



ARCHITECTS OF INTELLIGENT INFRASTRUCTURE

ATOM

---

FLEET VISIBILITY — TELEMETRY INTELLIGENCE — ALERT MANAGEMENT — INCIDENT INVESTIGATION — REPORTING & GOVERNANCE

---

---

INFO@APEXIAR.CO.UK  
WWW.APEXIAR.CO.UK

# ADVANCED TELEMETRY AND ONBOARD MONITORING

Operational rail visibility depends on live, reliable telemetry intelligence



## Why It Matters

Without structured telemetry visibility, rail teams operate reactively.

- Onboard data sits across separate systems
- Issues are often seen after escalation
- Incident review depends on manual reconstruction
- Governance weakens when changes are not traceable

ATOM replaces delayed review with live, auditable control.

## How ATOM Changes Decision-Making

When vehicle data is hard to access, decisions slow down.

ATOM turns OTMR and operational train data into structured intelligence.

- Consolidates fleet and vehicle visibility
- Surfaces threshold-based alerts
- Connects live status with historic context
- Supports engineering, control and leadership teams

Teams act from shared evidence, not isolated data.

## What ATOM Delivers

ATOM converts rail telemetry into a practical operational platform.

- Live fleet dashboard and vehicle status
- Active and historic alert management
- Vehicle drill-down, map views and journey replay
- Reporting and export for review and assurance
- Role-based access, audit trail and single-tenant deployment

A credible operational core with a clear expansion path.

Without ATOM: Rail telemetry remains fragmented, reactive and difficult to govern  
With ATOM: Fleet data becomes visible, alert-led and investigation-ready

# APEXIAR PORTAL (ATOM)

Operational rail telemetry without data reconstruction



## Overview

Operational rail visibility without fragmented telemetry review.

ATOM provides a secure rail telemetry platform for live fleet insight, alert management and incident investigation — replacing disconnected data views, delayed review and manual reconstruction.

Designed for rail operations, engineering and fleet leadership, ATOM enables teams to monitor vehicle condition, identify abnormal events and review historic activity from a controlled single-tenant environment.

## Core Functionality

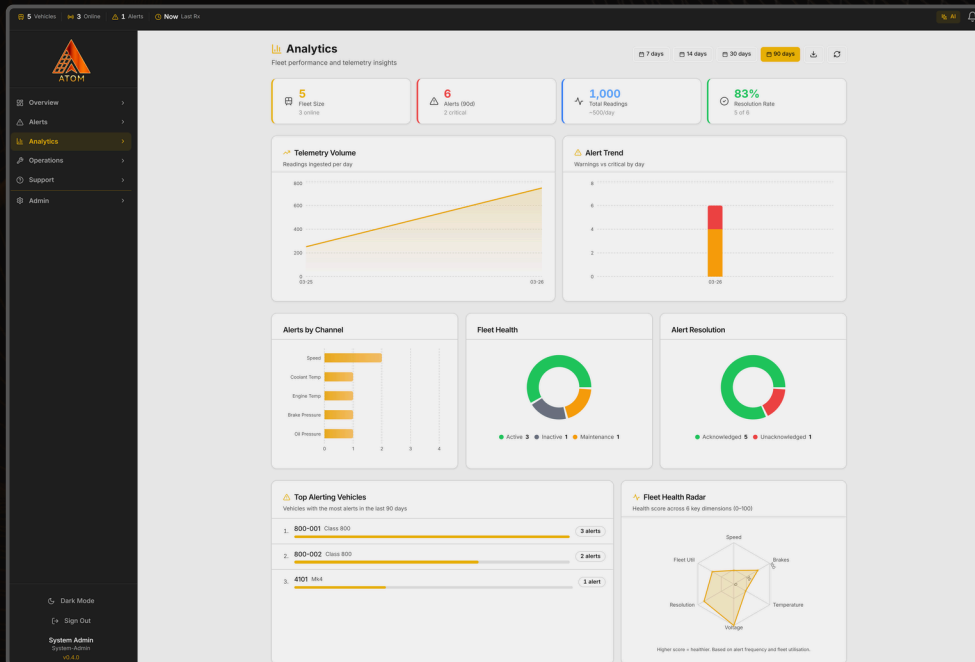
What teams use to maintain operational control:

- Live dashboard visibility across fleet status, online vehicles and active alerts
- Fleet and vehicle drill-down for unit-level telemetry context
- Threshold-based alerts for abnormal operating conditions
- Historic alert review, journey replay and map-based investigation
- Reporting and export for operational review and assurance

