



rovenma
Smart Technology

MARKOMAT

REFRIGERATED
LOCKER

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ROVENMA



Our Vision

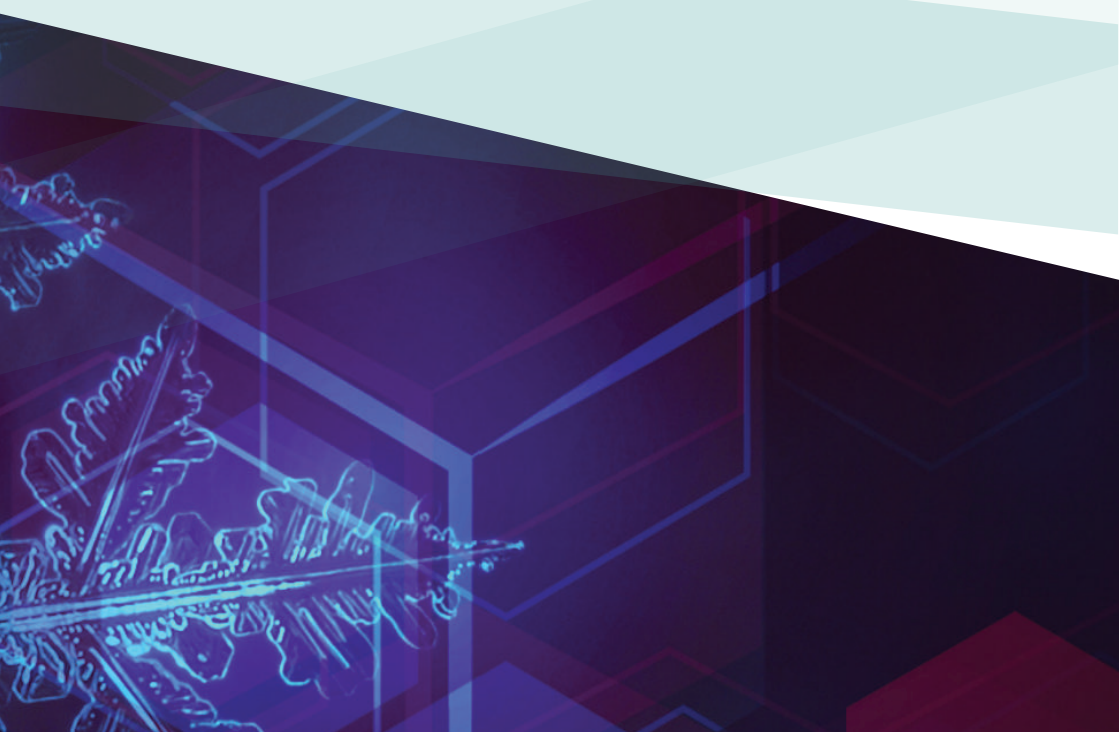
To be a highly competitive technological company with original, value-added and national products, that follows updated and developing technology.

Our Mission

To develop technology, goods and services at world standard which make difference, reduce foreign dependency and user-friendly; with our experienced, dynamic, young team that have R&D, design and innovation capabilities.

Our Quality Policy

It is never enough for us that a product only works. Performance, quality, reliability, price and security are our most important design principles.



R&D, Engineering and Design

Our R&D and design headquarters are located in Hacettepe Teknokent, a major technology hub in Ankara, Turkey.

R&D and design team has the following technical capabilities;

- 
- High Speed PCB Design
 - Embedded Software Design
 - FBGA/ASIC Digital
 - Mechanical Analysis
 - Mechanical Design
 - Server Software Development
 - PC Software Development
 - Mobile Software Development
 - Numerical Analysis
 - Industrial Design
 - Industrial Automation
 - Robotics
 - Cloud-Based Big Data
 - 3D Design
 - Technical Consulting



Manufacturing and Installation

Rovenma is, in addition to its R&D capabilities, a hands-on manufacturing company. Our 3000m² factory is located in one of the most important production areas in Ankara, Turkey. Most of the production is carried in-house by our expert staff and high technology manufacturing equipment.

