



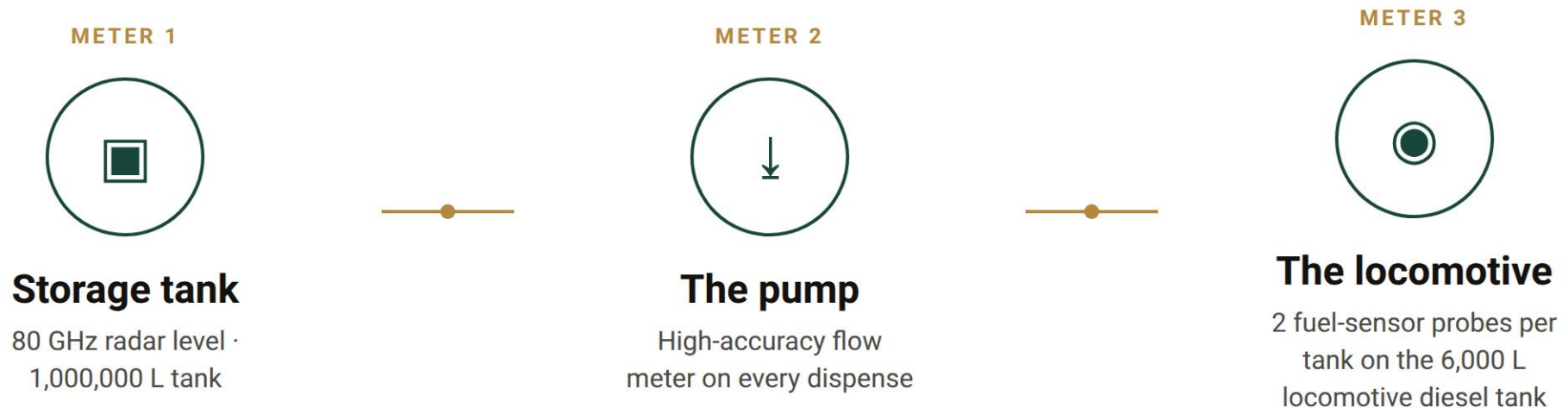
Fuel telemetry and reconciliation, from storage tank to locomotive.

A custom fuel-monitoring system for Transnet — metering, access control and reconciliation across the diesel supply chain.

SYSTEM CONCEPT

Three metering points, reconciled in real time.

Diesel volume is measured at three independent points and reconciled continuously.



Volume out of tank = volume dispensed = volume into locomotive. Any unreconciled delta is logged as a fraud or theft event.

Metering and access control at the diesel storage tank.



TANK

80 GHz radar level

Accurate to 0.5–1 cm level on the 1,000,000 L tank · Modbus / RS485



PUMP

High-accuracy flow meter

Exact volume per dispensing event, with automatic shut-off



IDENTIFICATION & AUTHORISATION

Biometrics · RFID · tablet

Operator by face and fingerprint, locomotive by RFID, on a custom-designed hardened pump tablet; fuel flows only after authorisation

On the locomotive: twin probes in the 6,000 L tank.



INSTALLATION OVERVIEW

The 6000L diesel tank uses two fuel probes installed diagonally across opposite corners to provide accurate fuel level monitoring.

The probes connect via an RS485 cable to a tracking / telemetry device.

The tracking / telemetry device is powered from the train power system.

