



CREATECH

SOFTWARE · AUTOMATION · AI

PUBLIC TRANSPORT · MUNICIPAL BUSES · SEPTEMBER 2026

Every trip, every passenger, fully under control

Telemetry, AI-powered cameras, RF-ID passenger counting and trip optimization for public transport fleets — on a single platform.

An integrated solution that plans the line on real passenger data rather than estimates, measures driving safety in real time and makes every trip traceable. Developed in our own R&D center, from hardware to software.

95%

COUNTING ACCURACY

60%

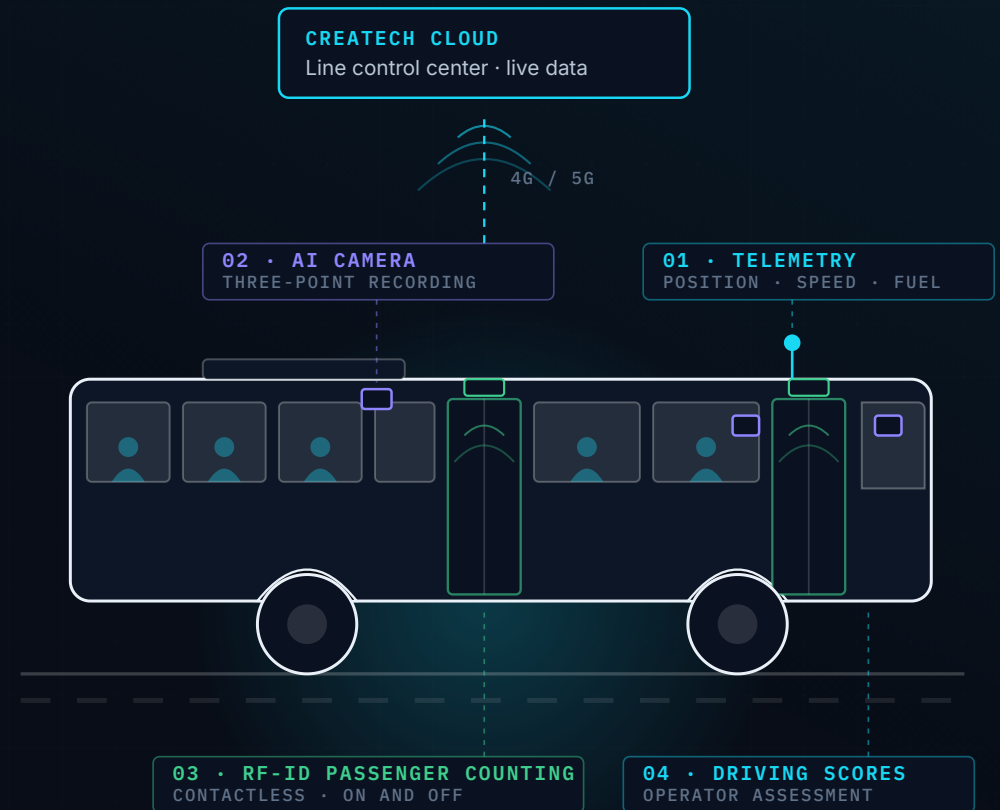
LINE EFFICIENCY ↑

85%

SAFETY RISK ↓

These figures are target values; see page 10.

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01 · CRITICAL CHALLENGES

Three things have to be managed at once in public transport

Loading, driving safety and central management. When a line is planned without knowing how many passengers it carries, the timetable rests on estimates: one trip runs packed while the one right behind it is almost empty, and more vehicles than necessary stay in service.

The Createch solution ties these three together into **one data flow**. The same trip record produces the passenger count, the safety event and the line efficiency report.

IN ONE SENTENCE

Plan the line on **real passenger and vehicle data** from the field, not on estimates.

WHAT HAPPENS TODAY

01 · CAPACITY

Loading and line inefficiency

Not knowing passenger numbers in real time leads to over- or under-planned trips and wasted capacity. Low-load trips only show up in the month-end report.

02 · TRANSPARENCY

Operator tracking

A lack of transparency in field operations makes processes harder to manage and costs efficiency. Assessment rests on statements and reviews on memory.

03 · SAFETY

Driving safety and risks

Risks such as harsh braking, phone use and seat belt violations are not detected in real time, so accident risk rises and events are only discussed afterwards.

04 · MANAGEMENT

Hard to manage centrally

Scattered vehicle, stop and line data prevents the fleet being managed effectively from one place; every question has to be put to a separate system.