In addition to the production capabilities, the Rovenma team has competence in installation and maintenance-repair services all around the world.

- **PCB Production**
- **Electronic PCB Assembly**
- **Cable Harness Production**
- **Mechanical Assembly**
- **Electronics Assembly**
- **Metal Injection**
- **Plastic Injection**
- **Casting**
- **Sheet Metal Cutting**
- **Sheet Metal Bending**
- **Precision Machining**
- **Machining**
- **3D Printer**
- **Industrial Painting**
- **Shipping**
- **Infrastructure Works**
- **Data and Energy Operations**
- **Assembly**
- **Start-up (Final Test)**
- **Maintenance and Repair Services**

Fundamental Systems

Smart parcel lockers which we develop all components as Rovenma, is a whole of systems provide the users to take their delivery 24/7 safely.

Temperature-controlled smart parcel locker, Markomat, functions as a smart parcel locker and in addition to this it increases the range of products through heat technology system.



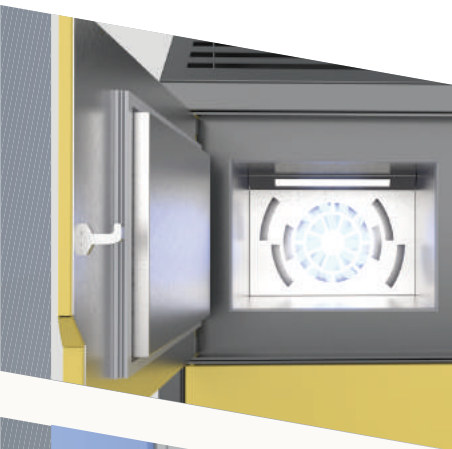
Markomat has distinctive features:

- Modular Design
- Lock Technology
- Module Size
- Maintainability

All components mentioned is designed and produced by Rovenma.

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Refrigerated Locker



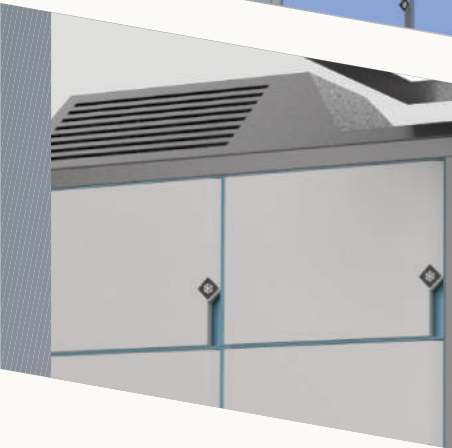
In today's technology, by using e-commerce web sites, it gets easier to reach products needed.

In addition to temperature-sensitive frozen foods, medical, chemical and cosmetic products are transmitted to the user via e-commerce websites.



Markomat provides to control the heat of products which are hot and cold sensitive.

Markomat enables the users to receive orders both as fresh and usable and as fast and easy.



