

Fleet & Mobile Asset Monitoring — Solution Brief

Condition and location monitoring for mobile assets and vehicles — the Sensorium™ Gateway, BLE sensor nodes and trackers, and the 5Tech dashboard delivering maintenance alerts and reports so the team can act.

fleet-management · Revision Draft (Preliminary) · 2026-07-07 · Status: **PRELIMINARY**

PRELIMINARY. This brief describes an intended solution built on the 5Tech hardware stack. Sensorium™ Trackers are a **planned** Sensorium™ device and do not yet ship. Business results, timelines, and quantities marked [TBD] are pending confirmation and must not be treated as commitments.



5TECH SOLUTION

Fleet & Mobile Asset Monitoring

Fleet & Mobile Asset Monitoring — condition and location monitoring with maintenance alerts and reports for mobile assets.

Figure FIG-001 — Fleet & Mobile Asset Monitoring: condition and location monitoring with maintenance alerts and reports for mobile assets.

The outcome

Fleet & Mobile Asset Monitoring gives a fleet of mobile assets and vehicles a single, self-reporting view. It combines Sensorium™ field hardware and the 5Tech dashboard so the team can:

- **See condition and location** — every asset's location and health is visible on a single monitoring dashboard, instead of a dispatcher tracking vehicles by phone and spreadsheet.
- **Get maintenance alerts early** — when sensor data indicates wear or fatigue, the dashboard raises a maintenance alert so the team can schedule work before a failure, not after.
- **Report and plan** — condition and utilization reports give the team what they need to plan dispatch, scheduling, and maintenance. Those decisions stay with the team; the system provides the monitoring, alerts, and reports.

The result is fewer surprise breakdowns, less idle time, and a continuous audit trail — the mobile-asset counterpart to the fixed-site [Construction Sites Monitoring](#) solution. Target operational metrics (utilization uplift, unplanned-downtime reduction) are [TBD] and will be stated only once measured in a pilot.

Solution architecture



Figure FIG-002 — Trackers and BLE sensor nodes feed the Gateway and the 5Tech dashboard; AI-assisted rules turn fleet data into maintenance alerts and reports for the team.

The solution follows the 5Tech **Sense** → **Connect** → **Decide** chain. This brief links to each component's own datasheet rather than restating its specifications.

- **Sense** — **Sensorium™ Trackers** (*planned*) — a variant of the BLE sensor node platform — provide location and status on each mobile asset. **Sensorium™ BLE sensor nodes** add condition signals (vibration, temperature, motion), and where structural fasteners are instrumented, **Sensorium™ SmartBolt** modules contribute load and movement-related data — see the [SmartBolt datasheet](#) and the [sensor-node datasheet](#).
- **Connect** — the **Sensorium™ Gateway** aggregates and buffers asset data and links it to the 5Tech dashboard over Wi-Fi, Ethernet, or a cellular option using MQTT — see the [Gateway datasheet](#).
- **Decide** — the **5Tech dashboard** provides the monitoring layer (tracking, device status, alerts, historical data) and rule-based automation (workflows and ERP/EAM integration), with AI-assisted rules and reports:
 - **Maintenance alert rules** — flag assets whose Sensorium™ sensor data indicates wear or fatigue and recommend maintenance; the team schedules and books the work.
 - **Reporting** — generates audit trails and operational briefings from the same event stream.

Note — planned component. Sensorium™ Trackers are registered as a *planned* Sensorium™ device. They have no datasheet yet; no Tracker specifications are stated in this brief. Until Trackers ship, the sensing capability described here is intended, not available.

