



# Public Transport System

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## ABOUT ELTE



We offer complex systems which combine state-of-the-art technology and computer science, support and monitor the processes of service provision, optimize the use of resources, and enhance the logistics of transport and communication. All this leads to lower costs, higher quality and increase in satisfaction of your customers.

As the manufacturer of both software and hardware system components, we

can guarantee flexible and customized solutions that meet your individual needs, and allow for further expansion and continuous upgrade.

The top level of our services, high quality components and professional warranty and post-warranty service have been appreciated by our numerous customers.

Please take a closer look at what we can offer.

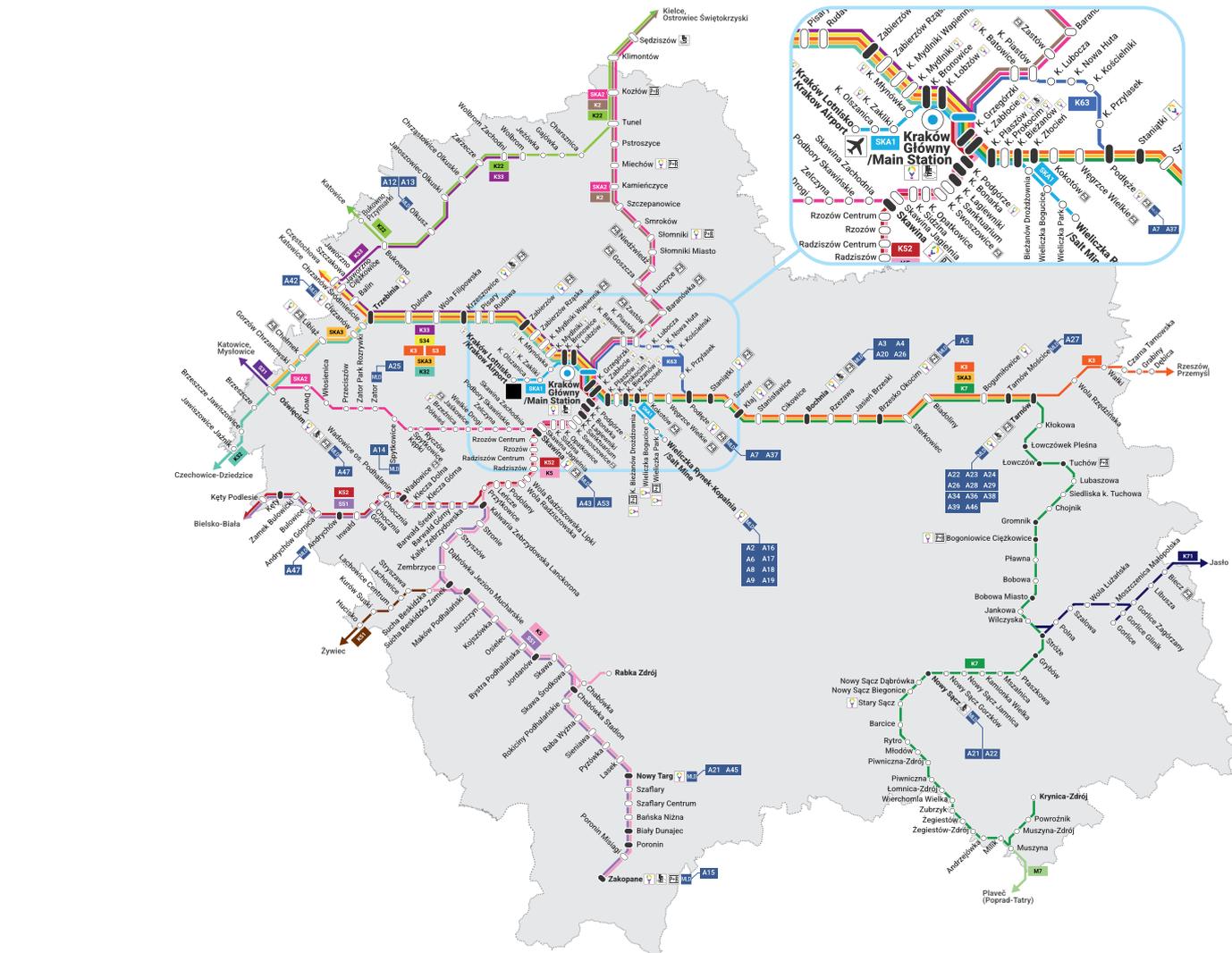
# INTRODUCTION

We have delivered a comprehensive solution supporting the operation of public transport in Małopolska – a region inhabited by over **3.4 million people**. The system was designed to integrate various modes of transport and all participants in the process: from **passengers, through drivers, to operators and transport authorities**. Developed with cloud infrastructure support from **OVHcloud**.