## Advanced Capability Path

Built with room to expand beyond the operational core:

- Analytics views for trends, patterns and recurring events
- Speed graphing and location context for incident review
- Configurable rules and thresholds to reflect operational needs
- API key management and ingest controls for telemetry integration
- Roadmap foundation for predictive maintenance and richer operational intelligence





# OPERATIONAL CHALLENGES THAT LIMIT RAIL TELEMETRY VALUE

The risks created by fragmented data, delayed visibility and reactive investigation



## Operating Rail Fleets Create Complex Visibility Challenges

Rail operators manage vehicles, routes, events and engineering issues across complex operational environments.

As fleet activity increases, maintaining live visibility, consistent alerting and timely investigation becomes harder.

This can expose operators to avoidable disruption, slower response and weaker operational assurance.

## Fragmented Telemetry and Limited Visibility

Onboard and operational data is often available, but not always easy to access or interpret.

- OTMR and telemetry data held across separate systems
- Limited live visibility across fleet activity
- Difficult movement from fleet view to vehicle-level context

## Inconsistent Alerting and Threshold Control

Without structured alert logic, abnormal conditions can be missed, delayed or handled inconsistently.

- Thresholds not always aligned to operational need
- Limited prioritisation of abnormal conditions
- Inconsistent escalation across teams

## Reactive Incident Investigation

When visibility is delayed, teams spend time reconstructing events after disruption has occurred.

- Issues identified after escalation
- Manual review slows operational learning
- Historic context is difficult to assemble quickly

## Governance and Operational Assurance

Rail telemetry has more value when actions, access and changes are controlled and traceable.

- Limited auditability of user actions and configuration changes
- Reporting can depend on manual exports or ad hoc analysis
- Data separation and access control are critical in sensitive environments



# ATOM — INSIDE THE PORTAL

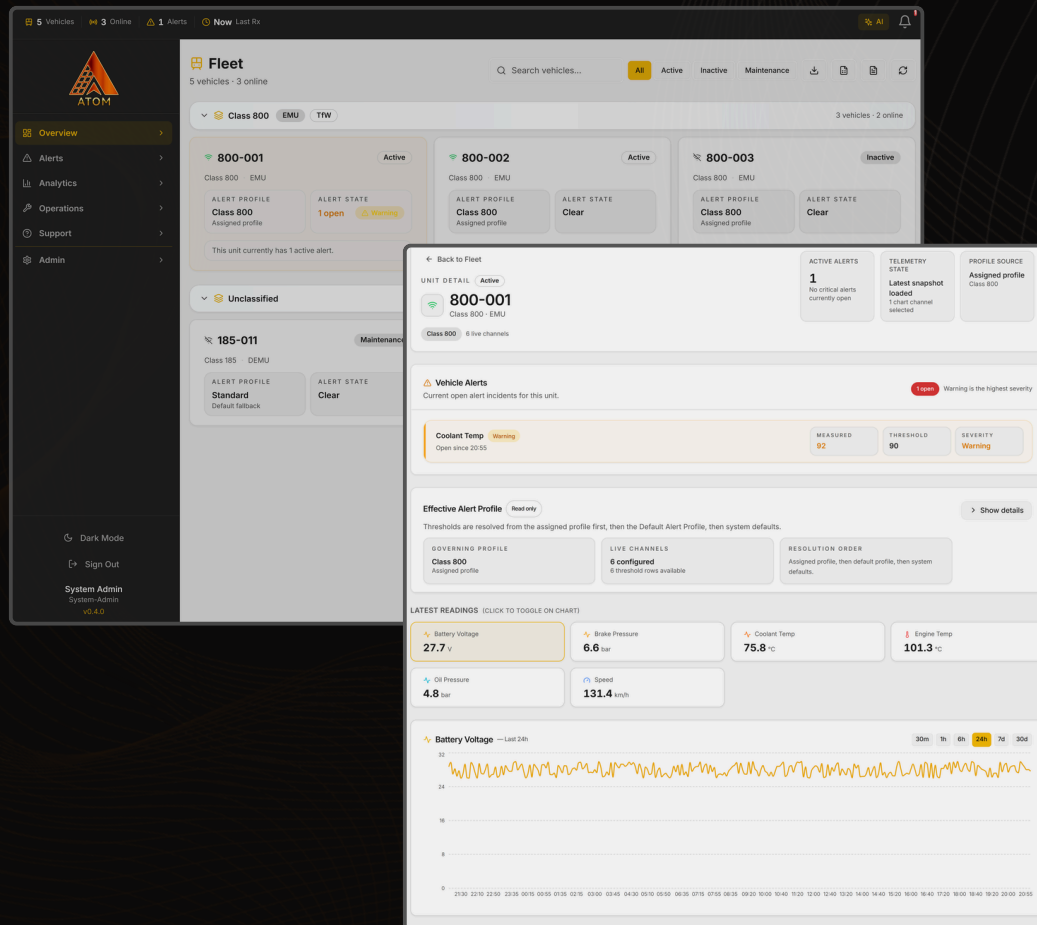
How visibility, alerting and investigation come together in a single operational view



