
AUTONOMOUS MOBILE ROBOTS

AMR Integrator for Central Europe





THE REALITY WITHOUT INTERNAL LOGISTICS AUTOMATION

- Manual material handling ties up staff who are needed elsewhere
- Internal logistics cannot keep up with the growth in production or orders
- High turnover and a shortage of handling personnel
- The movement of people and carts in the warehouse increases safety risks
- Automation is in the plans, but there is no clear first step

THE ECONOMIC IMPACT OF LACKING ROBOTIZATION

- Overtime and hiring staff for transfers
- Lower transfer productivity
- Risk of safety incidents
- Rising handling costs
- Limited capacity for growth
- Untapped potential of warehouse space

01.

How many workers are assigned each day solely to the manual handling of materials?

02.

How do you handle staff shortages caused by turnover or absences?

03.

What safety risks does the interaction of people, carts, and materials pose?

04.

Is your internal logistics keeping pace with the growth in production or order volume?

05.

How much of your capacity is tied up in manual handling instead of higher-value work?

06.

What would change if internal transfers took place without human intervention?

07.

Are you planning to implement automation, but aren't sure what the first step should be?

WHAT YOU'LL GAIN BY IMPLEMENTING AMR FROM M2M SOLUTIONS ROBOTIZATION TAILORED TO YOUR OPERATIONS

We do not supply robots as standalone devices. We integrate AMRs so that they work in harmony with your warehouse, production, and transportation operations—without disrupting your facility's existing processes.

FASTER AND SAFER DEPLOYMENT

Shorter deployment time · lower integration risk

- A proven portfolio of CTU, LMR, FMR, and CMR reduces deployment time
- Solutions for non-standard operations and non-standard pallet sizes
- Safe operation—multiple sensors, CE certification
- Gradual expansion without altering the underlying architecture

ONE PARTNER, ONE RESPONSIBILITY

Hardware, software, and service all under one roof

- A single supplier for hardware, software, integration, and service
- Lower integration risk compared to using multiple suppliers
- Integration of AMR with WMS, ERP, and TLS into a single control system
- Modular implementation based on actual operational needs

PRODUCTS



SKY TRANSFER UNIT

STU

It is used for the automated storage and retrieval of KLT boxes, crates, and cartons in high-density rack warehouses with heights of up to 12 m

Applications: High-density warehouses, e-commerce and distribution centers, Goods-to-Person order picking, and operations with many SKUs



CARTON TRANSFER UNIT

CTU

Used for transporting or storing bins and crates with a flexible picking height of up to 10 meters

Applications: High-density storage, distribution of goods to production lines or picking stations



LATENT MOBILE ROBOT

LMR

Used to move racks and containers weighing up to 2,000 kg to the picking area using a lifting mechanism

Applications : Distribution of goods directly to the picking area; streamlining processes



FORKLIFT MOBILE ROBOT

FMR

Designed for the automatic transport of standard containers and pallets using high-precision laser navigation

Application: Ideal for warehouses with diverse goods and non-standard pallet sizes.

STU – SHELVING SHUTTLE SYSTEM

High-density storage of standardized containers in a rack system operated by a shuttle unit

	PRODUCT	MAX. HEIGHT	FLOOR PLAN OF THE CRATE	NOTE
	TP6 – SCH(D)	12 000 mm	600×400 / 650×450 mm	Double-depth, enclosed environment, standard size only
	TP6 – SCW	12 000 mm	800×600 mm	Single-depth, enclosed environment, standard size only

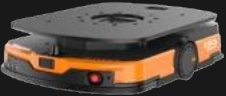
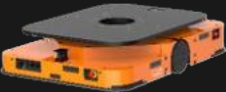
CTU – HEIG – LEVEL PICKING

Picking of crates and cartons at heights of up to 12 meters; high storage density

	PRODUCT	MAX. HEIGHT	LOAD CAPACITY / CRATE	NOTE
	TP1 – 50B	2000 mm	30 (hook) / 50 (grip) kg	Double-depth storage
	TP5 – DCH(T)	10 000 mm	30 (hook) / 50 (grip) kg	A double-depth, enclosed environment
	TP5 – DCP(T)	12 000 mm	30 (hook) / 50 (grip) kg	A double-depth, enclosed environment
	TP5 – DCW(T)	12 000 mm	30 (hook) / 50 (grip) kg	Single-depth, enclosed environment

LMR – MOVING SHELVING AND PALLETS

Moving racks, pallets, and crates across the floor within a warehouse or production facility