How it works

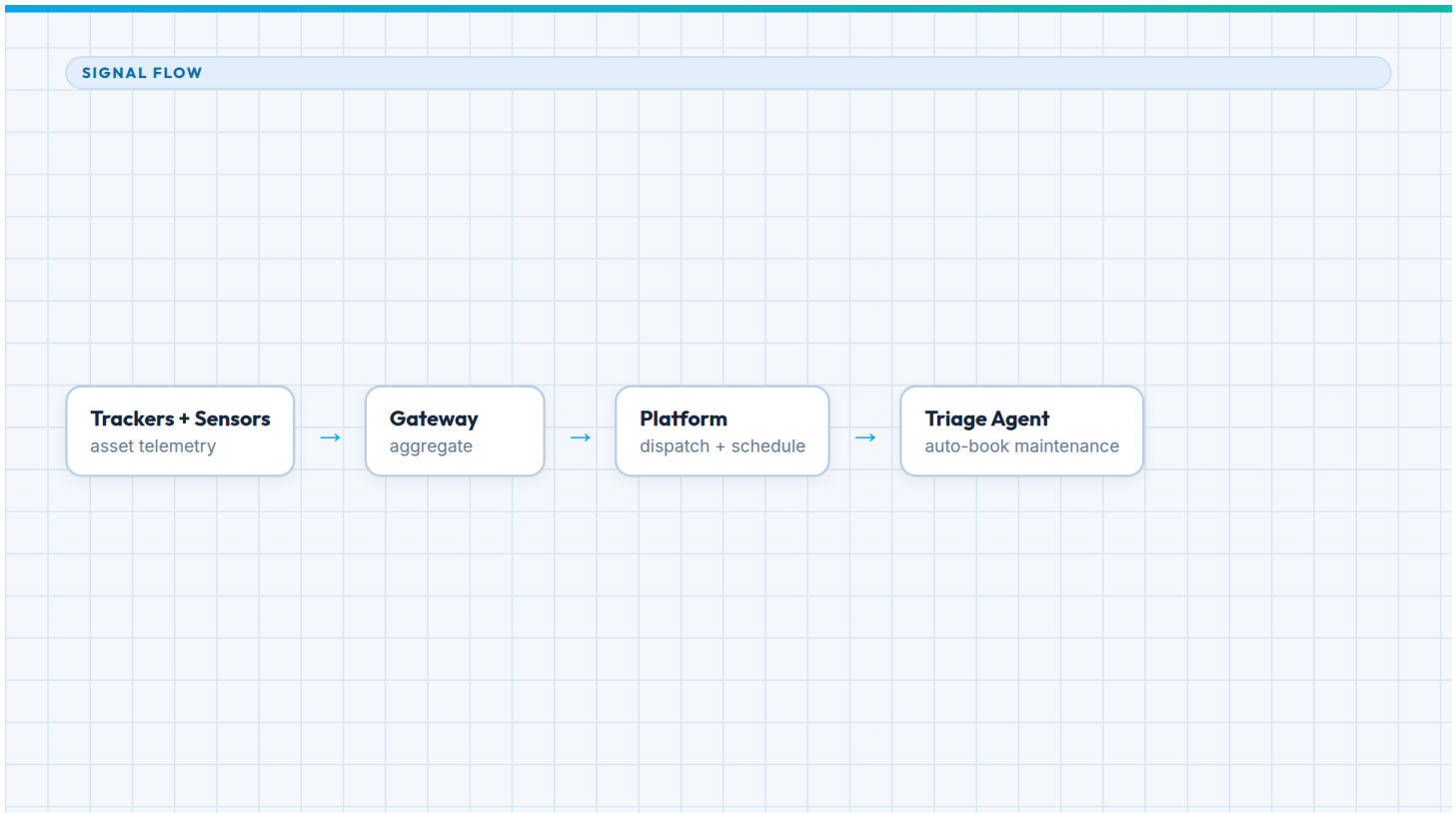


Figure FIG-003 — From asset sensing to insight: telemetry is aggregated, monitored, and evaluated by AI-assisted rules that raise maintenance alerts and reports; the team decides.