## Supporting the Operational Telemetry Cycle

ATOM supports the full telemetry workflow — from live fleet awareness to alert response, investigation, reporting and review.

The portal brings live visibility, alert response, investigation and reporting into one operational surface.



## Live Fleet Visibility

Dashboards provide immediate visibility of fleet status, online vehicles, active alerts and data freshness. Teams can move quickly from a fleet-level view into vehicle detail and telemetry context.

## Alert-Led Operational Response

Threshold-based alerts help surface abnormal conditions before they become harder to manage. Active alerts give teams a clear view of priority conditions requiring attention.

## Investigation and Replay

Historic alerts, map views, speed graphs and journey replay help teams understand what happened and when. This reduces reliance on manual reconstruction after incidents or anomalies.

## Reporting and Governance

Reports and exports turn operational data into management-ready outputs. User controls, audit trails and single-tenant deployment support controlled operational use.

# TELEMETRY BECOMES OPERATIONAL INTELLIGENCE

Ensuring operational visibility begins with reliable vehicle data



## Structured telemetry that supports operational visibility at source

Operational control begins with timely, usable vehicle data.

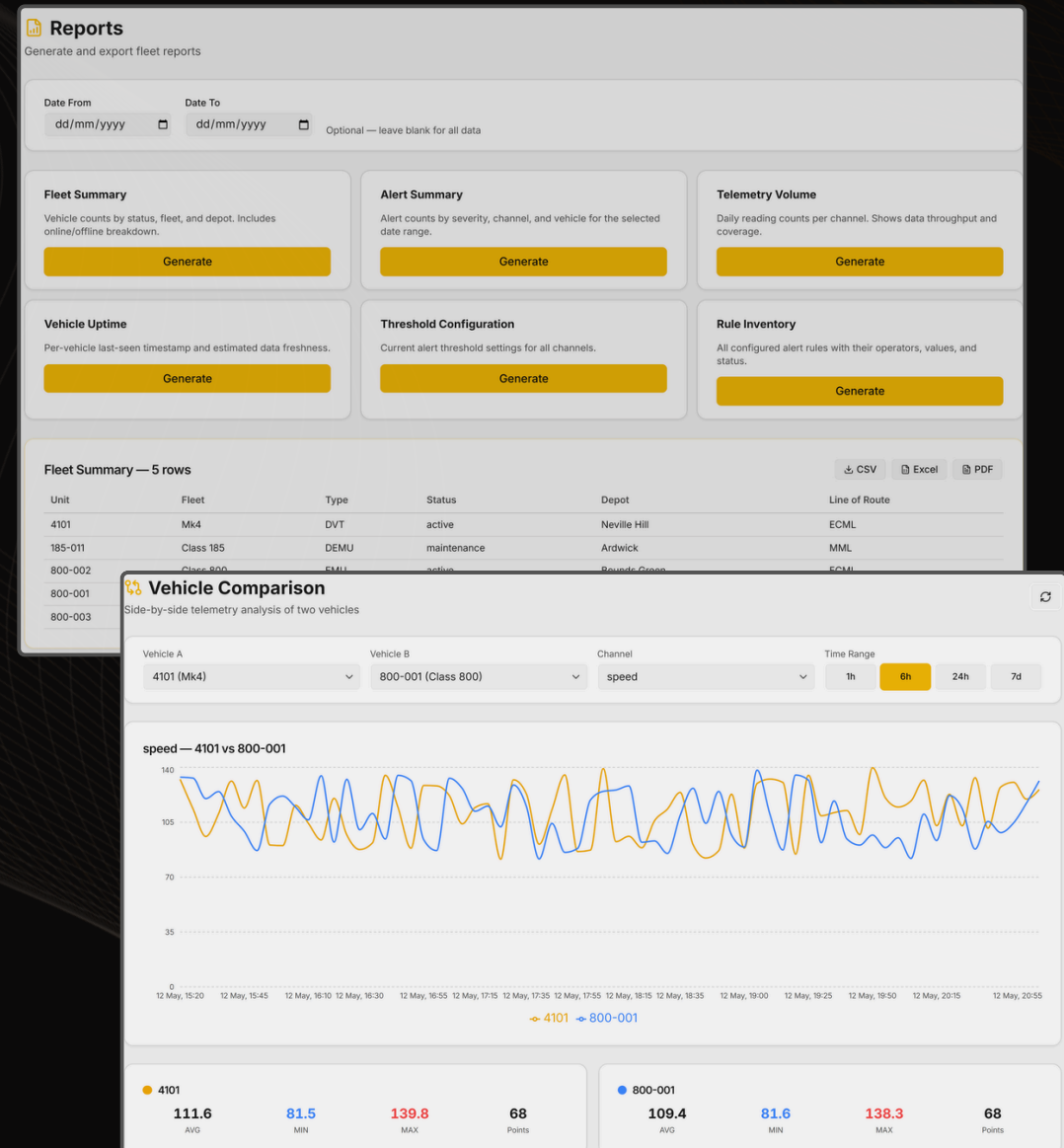
ATOM is designed to receive OTMR and related train telemetry through controlled ingest routes, turning raw data into fleet visibility, alerts and investigation-ready records.