	PRODUCT	DIMENSION	LOAD CAPACITY	NOTE
	Q3 – 600D	1001×650×250 mm	600 kg	Compact, low-profile
	Q7 – 1000E	1150×820×254 mm	1000 kg	The Most Versatile Option
	Q7 – 1500E	1150×820×256 mm	1500 kg	Higher load capacity, same floor plan
	Q8 – 2000A	1523×1150×317 mm	2000 kg	Heavy pallets and racks
	QF – 1000A	1423×1200×246 mm	1000 kg	Trailers and Oversized Cargo

FMR – LIFTING AND LOADING PALLETS

Automatic lifting and loading of pallets onto racks using high-precision laser navigation

	PRODUCT	MAX. LIFT HEIGHT	LOAD CAPACITY	NOTE
	F3 – 1500C	200 mm	1500 kg	Optional remote control
	F4 – 1500C	2000 mm	1500 kg	EPAL Version F4-2000
	F4 – 2000C	3000 mm	2000 kg	Does not support closed EPAL pallets
	F5 – 1600C	3000 mm	1600 kg	—



CMR

CONVEYOR MOBILE ROBOTS

Highly flexible mobile conveyors suitable for use in various warehouse and production areas



KEY FEATURES

- Flexibility
- Safety
- Precise navigation
- High accuracy
- Easy integration with third-party systems

TRANSPORT OF CARGO OR DELIVERY TO THE OPERATOR

A robotic solution can handle the autonomous transport of cargo or be part of a Goods-to-Person system. The configuration depends on the type of cargo and the process

INDEPENDENT TRANSPORTATION

- **LMR – Q3 / Q7 / Q8** – transport of racks and carts
- **FMR – F3 / F4 / F5** – handling, transport, and lifting of pallets
- **CTU – TP1** – independent handling of crates
- **QF** – transport of pallets with goods

GOODS-TO-PERSON / INTEGRATED SOLUTIONS

- **STU + Q1P / conveyors** – high-density storage and automated retrieval of KLT boxes, crates, and cartons
- **CTU + tower station / Q1P** – automated handling of crates
- **LMR + racking system / conveyors** – moving racks or pallets to the workstation
- **FMR + racking system / conveyors** – automated loading and unloading of pallets
- **OF + ground conveyor** – combined material flow

TYPICAL DEPLOYMENT SCENARIOS

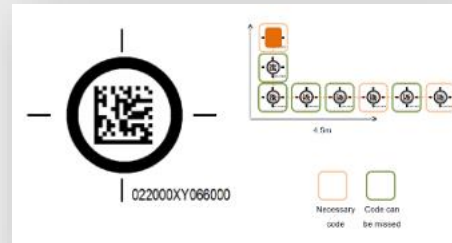
General model classification based on the type of cargo handled—we will design the exact configuration based on actual operating parameters

TYPE OF CARGO	RECOMMENDED MODEL	LOAD CAPACITY	TYPICAL DEPLOYMENT SCENARIOS
Pallet – ground transport	LMR – Q7 / Q8	1 000 – 2 000 kg	Moving pallets between warehouse and production areas, supplying production lines, JIT logistics. Typical industries: automotive, FMCG, manufacturing.
Pallet – Lift to Rack	FMR – F3 / F4 / F5	1 500 – 2 000 kg	Placing and retrieving pallets from racks; automated warehouse replenishment. Typical industries: automotive, manufacturing, heavy industry.
Shelf – Transfer to the Operator	LMR – Q3 / Q7	600 – 1 500 kg*	Goods-to-Person – moving racks directly to the order-picking station. Typical industries: e-commerce, fulfillment, electronics / 3C.
Crate / Carton	CTU – TP1	up to 50 kg / crate	Automated picking and transport of containers; high storage density. Typical industries: e-commerce, fulfillment, FMCG.
Pallet / Load on a Pallet	LMR – QF	up to 1 000 pcs	Moving pallets and cargo between workstations; frequent short-distance trips. Typical industries: electronics / 3C, manufacturing.
KLT boxes / crates / cartons – high-density storage	STU + Q1P / conveyors	by crate type	Automated storage and retrieval of containers from racks, utilization of warehouse heights up to 12 m, Goods-to-Person order picking. Typical industries: e-commerce, fulfillment, manufacturing, distribution centers.