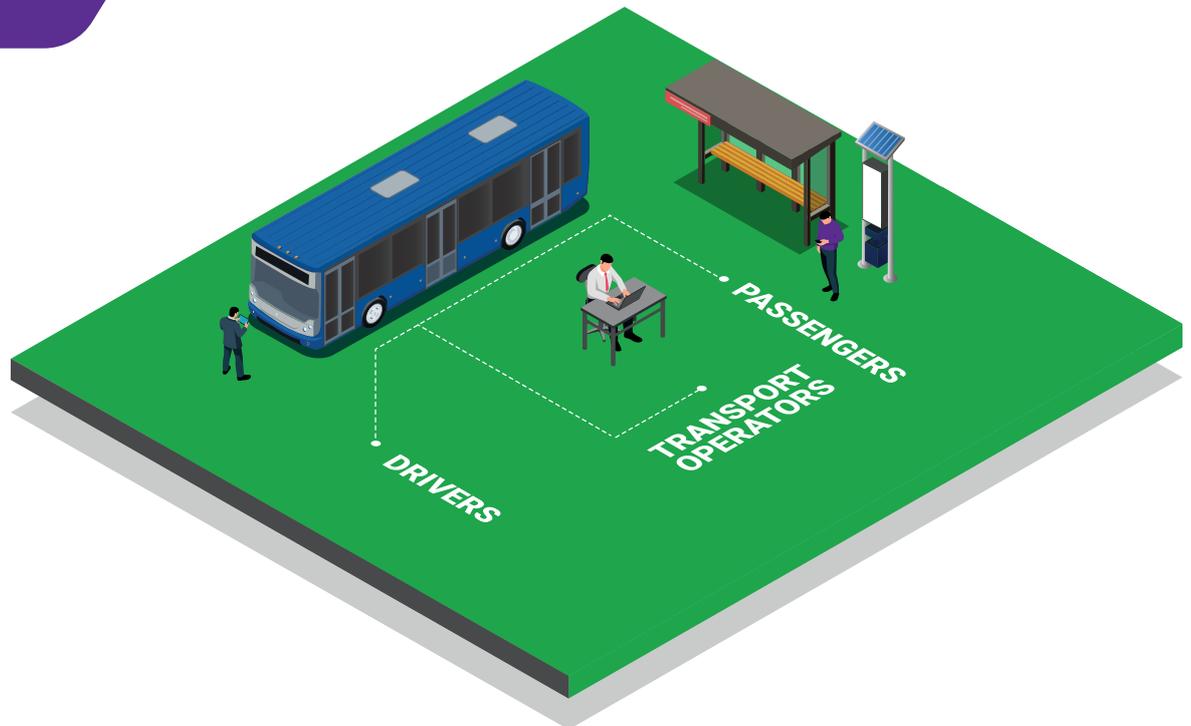
Scale of implementation: **Małopolska Voivodeship**  
Project goals: **transport integration, simplified travel, centralised management**

# AREA OF OPERATION



The system covers the entire Małopolska Voivodeship, integrating regional and urban transport.