By managing access, mapping and data freshness, ATOM creates a stronger foundation for reliable operational review.

## Built for controlled telemetry integration

- Managed API keys and ingest access
- Mapping of telemetry into operational views
- Data freshness visible across the platform
- Threshold tuning aligned to operational needs
- Traceable administration and configuration

This gives teams confidence that telemetry is not only received, but made usable for monitoring, alerting and review.





# ATOM — ALERTING & EVENT MANAGEMENT

Surfacing abnormal conditions early with context, control and traceability



## Active Alerts

ATOM helps operational teams identify abnormal telemetry conditions through active alert views.

Alerts provide a clear route from live monitoring to operational response.

## Historic Alert Review

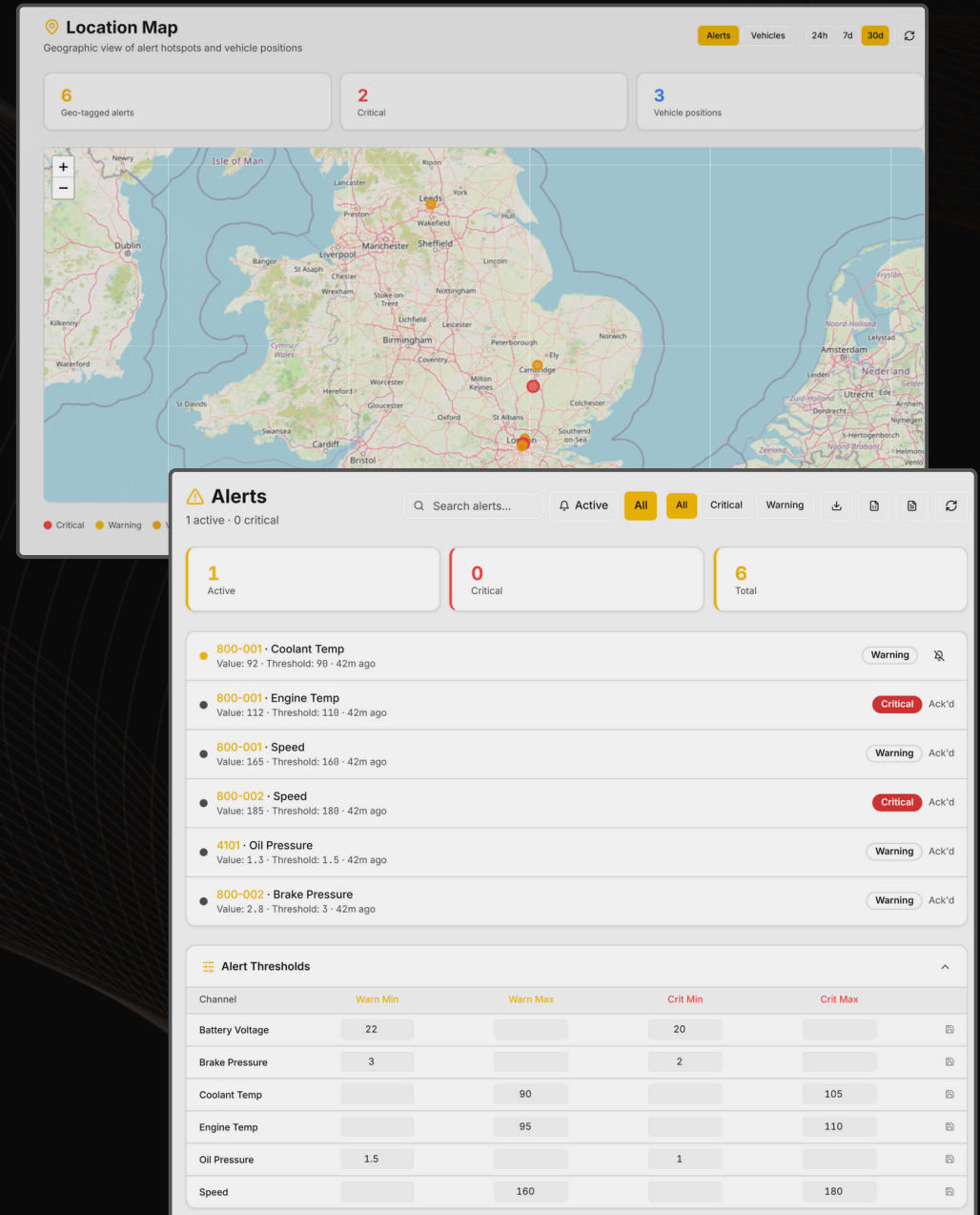
Historic alerts support after-action review, recurring issue analysis and incident reconstruction.

