



Mappost

Customized route and resource optimization solutions

Advanced Waste Management Route and Resource Optimization with Mappost

Tehnoeko Conference

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WM Trends from the New Nordics



From a policy perspective

- The Nordic countries have set ambitious targets to reduce waste generation and **increase recycling rates**
- Implementing extended **producer responsibility schemes** to ensure that manufacturers take responsibility for their products' end-of-life management (e.g. deposit refund systems and their management)
- Focus on implementing **circular economy principles** to reduce waste and promote the efficient use of resources



WM Trends from the New Nordics



From a consumer perspective

- **Pay-as-you-throw systems:** households pay for the amount of waste they generate
- **Separate waste** collection
- **Transparency, information availability online:** manage their waste services online or through mobile apps, such as requesting a bulky waste collection or reporting a missed collection, and accessible information
- Need for **efficient and reliable** service
- Request **last-minute** changes, e.g. «empty tomorrow for me»

Other trends

- **IoT devices:** container fullness sensors
- **RFID** identification
- **Underground containers**
- Development of cities, urbanization
- **Changing service rights**, new regions to collect waste from: how to collect waste efficiently from the very first day of operations in a new territory?
- Cost increase makes it economically viable to invest in **advanced technology**
- **Sudden changes** and last-moment demand, e.g. previous evening request to "please empty tomorrow for me"



What does it mean for waste management providers & municipalities?

Provide **service quality** for citizens: reliable service, fast reaction, feedback on collection status

Maintain **low cost** levels

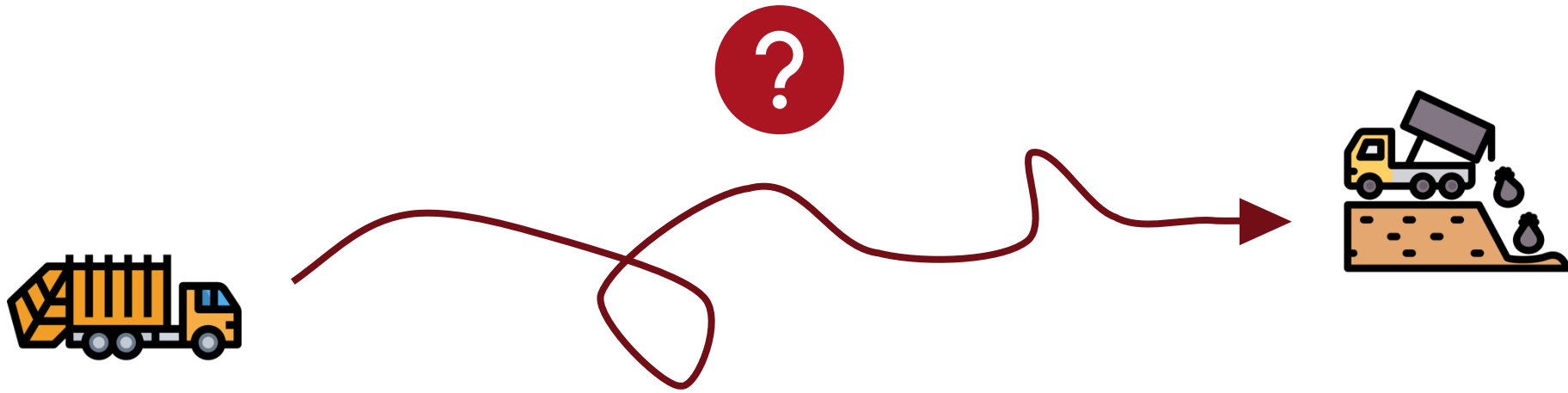
Data in **digital** format

Online **connectivity**

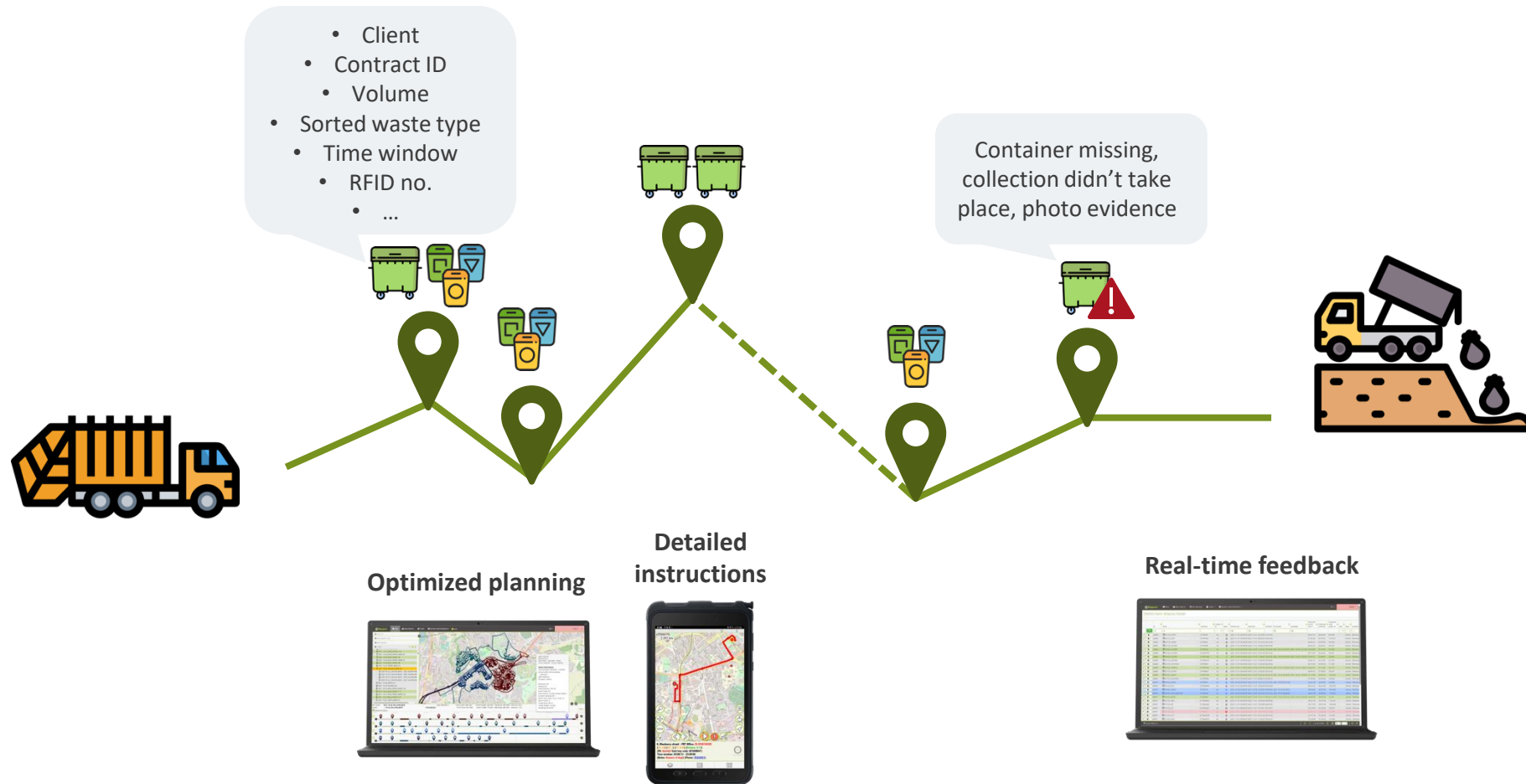
Full **control and traceability** over waste collection process: digital process and infrastructure