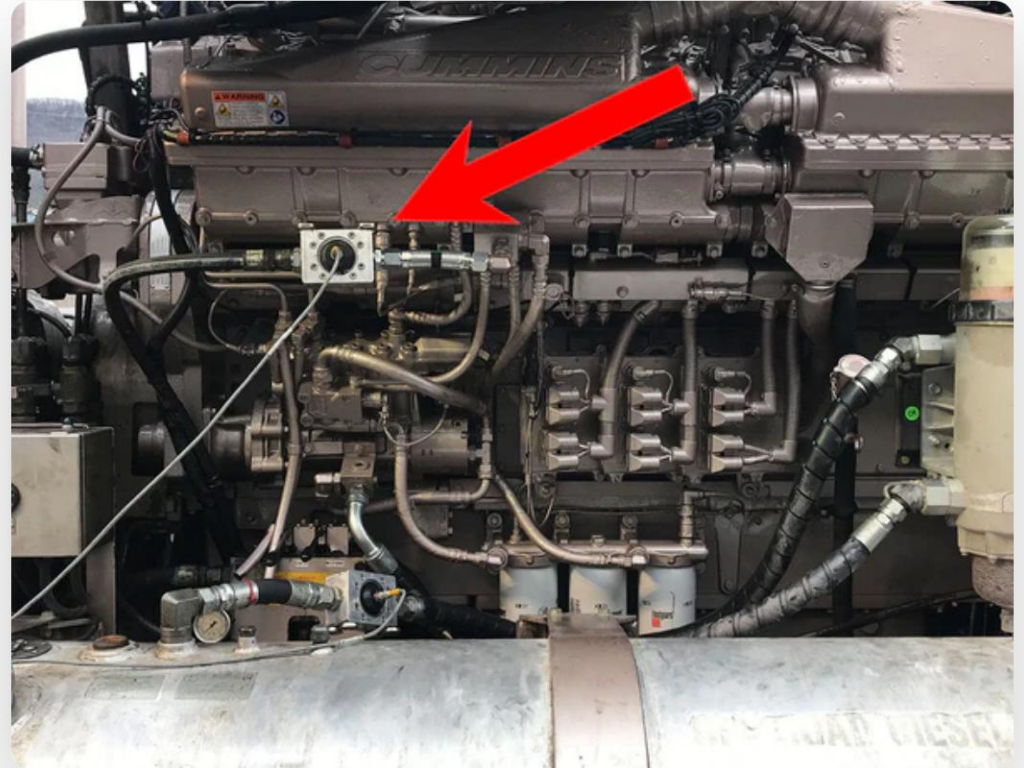


- 6,000 L diesel tank
- **Diagonally opposed** probes – correct for tilt & movement