Teams can understand not only that an event occurred, but how it developed over time.

## Threshold and Rule Control

Configurable thresholds help align alerting with operational relevance.

This supports clearer prioritisation and reduces reliance on manual monitoring.





# INCIDENT INVESTIGATION & OPERATIONAL CONTEXT

Turning telemetry, maps and journey history into faster event understanding



## Journey Replay and Location Context

ATOM helps teams reconstruct journey activity using replay and map-based views.

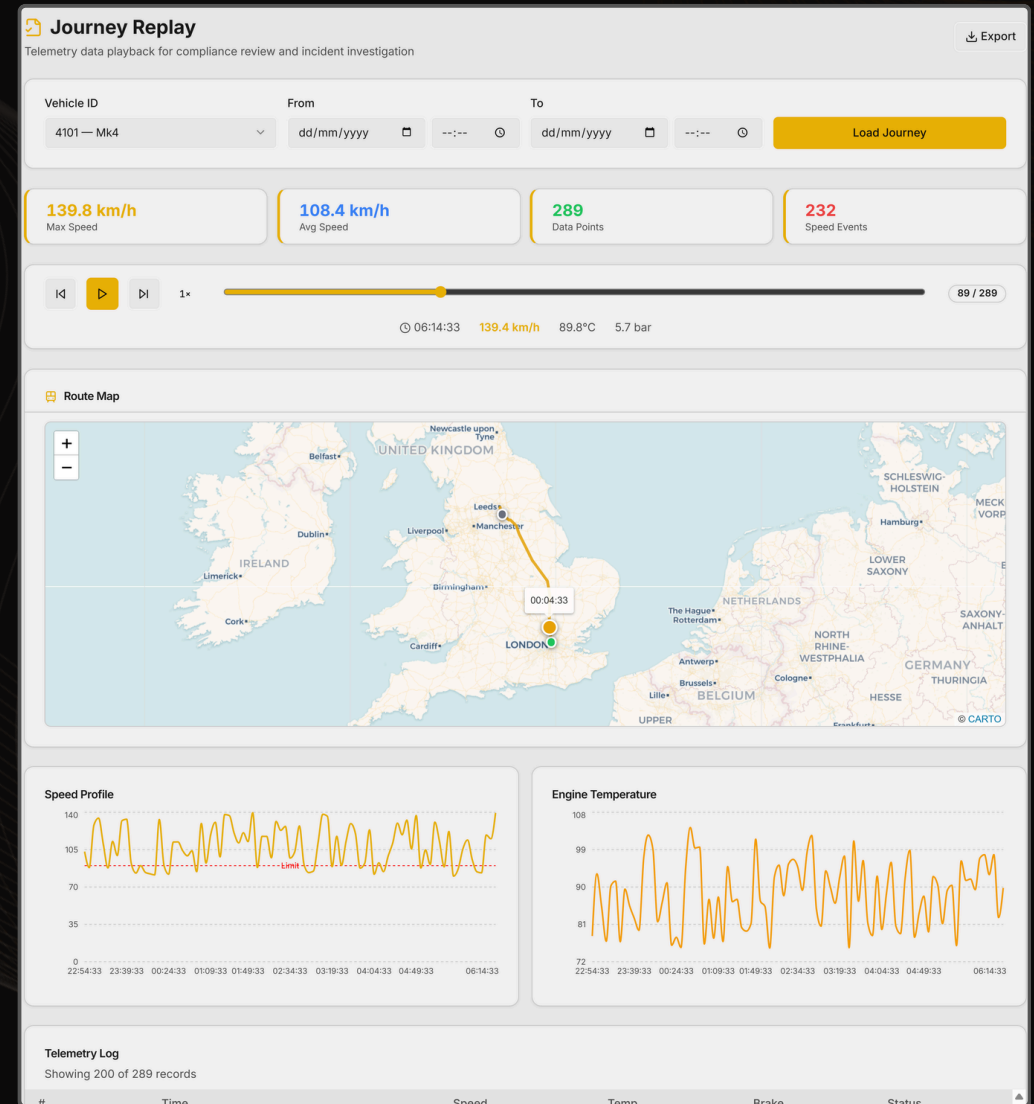
This gives operational and engineering users a clearer understanding of where events occurred and how they developed.