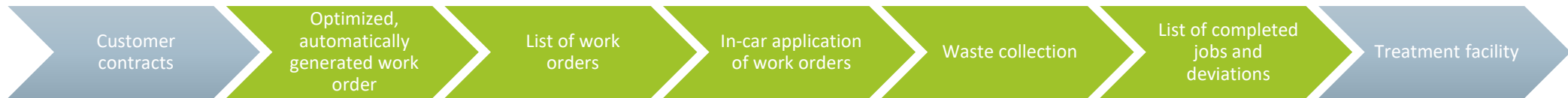
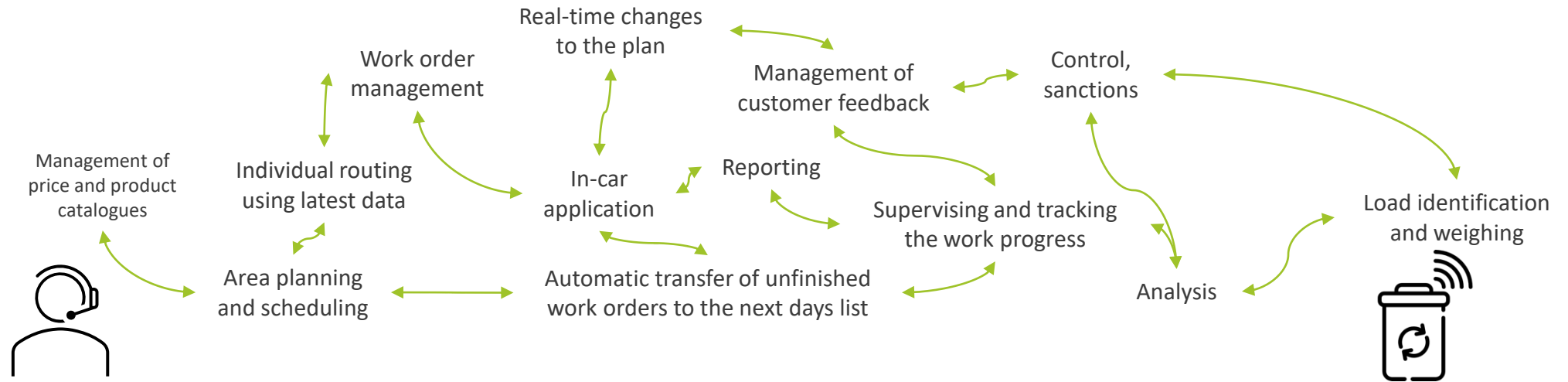
Full control and traceability over waste collection process



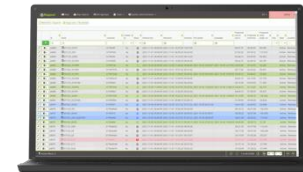
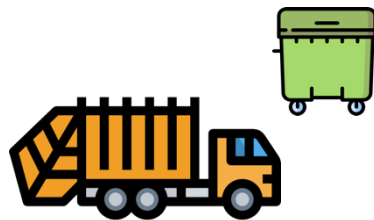
Full control and traceability over waste collection process



Software functions needed for waste logistics

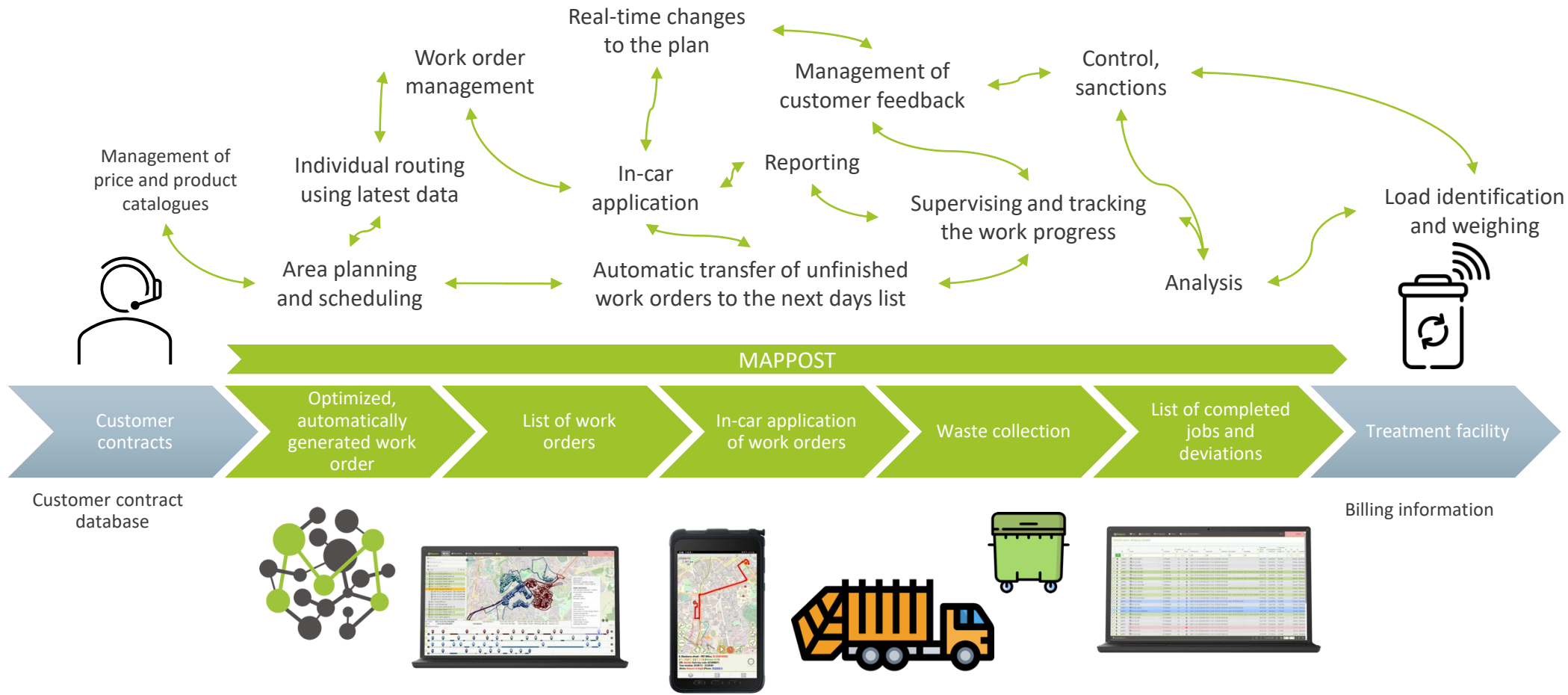


Customer contract database



Billing information

Software functions needed for waste logistics



About Mappost



THE PROBLEM

Vehicles	Objects	Obj./route	Possible dispatch scenarios
1	5	5	120
1	10	10	3 628 800
1	25	25	$\approx 1.55 \times 10^{25}$
5	50	10	$\approx 1.52 \times 10^{65}$
10	250	25	$\approx 3.23 \times 10^{493}$
15	4500	300	$\approx 3.41 \times 10^{14487} \rightarrow \infty$

*for reference: stars in the Universe $\approx 10^{23}$

+ Mappost plans routes based on vehicle profiles and load limitations, service time windows, road categories and their mutual priorities, driving speed profiles, regional and legislative restrictions & many other essential factors



- **Mappost**, a cloud-based SaaS solution, uses powerful algorithms to solve **high complexity optimization problems** that contain multitude of changing real-life constraints in various business applications
- Provides clients with complete **process control and transparency**, significant **cost reductions**, reduced **CO₂** emissions, ability to react to rapidly changing business process environment
- An outstanding **team of industry experts** with competencies in business process analysis, system analysis, IT development and testing, mathematics, statistics, mapping, geography, GIS and ICT
- Based in **Riga, Latvia**

20%

reduction in logistics costs from implementing Mappost logistics optimization system