1. **Sense.** Each asset emits location, condition (engine/health), and — where fitted — SmartBolt load and movement-related signals.
2. **Aggregate.** The Sensorium™ Gateway collects and buffers these signals at the edge and uplinks them to the dashboard, tolerating connectivity gaps without data loss.
3. **Monitor.** The dashboard's monitoring layer renders live tracking and device status and raises alerts on threshold events.
4. **Evaluate.** AI-assisted rules evaluate fleet health continuously. On a wear or threshold signal they raise a **maintenance alert** and recommend the work; the team schedules and books it in the maintenance / ERP system and plans dispatch of the next available asset. Reporting compiles an audit trail and briefing from the same stream.

5. **Act.** Maintenance is scheduled and dispatch is planned by the team; confirmed actions flow back out to the fleet and to integrated business systems.

Control and configuration flow back down the same secured path the telemetry travels up.

What's included

LAYER	COMPONENT	REFERENCE
Hardware — Sense	Sensorium™ Trackers (<i>planned</i>) — node-platform variant	No datasheet yet — planned device
Hardware — Sense	Sensorium™ BLE sensor nodes (condition signals)	Sensor-node datasheet
Hardware — Sense	Sensorium™ SmartBolt (where structural/engine health is instrumented)	SmartBolt datasheet
Hardware — Connect	Sensorium™ Gateway (Universal IoT Gateway)	Gateway datasheet
Platform	5Tech dashboard — monitoring (tracking, device status, alerts, history) + rule-based automation (workflows, ERP/EAM integration)	Platform overview
AI-assisted	Maintenance alert rules (flag wear/fatigue → recommend maintenance) · Reporting (audit trails / briefings) — human-in-the-loop	See Platform overview

Deployment & services

Delivered through the standard 5Tech lifecycle services. Scope and durations below are indicative; fleet-specific figures are **[TBD]** until scoped with the customer.

STAGE	SCOPE
Pilot & Proof-of-Value	A focused deployment on a subset of the fleet to prove ROI. Duration: indicatively 6–8 weeks (standard 5Tech pilot); asset count: [TBD]. Gated on Sensorium™ Trackers being available or a confirmed interim sensing approach.
Deployment & Integration Support	Help rolling out across the fleet: commissioning, driver/operator training, and integration with existing ERP / EAM / SCADA systems.
Monitoring & Maintenance Support	Ongoing support and continuous optimization of the alert rules, reports, and maintenance workflows.

