



CREATECH

SOFTWARE · AUTOMATION · ARTIFICIAL INTELLIGENCE

FOOD · COLD CHAIN AND DISTRIBUTION · SEPTEMBER 2026

Warehouse to store cabinet, an unbroken chain

Cold chain monitoring, telemetry, cloud cameras, fuel security and route optimization for food distribution fleets — on a single platform.

An integrated field solution that protects product quality, puts food safety on record and makes every trip measurable. From hardware to software, it is developed in our own R&D center.

95%

FLEET VISIBILITY

40%

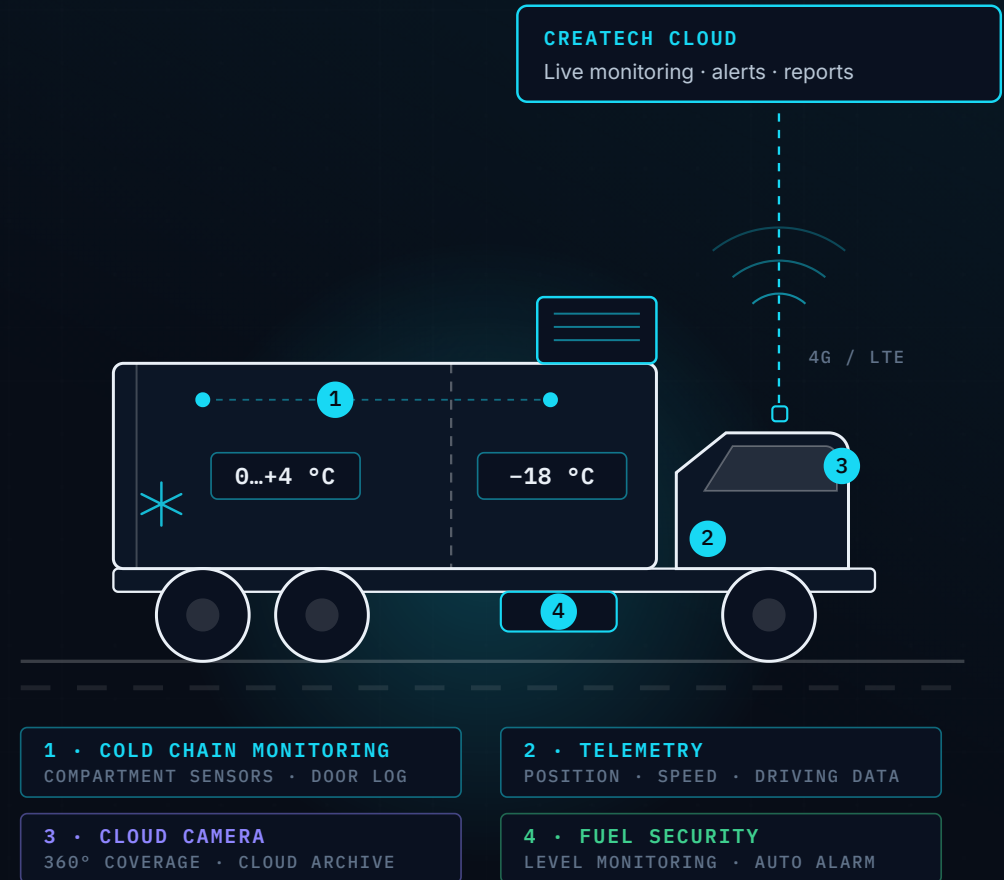
DELIVERY TIME ↓

85%

FUEL THEFT ↓

These are target figures; see page 10 for details.

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02 · KEY CHALLENGES

Four challenges food logistics has to solve at once

Product quality, food safety and distribution cost are not independent of one another. A one-minute break in the cold chain affects the product, a late delivery affects the customer, and fuel consumption nobody can track affects the **cost**. Createch addresses all four on a single platform.

01 · COST

Fuel security and theft

Fuel theft and unauthorized fuel use in food distribution fleets drive up operating costs and undermine the reliability of the process.

The energy the refrigeration unit consumes belongs in the same line: while the vehicle is on the road, the unit keeps running too.