## SYSTEM USERS



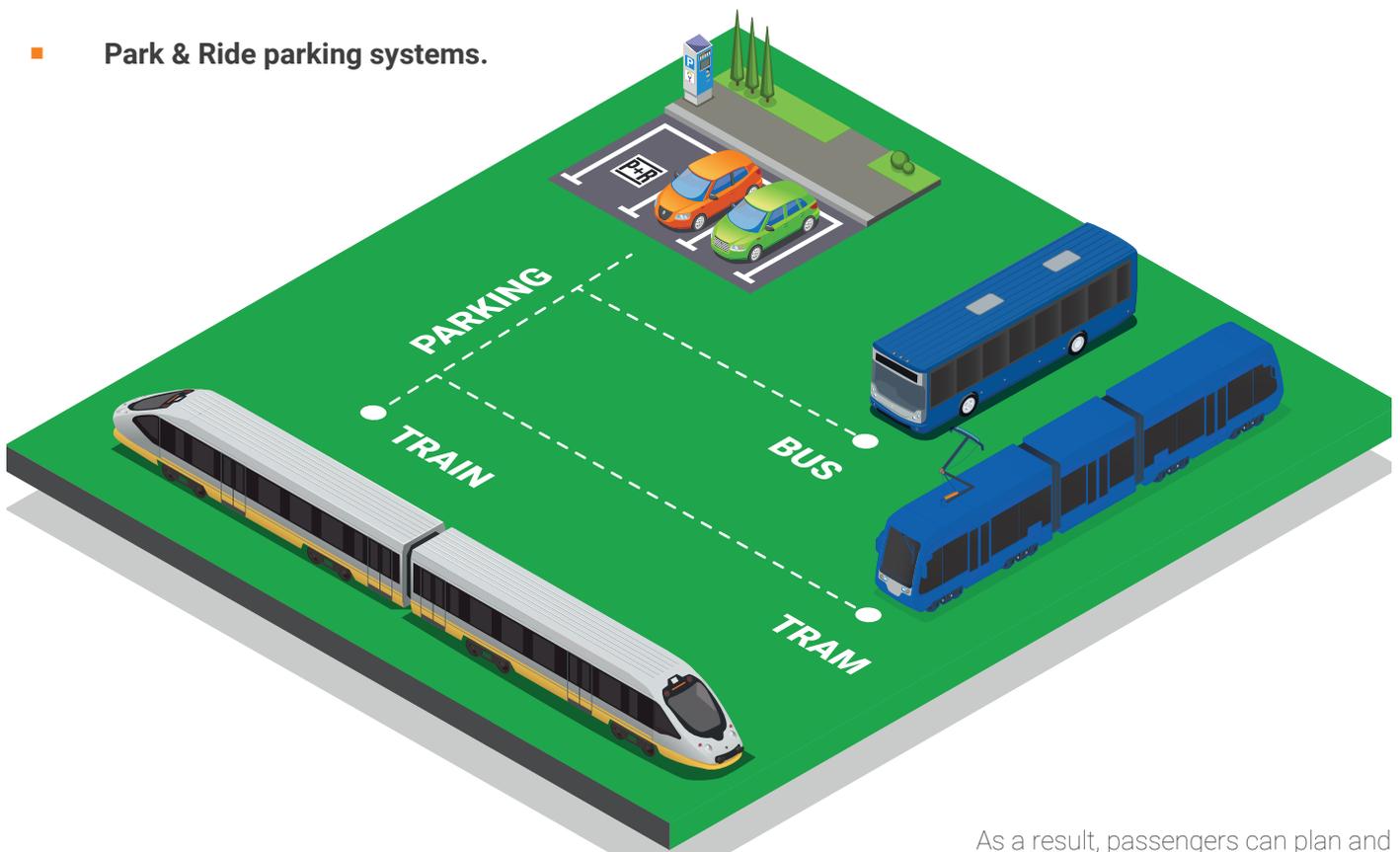
The system was designed for all participants in the public transport ecosystem:

- **Passengers** – journey planning, ticket purchase and inspection, parking.
- **Drivers** – trip execution, working time records, passenger service.
- **Transport operators** – fleet and timetable management, supervision, reporting, fares and documentation.

# TRANSPORT INTEGRATION

The solution integrates various modes of transport within a single system:

- railway transport,
- regional and urban buses,
- trams,
- Park & Ride parking systems.