THE SOLUTION IN SHORT

Telemetry, AI-powered cameras and RF-ID passenger counting on the vehicle; **line management and trip optimization** at the center. All three write to the same platform, so a trip is recorded with its passenger count, its video, and its position and time stamp together.

02 · ONE PLATFORM

Three systems, one data flow, one screen

Every component on the vehicle writes to the same center. A trip becomes a **single record**, together with its passenger count, position, video and driving behaviour.



ONE SUPPLIER

From hardware to software

Electronic board design, embedded software, on-vehicle installation, the platform and the AI models are all developed in our own R&D center.

PHASED ROLLOUT

You can start with one system

You can start with telemetry and add the cameras and RF-ID counting later; no new installation is needed on the platform side.

WITH YOUR SYSTEMS

Works with fare collection and ERP

Trip, load and line records are passed through an API to the existing fare collection, ERP or reporting system; no second data entry is needed.

03 · TELEMETRY

The vehicle's vital data under live control

Our telemetry solution, developed specifically for public transport fleets, monitors fuel consumption, speed, engine status and safety parameters **without interruption**. The data is analyzed in real time and operators' driving habits are scored.



01 · COLLECTION

Real-time data collection

Fuel, speed, engine and safety data is monitored without interruption; the on-board unit sends it straight to the center.

02 · ANALYSIS

Driving analysis

Operators' driving habits are analyzed in real time; harsh braking, harsh acceleration and speeding are recorded as events.

03 · SCORING

Operator assessment

Operators are scored on the analysis results, systematically encouraging safe and economical driving.

04 · COST

Fuel and maintenance

Consumption and idling time are reported by vehicle and by line; maintenance is planned on real odometer and engine data.

ECONOMICAL DRIVING SPREADS ON ITS OWN

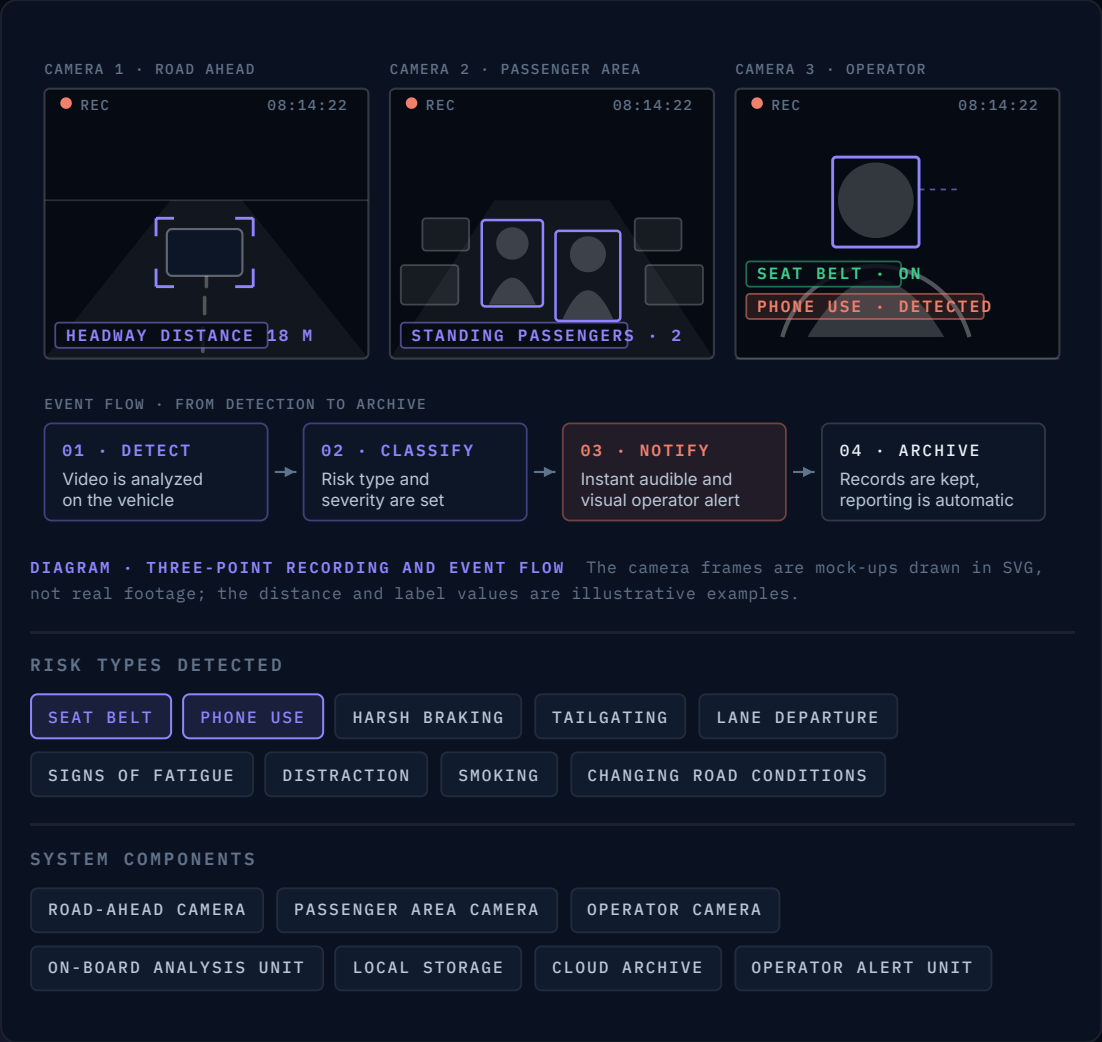
The operator sees their own score and which behaviour lowered it. Behaviour that is measured and fed back changes; **fuel cost and accident risk fall together**.

