AMIMOTION

UWB REAL-TIME LOCATION SYSTEM

Making the physical world visible, searchable and intelligent.

A complete, made-in-India UWB RTLS stack — tags, anchors, AmIHub Core and Analytics — that turns the movement of people, vehicles and assets into a live operational model of your indoor space — the spatial data layer for Physical AI.



±10 cm
3D POSITIONING

100%
WIRELESS ANCHORS

FiRa
& OMLOX COMPLIANT

India
DESIGNED & BUILT

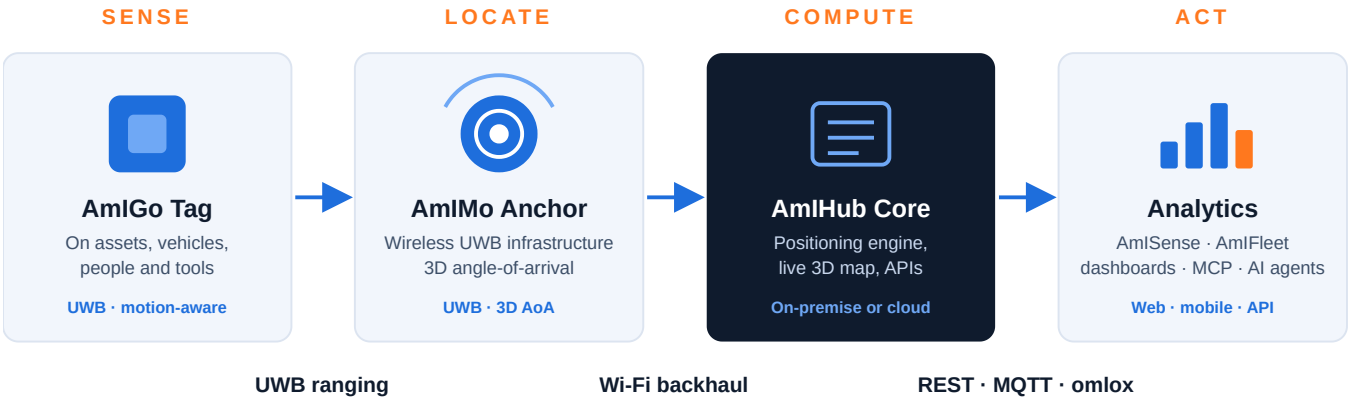
Product brochure · Live demo available
Deployed at leading automotive manufacturing, robotics and warehousing facilities

amimotion.com

ONE STACK, FOUR LAYERS

From radio pulse to operational insight

AmIMotion is the fundamental building block for spatial context. Tags and anchors capture where every person, vehicle and asset is; AmIHub Core turns that into a live digital twin of the facility; and because the twin is exposed through open APIs and MCP, Agentic AI can read it, reason over it and automate the workflows that run on it — from dispatch to safety to search.



Your systems: MES · ERP · WMS · SCADA · BI tools — integrate at any layer

Positioning modes

- **UL-TDoA** — thousands of low-power tags.
- **DL-TDoA** — phone-based, privacy-preserving tracking.
- **AoA + TWR** — high-precision cells and gates.
- **BLE RSSI · Wi-Fi FTM** — legacy devices and yard tracking.

Open standards

FiRa and omlox compliant, so your data model, APIs and future devices are not locked to a proprietary format. Built on NXP Trimension UWB silicon.

Outcomes, not dots

Utilisation, dwell time, cycle time, bottleneck prediction, fleet and work-order tracking — delivered as decisions your supervisors can act on in the same shift — and as the ground-truth spatial data your Physical AI and robotics initiatives depend on.

Smart factory · Warehouse & logistics · Forklift & AGV/AMR fleets · Worker safety · Tool & WIP tracking · Indoor navigation · Yards & events · Agentic AI via MCP

HOW A POSITION IS PRODUCED

1. **Tag transmits**
   An AmIGo tag sends a short UWB pulse — a few nanoseconds wide — on a motion-triggered schedule.
2. **Anchors time-stamp & measure angle**
   Every AmIMo anchor in range records arrival time to sub-nanosecond precision and, with 3D AoA, the direction it came from.
3. **AmIHub solves & publishes**
   AmIHub Core fuses timing, angle and map constraints into a 3D position and streams it to the live map, Analytics and your systems.