- **RS485** → telemetry, 4G / Wi-Fi
- Powered from the **train** system

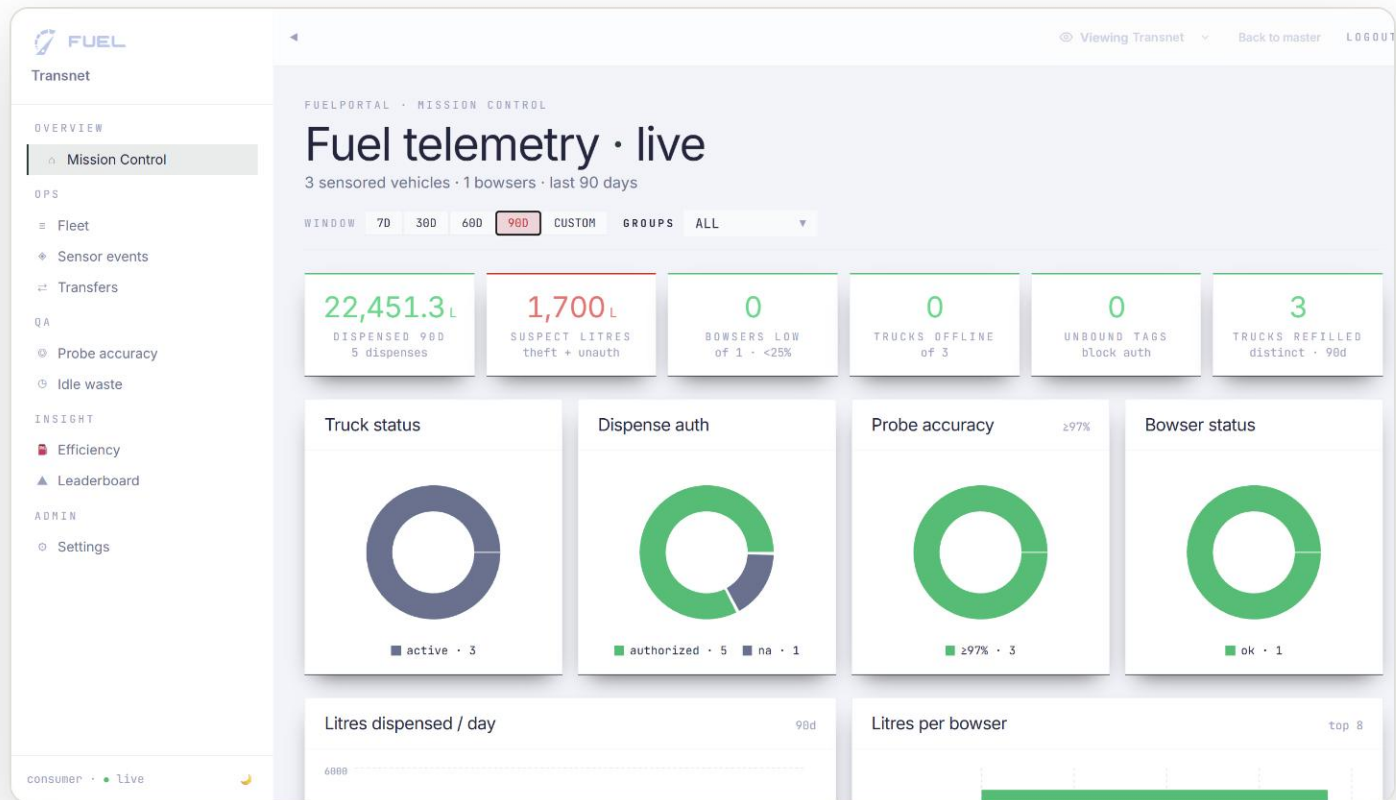
Field-proven equipment, already in service.