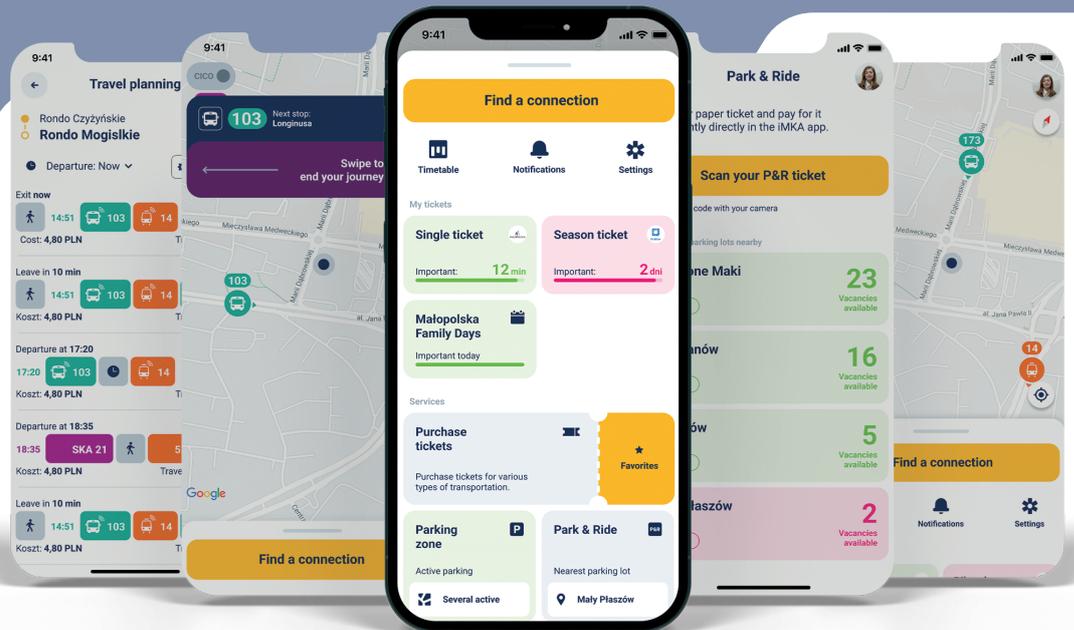


As a result, passengers can plan and complete journeys in a seamless, convenient and modern way.

# IMKA 2.0 PASSENGER APPLICATION

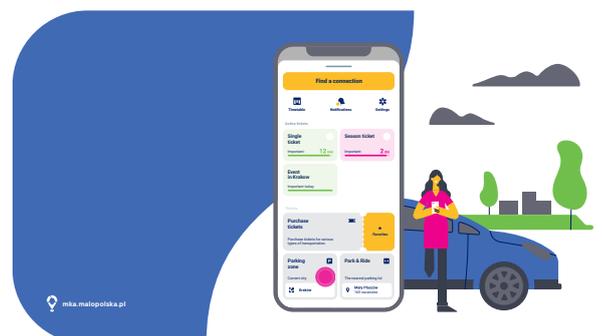


The IMKA 2.0 application is the central point for travel management:



## Payments and tickets

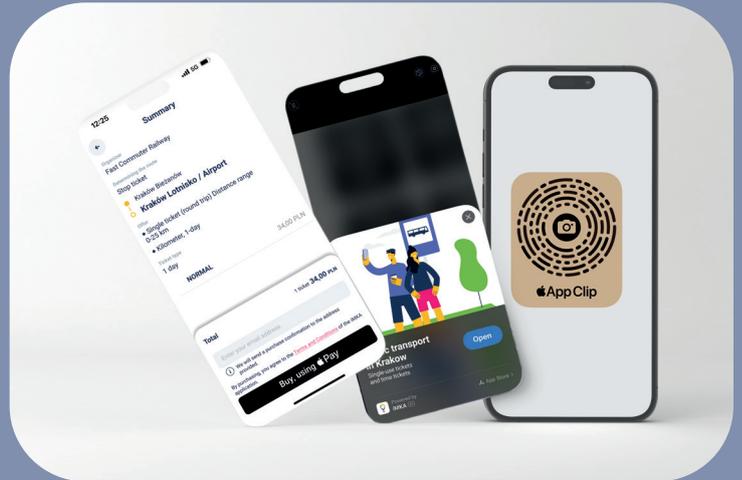
- payment cards,
- Google Pay, Apple Pay,
- AppClip
- Online payment methods (Przelewy24, BLIK)
- in-app electronic wallet,
- passenger profiles with saved preferences.