02 · COLD CHAIN

Cold chain and delivery tracking

Getting food products delivered on time and in the right conditions is critical to protecting product quality.

The problem is not only that the temperature deviates, but that the deviation goes unnoticed and unrecorded.

03 · VISIBILITY

Fleet visibility

A lack of real-time position and status information in distribution operations makes processes harder to manage and reduces efficiency.

Where the vehicle is matters, but so does when the door opened and what temperature the load was at.

04 · SAFETY

Safety risks

Blind spots around the vehicle and inadequate camera recording increase the risk of workplace accidents and damage.

Manoeuvring in a narrow street and backing onto a goods-in ramp are the two riskiest moments in food distribution.

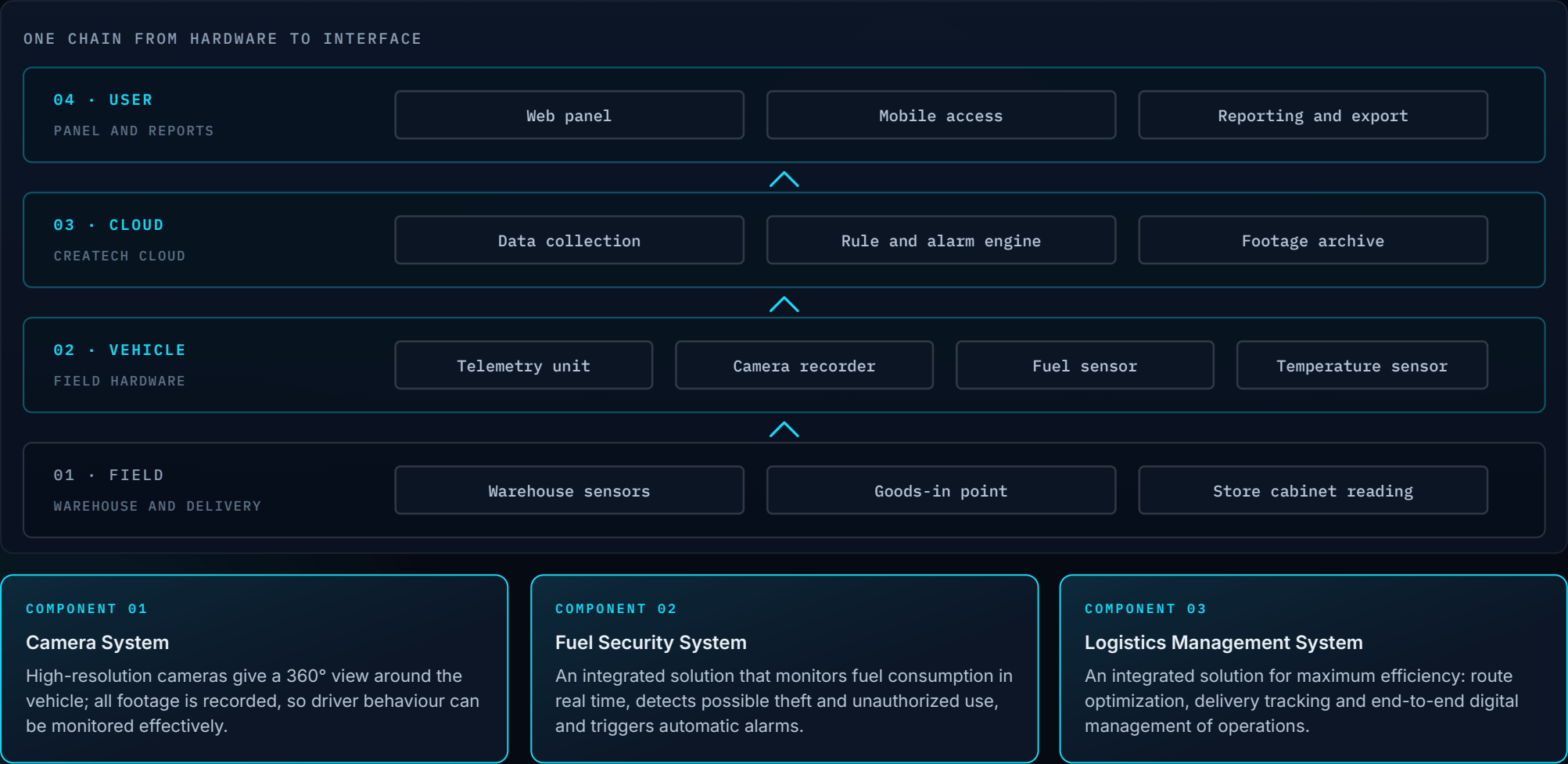
THE COMMON GROUND

All four challenges start to resolve in the same place: field data joining a single stream. When temperature, position, door status and fuel sit in separate systems none of them can explain the others; when they meet in the same trip record, each becomes the evidence for the rest.

03 · SYSTEM ARCHITECTURE

They look like separate products, they run on the same four layers