High-accuracy Macnaught flow meter, installed inline on an engine fuel line.



In-service installation on a Cummins diesel engine, connected to the telemetry unit – the same approach applies to generator (genset) engines.

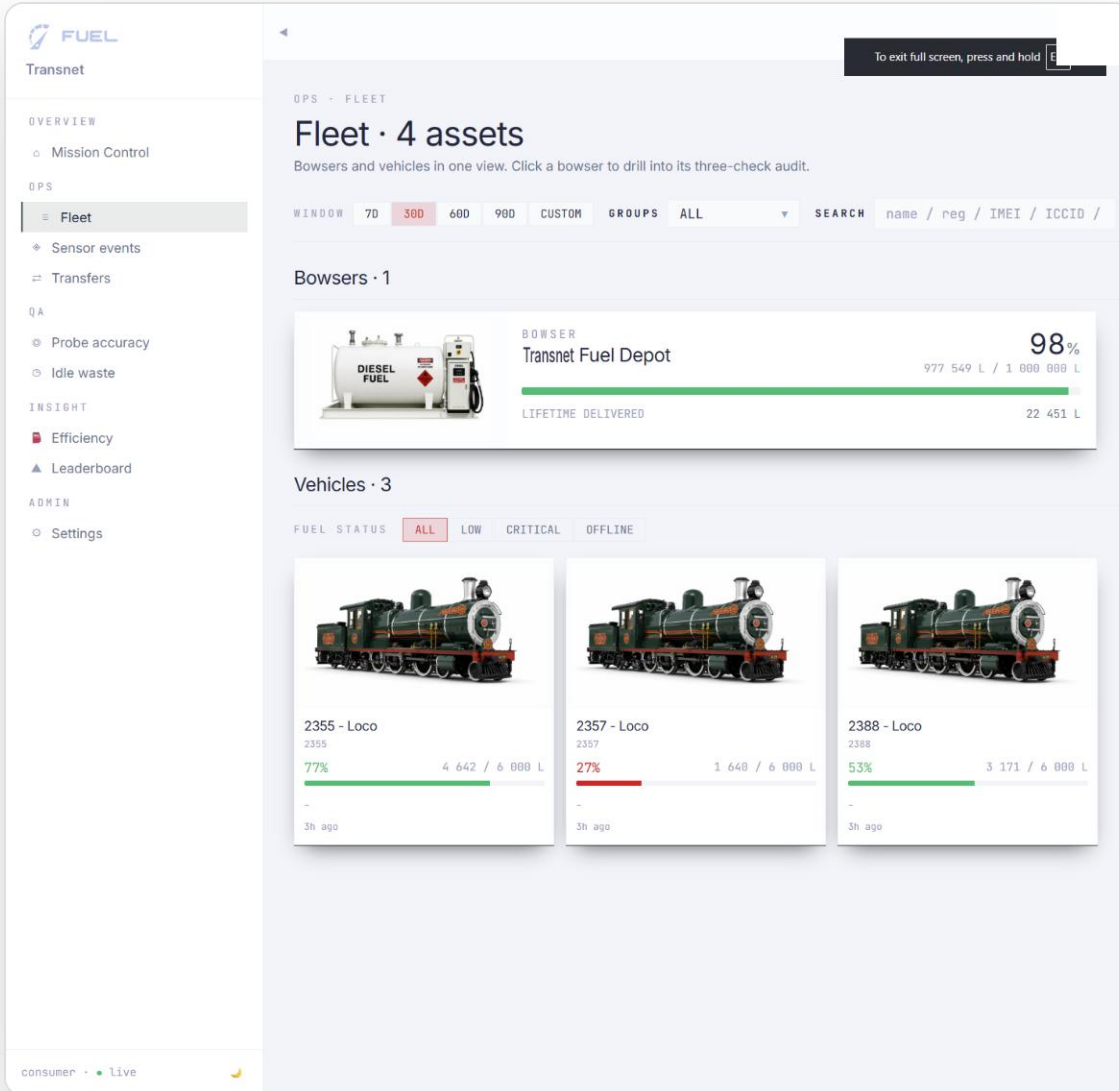


SOFTWARE · MOCK-UP, FULLY CONFIGURABLE

All assets on one view, updated in real time.

Mission Control – fuel telemetry across every storage tank and locomotive, live.

Mock-up populated with sample data – not actual Transnet figures. Every screen and rule is configured to Transnet's operation.