## App Clip

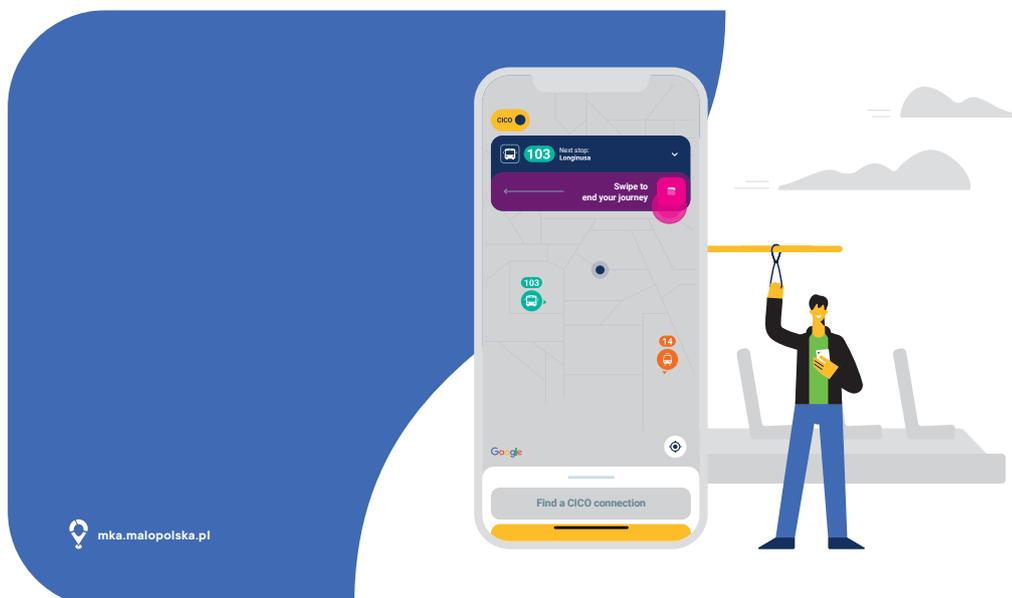
App Clip in iMKA is a lightweight version of the iMKA application for iOS that provides instant access to selected services without installing the full app. It allows users to start using iMKA immediately in real-life situations, such as at stops, parking areas or vehicles.

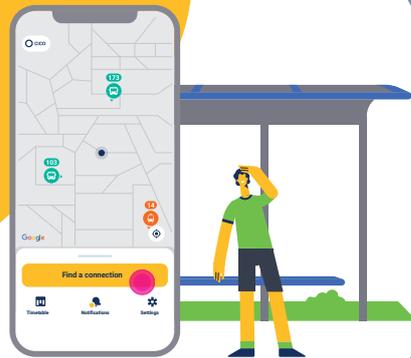
- Instant launch via QR code or NFC
- Quick access to key services, such as ticket purchase or payments
- No App Store download required, ensuring a fast and smooth user experience



## Check-in / Check-out (CICO)

- travel without having to purchase a ticket in advance,
- automatic fare calculation based on the travelled route,
- use of beacon and Bluetooth technologies.



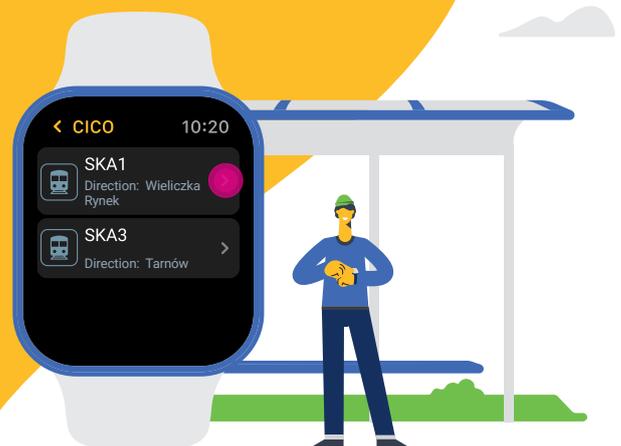


## Journey planner

- route planning using urban, regional and rail transport,
- visualization on the map,
- real-time vehicle tracking.

## Integrations and additional services

- integration with the Kraków City Card,
- parking payments (time-based, amount-based, start/stop),
- Park & Ride services (QR codes, space availability, navigation),
- light version of the app (without full registration),
- “ticket for an ad” – a free ticket in exchange for watching a video,
- smartwatch applications (WearOS, watchOS).



# TRANSPORT MANAGEMENT SYSTEM - CARRIER PORTAL

The core element of the solution is a public transport management system, available in a SaaS model via a web browser.

**Hello, Marcin**

- Drivers**
  - List of drivers
  - Tasks
- Tariffs**
  - Creator
  - Tariff zones
  - Ticket types
  - Ticket attributes
  - Reliefs
  - Eligibility for relief
  - tPurse
- Timetables**
  - List of timetables
  - Symbols of the legend
- Stops**
  - List of stops
  - Groups of stops
- Routes**
  - List after
- Fleet management**
  - Vehicles
- Reports**
  - List of reports

Application version : 1.1

## System functionalities

- remote management of stops, routes and timetables,
- planning and rapid data updates,
- real-time fleet monitoring,
- fare and ticket group management,
- driver management and working time records,
- advanced reporting and analytics.