The camera system, fuel security and logistics management can be bought one at a time; but they all share the same hardware, cloud and interface layers. From the electronic board design to the platform interface, every layer is developed in our own R&D center.



04 · COLD CHAIN

One temperature record, from the cold store to the store cabinet

Temperature is measured, verified and logged at three critical stages of the cold chain. Measurement continues whether or not the vehicle is moving; even a single excursion outside the target band **becomes an immediate alert and stays in the trip record**.

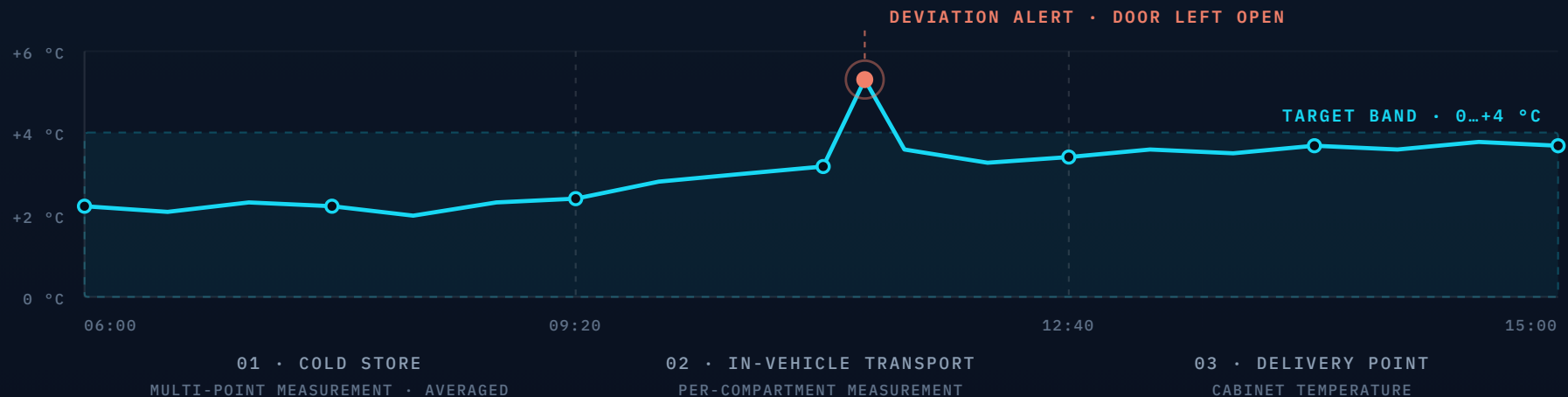


DIAGRAM · TEMPERATURE RECORD OF ONE TRIP The temperatures, times and durations shown are illustrative.

01 · COLD STORE**Verified before loading**

Multiple sensors measure temperatures in different zones of the warehouse, and their average verifies the temperature at dispatch. The first link of the chain closes before the trip starts.

02 · IN-VEHICLE TRANSPORT**Measured per compartment**

Sensors placed at different points track the temperature throughout transport. Chilled, frozen and ambient compartments are measured separately; door openings go into the same record.

03 · DELIVERY POINT**Proof of delivery**

The store cabinet temperature is measured to record that products were delivered in the right conditions. The delivery record is kept together with that trip's temperature history.