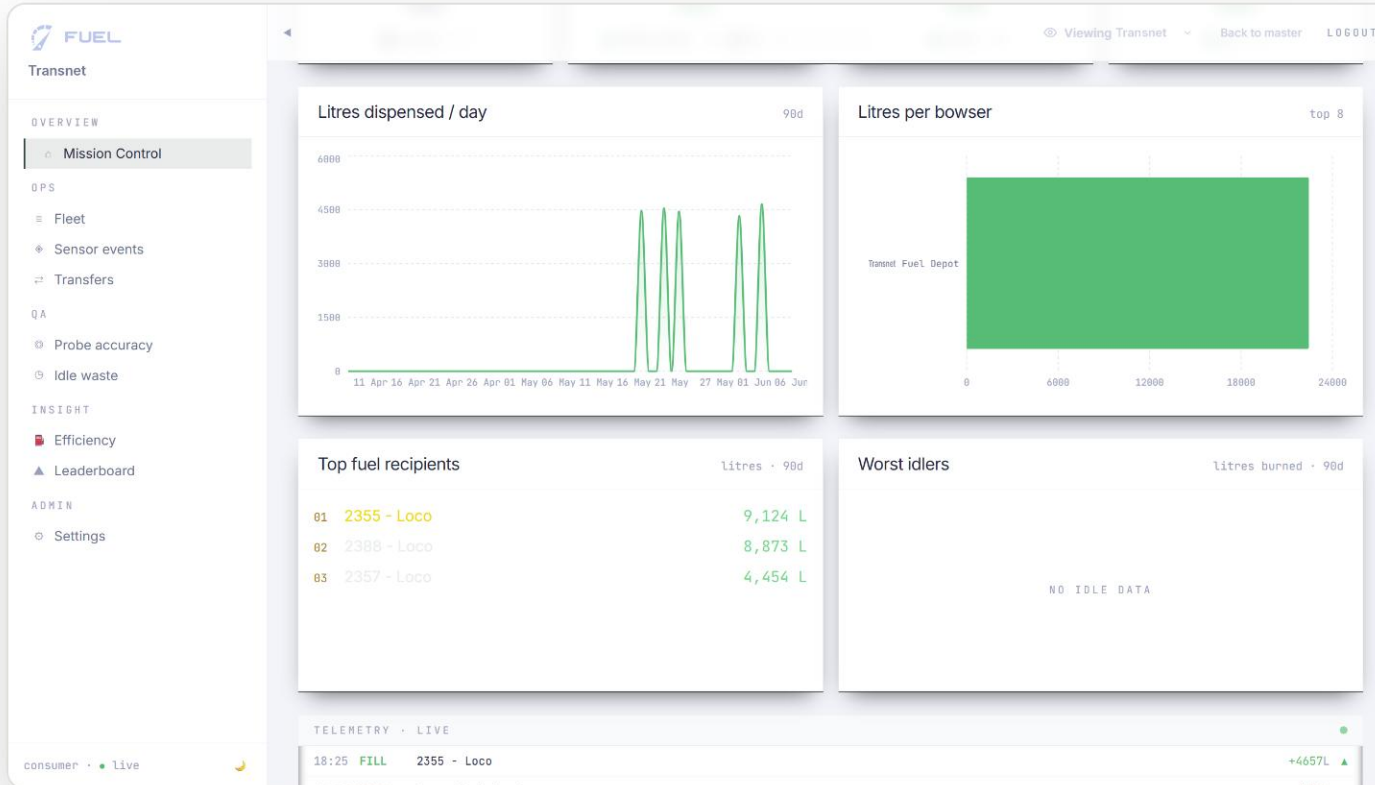


MANAGEMENT DATA · REAL-TIME LEVELS

Fleet view – every tank and locomotive, live.

Storage-tank stock and each locomotive's tank level on one screen, at a glance.

Demonstration / seeded data – not actual Transnet figures.

