

aiut

WE INNOVATE TECHNOLOGY

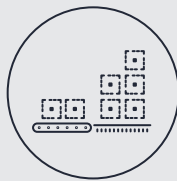
Automated storage and retrieval systems (ASRS)



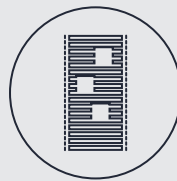
Technological progress has enabled the development of Automated Storage and Retrieval Systems (ASRS), which have revolutionized the functioning of warehouses and distribution centers. Companies want to constantly meet the growing volume of orders and meet high customer expectations. They are increasingly aware that in order to remain competitive in the market, they must strive for a fully automated warehouse model. Modern solutions allow them to increase the efficiency of warehouse operations, free up warehouse space, and optimize its use in order to fulfill a larger number of orders.



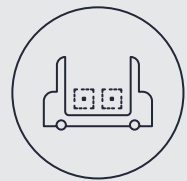
**HIGH STORAGE
WAREHOUSES**



**AUTOMATED
MANUFACTURING
BUFFERS - WAREHOUSES**



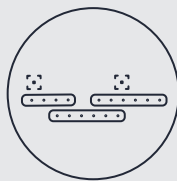
**TRANSPORTATION
SYSTEMS**



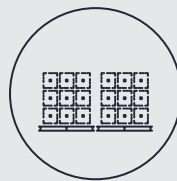
**PALLET AND CONTAINER
SHUTTLES**



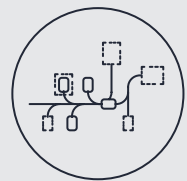
**COOPERATING
WAREHOUSE FACILITIES**



SORTERS

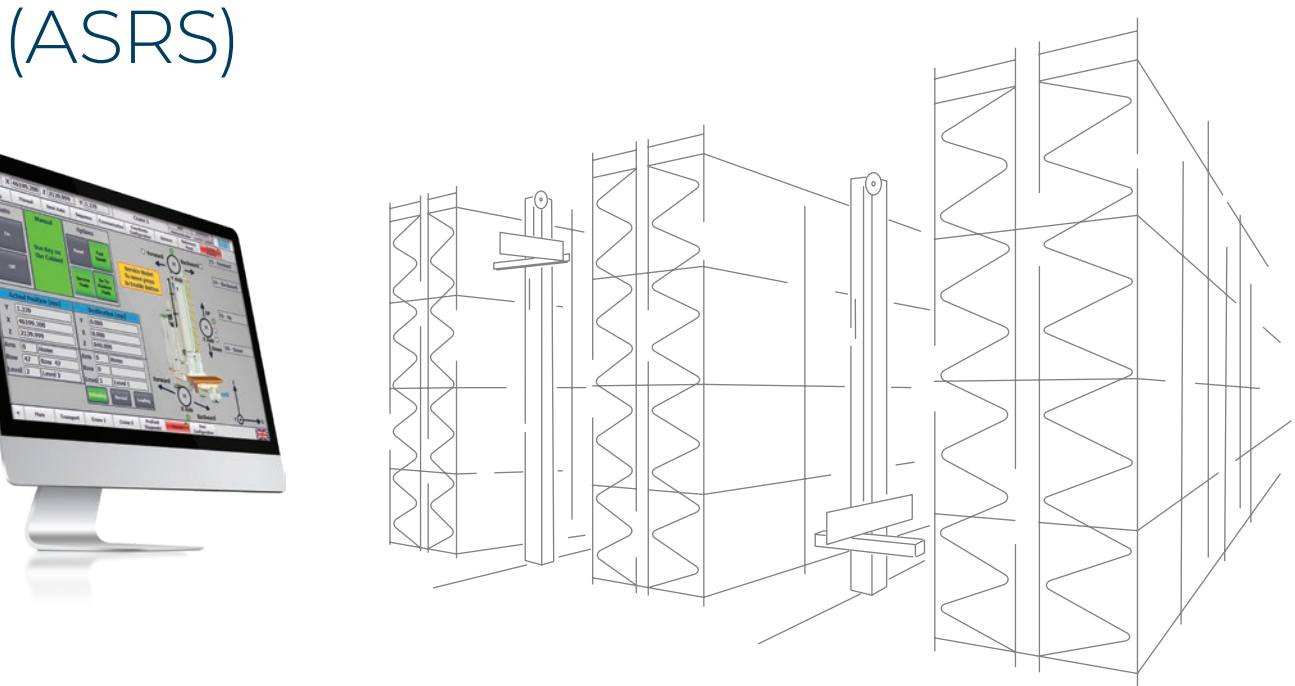


PALLETIZATION



**AUTONOMOUS
MOBILE ROBOTS**

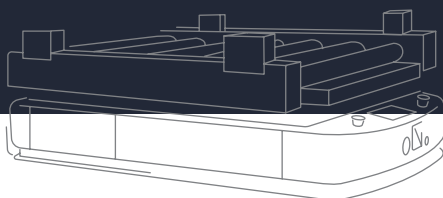
(ASRS)



