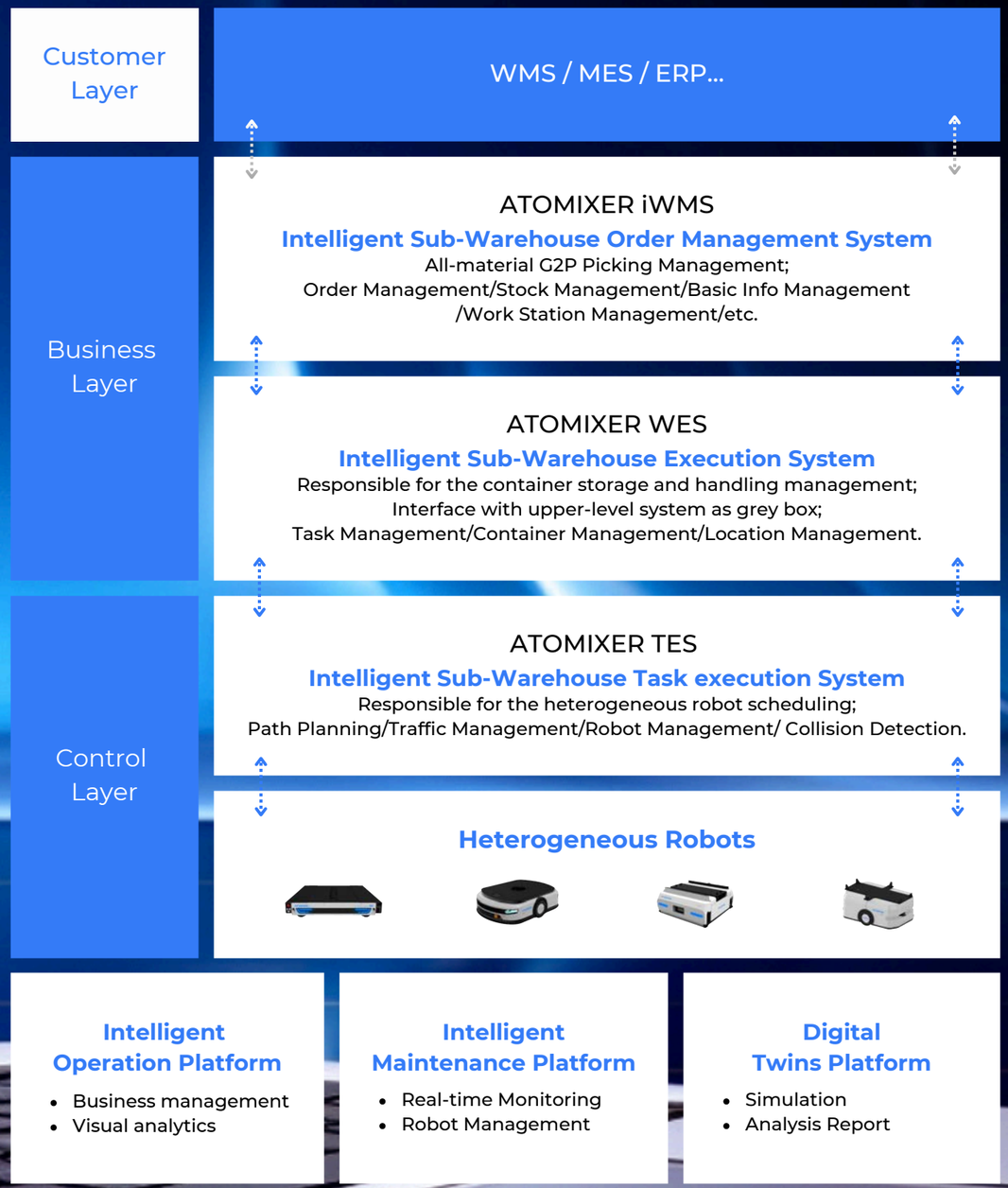
- Single stations achieve 1,000 pieces/hour efficiency with ergonomic multi-stage lifting designs
- Efficiency improves by 10% with wave and matching algorithms

ATOMIXER SOFTWARE

Atomixer Software is a 'Robot Internet of Things Operating System' developed based on cutting-edge AI algorithms. It offers comprehensive functionality, integrating multi-functional modules such as WES and TES, covering all operational processes within the warehouse, and supporting both B2B and B2C business models.

Atomixer features a three-layer intelligent software architecture, which could be integrated as black box, grey box or white box.