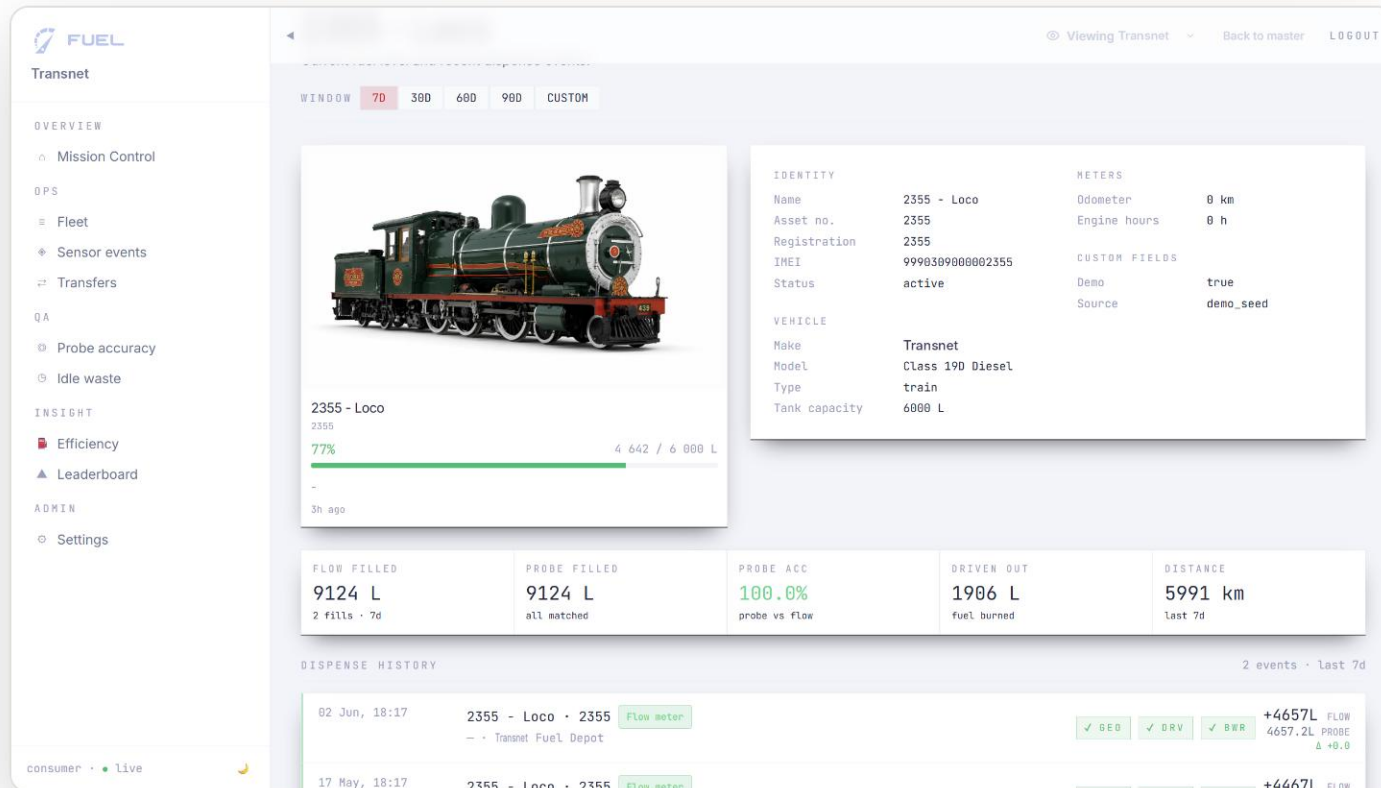


MANAGEMENT DATA · CONSUMPTION

Consumption – by locomotive and by route.

Litres dispensed over time, volume per storage tank, and the highest consumers ranked.

Demonstration / seeded data – not actual Transnet figures.



MANAGEMENT DATA · DRILL-DOWN

One locomotive, in full detail.

Tank capacity, flow-versus-probe accuracy, dispense history, distance and consumption.

Demonstration / seeded data – not actual Transnet figures.

FUEL
Transnet

Overview: Mission Control, OPS (Fleet, Sensor events, **Transfers**), QA (Probe accuracy, Idle waste), INSIGHT (Efficiency, Leaderboard), ADMIN (Settings)