Receive SMS



Enter Password
or show QR Code



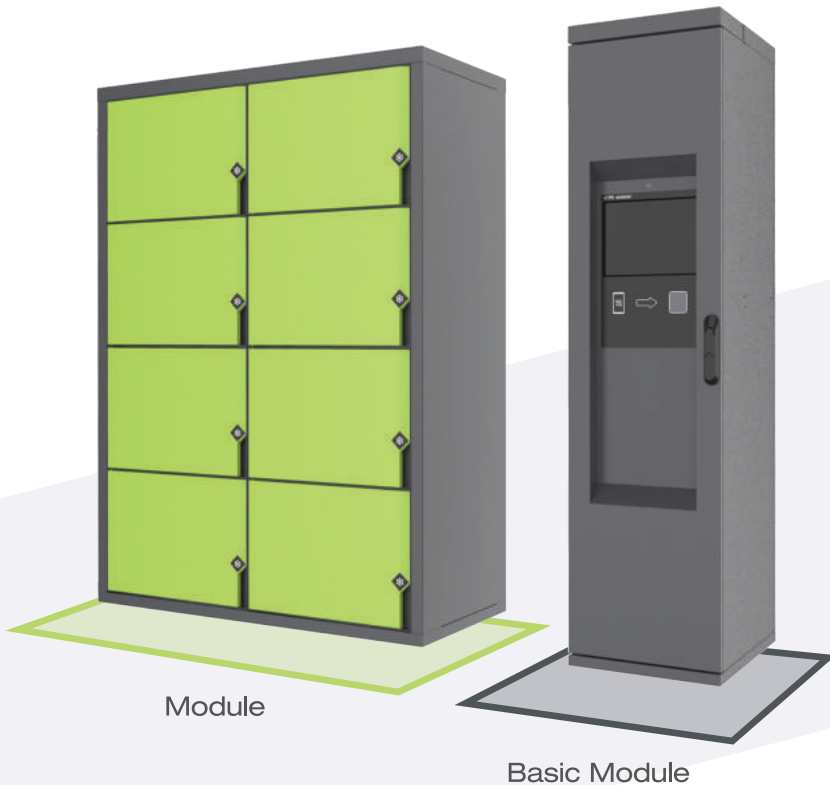
Take Delivery

Modular Structure

Markomat has a modular structure.

Modules can be used with several need-based configurations.

For use, basic module is compulsory, other modules can vary according to usage needs.

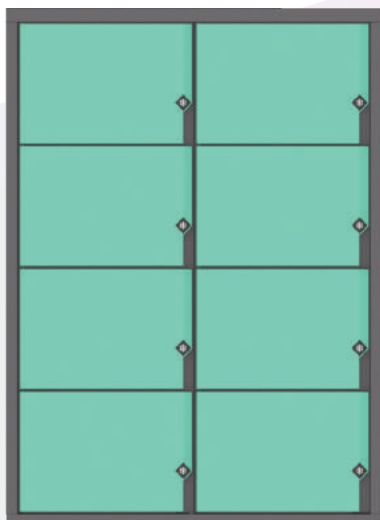


• Configurations of Installation



Module Sizes

Cooling Compartment



Module

Sun Visor



Main Module

Main Module Size: 470 x 600 x 1995 mm

Module Size: 1405 x 600 x 2265 mm

Size of Interior Compartment: 420 x 284 x 305 mm

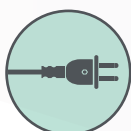
Cooling Compartments: 1030 x 600 x 280 mm

Size of Sun Visor: 970 x 640 x 210 mm (including antenna)
970 x 640 x 175 mm (excluding antenna)

External Size: 3280 x 1040 x 2265 mm (including sun visor)
3280 x 600 x 2265 mm (excluding sun visor)