SENSE

AmIGo Tag

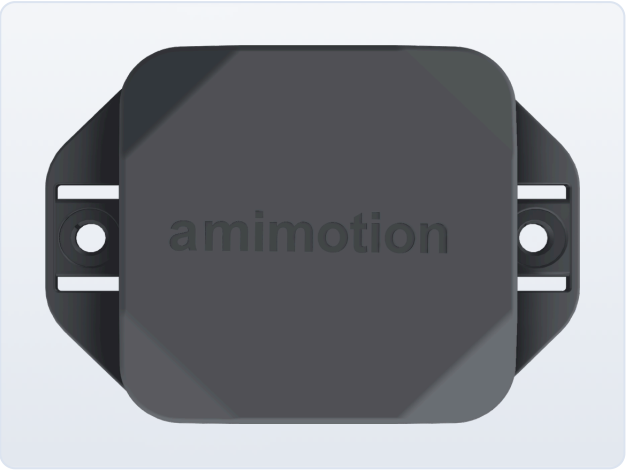
A compact UWB tag for assets, vehicles, tools and people.

Highlights

- **UWB transceiver**, ±10 cm 3D accuracy.
- **On-board motion sensing** — transmits on movement, deep-sleeps at rest.
- **Multi-year battery life**; battery level reported to AmIHub.
- **Every positioning mode** — UL-TDoA, DL-TDoA, TWR, AoA — on one tag.
- **Configurable update rate** per tag group.
- **Bulk provisioning** from AmIHub in seconds.

Form factors

- **Asset tag** — bins, racks, WIP carriers, tools.
- **Vehicle tag** — forklifts, tuggers, AGVs; vehicle-powered option.
- **Personnel badge** — lanyard or helmet mount.



INDICATIVE SPECIFICATIONS final datasheet under NDA

UWB radio	IEEE 802.15.4z HRP · Channels 5 & 9
Positioning modes	UL-TDoA · DL-TDoA · TWR · AoA-assisted
Accuracy	±10 cm (3D, typical, with AmIMo anchors)
Update rate	Configurable 0.1 – 10 Hz per tag group; motion-triggered
Battery life	1 – 3 years typical (usage-dependent); battery-powered & vehicle-powered options
Sensors	3-axis accelerometer (motion wake, tilt/impact events)
Form factor	Compact, low-profile housing
Operating temperature	−20 °C to +60 °C (typical)
Mounting	Adhesive · screw · lanyard/helmet · vehicle cradle

Values marked "typical" or "indicative" depend on update rate, environment and configuration. Full specifications, test reports and pricing are shared under NDA.

WHERE AMIGO TAGS GO

Forklifts & tuggers

Vehicle-powered tag; live location, utilisation, speed-zone and pedestrian-proximity alerts.

WIP carriers & bins

Asset tag on trolleys and containers; stage-wise tracking, dwell and idle detection.

Tools & fixtures

Small adhesive tag; find any tool in seconds and log which cell used it and when.

People

Badge or helmet mount; restricted-zone alerts, muster counts, ergonomics and walking-distance studies.

LOCATE

AmIMo Anchor

Fully wireless UWB infrastructure with 3D angle-of-arrival.

Highlights

- **Multi-antenna 3D AoA array** — angle as well as range.
- **Time-of-flight + angle** — fewer anchors, works with as few as two in view.
- **~50 m line-of-sight** coverage radius.
- **No data or sync cabling** — over-the-air sync, Wi-Fi backhaul.
- **Power only** — DC adapter or PoE.
- **Commissioned from a phone app**; auto-discovered by AmIHub.

One anchor, every mode

- **UL-TDoA** — high tag counts.
- **DL-TDoA** — phones and privacy-first use cases.
- **AoA + TWR** — gates, docks, precision cells.
- **BLE RSSI · Wi-Fi FTM** — legacy devices and yard tracking.
- Modes selected per zone from AmIHub — no hardware swap.



INDICATIVE SPECIFICATIONS final datasheet under NDA	
UWB radio	IEEE 802.15.4z HRP · 3D AoA antenna array
Positioning modes	UL-TDoA · DL-TDoA · TWR · 3D AoA — per-zone selectable
Additional ranging	BLE-based ranging · Wi-Fi FTM (IEEE 802.11mc) ranging
Coverage	~50 m line-of-sight radius
Synchronisation	Wireless over-the-air timing sync; no sync cable
Backhaul	Wi-Fi (2.4 / 5 GHz) to AmIHub; Ethernet option
Power	DC adapter or PoE
Tag capacity	Hundreds of active tags per anchor cell (UL-TDoA)
Mounting height	3 – 8 m recommended; wall, column, ceiling and pole brackets
Operating temperature	−20 °C to +60 °C (typical) · indoor & sheltered outdoor

Coverage and spacing vary with ceiling height, racking and metal density; final anchor counts come from a site survey. Full specifications are shared under NDA.