Construction (bulky) waste



Commercial and industrial waste management

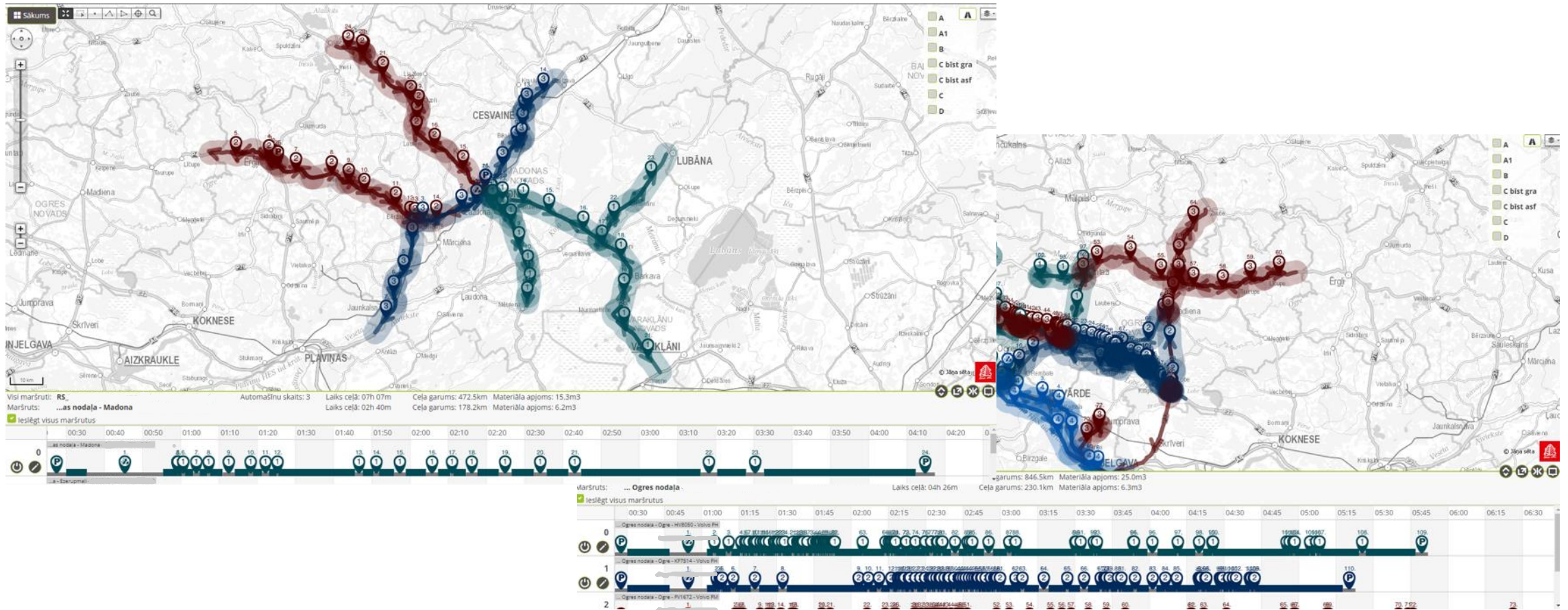
The construction waste sector has a completely different collection and delivery logic, which requires specialized planning algorithms.

With our expertise and experience, we can provide efficient and tailored solutions to construction waste planning optimization.

Road cleaning and maintenance



Road cleaning and maintenance



Other Industries



OTHER INDUSTRIES

- Postal services
- Vending business
- Forestry & Agriculture
- Mining

PROJECTS

- **Country-wide** smart optimization of vending business operations for the largest operator in Baltics, assisting the business in efficiently scaling across Baltic states
- Developed an advanced **timber transportation logistics and optimization solver**, producing optimized work orders on a country scale for 150 timber trucks, >1000 timberyards, >100 clients, 60 assortments, and various other parameters
- Optimizing thousands of deliveries daily of the Latvia's national **postal service** provider
- Experience in pilot projects across **Europe and Asia**



SYSTEMS INTEGRATOR FOR HOLDING
GRAZ WHICH HAS EUR 587 MIL
TURNOVER



EUR 47 MIL TURNOVER
1300 EMPLOYEES



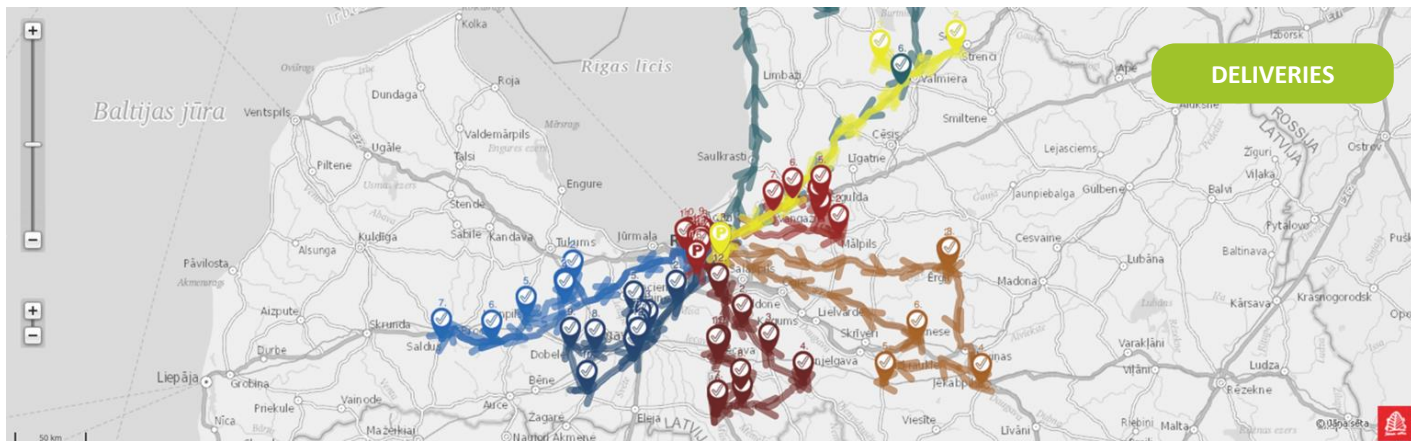
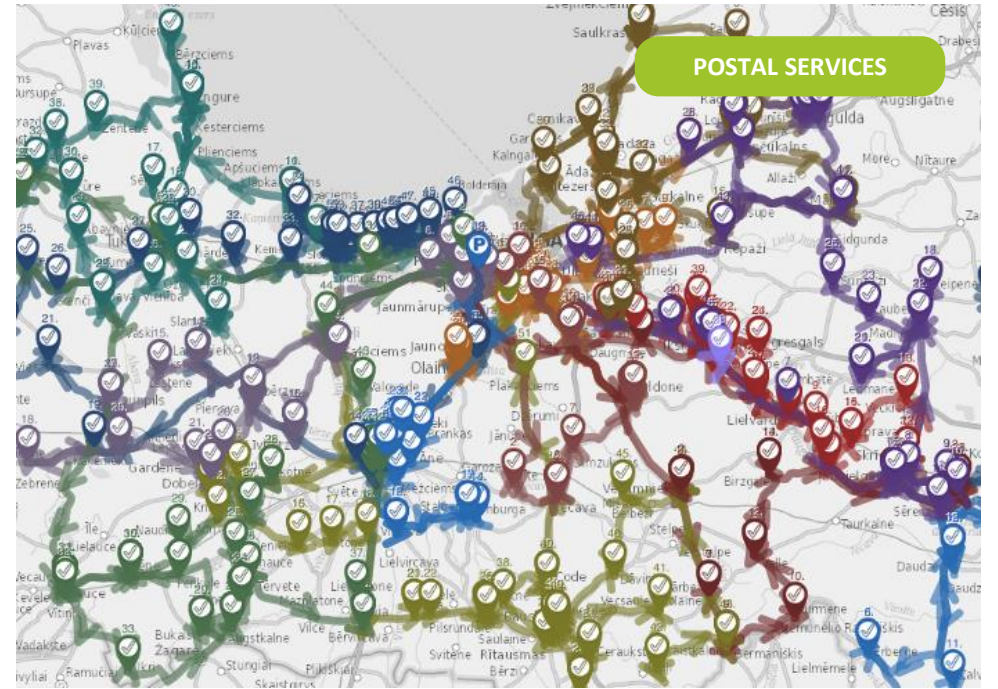
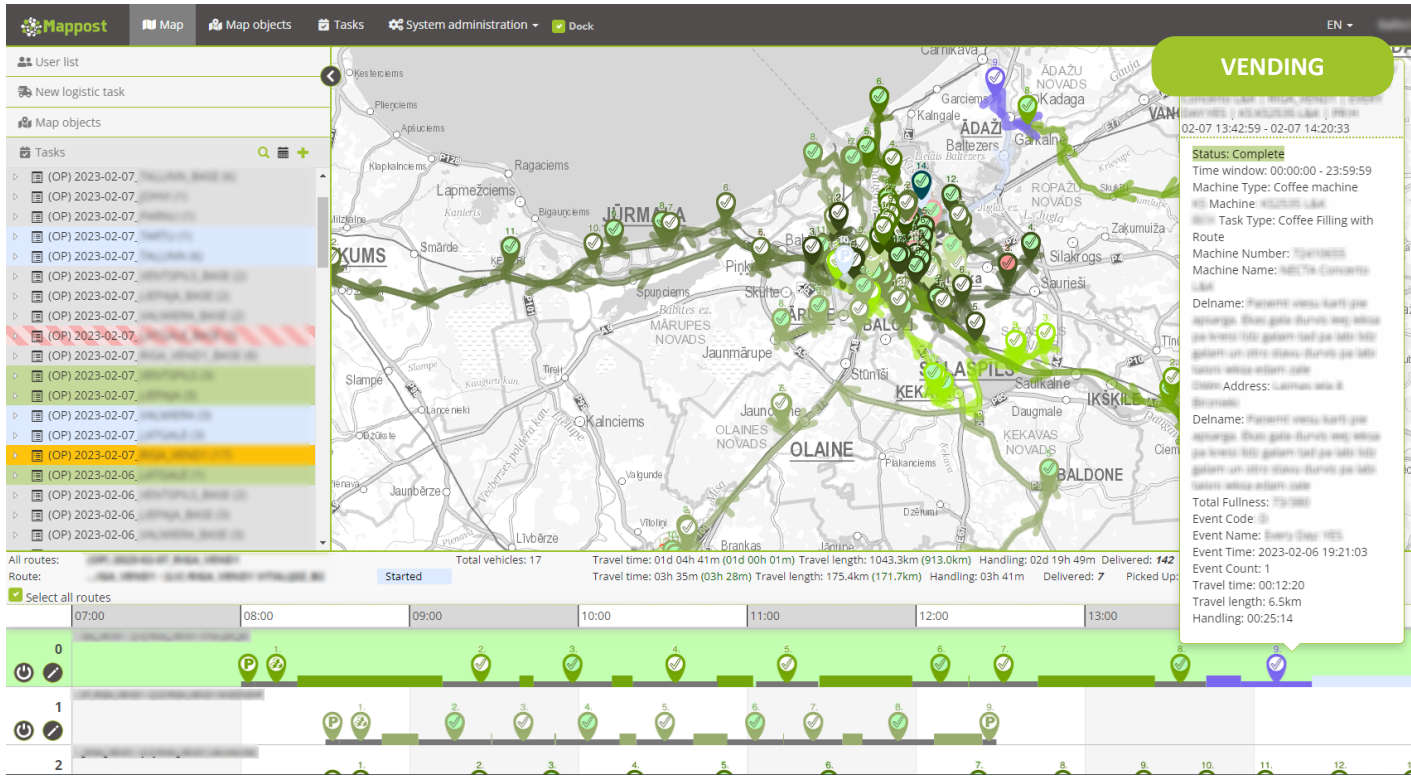
EUR 107 MIL TURNOVER
3300 EMPLOYEES