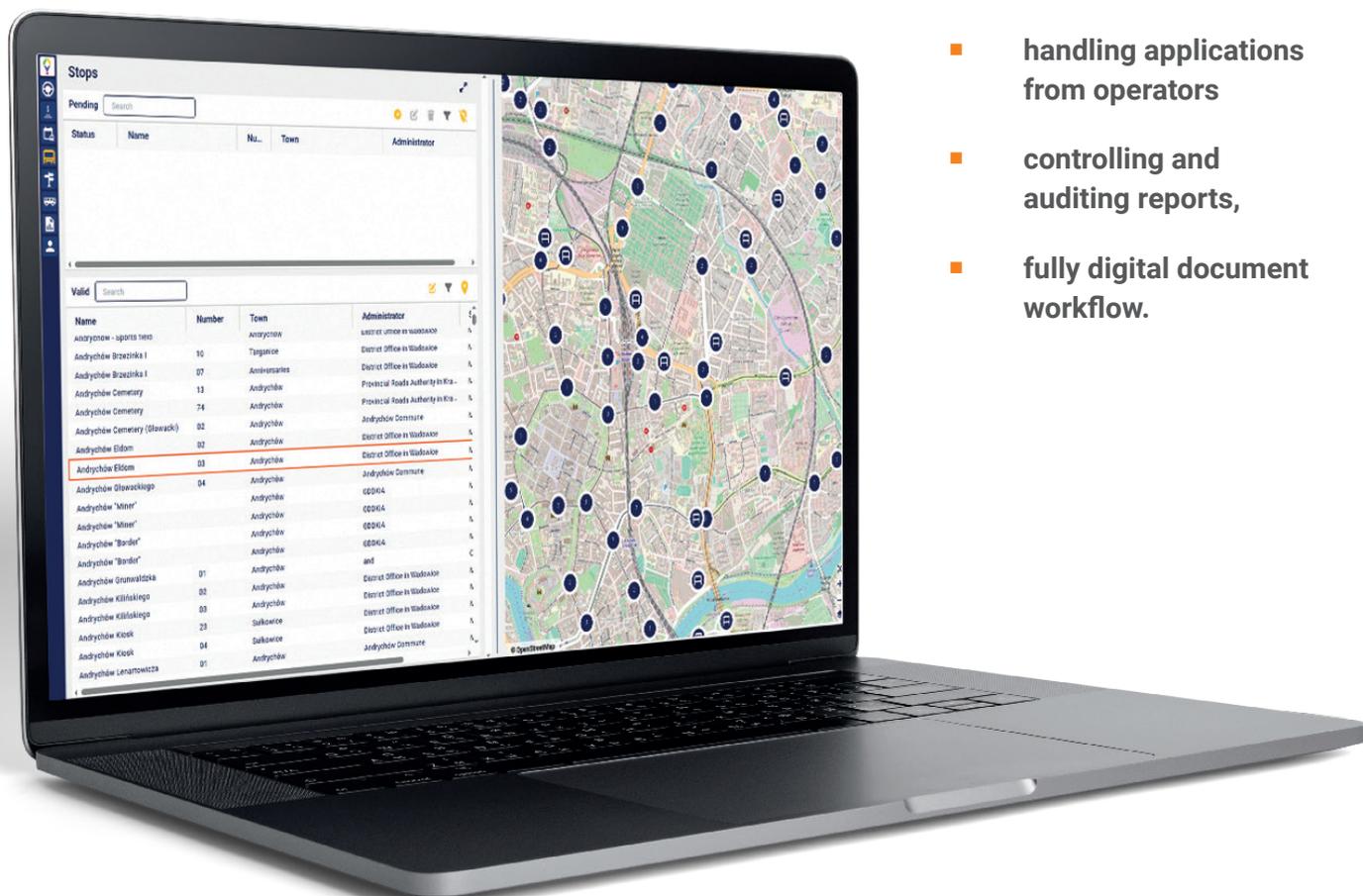
**Groups of stops**

List of stop groups

Name	Nu...	Town	Administrator
Czerna Monastery	00	Paczątkowice	Krzeszowice commune
Czerna Monastery	03	Black	Krzeszowice commune
Czerna Monastery	01	Black	Krzeszowice commune
Czerna Mill	04	Black	Krzeszowice Commune
Czerna Mill	03	Black	Krzeszowice commune
Black Fire Station (Loop)	08	New Mountain	Krzeszowice Commune
Czerna Crossing		Black	City and Commune Office in Krzeszowice
Czerna Crossing		Black	City and Commune Office in Krzeszowice
Czerna Crossroads	04	Black	Krzeszowice commune
Czerna Crossroads	03	Black	Krzeszowice commune
Czerna Crossroads	02	Krzeszowice	Krzeszowice Commune
Czerna Crossroads	03	Black	Krzeszowice commune
Friwald		Friwald	City and Commune Office in Krzeszowice
Czatkowice Limestone Mine	00	Krzeszowice	Krzeszowice commune
Czatkowice Limestone Mine	01	Krzeszowice	Krzeszowice commune
Krzeszowice		Krzeszowice	GDDKIA
Krzeszowice Center	00	Krzeszowice	Krzeszowice commune
Krzeszowice Czatkowice / Czatkowice II		Krzeszowice	District Office in Krakow
Krzeszowice Czatkowice / Czatkowice II		Krzeszowice	District Office in Krakow
Krzeszowice Czatkowice Eden / Czatkowice I		Krzeszowice	District Office in Krakow
Krzeszowice Czatkowice Eden / Czatkowice I		Krzeszowice	District Office in Krakow
Daszyński's Krzeszowice		Krzeszowice	District Office in Krakow
Daszyński's Krzeszowice		Krzeszowice	District Office in Krakow
Krzeszowice Public Transport Station	01	Krzeszowice	Krzeszowice commune
Krzeszowice Railway Station	01	Krzeszowice	Krzeszowice commune