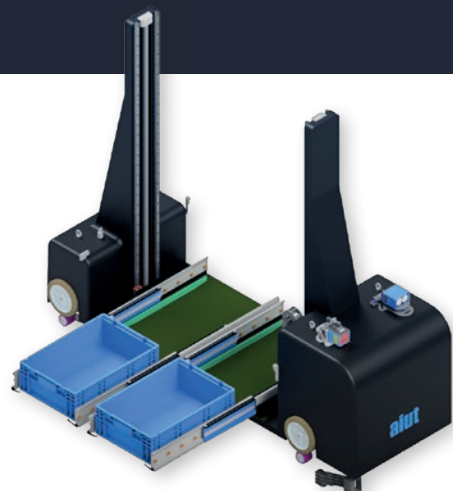
The image illustrates an Automated Storage and Retrieval System (ASRS). On the left, a computer monitor displays a control interface with various data fields and a 3D schematic of the system. The interface includes fields for 'ASRS Position (mm)', 'ASRS Velocity (mm/s)', 'ASRS Acceleration (mm/s²)', 'ASRS Deceleration (mm/s²)', 'ASRS Jerk (mm/s³)', 'ASRS Torque (Nm)', 'ASRS Power (W)', 'ASRS Temperature (°C)', 'ASRS Humidity (%)', 'ASRS Pressure (Pa)', 'ASRS Vibration (g)', 'ASRS Noise (dB)', 'ASRS Light (lux)', 'ASRS Sound (dB)', 'ASRS Gas (ppm)', 'ASRS Dust (µg/m³)', 'ASRS Particles (1/m³)', 'ASRS Radiation (Sv/h)', 'ASRS Magnetic Field (mT)', 'ASRS Electric Field (kV/m)', 'ASRS Gravitational Field (m/s²)', 'ASRS Inertial Field (m/s²)', 'ASRS Gravitational Gradient (m/s³)', 'ASRS Inertial Gradient (m/s³)', 'ASRS Gravitational Curvature (m/s⁴)', 'ASRS Inertial Curvature (m/s⁴)', 'ASRS Gravitational Torsion (m/s⁵)', 'ASRS Inertial Torsion (m/s⁵)', 'ASRS Gravitational Curl (m/s⁶)', 'ASRS Inertial Curl (m/s⁶)', 'ASRS Gravitational Divergence (m/s⁷)', 'ASRS Inertial Divergence (m/s⁷)', 'ASRS Gravitational Laplacian (m/s⁸)', 'ASRS Inertial Laplacian (m/s⁸)', 'ASRS Gravitational 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At AIUT, we co-create the latest trends in intralogistics. We are a leader among providers of advanced robotics and automation systems for global industrial markets. Our comprehensive solutions are tailored to client's needs, in order to achieve their goals and successes in the market together.

Mobile robots such as AMR Formica, conveyor transport systems, automatic sorters, and high storage systems that can reach over 40 meters in height are just examples of intralogistics solutions that have become an integral part of warehouses and distribution centers today. Integration, customization, and utilization of these solutions to individual needs are key. Development, following new trends, and technological progress will ensure companies' high competitiveness and the ability to face new challenges.



Transforming manual warehouses into automated ones is the direction of the market. The basis for effective investment is the choice of the right technological partner.





EXPERIENCE

For over 30 years, we have been providing our customers with comprehensive solutions in the field of automation and robotization of processes. We know the needs of manufacturing companies as well as suppliers of equipment and systems necessary for production and logistics processes. We use only proven system components from the world's leading manufacturers. We professionally and quickly create modern warehouses tailored to individual requirements.

FLEXIBILITY

At AIUT, we focus on quality and reliability. We carefully select suppliers and solutions, offering each customer, a system tailored to their specific needs and requirements. We value challenges, including complex and unconventional projects. For our customers, we always create solutions that are best suited for their project.