EUR 350 MIL TURNOVER
1400 EMPLOYEES



EUR 32 MIL TURNOVER
200 EMPLOYEES



What drives the need for changes?



New government regulations and EU legislation



Customer demands and expectations for high-quality and real-time waste management services



Emphasis on waste separation and recycling



What drives the need for changes?



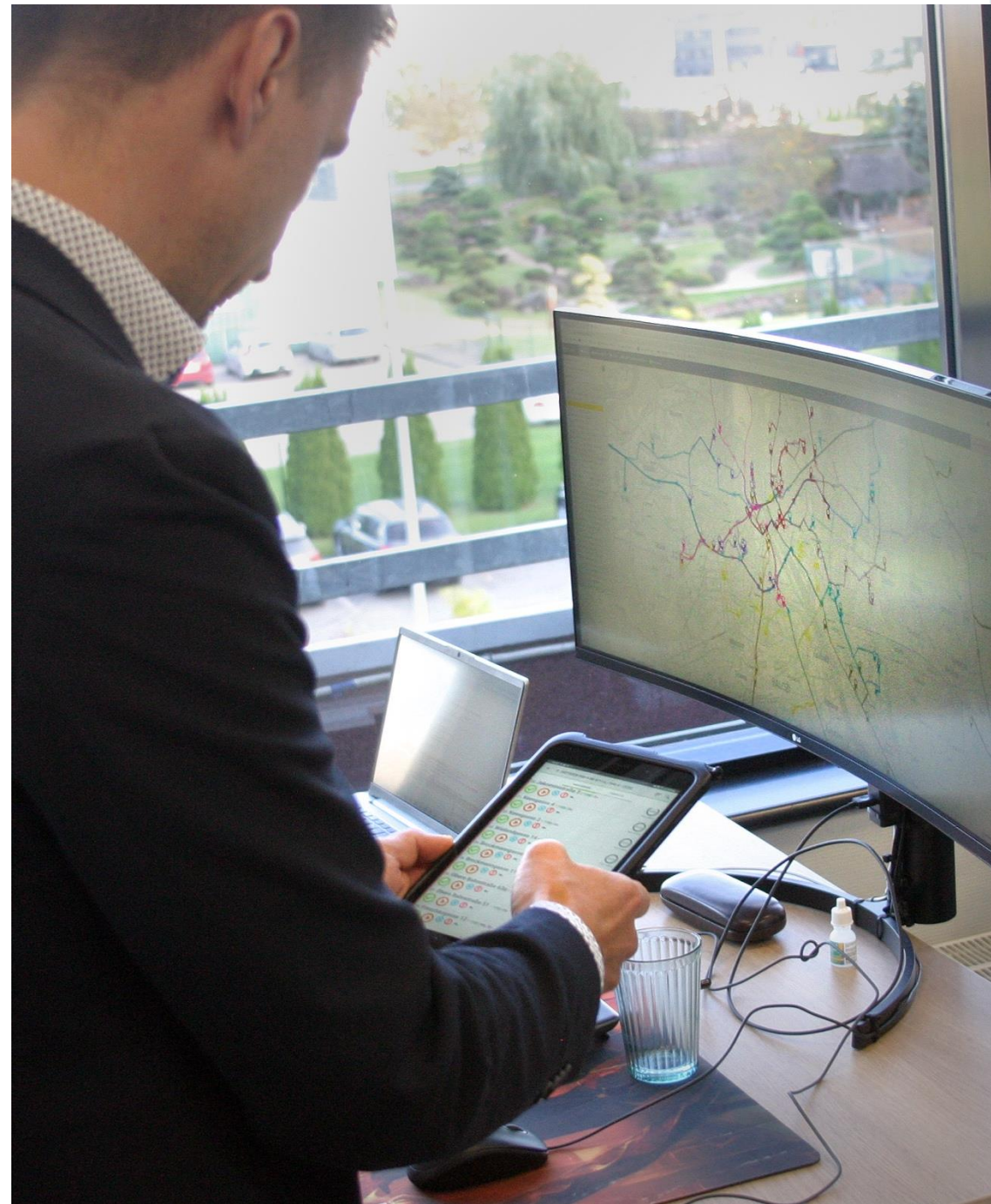
Necessity of real-time reporting to increase service quality



Pricing and customer service level agreements (SLAs)



Growth of new regions and urban areas



What drives the need for changes?



Modernization of waste management fleet and fuel sources



Pressure from customer satisfaction and public demand for sustainable waste management practices



Expert human resource shortage, leading to reliance on experienced industry veterans



What drives the need for changes?



Need to shift from infrequent, fixed waste collection schedules to more complex and efficient systems