- Journey replay supports incident review
- Map views connect telemetry to location
- Vehicle context helps reduce manual reconstruction
- Historic data supports after-action analysis

## Analytics and Speed Review

Telemetry becomes more valuable when it can be reviewed visually. ATOM supports trend analysis, speed graphing and historic investigation views that help teams identify patterns, anomalies and recurring issues.

- Speed graphs support event review
- Analytics highlight operational patterns
- Historic context strengthens investigation
- Outputs support engineering and management review



Without ATOM: Incidents are reconstructed manually after the event

With ATOM: Events are reviewed through telemetry, location and journey context

# WHAT OPERATORS GAIN WITH ATOM

Fleet visibility, faster investigation and stronger operational governance



## Operational Impact

ATOM improves day-to-day visibility across fleet condition, vehicle status and active alerts.

- Earlier visibility of abnormal conditions
- Faster movement from alert to investigation
- Clearer operational awareness across teams

## Engineering and Fleet Assurance

ATOM gives engineering and fleet teams better access to historic telemetry context.

- Reduced manual incident reconstruction
- Improved review of recurring events
- Stronger evidence for operational learning

## Governance and Commercial Value

ATOM supports controlled rollout, reporting and accountable use of telemetry data.

- Exportable reports for review and assurance
- Role-based access and audit trail
- Single-tenant deployment for sensitive environments

Without ATOM: Telemetry is fragmented, reactive and difficult to turn into operational value  
With ATOM: Teams operate with visible, alert-led and governed fleet intelligence

# SECURITY, AUDIT & DATA SEPARATION

Built for controlled deployment in sensitive rail environments



## Single-Tenant Deployment

ATOM is positioned as a dedicated single-tenant platform for each client or operational environment.

- Separate customer data boundaries
- Dedicated configuration and user estate
- Reduced shared-platform exposure
- Clearer support and ownership model

## Access Control and Auditability

ATOM supports controlled use across operational, engineering and management teams.

- Role-based access control
- User administration and permissions
- Audit logging for key actions
- Traceability of operational changes

## Operational Assurance

ATOM is designed to support reliable, governed use of telemetry data.

- Controlled feature rollout
- Managed administration settings
- Reporting and export for review
- Practical governance for operational teams

Without ATOM: Access, telemetry and review can remain spread across separate systems

With ATOM: Fleet data is managed in a controlled, auditable operational platform





## ARCHITECTS OF INTELLIGENT INFRASTRUCTURE

---

ATOM is designed for rail operators working in complex, safety-conscious and data-sensitive environments where fleet visibility, incident investigation and operational governance matter.

By combining live telemetry views, alert management, historic investigation and structured reporting, ATOM turns onboard rail data into a clearer picture of fleet condition and operational activity.

This enables earlier awareness, faster review and stronger confidence that telemetry is being used in a controlled, auditable and commercially practical way.

Built for rail telemetry.

Designed for controlled deployment.

Focused on operational visibility — with a clear expansion path.

---