THREE RADIOS, ONE INFRASTRUCTURE

UWB

±10 cm 3D positioning for tagged assets, vehicles and people. UL-TDoA, DL-TDoA, TWR and 3D AoA, selectable per zone.

BLE-based ranging

Locates BLE-equipped devices and beacons that do not carry a UWB tag, on the same anchors, for zone-level presence and search.

Wi-Fi FTM ranging

Uses IEEE 802.11mc fine-time measurement so compatible phones and laptops can be positioned without any tag.

COMPUTE

AmIHub Core

The positioning engine and system of record. AmIHub turns raw UWB timestamps into a live 3D map of every tagged object, keeps it running, and exposes it to your systems through open APIs.

Positioning engine

Multi-mode solvers (TDoA, AoA, TWR) with map-aware filtering. Sub-second latency from tag transmission to position on the map. Handles thousands of tags per site.

Live digital map

Your floor plan, zones, geofences and racking as a 3D model. Tracked objects are shown live with history, trails and status — the same view your apps and dashboards read from.

Trackable & zone model

Assets, vehicles, people and work orders are first-class objects. Assign tags, define zones and fences, set rules — every event (enter, exit, idle, dwell) is time-stamped and queryable.

Open integration

REST, MQTT and WebSocket streams, plus an omlox-compatible hub interface. Push positions and events into MES, ERP, WMS, SCADA or your BI stack — or pull them on demand.

Device management

Auto-discovery of anchors, health and battery monitoring for every tag, OTA firmware, and alerts when an anchor goes dark — so the RTLS is maintained, not babysat.

Deploy your way

Runs on an industrial PC inside your plant with no internet dependency, or in a cloud tenant we manage. Role-based access, audit logs and data retention policies in both.

Indicative platform characteristics

Scale	Thousands of tags and hundreds of anchors per site; multi-site from one console
Latency	Sub-second position updates end to end
Interfaces	REST · MQTT · WebSocket · omlox hub · CSV/Parquet export
Hosting	On-premise (edge PC / server) or managed cloud
Security	TLS everywhere, role-based access, API keys, audit trail
Standards	FiRa & omlox compliant data and device model

What you get on day one

- Live map of every tagged asset, vehicle and person in your plant.
- Zone and fence events streaming to any system you name.
- Query any object's trajectory, trip history and dwell by time window.
- A single console to commission tags and anchors and watch system health.
- One data model that Analytics, AI agents and your own applications all build on — add capabilities later without touching a tag or anchor.

ACT

Analytics: AmISense & AmIFleet

Location data only pays back when a supervisor changes a decision because of it. The Analytics layer turns AmIHub's live model into the numbers plants run on.

AMISENSE

Operations & flow intelligence

- **Heatmaps & spaghetti diagrams** — where people and material actually go, by shift, line or product.
- **Dwell & cycle time** — time in every zone, station and queue; stage-wise WIP tracking.
- **Bottleneck prediction** — AI models flag congestion and queue build-up before it stops a line.
- **Safety & compliance** — restricted-zone alerts, vehicle–pedestrian proximity, evacuation muster counts.
- **Search & audit** — find any asset now, or replay any hour of the plant's history.

AMIFLEET

Fleet, assets & work orders

- **Fleet status & utilisation** — forklifts, tuggers and AGV/AMRs: running, idle, parked, charging — and for how long.
- **Idle asset detection** — trolleys, bins and tools that have not moved; right-size your float.
- **Trip summaries** — distance, duration, stops and zones visited per vehicle and per shift.
- **Work-order tracking** — link tags to orders; watch progress through stations and close automatically on completion.
- **Fence visit counts** — deliveries per dock, visits per cell, lap counts for milk runs.

FORKLIFT UTILISATION	AVG. DOCK DWELL	IDLE TROLLEYS	OPEN WORK ORDERS
61%	**14 min**	**37**	**112**
shift A · illustrative	target 10 · illustrative	> 4 h · illustrative	8 at risk · illustrative

Delivered as

Web dashboards, mobile views for supervisors, scheduled reports, and the same metrics via API for your BI tools.