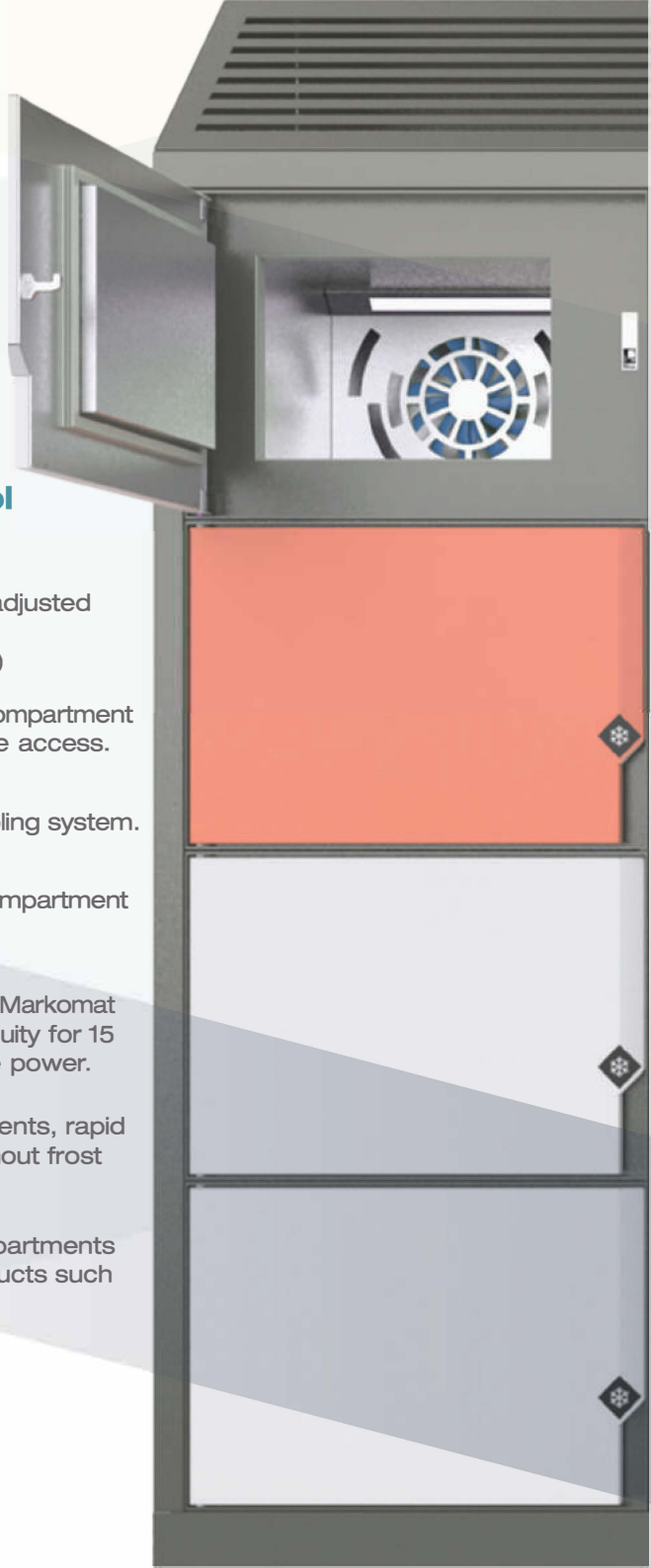
Wired / Wireless
Internet infrastructure



Operating with
mains electricity

Features of Temperature Control

- ❄ Each compartment can be adjusted at different temperatures.
(Between -10 °C and +20 °C)
- ❄ The temperature of interior compartment can be arranged with remote access.
- ❄ Markomat has the 3-kW cooling system.
- ❄ Heat fluctuation of interior compartment is mostly between ± 2 °C.
- ❄ In the case of power outage, Markomat provides heat-control continuity for 15 minutes with uninterruptable power.
- ❄ For instant cooling requirements, rapid cooling system is found without frost deposit.
- ❄ Markomat has cooling compartments suitable for contact for products such as food