FOR ELECTRIC AND DIESEL FLEETS

For diesel vehicles fuel consumption and engine data, and for electric vehicles battery state of charge, range and charging status, are monitored on the same panel. In a mixed fleet both vehicle types appear in one list; remaining range and the charging window are taken into account as constraints when trips are assigned.

Real-time AI risk detection and recording

The camera system records **the road ahead, the passenger area and the vehicle operator at the same time**. Video analysis detects risks such as seat belt use, phone use and harsh braking instantly, and sends the operator a real-time notification.



01 · RECORDING

Simultaneous three-point recording

The road ahead, the passenger area and the vehicle operator are recorded at the same time; all three meet in one trip record.

02 · DETECTION

AI risk detection

Risks such as seat belt use, phone use and harsh braking are detected instantly through video analysis.

03 · ALERT

Real-time notification

When a risk is detected the operator is notified immediately, creating the chance to act before an accident.

04 · ARCHIVE

Recording archive and assessment

All records are stored for use in operator assessment, and reporting becomes automatic.

THE ROAD AHEAD IS WATCHED CONTINUOUSLY

Continuous analysis of the road ahead also makes it possible to track sudden changes in road conditions. That keeps both operator and passenger safety at the highest level; **it creates the chance to intervene before an accident.**

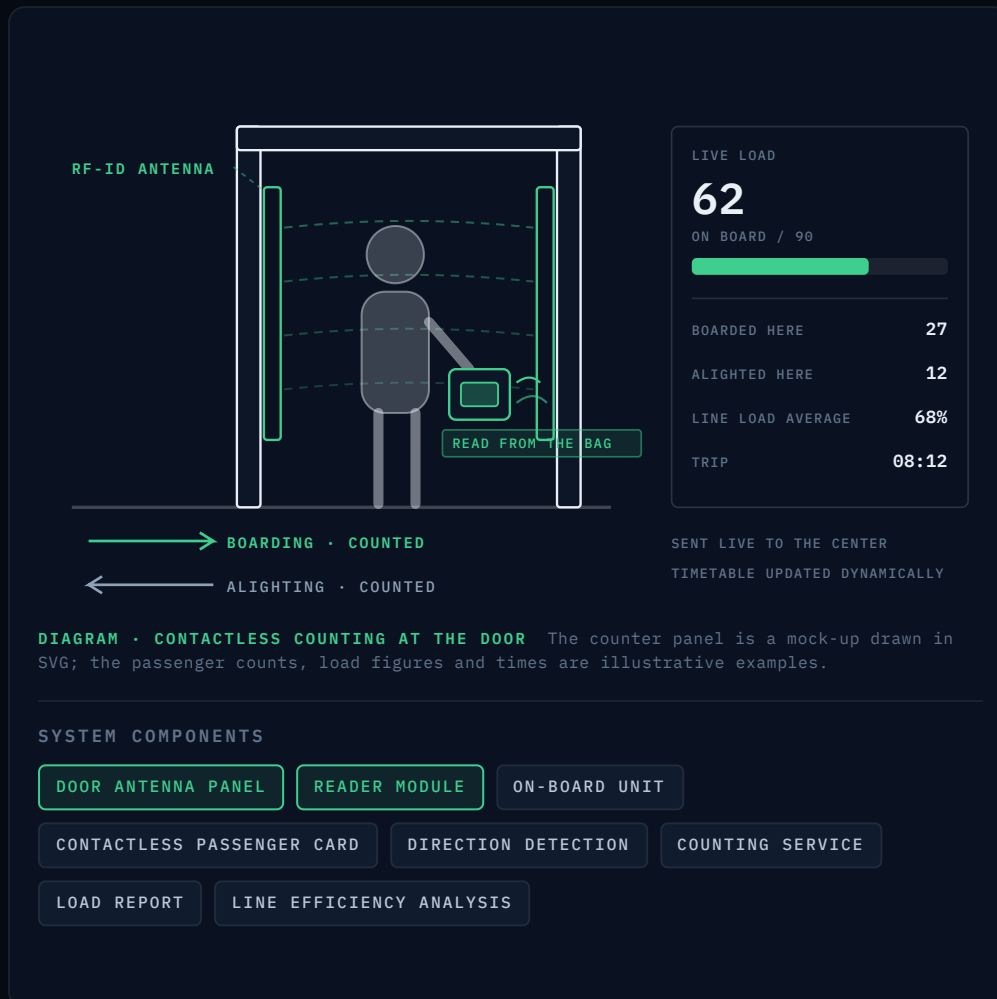
RECORDING AND ARCHIVE

Video is analyzed on the vehicle; recordings are buffered on board and sent to the center when a connection is available. A detected risk is marked automatically and linked to the trip record, so video, position, speed and passenger count can be reviewed together.

05 · RF-ID SYSTEM

Automatic counting and contactless load management

The RF-ID system detects passengers boarding and alighting **automatically as they pass through the doors**. A contactless card in a passenger's wallet or bag is read without being taken out, which speeds up boarding, improves the passenger experience and sends live load data to the center.



01 · COUNTING

Automatic passenger detection

Boarding and alighting passengers are counted automatically by RF-ID at the doors, with no manual intervention.

02 · CONTACTLESS

Contactless card reading

A card in a passenger's wallet or bag is read without being taken out, making boarding fast and easy.

03 · LOADING

Load analysis

Live passenger data keeps line load factors visible and optimizes timing and capacity planning.

04 · REPORTS

Line efficiency reporting

Detailed reports by line and by trip support efficiency analysis and make underperforming routes easy to spot.

BOARDING SPEEDS UP, QUEUES GET SHORTER

Because nobody has to stop to tap a card, the queue at the door gets shorter and dwell time at the stop falls. **Trip times shorten and adherence to the timetable improves.**