05 · ALERT AND RECORD

An alert alone is not enough; the reason goes on record too

Because temperature data is stored together with camera footage and location, when a delivery is questioned later **the answer to “what happened” is already in the record.**

01 · DETECT

Threshold exceeded

The sensor value leaves the defined range; the system detects the deviation at that moment.



02 · ALERT

Instant notification

Driver and control centre are notified at the same moment, buying time to intervene.



03 · CONFIRM

Footage and location

The event is verified with the camera footage and position data from that moment.



04 · RECORD

Trip record

The event is written into the trip file and the report with a timestamp.

WHAT IS RECORDED ON EVERY TRIP

- **Temperature history:** Continuous per-compartment measurement from dispatch to delivery; the whole curve is kept, not just an average.
- **Door-opening record:** When, where and for how long the door stayed open goes into the trip record.
- **Location and time:** Every reading is matched to a position and a timestamp, so it is clear where each value was taken.
- **Refrigeration run time:** How long the unit ran during the trip is recorded.
- **Compartment mapping:** Which product group travelled in which compartment stays in the trip record.

WHAT THE RECORD IS WORTH IN OPERATION

- **Deviations and alerts:** Threshold excursions, who the alert went to and when it was closed all stay on record.
- **Delivery confirmation:** The store cabinet reading and the delivery step come together in the same record.
- **Audit-ready output:** Trip-based records are exported as reports, ready for a customer or an audit request.
- **Disputes and damage claims:** With footage and temperature presented together, the process runs on evidence.
- **Process improvement:** Recurring deviations become visible by route, vehicle or delivery point.

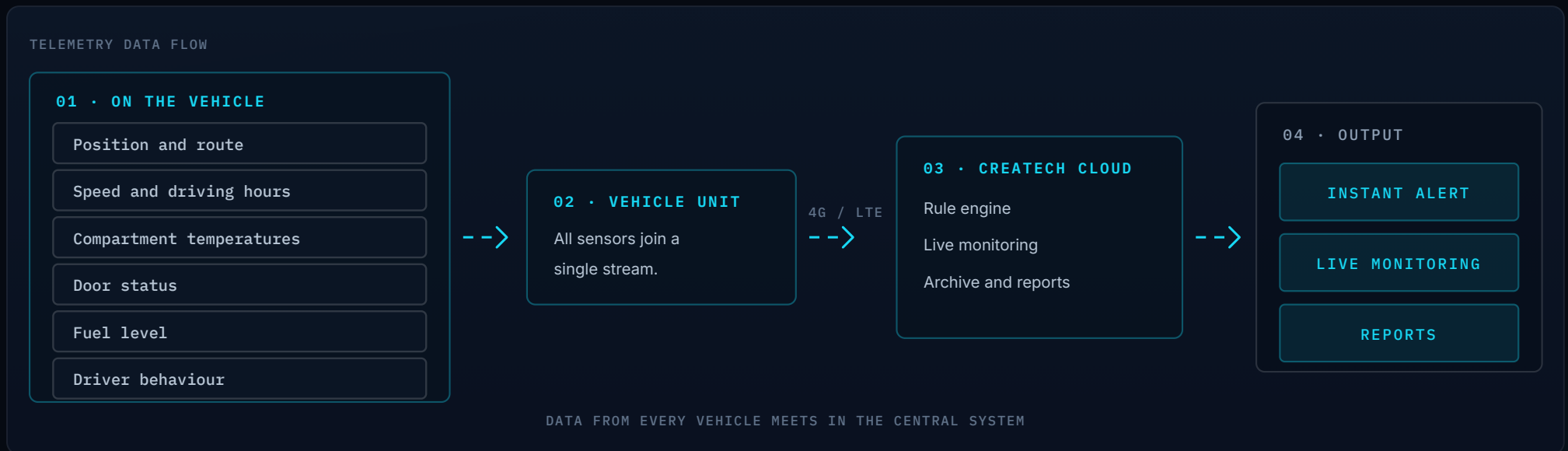
AN UNEDITABLE RECORD

A deviation record cannot be deleted or edited afterwards. This is not there to constrain the operations team, but so the record carries evidential weight with customers and auditors.