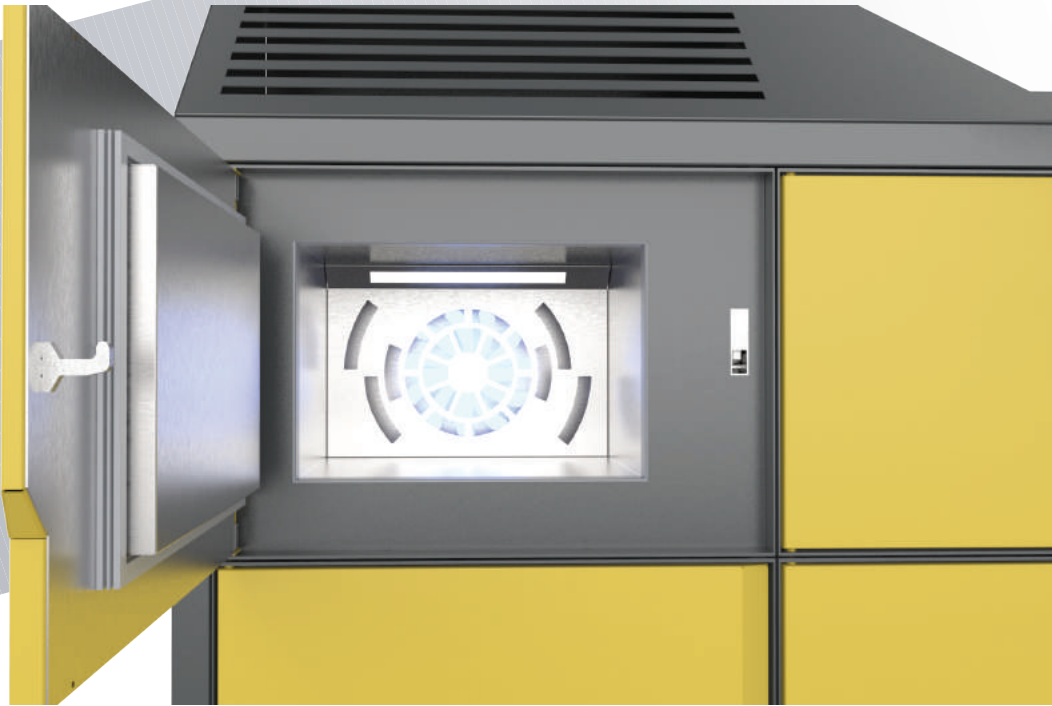
Technical Specifications

TOP CATEGORY	CATEGORY	FEATURE	STANDARD/ OPTIONAL
HMI	LCD DISPLAY	15" horizontal LCD& capacitive touch screen	S
		32" vertical LCD& vertical touch screen	O
		Automatic LCD screen brightness adjustment for energy efficiency and low light conditions	O
	AUDIO CONTROL	Voice level adjusted by noise	S
	FRONTAL CAMERA	Frontal webcam for recipient's snapshot	S
		The receiver's snapshot is recognized via image processing. In this way, the user's credentials are automatically entered into the system	S
	BARCODE READER	1D&2D Barcode reader: QR Code, Code 39/128, EAN 13/128 and etc.	S
	CARD READER	Mifare, chip card reader and RF card reader	S
	CREDIT CARD READER	Provides easy to pay by credit card reader with magnetic and chip features	O
	BLUETOOTH	Bluetooth support to connect Markomat with cellphones	O
	COMPUTER	Fan-free and aluminum cooled industrial computer	S
HEAT MANAGEMENT	AIR CONDITIONING	Active cooler A/C, heating 750W power	S
		Configuration of the fan and compressors for the energy efficiency	O
COOLING MANAGEMENT	WATER-COOLING SYSTEM	3 kW cooling system	S
	DIFFERENT COMPARTMENTS, DIFFERENT TEMPERATURE	0°C, +4 °C and +10 °C cooling	S
ELECTRIC MANAGEMENT	UPS	In the case of power cut, 230V AC produces energy with 15 minutes power to provide continous operation of the device	S
		In the case of power cut, 230V AC produces energy with 15 minutes power to provide continous operation of the device including cooling system	O
		In the case of power cut, 230V AC produces energy with 1 hour power to provide continous operation of the device including cooling system.	O
PRINTER	OPTIONS	With 8 cm width thermal receipt printer, desired printout can be taken	O
		8 cm width thermal label printer feature	O
SENSOR	LIGHT/MOUMENT/ TEMPERATURE/ HUMIDITY/SAFETY	Easy operating environment and high safety are provided with multiple sensors	O
MAINTENANCE	MAINTENANCE TYPE	With high security keys, it provides maintenance from back side	S
		While maintenance, deliveries in the components should be removed and components should open	S