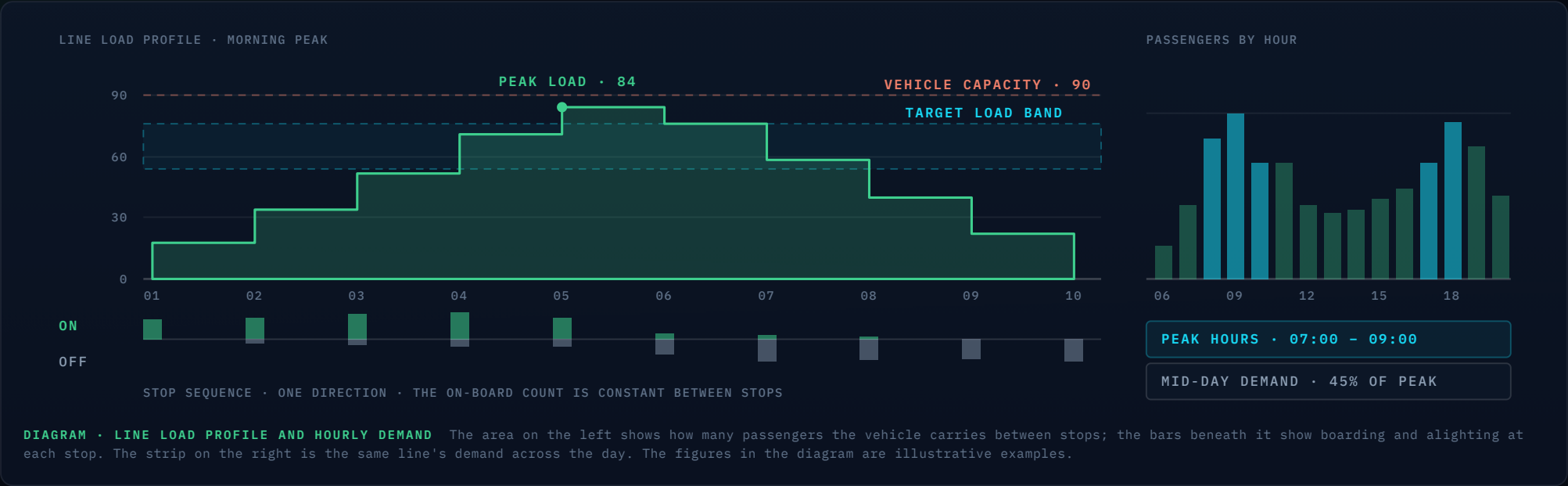
WHERE THE COUNTING DATA IS USED

- Departure intervals:** Passenger counts by stop and by hour feed the timetable directly.
- Capacity planning:** Which vehicle type runs on which line is decided from the load profile.
- Line performance:** Low-load trips are identified and wasted resources are prevented.
- Revenue and audit:** Counting data can be compared with fare collection records.

06 · LOAD ANALYSIS

Which stop, which hour, how many passengers

Counting data does not stay a raw number. Combined by stop and by hour, it becomes the **line's load profile**: where the vehicle fills up, where it empties and how demand is spread across the day, all in one chart.



01 · CAPACITY

The right vehicle on the right line