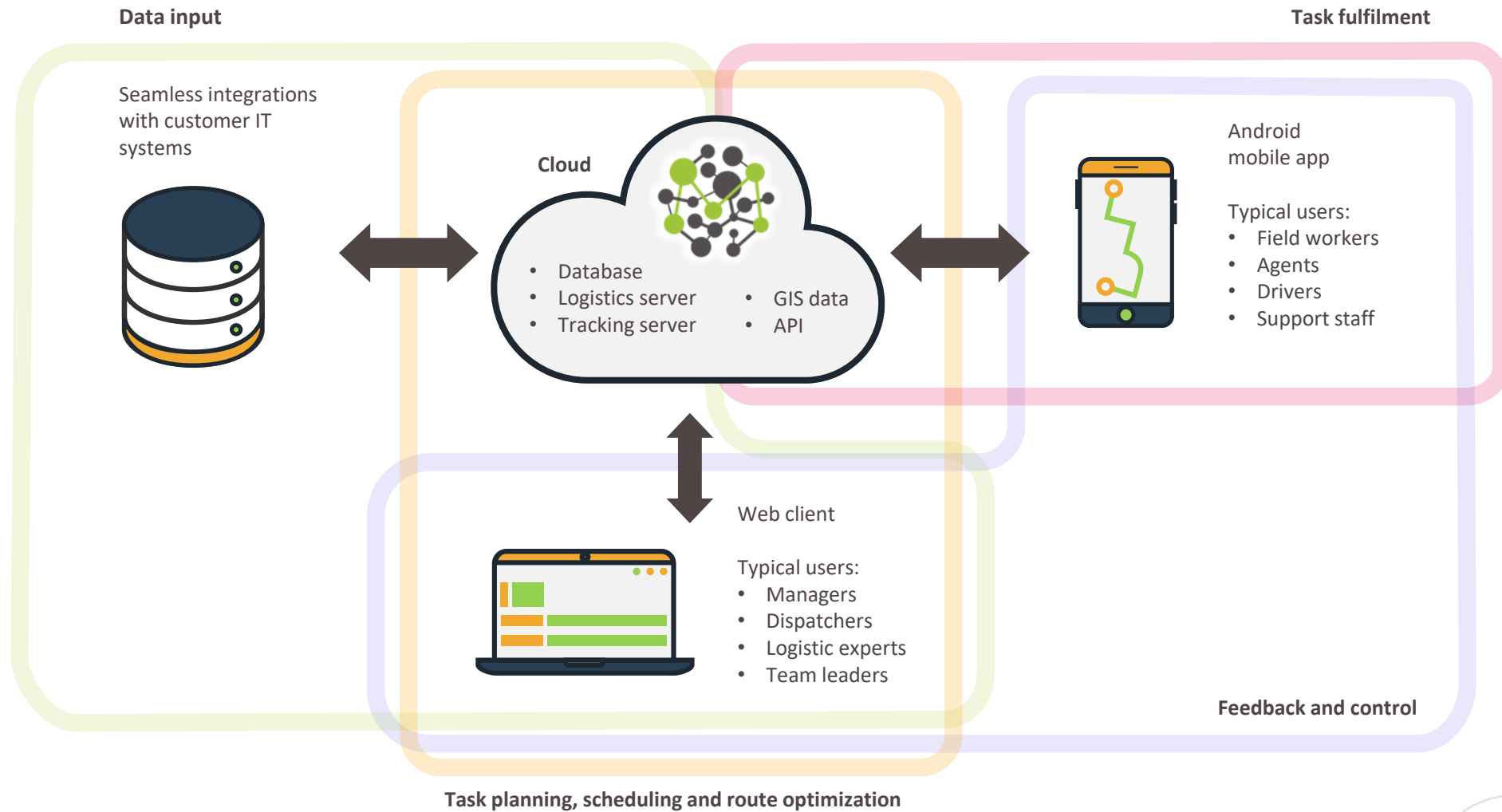
Cost constraints that force optimization of waste management processes



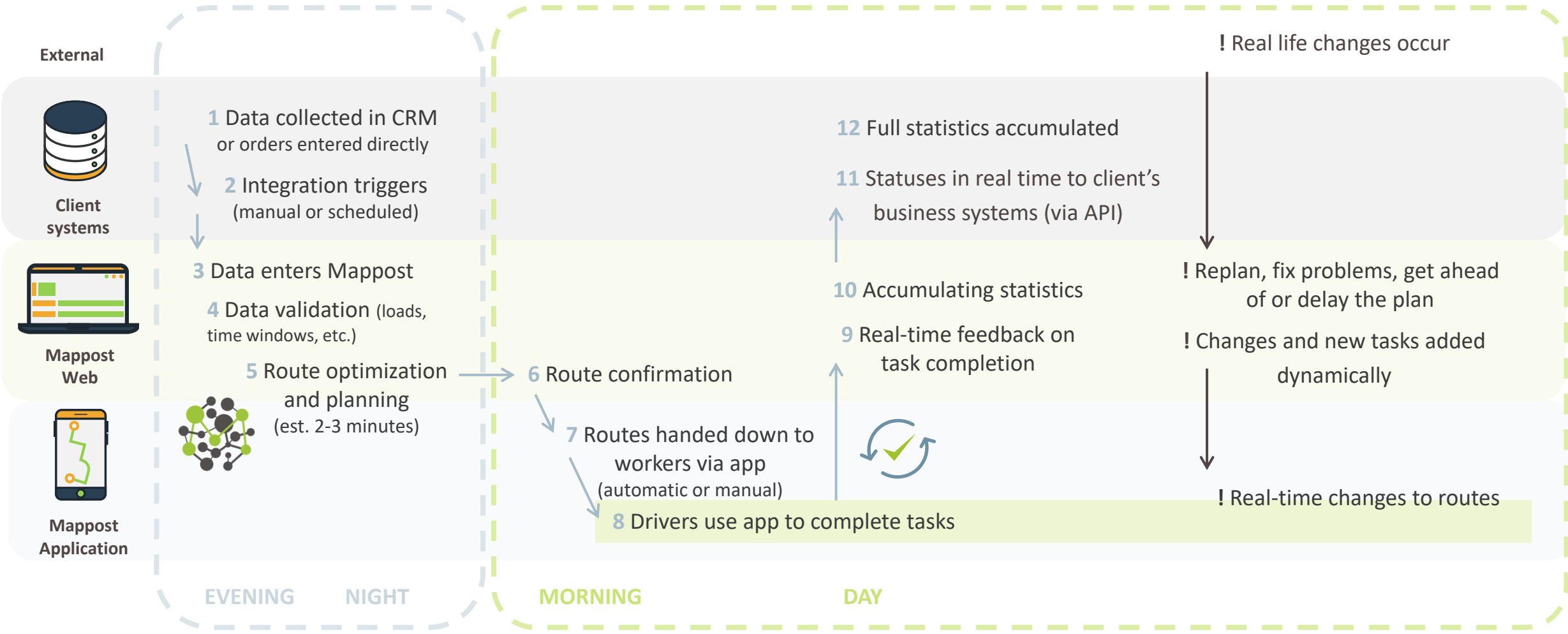
The background of the slide is a complex network diagram. It features a light blue-grey background with a dense web of thin, light grey lines connecting various nodes. Some nodes are represented by small white circles, while others are larger dark grey or black circles. The network structure is irregular and interconnected, suggesting a complex system or data flow. In the center of the slide, there is a white rounded rectangular box with a subtle drop shadow. The text 'How does Mappost help to solve these problems?' is centered within this box in a dark grey, sans-serif font. The overall aesthetic is clean, modern, and technical.

How does Mappost help to solve these problems?

Cloud-Based Solution



Typical Daily Process





Mappost App Features



Android application used by drivers

- Receive geolocated tasks with detailed approach instructions (incl. gate codes and keys, notes, additional volumes to be collected, etc.)
- Record task completion
- Record issues encountered at each collection point with comments and photo evidence (wrong waste sorting, unreachable bin, etc.)
- Record lunch breaks
- Specify the exact bin locations
- In case of unplanned visits to landfills, remaining tasks are automatically reoptimized and reassigned

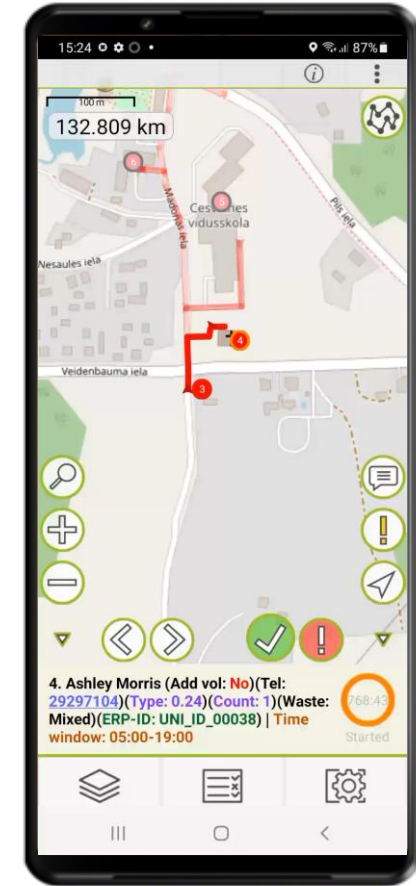




Photo Evidence

When registering a problem in the mobile app, it is possible to add an image as a proof. The image is captured by the camera of the device and is immediately available on the Mappost web platform.