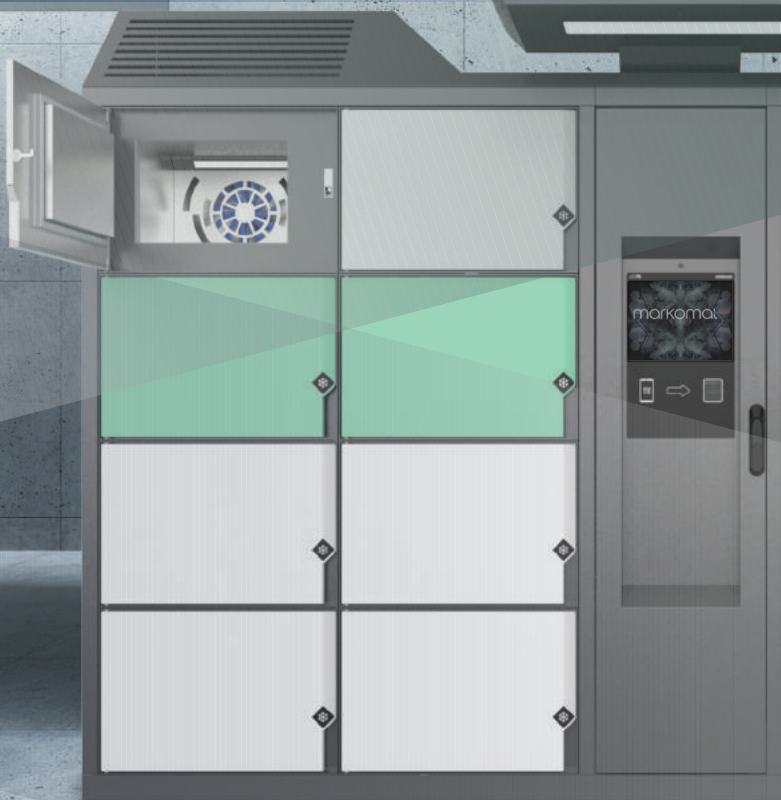
GENERAL SECURITY	SECURITY CAMERA	2 Mp/ night vision motion detection security camera, outdoor IP 67 with sound recording	S
	NVR	3 Port 1 TB or more video, outdoor NVR	S
	LOCK SYSTEM	Electromechanical solenoid actuator with sensors lock system	S
	COMPARTMENT MARKER	RGB LED, Buzzer.	S
	IN-COMPARTMENT PACKAGE DETECTION	In-compartment delivery recognition, parcels which are thicker than 1 cm can be recognized	S
		Compartment Control System	S
SIZE OF DEVICE AND COMPARTMENTS	OUTER DIMENSIONS	3280x1040x2265 mm (including sun visor) 3280x600x2265 mm (excluding sun visor)	S
	DIMENSIONS OF MODULES	1410x600x2265 mm	S
	SET TYPE	2 modules + 1 main module	O
	NUMBER OF COMPARTMENT PER MODULE	2x4 piece	S
	INTERIOR COMPARTMENT DIMENSION	420x284x305 mm	S
	MAIN MODULE	470x600x2010mm	S
	SUN VISOR DIMENSIONS	970x640x175 (excluding antennas) 970x640x210 mm (including antennas)	S
PAYMENT	PAYMENT	Modular accesories suitable for all types of payment	O
CONNECTION PROTOCOLS	CONNECTION	3G / 4G / Ethernet	S
PHYSICAL SAFETY METHOD	SECURITY TYPE	Compartment and door sensor	S
		Voice, visual, server robbery alarm	S
PRECAUTIONS FOR ENVIRONMENTAL EFFECTS AND VANDALISM	PRECAUTION TYPE	5 MOHS screen hardness	S
		Impact resistant steel metal body	O
		High quality paint resistant to environmental factors	O
		-20 to +60 degrees operating temperature	S
		-10 to +50 degrees storage temperature	S
		Relative humidity resistance from 10% to 95%	S
		Resistance to rain and dust	O
		Waterproof and dustproof locks	O
		Maximum 75 DB sound level	S
		Fire resistant body	S
		Stainless steel body that resistant to harsh climate conditions	S
		High/ low temperature-resistant paint	S