* depending on the specific model configuration

ROBOT NAVIGATION

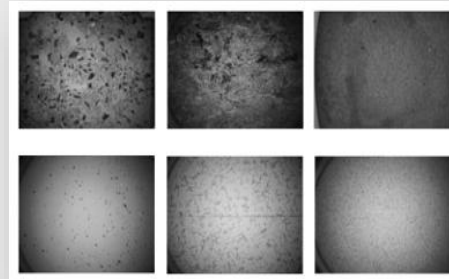
- The ability to combine multiple types of navigation



FLOOR LABELS WITH QR CODES

QR

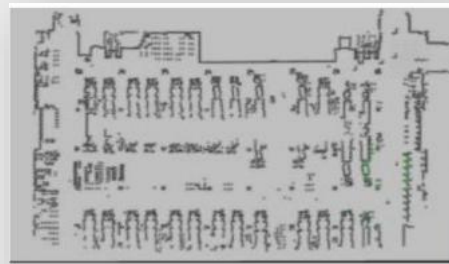
Scanning QR codes with the bottom-mounted camera, which are placed at least every 4.5 meters; 75% of the codes need to be scanned for the system to function



DETECTION OF PATTERNS ON THE FLOOR

V-SLAM

Visual detection of floor patterns using the robot's bottom-mounted camera with an accuracy of 5 mm. Intended for use only on clean floors with non-repeating patterns



LASER-BASED AUTONOMOUS NAVIGATION

L-SLAM

Scanning the area with a laser sensor and comparing it to a map to calculate the current position in space. For proper operation, high-quality reference points marked with reflective stickers are required

**RESULTS
ACHIEVED BY
COMPANIES
AFTER
IMPLEMENTING
AMR**

- 40 %

manual handling of materials
and components

+ 30 %

Higher worker productivity
thanks to automation

+ 100 %

Operational availability — the
robots operate reliably 24/7

*Average values based on M2M Solutions' AMR
deployments to date.*

PROVEN ON AN INDUSTRIAL SCALE

M2M Solutions' largest project to date as an AMR and HIK integrator in Europe.

LUNYS

A leading supplier of fresh food on the Slovak market

- **The Situation Before AMR** — Manually Managed Processes Slowed Down the Movement of Goods
- **High error rates and limited capacity** — only 14 loading gates
- A growing volume of orders that was becoming increasingly difficult to manage manually

- **New warehouse** — 2,500 m² of dark storage space, approximately 33,300 storage locations
- **Deployment of AMRs** — **more than 90 autonomous mobile robots** — CTUs, mini CTUs, LMRs, and tower stations
- Integration with the warehouse management system and the transportation logistics system

HOW LUNYS OPERATIONS HAVE CHANGED SINCE THE IMPLEMENTATION OF AMR

Indicator	Before AMR	After AMR
Picking Throughput	1,000 crates per hour	3,000 crates per hour
Error Rate	High (human factor)	0,05 %
Loading Gates / Crates (2:00 a.m.–7:00 a.m.)	14 gates · 10,000 pcs	20 gates · 18,000 pcs
Vehicle Loading Time	90 minutes	45 minutes

LUNYS RESULTS

30 600

storage locations

15–18 k.

unloaded crates
(2:00 a.m.–7:00 a.m.)

45 min

reducing loading time from
90 minutes

3,5 years

Payback period

PROVEN IN LOGISTICS AND MANUFACTURING FACILITIES



Magna is one of the world's largest suppliers to the automotive industry and a trusted partner to automakers in the industry's most important markets—North America, Europe, and China.



Wistron is a leading global electronics manufacturer and technology services provider. It designs, develops, manufactures, and services products for other global brands, which then sell them under their own brand names.

Other companies we help manage logistics for:



01.

Traffic Analysis

- mapping of material flow
- warehouse and production layout, inputs, and users
- integration requirements

02.

Proposed Solution and Pilot

- Selection of AMR type (CTU, LMR, FMR, CMR), proposal for integration with WMS and ERP, pilot test directly at your facility

03.

Testing and Deployment

- testing scenarios in operation
- making adjustments based on feedback
- training staff

04.

Support and Service

- team training
- full deployment
- maintenance, monitoring, expansion

FROM DECISION TO AMR DEPLOYMENT

The timeline varies depending on the scope of operations, the number of robots, and the complexity of integration with existing systems.



 Countries with Implemented Solutions

AMR AS PART OF A SYSTEM, NOT AS ISOLATED DEVICES

M2M Solutions is a Slovak integrator of AMR robots for Central Europe. We develop our own software to control them and deploy the robots as part of operations, not as standalone devices.

We integrate the robots with WMS, ERP, and TLS systems. This allows them to work in harmony with warehouse, production, and transportation operations—enabling companies to automate their internal logistics without disrupting existing processes.

- 13 countries using our solutions
- Solutions for the entire logistics process—from entry into the facility to reporting

01.



CONSULTATION



We will prepare a proposed solution, the scope of the pilot project, and the next steps.

02.



SOLUTION DESIGN



Once we receive your order, we will confirm the plan together and prepare the project.

03.



DEPLOYMENT



System implementation, configuration, integration, and training for your team.

04.



RESULTS

The system is starting to deliver measurable results – we're saving both time and money and increasing efficiency.

M2M
SOLUTIONS

CHECK OUT THE AMR LIVE IN
OUR SHOWROOM

Let's arrange a short consultation or
showroom visit in Žilina.