The load profile shows which vehicle type a line needs. An articulated vehicle goes to the line whose peak load strains capacity, and a smaller vehicle to the line with low mid-day demand.

Once it is known where the vehicle fills up, options such as starting some trips from an intermediate stop can also be considered.

02 · TIMING

Demand is read hour by hour

Morning and evening peaks are not managed with the same timetable as the middle of the day. The window where demand actually rises is measured, and frequency follows it.

Weekdays, weekends and term time are assessed separately; the timetable is updated for seasonal demand.

03 · EFFICIENCY

Low loading becomes visible

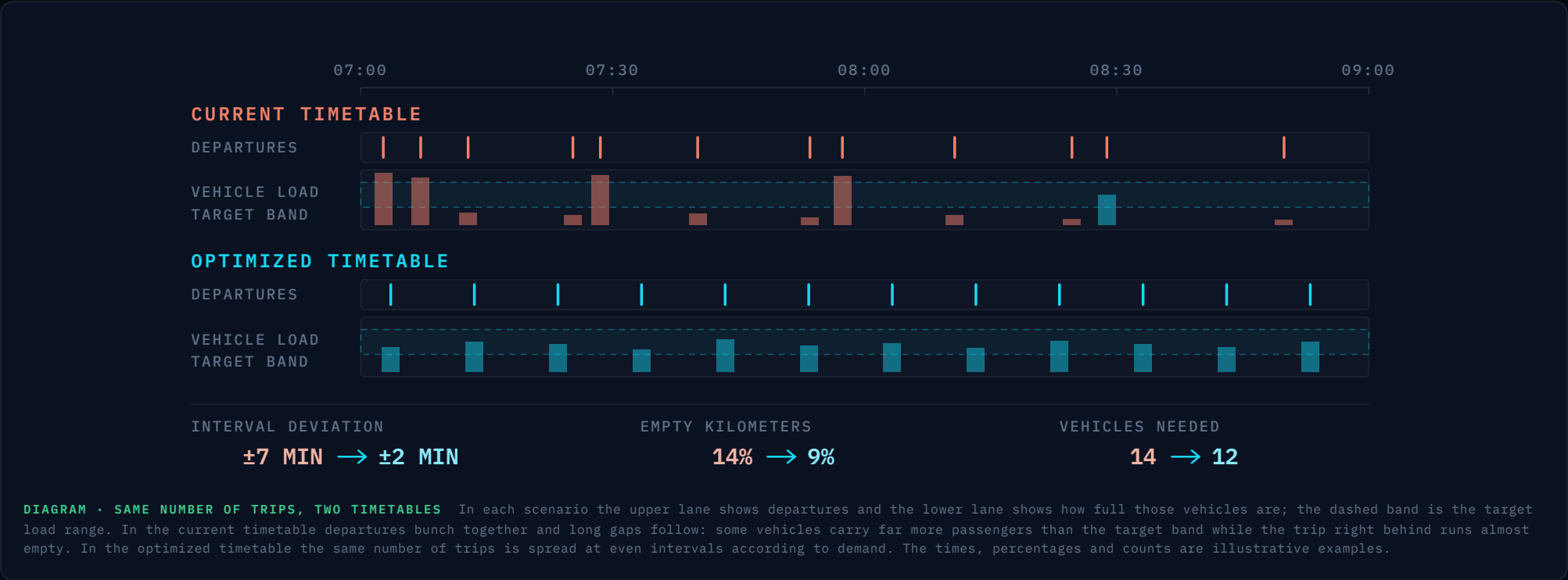
Which trips fall below the target band is reported trip by trip. Wasted resources are identified from the line's own data, without waiting for month end.