Superior Features

- Heat sensors that detect heat of interior compartment and enable the system to interfere with remote access and continuous notifications of sensors via cloud system
- Automatic close down of compartment door to avoid waste of energy and security breaches
- The existing temperature of the products in the compartment can be changed as any desired temperature with the optimization and sensor system of Markomat. Minimizing the spoilage risk of products that result from sudden heat changes
- For the possible product degradations, there are waste management system and compartment cleaning system



- Adjustment interior compartment heat with perceiving outside heat
- Ensuring that residual liquids are discharged from the residual liquid reservoir in the refrigerant modules in a way that will not harm the environment and health.
- Sensor system that determines the contamination of interior compartment
- Special door design to provide heat insulation of interior compartment



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Refrigerated Locker



- **Smart Energy Management**

Ambient light level and intensity are automatically adjusted with smart energy management.

- **Environmental Awareness**

The volume is optimized according to the ambient volume.

- **Security**

With frontal camera image, possible interventions to the device is detected.

- **Environmental Resistance**

High-temperature and high-humidity sensitive air conditioning and intelligent control system keep the machine running or automatic shutdown.

- **Smart Sensors**

Markomat constantly monitors the surroundings with sensors that detect different situations, so that necessary precautions are taken.

- **Easy Maintenance**

The modules can be maintained from the front of the system. This eliminates the problem of the need of providing adequate back spacing for servicing.

- **Quality Material**

All metal and plastic parts are made of the highest quality material and are resistant to vandalism and environmental conditions.



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Reference Project

Kargomat 7/24 Project

The project idea came from various problems that were experienced in the last-mile delivery system of PTT.

- Absence of the customer in the target location,
- Non-existing addresses,
- Multiple tenants at an address (company locations),
- Delivery to an incorrect customer,
- Proper location problems in e-commerce etc.

By integrating smart parcel lockers to the last-mile delivery services, solutions to all of these problems are provided to customers. PTT Kargomat 24/7 provides the users to take their delivery from smart parcel locker at any time of the day without needing to wait at their address.

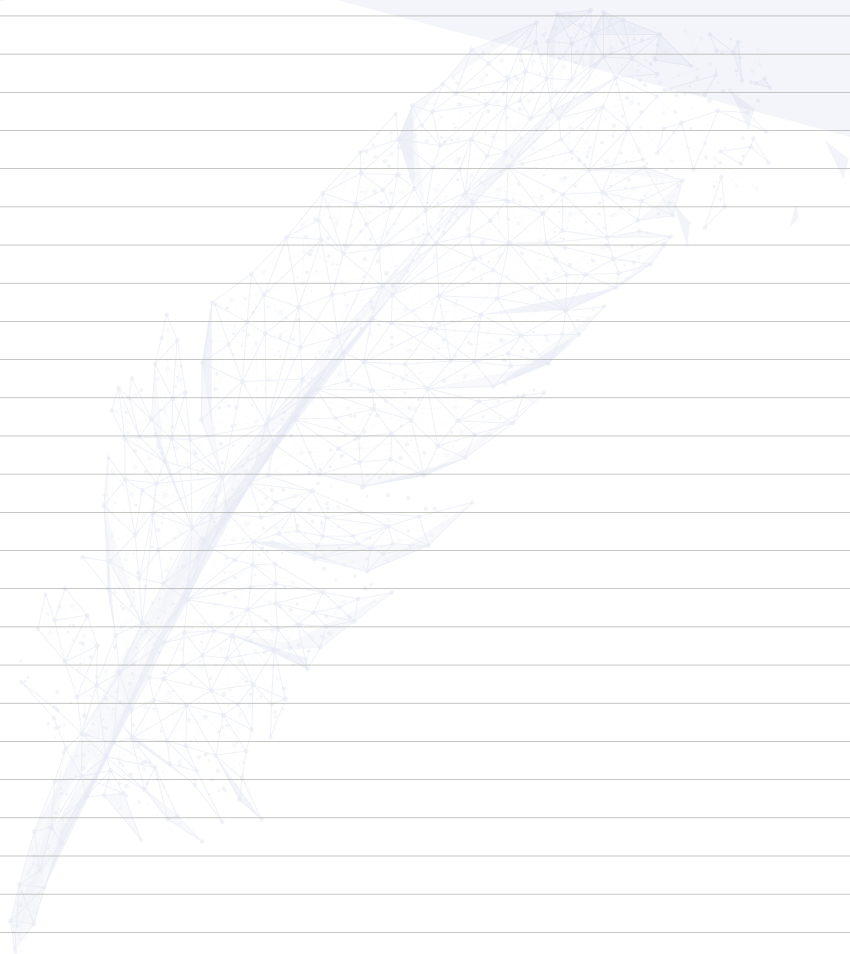
In addition to this, because of re-delivery prevention, energy efficiency of postal delivery processes is increased.