With a flexible API interface and highly modular design, the system is convenient and efficient for integration.



ATOMIX PALLET SHUTTLE

Versatile Model Range, Outstanding Performance

The four-way pallet shuttle is designed for high-density automated warehouses, offering movement in four directions: forward, backward, left and right. It can also move vertically via lifts, maximizing operational flexibility.

Features

EXCELLENT PERFORMANCE

- 1,500 kg load capacity with an exceptional deadweight-to-load ratio
- 8-hour average battery life (51.5V/60Ah capacity)
- 30% higher efficiency with no adjustments needed for movements

EXTREME THIN AND LIGHT

- Slim structure: Just 125mm, maximizing space efficiency
- Lightweight design: Deadweight of only 330kg

ROBUST AND RELIABLE

- Mechanical lift structure ensures stability and easy maintenance
- Thermal runaway temperature ≥ 500°C, ensuring safety
- MTBF ≥ 2,000 hours for enhanced reliability

INTELLIGENT AND SMART

- Supports autonomous obstacle avoidance with omni-directional sound and light alarms
- Features best path planning and optimized rhythm for maximum efficiency

ATOMIX PALLET AMR

Leading Algorithm, Flexible Deployment

Pallet AMR has all-round traveling and lifting capabilities on the ground, and mainly used for autonomous placing, retrieving and handling of pallets.

Features

FINEST TECHNOLOGY

- Over 95% high-precision industrial design ensures top performance
- Two-section chassis design improves ground adaptability
- Industry-leading volume-to-weight ratio

SUPER INTELLIGENT

- Advanced control powered by a self-developed SoC control module
- Autonomous driving architecture for high-performance mobility

EXTREMELY SAFE

- Multi-level protection through laser, emergency stop, bumper and scheduling systems
- Comprehensive sound, light, and visual alarms to prevent accidents

SOPHISTICATED DESIGN

- High-precision industrial design with customizable sizes and rich color options

ATOMIX BIN SHUTTLE

Maximize Space, Optimize Speed

The Bin Shuttle is a highly intelligent automated storage and retrieval system developed by Atomix.

The Bin Shuttle is a cutting-edge automated storage and retrieval system tailored for bin storage. It enhances warehouse operations by handling tasks with exceptional precision and speed. With the ability to move in all directions and autonomously climb racks without the need for additional lifts, the Bin Shuttle sets a new standard for operational efficiency.

Features

OUTSTANDING EFFICIENCY

- Ground speed up to 4 m/s for high operational efficiency
- Uninterrupted vertical climbing, unaffected by height
- Narrow aisle width of only 779mm for maximum storage density

SEAMLESS FLEXIBILITY

- No lift installation required, allowing flexible and independent task execution
- Proprietary arc-turning technology for smooth and continuous directional changes
- Full six-direction omnidirectional movement

SAFETY & RELIABILITY

- 180° laser obstacle avoidance technology and audio-visual alarm systems for comprehensive safety
- Aerial locking mechanism to minimize equipment fall risks

SMART INNOVATION

- Proprietary climbing posture adjustment and reengagement retry control algorithms enhance safety and intelligence
- Self-developed controller with rich interfaces for powerful scalability

ATOMIX BIN AMR

Smart Collaboration, Fast Deployment and Sustainable Efficiency

Bin AMR is a highly flexible automatic bin handling equipment developed by Atomix. By combining the three pillars of Smart Collaboration, Fast Deployment, and Sustainable Efficiency, Bin AMR revolutionizes modern logistics, delivering unmatched operational flexibility, streamlined processes, and enduring value to businesses seeking to stay ahead in a competitive market.

Features

SAFETY PROTECTION

- Intelligent obstacle avoidance and safety collision systems ensure the safety of both operators and equipment.
- Wide safety monitoring coverage, with a laser radar range of up to 200°.

QUICK DEPLOYMENT

- With a standardized design, it takes only hours to complete deployment
- Intelligent indexing learning, with each code point learning time as short as 15 seconds, enabling rapid deployment.

INTELLIGENT COLLABORATION

- Wide lifting range, from 305mm to 805mm, with rapid lifting speeds of up to 60mm/s.
- Ergonomically designed to adapt to picking positions, improving picking efficiency by over 30%.

LOW-CARBON OPERATION

- Three motors work in sync, optimizing power output for high efficiency and low energy consumption, using less than 0.8 kWh per hour, promoting energy conservation and environmental protection.
- High-efficiency charging technology with a 1C charging rate, allowing 7 minutes of charging to support one hour of operation.