The same report also flags lines that constantly run at the capacity limit; the need for extra trips is seen before complaints arrive.

07 · TRIP OPTIMIZATION

The same number of trips, a far more balanced service

In public transport the route is usually fixed; what gets optimized is not the line itself but **how many trips run on it, at what intervals they depart and which vehicle takes which trip**. Passenger counting data, telemetry and actual trip times are assessed together to rebuild the timetable.



01 · COST

Distance, energy and empty running

Part of the cost arises in kilometers that carry no passengers: depot-to-line runs, turnarounds at the line end and trips with very low loading. These enter the plan and are reduced.

02 · TIME

Departure intervals and waiting time

When departure intervals are regular, passengers wait less at the stop, and the pattern of bunched trips followed by a long gap disappears.

03 · EQUIPMENT

Vehicle and driver use

A regular timetable lets the same level of service be delivered with fewer vehicles; an idle vehicle and an overloaded one become visible at the same time.

08 · MANAGEMENT CENTER

Vehicle, stop and line meet on one screen

Vehicle positions, loading and trip status are updated continuously; your fleet is followed **live** on a digital map. From the analysis of driving behaviour to line performance reporting, every detail is controlled centrally.



01 · POSITION

Live position and trip tracking

Every vehicle's position is shown on the map in real time; which vehicle is on which trip is visible at a glance.

02 · INTERVAL

Departure interval control

Bunching and interval drift are detected immediately; the center intervenes and keeps the line in order.

03 · ALERTS

Automatic notification

Managers are notified in real time when a vehicle leaves its route, exceeds the load band or raises a driving risk.

04 · REPORTS

Line and operator reporting

Detailed reports by line, trip and operator support efficiency analysis and identify areas for improvement.

PROBLEMS ARE SEEN BEFORE THE DAY ENDS

Bunched trips, loading above the target band and vehicles falling behind are flagged at the center **the moment they occur**. Action does not wait for the month-end report.

ALONGSIDE YOUR EXISTING SYSTEMS

The management center integrates through an API with the organization's existing fare collection, ERP and reporting systems. Trip, load and event records can be transferred one way or both ways; because the record in the field and the report in the office come from the same data, no second data entry is needed.

09 · RESULTS

Measurable operational benefits

The concrete gains delivered by the systems put into service across line and fleet operations.

85%

LOWER SAFETY RISK
AI-supported camera analysis brings a marked fall in driver-related risk events.

40%

FUEL SAVINGS
Telemetry and driving scores spread economical driving behaviour, which lowers fuel costs.

95%

COUNTING ACCURACY
RF-ID based automatic counting reports line load data with almost complete accuracy.

60%

HIGHER LINE EFFICIENCY
Real-time load and timing data optimize how trips are planned.

ABOUT THESE FIGURES

The percentages above are **target values**, not measurements from a particular installation. Project-specific targets are set together with a measurement of the current situation and the results of a pilot. The passenger counts, load figures, times, lines and hours in the diagrams are likewise illustrative examples.

WHY CREATECH

IN-HOUSE R&D

Through our own R&D center we develop innovative, sustainable solutions tailored to the needs of the public transport sector.

SECTOR EXPERTISE

Years of experience in public transport mean we know the operational needs of the sector's leaders at first hand.

CONTINUOUS SUPPORT

Our expert technical team provides fast, effective service to keep your operations running.

MEASURABLE RESULTS

The solutions we offer are designed to deliver concrete efficiency gains and cost savings in operational processes.

NEXT STEP

Carry your fleet into the future

From telemetry and driving scores to the AI camera system, and from RF-ID passenger counting to trip optimization, we offer solution packages built around your needs. The systems can also be deployed one at a time, and they all come together on the same platform.

Get in touch for detailed information, project consultancy and demo requests. Our technical team is ready to put together a solution for you.

01

Line analysis

We review your lines, timetable and fleet together and set out the priority areas for gains.

02

Pilot installation

Real measurement on a limited number of vehicles; the gains are seen in your own line data.

03

Demo

A live walkthrough of the management center, load analysis and reporting screens.

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