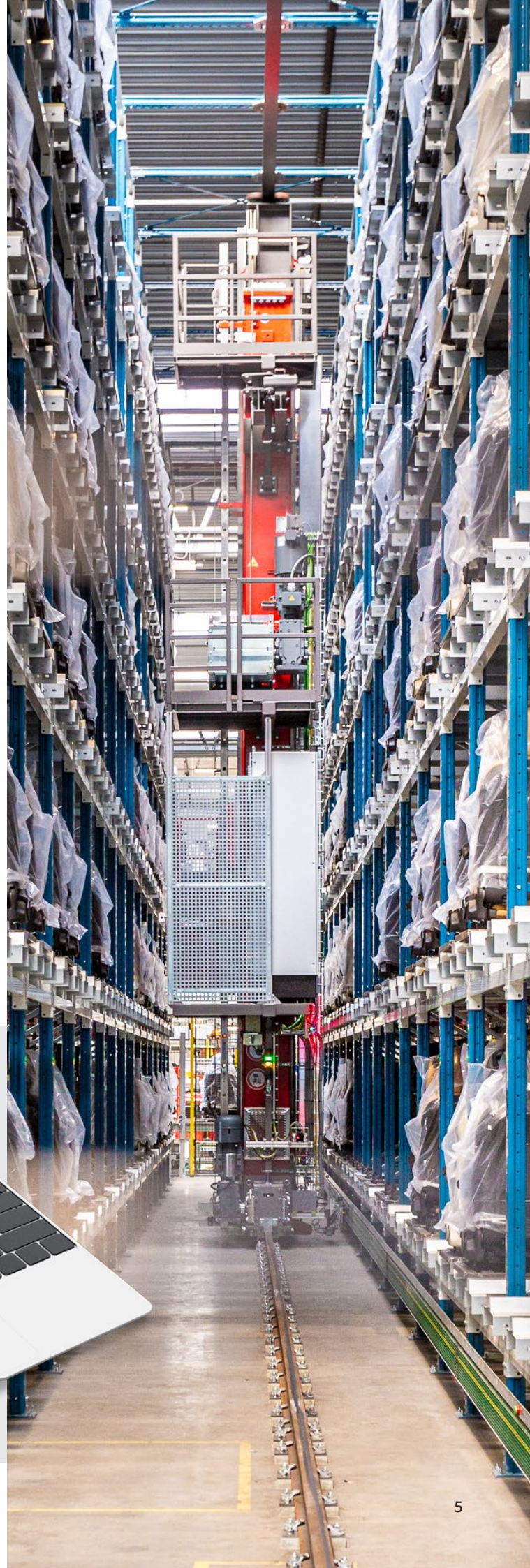


IMPLEMENTATIONS

AIUT provides comprehensive equipment for companies, warehouses, and logistics centers with automated storage systems, order picking, and cargo transportation. We significantly speed up intralogistics processes for many manufacturing market leaders. Our solutions have already been implemented at leading automotive manufacturers in e.g. Spain, France, Slovakia, Sweden, and Germany.

What makes us stand out?

- Quality of modern technologies
- Competence developed through years of experience
- Customization for individual customer needs
- Implemented projects for leading European manufacturers
- Fully comprehensive and responsibility for implementations
- Reliability of the best system solutions and reputable global suppliers
- Support at every stage of the investment
- Competitive prices of our solutions





Automated storage and retrieval systems

Our solutions

High storage warehouses

For efficient storage and retrieval of materials, pallets, and containers in warehouses – well as in distribution centers, we use advanced storage systems based on: pallet stacker cranes, miniload, automatic pallet shuttles, or our innovative solution of mini stacker cranes, which are dedicated to container handling for high-capacity systems. Our set of possible solutions also includes less typical systems, such as stacker cranes for transporting car bodies, large-volume storage, or other less typical materials or structures.

Experience, engineering, and flexible approach to challenges, cooperation with manufacturers in the intralogistics industry, design of mechanical, electrical and control systems allow us to realize any ASRS request. For example, these may be high storage systems from a few to more than 40 meters, solutions for freezers (-30° C), or very fast rotation of KLT containers (e.g. 10,000 KLT per hour). The systems we supply are programmed to perform specific tasks, allowing you to increase the efficiency of your warehouse operations, and the designed solution guarantees optimal space utilization.

Automated manufacturing buffers - warehouses

Automated manufacturing buffers and smooths out production in case of line stops and provide the possibility of product sequencing, particularly when there is a large variety of assortments. Also, they minimize the risk of downtime in just-in-time production and provide its greater flexibility.

Transportation systems

We use conveyor transportation systems to move pallets. We begin the construction of such systems with a full analysis of the capacity, dimensions, and weight of the transport media. Depending on the needs of a particular plant, different types of conveyors are used: roller, chain, belt, and modular. Systems built with roller conveyors are used on sections of horizontal transport lines for picking or buffering pallets. Chain systems, on the other hand, are used where pallets must be transported laterally due to limited space. Belt conveyors are used where there is a difference in level and small items are transported. Conveyor modules can be mechanically driven or work through the force of gravity. Roller and chain conveyors are most commonly used to transport pallets, while roller and belt conveyors are used for containers and cartons.