The screenshot shows the Mappost web interface with a task list table. The table has columns for ID, Order, Name, Target ID, Status, Prognosed travel time, Prognosed travel length, km, Files, State, Priority, and Date. A modal window is open on the right, showing a photo of a wooden fence and file information.

ID	Order	Name	Target ID	Status	Prognosed travel time	Prognosed travel length, km	Files	State	Priority	Date
30051534	0	Short example - General Parking	28313363	✓	00:00:00	0		Active		2022
30051535	1	Short example - Anthony Williams	28348472	✓	00:24:46	10.231		Active		2022
30051536	2	Short example - Kimberly Bradshaw	28348883	✓	00:08:15	1.406		Active		2022
30051537	3	Short example - Douglas Robinson	28348829	✓	00:02:59	1.158		Active		2022
30051538	4	Short example - Dennis Castillo	28348445	✓	00:01:44	0.599	Fail	Active		2022
30051539	5	Short example - Samuel Garcia	28348775	⚠	00:03:07	0.999		Active		2022
30051540	6	Short example - Mitchell Black	28348664	✓	00:01:53	0.556		Active		2022
30051541	7	Short example - Jill Carter	28348787	✓	00:00:32	0.116		Active		2022

Modal window details:

- File name: 40355f5e.jpg
- File size: 138 KB
- Buttons: Download, Delete

Weighting & RFID



Weighting and RFID statistics

RFID support: comparing expected and received RFID data to detect discrepancies and alert to any issues, analysis of expected vs received location differences.

Ensures that all waste is collected and transported correctly, reducing the risk of errors and improving overall efficiency.

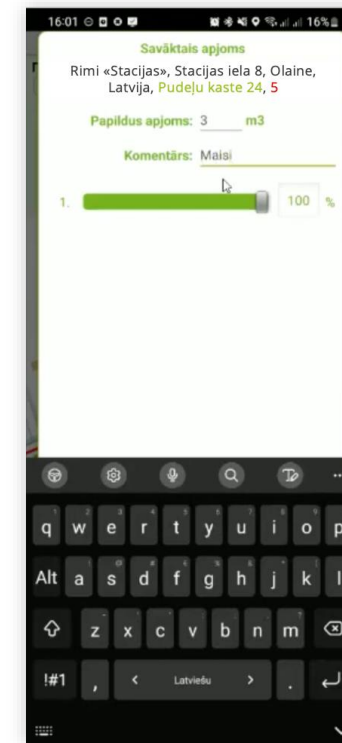
Input of Collected Volume



In each object, the driver can enter the amount collected using the mobile app.

The entered volumes will automatically be available on the Mappost Web platform, where this data can be used for further calculations and purposes (e.g. billing).

Various custom visual solutions for volume input are possible.





Vehicle Capacity Planning

Mappost predicts the need for waste discharge

The distribution of vehicles by routes takes into account the capacity of each vehicle, as well as the expected amount to be collected at each object.

In addition, [Mappost Android application](#) allows drivers to make unplanned visits to landfill in case trucks become full sooner than expected. Mappost records such changes and replans and reassigns routes and remaining objects.



Cesvaine 3 big trucks - Kimberly Reid
07-22 17:01:25 - 07-22 17:04:12

Status: Not started
Time window: 05:00:00 - 19:00:00
Prognosed deviation from the planned:
5h 51m

Arrival within time window:
Yes

Prognosed arrival:
2022-07-22 22:54:14

ERP-CRM_ID: UNI_ID_00164
Address: Augusta Saulieša iela 1, Cesvaine, LV-4871
Container type: 0.24
Count: 1
Waste type: Mixed
Additional volume: Yes
Phone: 29297104
Travel time: 00:01:46
Travel length: 0.9km
Handling: 00:01:01
Car load: 82.48% (98.98)

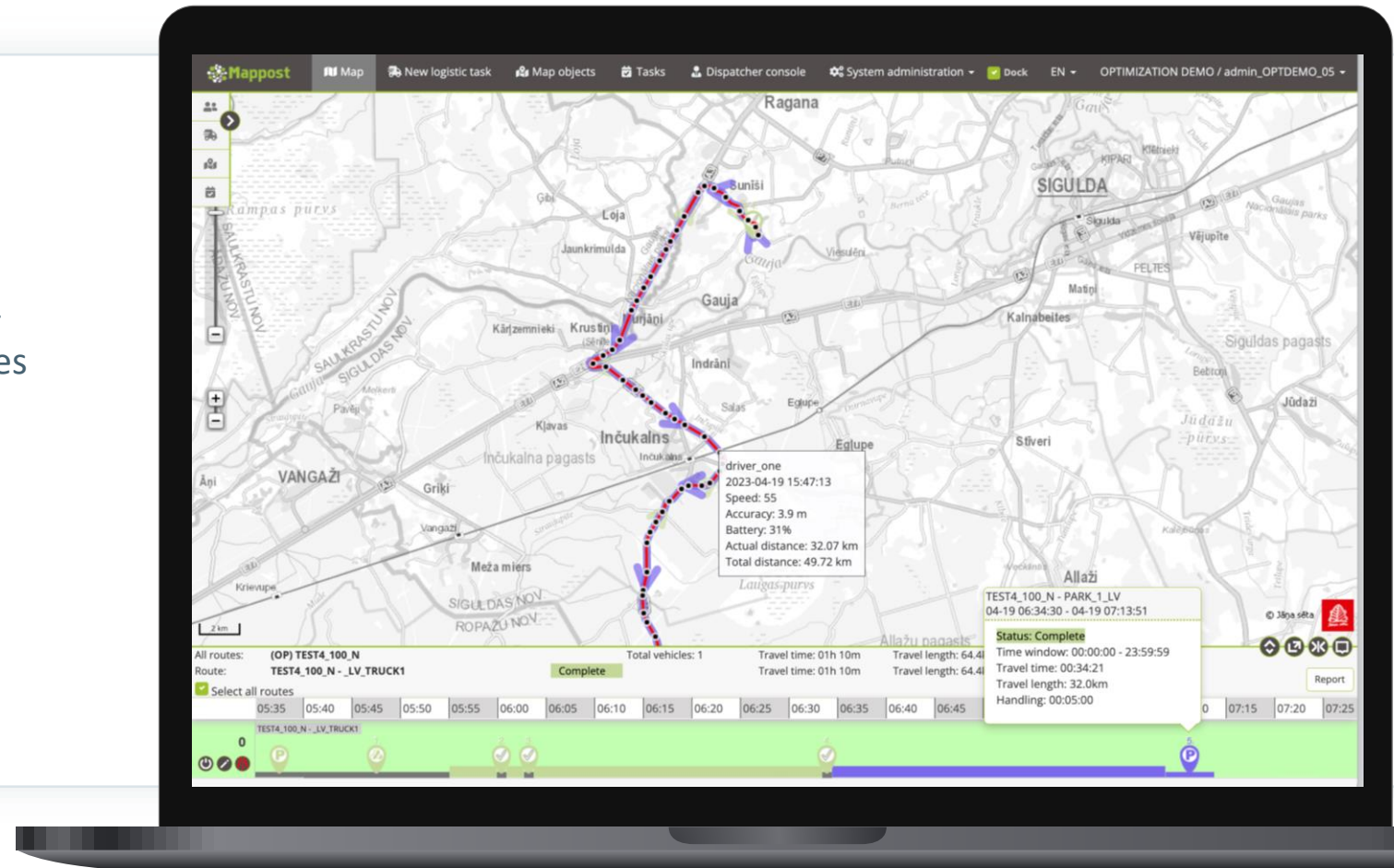
GPS Tracking



In Real-time

Monitor field workers and track progress on the road or on site in real-time with GPS data from mobile devices

Mappost not only collects GPS data from mobile devices to track progress on the go but also stores this data to enable viewing and analyzing past activities and identify areas for improvement.



Reports and Analysis



Problem catalogue

Receive task customized status notifications about completion, delays, and changes, including photos from client or task locations.

Visual indicators in the map view and detailed information in the tabular task view for comparing fact vs. plan.

Automatic problem warnings (e.g. through email).

The screenshot displays the Mappost software interface, specifically the 'Tasks' view. The interface includes a navigation bar at the top with options like 'Map', 'New logistic task', 'Schedule', 'Map objects', 'Tasks', 'Dispatcher console', and 'System administration'. Below the navigation bar, there are search and filter options. The main area is a table with columns for task details. The table contains 15 rows of task data, each with a unique ID, order number, target name, address, user, status, planned and planned to times, duration, and various performance metrics. Some rows are highlighted in red, indicating issues or delays.