06 · TELEMETRY

Telemetry is not a single box but a four-layer chain

Because every field reading joins the same stream, temperature, position and door status are not independent — they are read as parts of the same trip.



WHAT IS TRACKED IN FOOD DISTRIBUTION

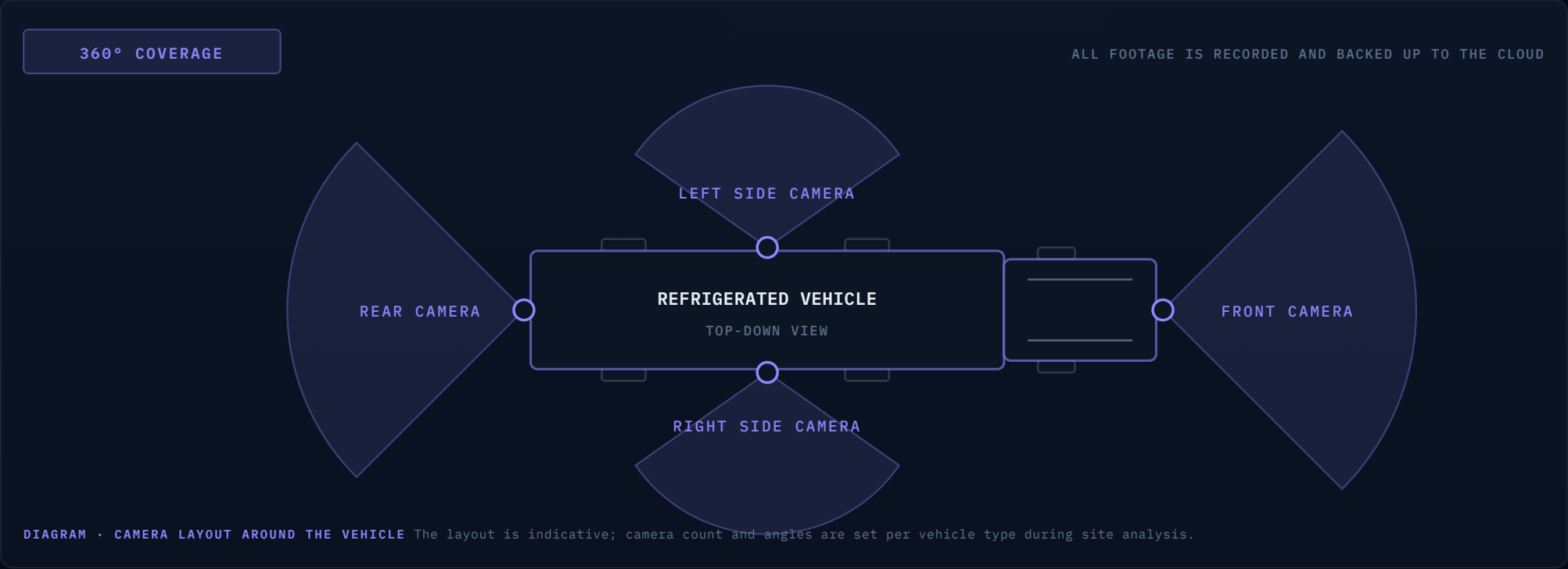
- **Position and route:** Live position, drift from the planned route and stop durations.
- **Speed and driving hours:** Speed violations, continuous driving time and break patterns; the plan stays compliant.
- **Compartment temperatures:** Chilled, frozen and ambient compartments are assessed against separate thresholds.
- **Door status:** The moment and duration of each opening matches the temperature data on the same time axis.
- **Fuel level:** Sudden drops and unusual consumption are assessed together with the fuel security system.
- **Driver behaviour:** Harsh braking, sharp acceleration and idling time are reported per trip.

PROACTIVE ALERTS

When a deviation or anomaly is detected the system notifies the relevant teams immediately; the problem is solved in the field, not at the reporting stage.