6 transfers • Backend pair-matcher updates every minute

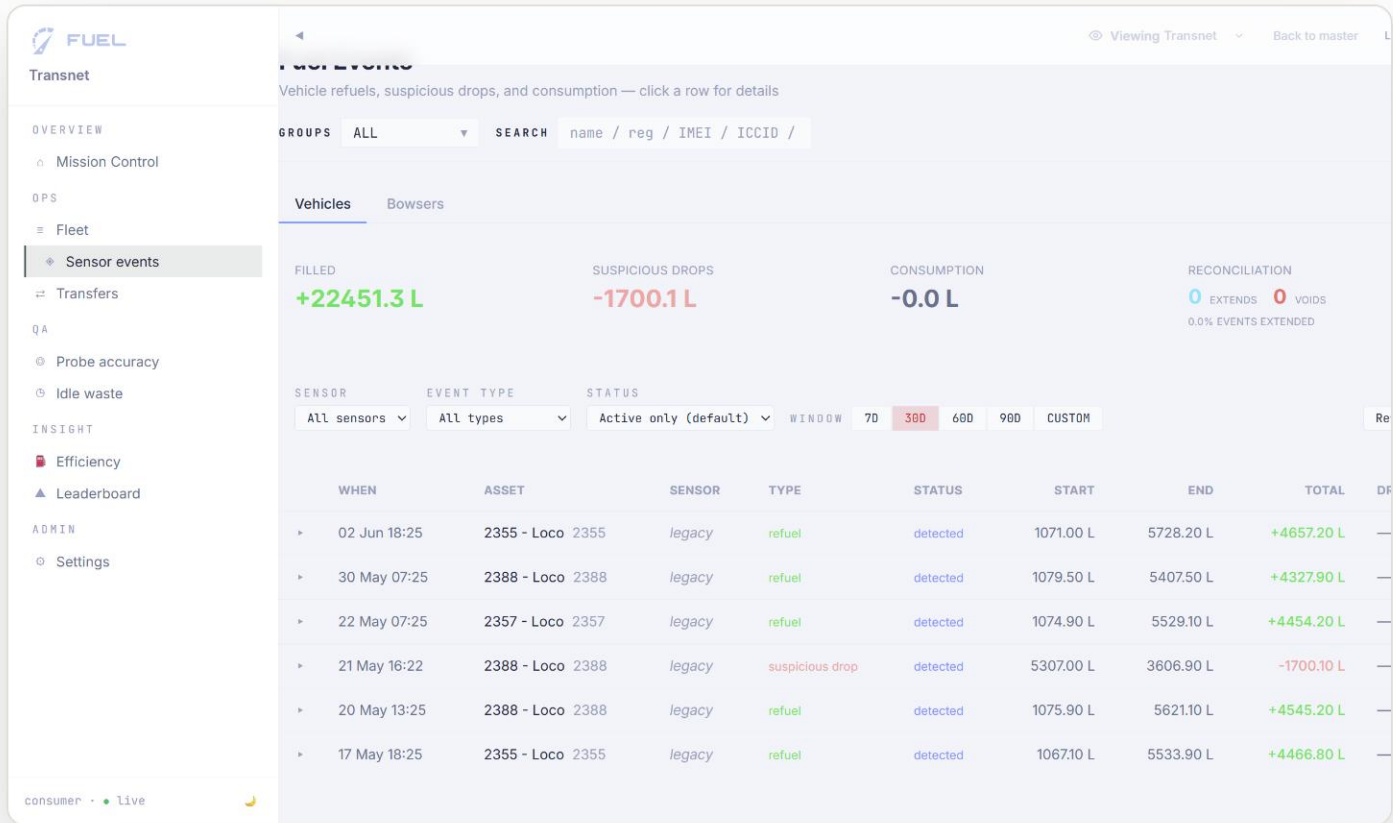
WHEN	SOURCE	DESTINATION	TAG	DRIVER	LITERS	CLASS	AUTH	SCORE	EVIDENCE
2026/06/02, 18:17:33	Transnet Fuel Depot bowser	2355 - Loco (2355) train	DEMO-FT-2355 UNKNOWN TAG	—	4657.2 L FLOW 4657.2 L PROBE +0.0%	Dispense	authorized	0.70	tapped: DEMO-FT-2355 [UN...] View + Report
2026/05/30, 07:17:33	Transnet Fuel Depot bowser	2388 - Loco (2388) train	DEMO-FT-2388 UNKNOWN TAG	—	4327.9 L FLOW 4327.9 L PROBE +0.0%	Dispense	authorized	0.70	tapped: DEMO-FT-2388 [UN...] View + Report
2026/05/22, 07:17:33	Transnet Fuel Depot bowser	2357 - Loco (2357) train	DEMO-FT-2357 UNKNOWN TAG	—	4454.2 L FLOW 4454.2 L PROBE +0.0%	Dispense	authorized	0.70	tapped: DEMO-FT-2357 [UN...] View + Report
2026/05/21, 16:17:33	2388 - Loco (2388) train	external	—	—	1700.1 L DROP	Theft	na	—	
2026/05/20, 13:17:33	Transnet Fuel Depot bowser	2388 - Loco (2388) train	DEMO-FT-2388 UNKNOWN TAG	—	4545.2 L FLOW 4545.2 L PROBE +0.0%	Dispense	authorized	0.70	tapped: DEMO-FT-2388 [UN...] View + Report
2026/05/17, 18:17:33	Transnet Fuel Depot bowser	2355 - Loco (2355) train	DEMO-FT-2355 UNKNOWN TAG	—	4466.8 L FLOW 4466.8 L PROBE +0.0%	Dispense	authorized	0.70	tapped: DEMO-FT-2355 [UN...] View + Report

FRAUD & THEFT · AUTHORISATION

Every dispense authorised and evidenced.

Operator, locomotive, authorisation status and classification – dispense versus theft, with evidence.

Demonstration / seeded data – not actual Transnet figures.