ID	Order	Target	Target Address	User	Status	Planned from	Planned to	Working	Planned arrival	Deviation from the planned	Duration	Duration sec	Completed	Proposed travel time	Proposed travel length km	Files	Balance	Side of street	Problem	Comment	EPH-CRM_ID	Contract_ID	Engaging schedule	Container type	Count	Waste type	Additional volume	Photo	
28524007	0	General Parking	Saules iela 63G, Madon...	driver_UNIVERSAL_04	✓	2022-07-15 04:38:33	2022-07-15 04:43:33	00:05:00		0h 1m	38	2022-07-14 10:48:14	00:00:00	0	0.00														
28524008	1	Jeremy Hines	Kalnielī, Cēvaine, La...	driver_UNIVERSAL_04	⚠	2022-07-15 04:43:33	2022-07-15 05:01:01	00:17:28		+6m	0h 7m	61	2022-07-14 10:50:58	00:16:27	13.86		-16.63	02 - access not possible			UNI_ID_00704 #C_001_0704		Every 8 weeks	1.1	3	Mixed	No	292	
28524009	2	Benjamin Johnson	Brīvības iela 28, Cēs...	driver_UNIVERSAL_04	✓	2022-07-15 05:01:01	2022-07-15 05:04:03	00:03:02		0h 0m	25	2022-07-14 10:51:23	00:02:01	0.76	-0.91							UNI_ID_05226 #C_001_5226		Every 1 week	0.77	3	Mixed	Yes	292
28524010	3	Jesse Freeman	Brīvības iela 28, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:04:03	2022-07-15 05:05:07	00:01:04		+10m	0h 1m	44	2022-07-14 10:52:07	00:00:03	0.032		-0.04	03 - wrong waste type			UNI_ID_05220 #C_001_5220		Every 1 week	0.24	1	Recyclables	Yes	292	
28524011	4	Jose Smith	Antragi, Cēvaine, Lat...	driver_UNIVERSAL_04	✓	2022-07-15 05:05:07	2022-07-15 05:06:12	00:01:05		0h 3m	61	2022-07-21 12:46:55	00:00:04	0.049	-0.06							UNI_ID_05216 #C_001_5216		Every 8 weeks	0.24	1	Mixed	No	292
28524012	5	Joshua Reed	Antragi angars, Cēs...	driver_UNIVERSAL_04	✓	2022-07-15 05:06:12	2022-07-15 05:07:23	00:01:11		0h 32m	1931	2022-07-21 13:19:06	00:00:10	0.112	-0.13							UNI_ID_05212 #C_001_5212		Every 12 weeks	0.24	1	Recyclables	Yes	292
28524013	6	Thomas Nielsen	Brīvības iela 30, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:07:23	2022-07-15 05:08:33	00:01:10		+12m	0h 1m	58	2022-07-21 13:20:04	00:00:09	0.097		-0.12				UNI_ID_05208 #C_001_5208		Every 2 weeks	0.24	1	Mixed	Yes	292	
28524014	7	David Smith	Brīvības iela 23, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:08:33	2022-07-15 05:10:10	00:01:37		+35m	0h 45m	2710	2022-07-21 14:05:14	00:00:36	0.402		-0.48	03 - wrong waste type			UNI_ID_05241 #C_001_5241		Every 2 weeks	0.24	1	Mixed	Yes	292	
28524015	8	Nicole Conner	Brīvības iela 21, Cēs...	driver_UNIVERSAL_04	✓	2022-07-15 05:10:10	2022-07-15 05:11:12	00:01:02		0h 46m	2774	2022-07-21 14:07:25	00:00:01	0.009	-0.01							UNI_ID_05244 #C_001_5244		Every 12 weeks	1.1	3	Mixed	Yes	292
28524016	9	Joseph Vega	Brīvības iela 22, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:11:12	2022-07-15 05:12:14	00:01:02	05:11				00:00:01	0.007	-0.01							UNI_ID_05240 #C_001_5240		Every 2 weeks	0.24	1	Mixed	No	292
28524017	10	Lisa Hoffman	Brīvības iela 23, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:12:14	2022-07-15 05:13:17	00:01:03	05:12				00:00:02	0.02	-0.02							UNI_ID_05248 #C_001_5248		Every 8 weeks	1.1	2	Mixed	No	292
28524018	11	Susan McFarland	Brīvības iela 20, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:13:17	2022-07-15 05:14:23	00:01:06	05:13				00:00:05	0.057	-0.07							UNI_ID_05250 #C_001_5250		Every 2 weeks	0.24	1	Recyclables	No	292
28524019	12	David Long	Brīvības iela 18, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:14:23	2022-07-15 05:15:26	00:01:03	05:14				00:00:02	0.019	-0.02							UNI_ID_05253 #C_001_5253		Every 2 weeks	0.24	1	Recyclables	No	292
28524020	13	John Wright	Brīvības iela 16, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:15:26	2022-07-15 05:16:29	00:01:03	05:15				00:00:02	0.023	-0.03							UNI_ID_05256 #C_001_5256		Every 2 weeks	0.24	1	BIO	Yes	292
28524021	14	Kristin Stevens	Brīvības iela 14B, Cēs...	driver_UNIVERSAL_04	⚠	2022-07-15 05:16:29	2022-07-15 05:17:32	00:01:03	05:16				00:00:02	0.026	-0.03							UNI_ID_05261 #C_001_5261		Every 12 weeks	0.24	1	Mixed	Yes	292
28524022	15	Jeffrey Holt	Jaukā iela 1, Cēvaine...	driver_UNIVERSAL_04	⚠	2022-07-15 05:17:32	2022-07-15 05:19:10	00:01:38	05:18				00:00:37	0.278	-0.33							UNI_ID_00878 #C_001_0878		Every 2 weeks	0.24	1	Mixed	Yes	292

Calculations of savings



As we use Score (total cost) parameter to evaluate routing scenarios, it is easy to simulate and compare scenarios using the same parameter.

Detailed statistics are available for each route separately and jointly for all daily routes with the planned costs (Score), mileage, time, volume, etc.

Basis for making informed data-based decisions.

The screenshot displays the Mappost software interface. A 'Report' window is open, showing detailed statistics for various routes. The main window shows a table of tasks with columns for ID, Name, Description, Status, Planned from, Planned to, Worktime, Prognosed service time, and Prognosed travel. The table contains 17 rows of data, with some rows highlighted in red and others in green. A status bar at the bottom shows summary statistics for vehicles, travel time, travel length, handling, and amount.