In 2018, while 100 Kargomat serve, until 2019 July 400 Kargomat are going to serve.

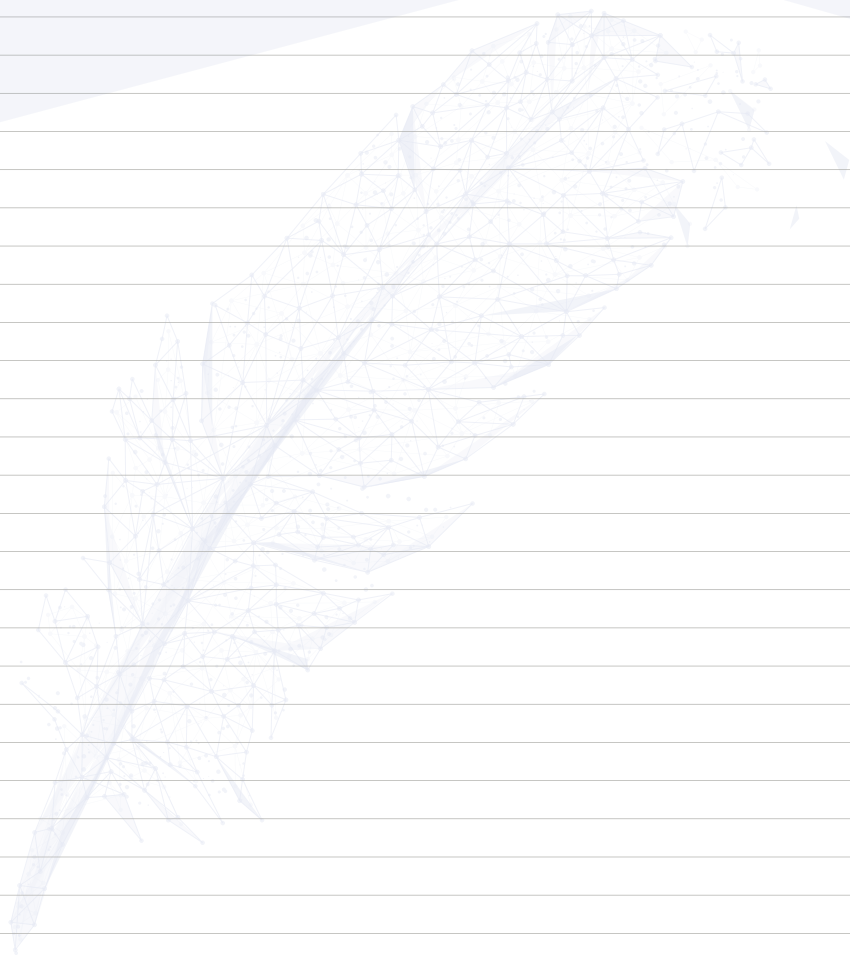
For current Kargomat 24/7 locations: enyakinptt.ptt.gov.tr



Notes:



Notes:



REFERENCES



MEMBERSHIPS



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