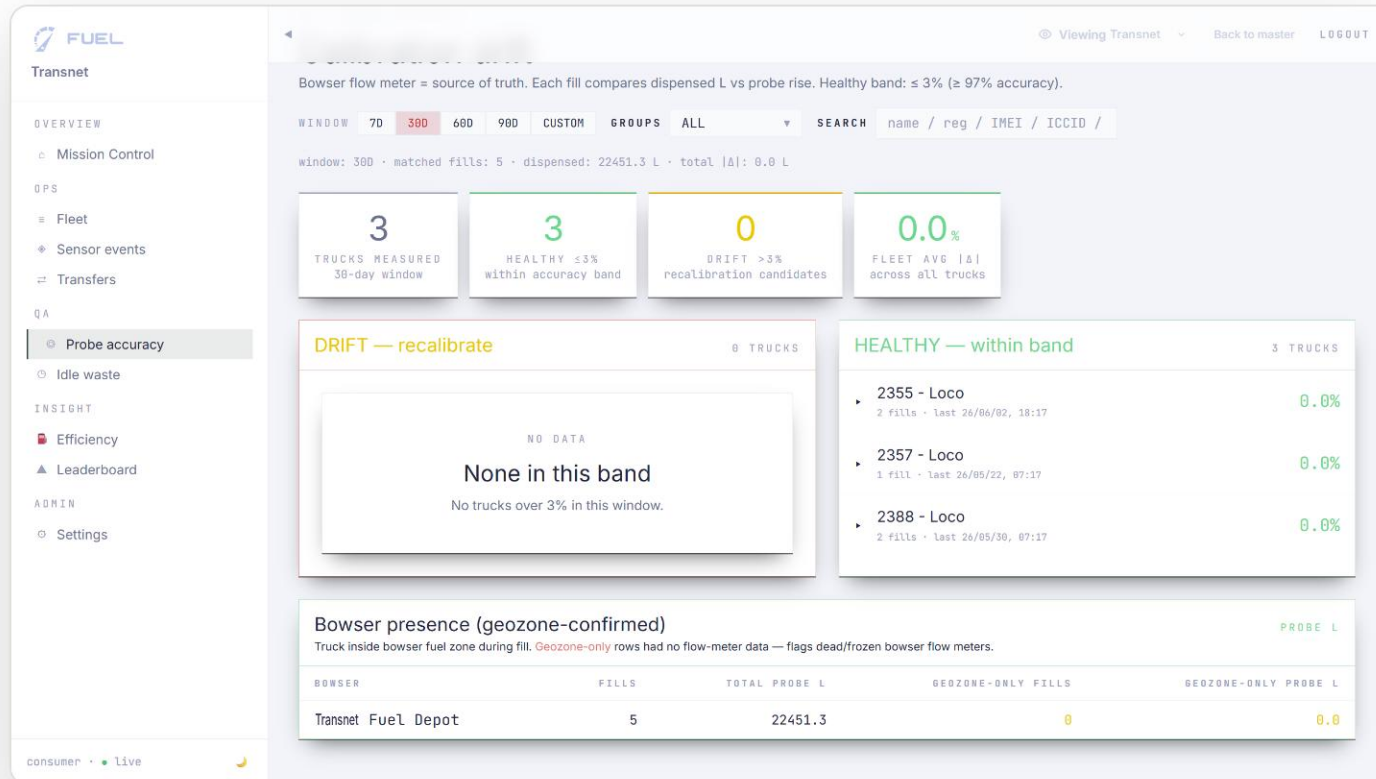


FRAUD & THEFT · SENSOR EVENTS

Sensor events — unexplained drops flagged.

Refuels and suspicious drops, logged per locomotive and per storage tank, with reconciliation status.

Demonstration / seeded data — not actual Transnet figures.



FRAUD & THEFT · RECONCILIATION

Flow versus probe, reconciled within tolerance.

The flow meter is the source of truth; drift beyond the $\pm 3\%$ healthy band is flagged for investigation.

Demonstration / seeded data — not actual Transnet figures.

SUPPLIER · GOTYOU TELEMATICS

Custom software on best-of-breed telemetry hardware.

DISCIPLINE

Telemetry

Sensor integration, connectivity and data pipelines.

SOFTWARE

Built to specification

Application configured to Transnet's assets, workflows and reports.

HARDWARE

Proven components

Radar level sensors, flow meters, RS485 telemetry units.

Proof of Concept: one instrumented locomotive.

Scope:

- One locomotive – twin tank probes and telemetry
- Live access to the GotYou Fuel platform

What it demonstrates:

- Real-time tank level on the locomotive
- Measured consumption for that locomotive
- Unexplained level-drop events flagged
- All data live on the GotYou Fuel platform

A minimal, low-risk pilot to validate accuracy and data before any wider rollout.

GotYou supplies the hardware and provides installation support and consulting services; fitment on the locomotive is carried out by Transnet engineers.