Collaborating warehouse facilities

In a warehouse designing, many cooperating devices are used to help streamline warehouse operations. These can include labelers, through-feed scales, automatic wrappers, strapping or stacking machines and a lot more.

Sorters

Automated sorters guarantee highly efficient and almost error-free segregation of items and parcels in a time incomparably shorter than during manual operations. Sorters can support companies at many points in production and logistics processes, including order picking or final sorting at parcel release. They are also used in the process of returning goods. When selecting sorters; we take into account the type of items to be sorted and the available space in the warehouse to optimally plan the physical flow of goods. Non-standard size, length or lack of packaging of goods that a company wants to segregate automatically is not a problem from our perspective, as we create a project for individual customer needs.

The solutions designed at AIUT, thanks to the traceability systems used, also allow tracking and full control of the sorting process. Errors in the sorting process are reduced by vision systems. Data from each stage of sorting goods are archived for future analysis and control, and photos taken of individual packages leaving the sorter allow full traceability of shipments and their condition at the time of release.

Palletization

Pallets are platforms supported by means of transport, i.e. forklifts, which allow us to transport goods in a simple way. We call palletization the whole process of grouping goods on a pallet in the most efficient and safe way possible. Robotization of pallet loading and unloading stations brings measurable results in reducing operating costs. The robots we implement ensure the repeatability of the processes, improving the quality and efficiency of packing pallet loads. They influence a more efficient flow of warehouse goods and better control of inventory as well as warehouse space.

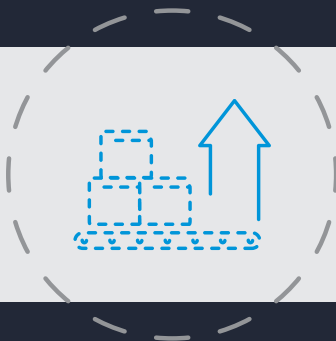
Autonomous mobile robots

AIUT Formica autonomous mobile robots provide efficient and unmanned cargo transportation. The heart of the intralogistics system using Formica robots is the Qursor platform. Our system enables the optimization of logistics processes in warehouses, distribution centers, or manufacturing plants. It reduces inventory and labor costs, improves production efficiency, eliminates anomalies and collision risks, as well as enhances employee safety, and enables real-time process monitoring.

Benefits of implementation ASRS

- speed and flawlessness in the execution of tasks
- increase the density of storage per unit area
- maintain consistency of supply and high productivity
- generate savings and minimize production costs
- improve security

Operation scenarios:



**Building new warehouse
from scratch – ASRS**

**Modernization
of warehouse**



**Relocation or expansion
of the warehouse with
the selection of modern solutions**

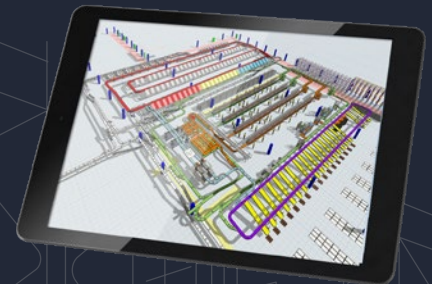
Method of project implementation

Evaluation and selection of warehouse automation and intralogistics systems

- Technical specifications
- Selection of stacker cranes, shuttles, and racks
- Selection of transportation systems and specialized equipment
- Project development of a comprehensive storage system

Virtual warehouse arrangement

- Simulations of real processes
- Analysis of transportation systems
- Virtual commissioning – elimination of disruptions right at the testing phase



Selection and implementation of a warehouse management system – WMS

- Automation of handling orders and deliveries
- Automatic picking of goods
- Real-time control – full diagnostics
- Communication with a third party system

Automated deliveries with Formica's fleet of autonomous mobile robots

- Robotized deliveries within the warehouse
- Automated transportation of heavy and large loads
- Safe collaboration between warehouse crews and robots in a shared space

Implementation

- Mechanical and electrical assembly and installation of the system
- Full commissioning of the systems
- Warranty and post-warranty support and service



30+

years of experience

1000+

employees

600+

engineers

3500+

big projects

A leading provider of advanced robotics and automation systems for the global industrial and utility markets. AIUT combines engineering expertise and intelligent automation technologies, and provides solutions that improve manufacturing and intralogistics processes, allowing customers to achieve even more benefits.



Talk to our experts

Automated warehouses

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