ID	Name	Description	Status	Planned from	Planned to	Worktime	Prognosed service time	Prognosed travel
11995621	(OP) BG_161222_TEST	(68.817 sek, score EUR: -238.66,...	⊖	2022-12-16 07:00:00	2022-12-16 12:40:37	05:40:37	02:22:00	03:18:37
11891452	(OP) BG_280223	(61.505 sek, score EUR: -231.99,...	⊖	2023-02-28 08:33:39	2023-02-28 13:25:18	04:51:39	02:00:00	02:51:39
11890950	(OP) BG_280223	(61.658 sek, score EUR: -231.99,...	⊖	2023-02-28 08:33:39	2023-02-28 13:25:18	04:51:39	02:00:00	02:51:39
11879971	(OP) BG_180922_TEST	(63.392 sek, score EUR: -304.87,...	⊖	2022-09-18 07:00:00	2022-09-18 15:25:24	08:25:24	03:30:00	04:55:24
11879469	(OP) BG_240223	(61.766 sek, score EUR: -336.73,...	⊖	2023-02-24 07:00:00	2023-02-24 14:47:11	07:47:11	02:00:00	05:47:11
11879359	(OP) BG_240223	(61.476 sek, score EUR: -331.61,...	⊖	2023-02-24 07:00:00	2023-02-24 14:48:26	07:48:26	02:00:00	05:48:26
11879152	(OP) BG_240223	(62.341 sek, score EUR: -331.61,...	⊖	2023-02-24 07:00:00	2023-02-24 14:48:26	07:48:26	02:00:00	05:48:26
11870302	(OP) BG_240223	(66.095 sek, score EUR: -331.61,...	⊖	2023-02-24 07:00:00	2023-02-24 14:48:26	07:48:26	02:00:00	05:48:26
11861995	(OP) BG_230223	(61.489 sek, score EUR: -384.93,...	⊖	2023-02-23 07:00:00	2023-02-23 14:21:02	07:21:02	01:45:00	05:36:02
11776142	(OP) BG_160223	(61.584 sek, score EUR: -153.65,...	⊖	2023-02-16 07:00:00	2023-02-16 10:52:34	03:52:34	02:03:00	01:49:34
11776121	(OP) BG_160223	(61.63 sek, score EUR: -214.07, ...	⊖	2023-02-16 06:28:33	2023-02-16 11:23:45	04:55:12	02:03:00	02:52:12
11775099	(OP) BG_180922_TEST	(84.631 sek, score EUR: -306.74,...	⊖	2022-09-18 07:00:00	2022-09-18 15:27:27	08:27:27	03:30:00	04:57:27
11718378	(OP) BG_130223	(70.546 sek, score EUR: -230.00,...	✓	2023-02-13 07:00:00	2023-02-13 12:39:40	05:39:00	02:21:00	03:18:40
11718358	(OP) BG_130223	(74.634 sek, score EUR: -283.17,...	✓	2023-02-13 07:00:00	2023-02-13 13:19:43	06:19:00	02:06:00	04:13:43
11718349	(OP) BG_130223	(60.941 sek, score EUR: -100.75,...	⊖	2023-02-13 07:00:00	2023-02-13 08:28:06	01:28:06	00:42:00	00:46:06
11718325	(OP) BG_130223	(62.51 sek, score EUR: -366.00, ...	⊖	2023-02-13 07:00:00	2023-02-13 15:24:24	08:24:24	02:52:00	05:32:24

Report window content:

- (OP) 02122022_T9
Travel time: 03d 08h 50m
Travel length: 3836.7km
Handling: 01d 15h 30m
- 02122022_T9 - MWT Truck#1
Travel time: 04h 42m
Travel length: 178.0km
Handling: 02h 58m
- 02122022_T9 - MWT Truck#2
Travel time: 05h 08m
Travel length: 138.7km
Handling: 02h 58m
- 02122022_T9 - MWT Truck#4
Travel time: 05h 42m
Travel length: 154.6km
Handling: 03h 13m
- 02122022_T9 - ET Truck #1
Travel time: 05h 52m
Travel length: 263.6km
Handling: 04h 09m

Summary statistics at the bottom:

- Total vehicles: 13
- Travel time: 03d 08h 50m
- Travel length: 3836.7km
- Handling: 01d 15h 30m
- Amount: 27
- Travel time: 06h 07m
- Travel length: 279.0km
- Handling: 03h 53m
- Amount: 428.0



All waste types in a single platform

Create personalized material catalogues to let Mappost distinguishing between waste types and the respective landfills/recycling facilities they must be delivered to.



Name EN	Name RU	Name EN	Name DE	Name EE	Name LT
Materiāls/Klase	Materiāls/Klase	Materiāls/Klase	Materiāls/Klase	Materiāls/Klase	Materiāls/Klase
All lists + Add New Zone catalogue Material catalogue					
Value	Name EN	Name DE			
5	Construction waste other than 170901, 170902 and 170903				
21	Metals				
1	Heavy ash, slag and soot, which do not correspond to class 100104				
2	Wooden packaging.				
6	Waste from the mechanical treatment of waste (including mixtures of materials) not corresponding to class 191211				
18	Soil and rocks not covered by class 170503				
7	Wood, Construction and demolition waste				
8	Concrete, brick, tile, tile, ceramic mixtures that do not correspond to class 170106				
9	Concrete				
23	Mixed packaging				
10	Bulky waste				
22	Biodegradable waste				
17	Unsorted household waste				
16	Glass				
19	Plastic and rubber				
11	Fabric packaging				
12	Building materials containing asbestos7				
90	Other solid waste from gas treatment, which does not correspond to class 101312 - is not dangerous.				

Localization



Interface in your language

We offer the flexibility to customize our platform to any preferred language, including Bulgarian.

With our multilingual interface, you can streamline your waste collection process and focus on what matters most – running your business.

The screenshot displays the Mappost application interface. At the top, there is a navigation bar with the Mappost logo and several menu items: Map, New logistic task, Map objects, Tasks, System administration, and a language dropdown set to EN. The main content area is titled 'Lists' and features a '+Add New' button. Below this is a table with the following data:

Name LV	Name BG	Name EN	Name DE	Name EE
Apakšgrupas	подгрупа	Subgroup	Untergruppe	Subgroup
Jauns apmeklējuma laika logs	нов времеви прозорец за посещение	New visiting time window	neues Besuchszeitfenster	New visiting time window
Lietotāju grupas	потребителски групи	User groups	Benutzergruppen	User groups
Problēma	проблем	Problem	Problem	Problem
Zonas	зони	Zones	Zonen	Zones

Implementation process



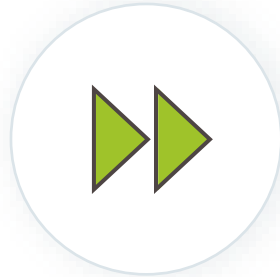
PRELIMINARY
ANALYSIS



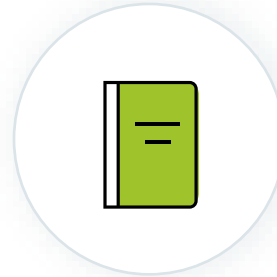
PILOT PROJECT



TERRITORY
EXPANSION



TRAINING



FULL-SCALE
IMPLEMENTATION



REGULAR
SUPPORT



Resources



Mappost
Customized route and resource optimization solutions

Making cities greener:
how to reduce the environmental impact of municipal waste collection

eBook by Mappost

eBooks



Mappost
Customized route and resource optimization solutions

How to reduce municipal waste collection costs and environmental impact through route optimization

eBook by Mappost



Mappost
Customized route and resource optimization solutions

Client: CleanR
Location: Latvia (various locations)
Contract signed: 2015

How Mappost assists CleanR in servicing 40,500 objects and waste containers every day

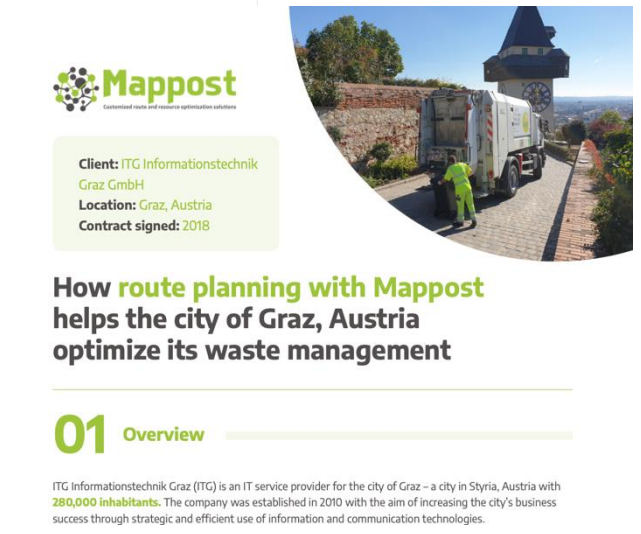
01 Overview

CleanR is the leading provider of environmental services in Latvia, a million. The company has over **1,300 employees** and **50,000 clients**.

The company provides nearly **40 types** of environmental services: roads, common areas, and private and public property, including multi-story buildings. Every year, the company exports as much as **186,000 tons** of waste.

CleanR has decades of experience in the waste management business, using the latest technologies and innovative solutions. One of the **route planning solutions**.

Case studies



Mappost
Customized route and resource optimization solutions

Client: ITG Informationstechnik Graz GmbH
Location: Graz, Austria
Contract signed: 2018

How route planning with Mappost helps the city of Graz, Austria optimize its waste management

01 Overview

ITG Informationstechnik Graz (ITG) is an IT service provider for the city of Graz – a city in Styria, Austria with **280,000 inhabitants**. The company was established in 2010 with the aim of increasing the city's business success through strategic and efficient use of information and communication technologies.



We look forward to your questions!

info.mappost.eu

Contact us at: office@mappost.eu

Get in touch with us!

Scan the QR code to
share your opinion and
receive our free
materials.