No corner around the vehicle is left to the mirrors

The four cameras are positioned so their fields of view overlap. Manoeuvring in a narrow street, backing onto a goods-in ramp and reversing all end up in the same record; footage is **backed up to the cloud infrastructure automatically**.



01

Remote access

Every vehicle camera can be reached in real time from any device with an internet connection.

02

Automatic backup

Footage is backed up to the cloud automatically, removing the risk of data loss.

03

Real-time event alerts

When a critical event is detected, managers receive an immediate notification with footage.

04

Archive and reporting

Recorded footage is easy to filter, and event-based reports are produced quickly and efficiently.

08 · FUEL SECURITY

Every movement in the fuel level goes on record

An integrated solution that monitors fuel consumption in real time, detects possible theft and unauthorized use, and **triggers automatic alarms**. Any movement that departs from the normal consumption curve is handled as a separate event.



DIAGRAM · FUEL LEVEL RECORD OF ONE TRIP The levels and times shown are illustrative.

WHAT THE SYSTEM DOES

- **Live level monitoring:** Tank level is measured continuously and logged with position and time.
- **Off-curve detection:** Drops that do not fit engine load and distance travelled are separated out.
- **Automatic alarm:** When suspicious movement is detected, the control centre is alerted immediately.
- **Refuelling record:** Every refuelling is logged with amount, location and time.

WHY IT MATTERS IN FOOD DISTRIBUTION

- **Two energy lines:** In food distribution fuel powers not only the vehicle but the refrigeration unit too.
- **Long idling times:** A vehicle waiting at a delivery point keeps cooling, so it keeps burning fuel.
- **Many-stop trips:** Dozens of stops a day complicate the consumption curve, which is why automatic separation is needed.
- **Together with the cameras:** Footage from the moment of the alarm ties the cause to evidence.

85%

LESS FUEL THEFT

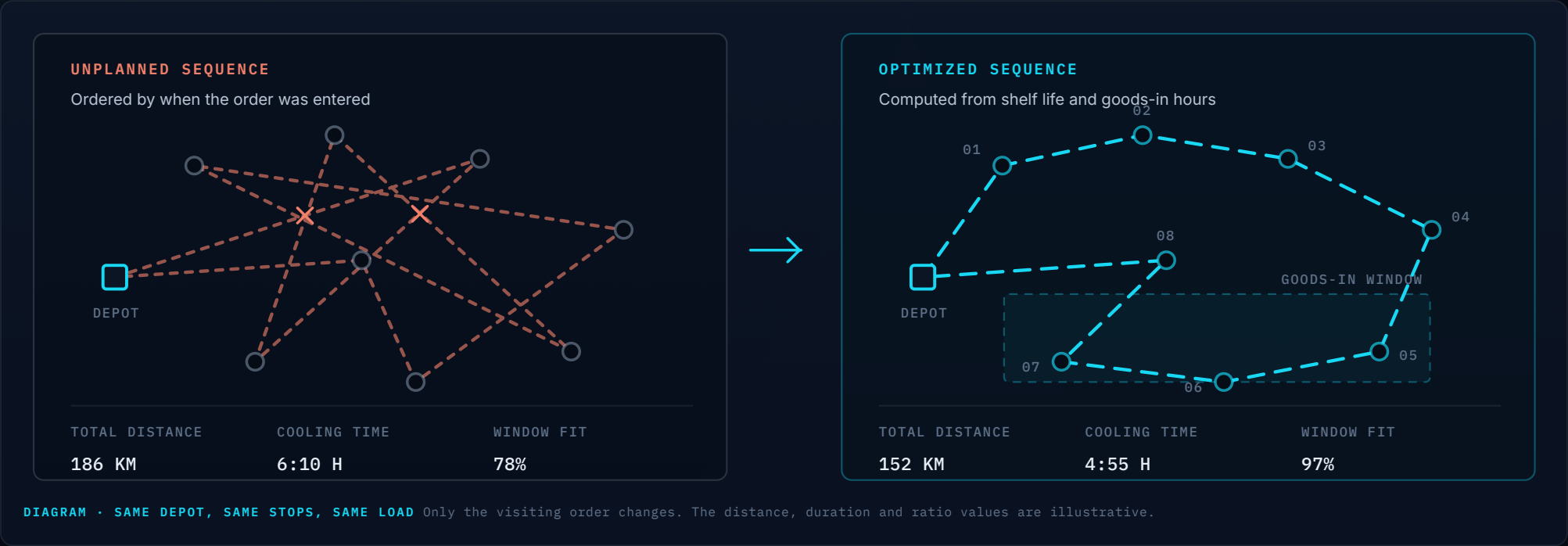
The fuel security system brings a clear reduction in unauthorized fuel use.