Signal & alert behaviour

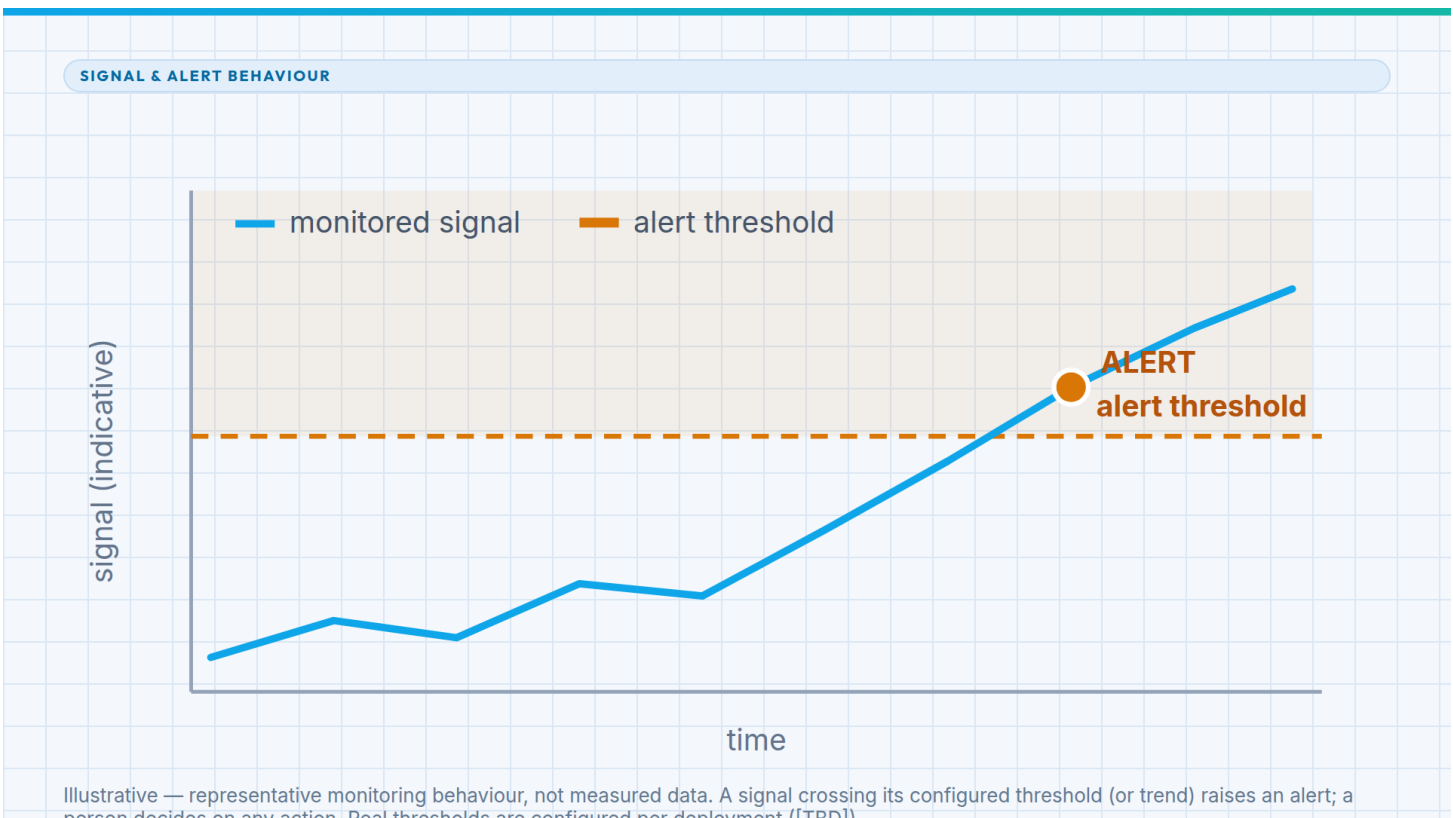


Figure FIG-004 — Illustrative: a monitored signal crossing its configured alert threshold (or an abnormal trend) raises an alert; a person decides on any action. Representative behaviour, not measured data.

Monitored signals feed the 5Tech dashboard; when a signal crosses a configured threshold or trend, a maintenance **ALERT** is raised and the team decides on any action — this is condition and location monitoring, not autonomous dispatch (illustrative; thresholds are configured per deployment, [TBD]).

Example monitored signals & alerts

WHAT IS MONITORED	EXAMPLE ALERT	WHO ACTS
Asset condition drift (engine/health, vibration)	Wear or fatigue trend raises a maintenance alert	Maintenance team / fleet manager
SmartBolt looseness (structural fasteners)	Fastener trends toward looseness	Maintenance team
Location / offline status	Asset goes offline or leaves its expected area	Dispatcher decides (no autonomous dispatch)

Illustrative — representative, not measured; configured per deployment ([TBD]).

Figures

ID	TITLE	STATUS	FILENAME	ASPECT	PURPOSE
FIG-001	Fleet Operations Hero	Placeholder	images/hero_fleet_management.png	16:9	Co he
FIG-002	Solution Architecture	Placeholder	diagrams/solution_architecture.png	16:9	W pr pl fe an co
FIG-003	Signal & Decision Flow — Dispatch and Maintenance	Placeholder	diagrams/signal_flow_dispatch_maintenance.png	16:9	Da de pa se ac
FIG-004	Signal & Alert Behaviour (illustrative)	Placeholder	diagrams/signal_threshold_chart.png	16:9	Ho me sig cro th ra ale (ill nc me da

This solution brief is preliminary and subject to change. Prompts for every figure live in `figures.json`. Related: [Gateway datasheet](#) · [Smart Bolt datasheet](#) · [5Tech Platform](#) · [Construction Sites Monitoring](#).