Krzeszowice Grunwaldzka / City Hall		Krzeszowice	District Office in Krakow
Krzeszowice Grunwaldzka / City Hall		Krzeszowice	District Office in Krakow
Krzeszowice Church (Grunwaldzka Street)	2	Krzeszowice	ZDPK
Krzeszowice Krakowska Museum	01	Krzeszowice	ZDPK

## Support for transport authorities

- handling applications from operators
- controlling and auditing reports,
- fully digital document workflow.



# SYSTEM PRODUCTS AND MODULES

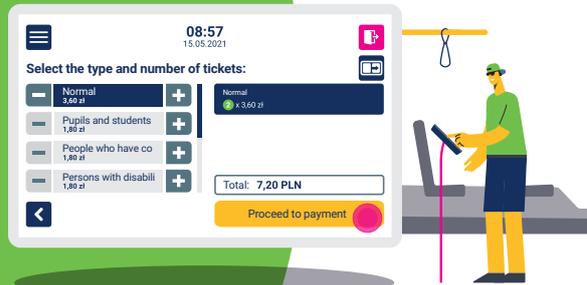


## Driver module

The driver module enables selection and execution of scheduled tasks, punctuality control, access to trip information and upcoming stops, printing of paper tickets, as well as biometric login with working time registration.



## Passenger module



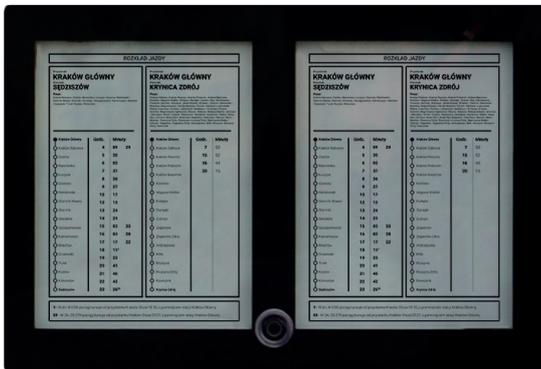
The passenger module allows ticket identification (biometrics, RFID, QR codes), ticket purchase using cash, card or electronic wallet, and handling of distance-based CICO fares.



## Identification terminal

A multifunctional validator dedicated, among others, to railway transport, supporting paper tickets, CICO, season tickets and communication with smartphones and smartwatches.





## Electronic timetable

A timetable transmitted remotely to an e-paper display, without the need for manual replacement, maintaining a form similar to traditional paper schedules.



## Smart waste bin

Waste bin equipped with a fill-level sensor and GSM communication, enabling reporting and optimisation of emptying schedules.