A target figure; see page 10 for details.

09 · LOGISTICS OPTIMIZATION

One delivery list, two different sequences

In food distribution, route optimization manages three things at once: on the **cost** side distance, fuel and the refrigeration unit's energy; on the **time** side goods-in hours and remaining shelf life; on the **equipment** side compartment load factor. A shorter route cuts not just fuel, but the time spent refrigerating.



01 · COST

Fuel and refrigeration energy

Total trip distance and fuel consumption fall, the refrigeration unit runs for less time, and door openings are measured per trip.

02 · TIME

Goods-in hours and shelf life

Sequences that miss the window are eliminated at planning, short-shelf-life products go to the front, and time spent in the vehicle stays on record.

03 · EQUIPMENT

Vehicle and compartment use

Load factor is measured per trip, fewer trips leave half loaded, and refrigerated vehicle numbers are planned to real demand.

10 · RESULTS

Gains that show up in the operation

The targeted contribution of the systems deployed in food distribution operations. The ratios below, and the distance, duration and level values in the diagrams throughout this document, are **illustrative target figures**.

85%

LESS FUEL THEFT

The fuel security system brings a clear reduction in unauthorized fuel use.

40%

SHORTER DELIVERY TIMES

Route optimization within the Logistics Management System shortens delivery times.

95%

FLEET VISIBILITY

Telemetry and cloud cameras keep the fleet's operational status visible in real time.

60%

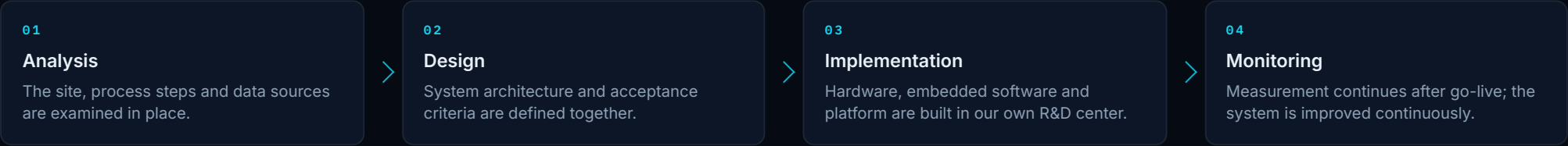
LOWER ACCIDENT RISK

Camera systems and real-time alerts bring a clear reduction in safety incidents.

ABOUT THESE NUMBERS

These ratios are not a commitment to measured results. Project-specific targets are agreed with the operations team after discovery and site analysis, and measured on the same platform once the system goes live. The distances, durations, temperatures and levels in the diagrams are illustrative in the same way.

HOW WE WORK · A FOUR-STEP CYCLE



Home-grown engineering, sector experience, measurable results

A system that works in food logistics is not made of a single product; it comes from a team that knows the field, hardware it developed itself, and a support relationship that continues long after go-live.

01

Home-grown R&D

Through our in-house R&D center we develop innovative, sustainable solutions built for the food sector. Electronic boards, embedded software and the platform are produced by the same team.

02

Sector expertise

Drawing on many years of experience in the food sector, we analyze the operational needs of sector leaders in depth.

03

Continuous support

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

04

Measurable results

Solutions are designed to deliver concrete efficiency gains and cost savings; the gains become measurable on the same platform.

Take your fleet into the future

Manage your operations more effectively with real-time telemetry, cold chain monitoring, smart logistics optimization and cloud-based camera systems: optimize your costs while raising customer satisfaction. Our expert technical team is ready to put together a solution package that fits your needs.

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