Built on AmIHub

Every metric is computed from the AmIHub model you already have — enable analytics without touching a tag or anchor.

Talk to your plant

Every metric and action is exposed through AmIHub's MCP server, so any AI assistant or agent can ask "which forklifts were idle over an hour today?" and act on the answer. See the next page.

WHAT EACH ROLE SEES

Plant head

Site-level OEE-style view of flow, utilisation and bottleneck trends, week over week.

Production supervisor

Live line map, WIP by station, work-order progress and where the next delay is forming.

Logistics manager

Fleet utilisation, dock dwell, milk-run compliance and idle-asset lists to right-size the float.

EHS lead

Restricted-zone and proximity alerts, near-miss replay, evacuation muster counts.

AGENTIC AI

Ask your plant. Let agents act.

AmIHub Core ships with a built-in **MCP (Model Context Protocol) server**. It exposes the live spatial model — every position, zone, fleet and work order — as tools that any AI assistant or autonomous agent can call. Ask a question in plain language, get an answer from live data, and let an agent take the next step.

EXAMPLE · ASK

"Which forklifts have been idle for more than an hour, and where are they?"

Agent calls get_fleet_status → count_idle_assets → get_live_locations and answers with a list and map pins.

EXAMPLE · ACT

"Trolleys at Dock 3 have waited over 15 minutes — raise a work order for the nearest free tugger."

Agent calls get_fence_events → get_fleet_utilization → create_work_order, then tracks it with get_work_order_progress.

MCP tool families

Live location	Live positions of all or one asset; system and provider status
History	Trajectories and trip summaries for any time window
Fleet	Fleet status, utilisation, idle-asset counts
Zones & fences	Zones, geofences, fence events and visit counts
Trackables	Create, update and assign tags to assets, vehicles and people
Work orders	Create, track progress and complete work orders

Works with Claude, ChatGPT, Copilot and custom agents — any MCP-capable client. Same tools available over REST and MQTT.

Agentic workflows on the floor

- **Shift briefing agent** — summarises utilisation, dwell and bottlenecks for the supervisor before every shift.
- **Dispatch agent** — watches dock and line-side fences, assigns the nearest free vehicle, raises and closes work orders.
- **Safety agent** — alerts on restricted-zone entry or vehicle–pedestrian proximity and logs the incident with replay.
- **Search & audit** — "where is fixture F-214?" or "what visited Cell 7 last night?" answered in seconds.
- **Your own agents** — connect MES, ERP or planning agents to the same tools; humans stay in the loop on every action.

BUILT FOR PRODUCTION, NOT JUST DEMOS

Runs where AmIHub runs

The MCP server is part of AmIHub Core — on-premise inside your plant or in your cloud tenant. Agent traffic never has to leave your network.

Scoped, logged, reversible

Each agent gets its own credentials and tool scope (read-only, or specific write tools). Every call is logged with who asked, what was called and what changed.

Humans in the loop

Write actions — work orders, assignments — can require approval from a supervisor before they execute. Read and reasoning are instant; action is governed.

LIVE DEMO

See the agent work on a live map

In the discovery call we run the demo end to end: tagged assets moving live, a question typed to the AI agent, the MCP calls it makes, and the action it takes — on real AmIHub data, not slides.

Book a demo
sales@amimotion.com

WHY AMIMOTION

A complete RTLS stack, designed and built in India

Ready for Physical AI

Robots, AGVs and AI agents need a live, accurate model of the physical world. AmIMotion provides that spatial layer — today for people and assets, tomorrow for every autonomous system on your floor.

End-to-end ownership

Tags, anchors, engine and analytics from one team. One contract, one support line, no finger-pointing between vendors.

Designed and made in India

Designed and manufactured in India, optimised for Indian customers and use cases — local stock, local engineers on site, and pricing that makes plant-wide coverage realistic.

Proven silicon, open standards

NXP Trimension UWB inside; FiRa and omlox compliant so your investment is not tied to a proprietary ecosystem.

Proven on real floors

Deployed at leading automotive manufacturing, robotics and warehousing facilities. References and results are shared under NDA.

Starts small, scales plant-wide

Pilot one bay or line, then extend on the same AmIHub instance — no re-instrumentation, no forklift upgrade of the platform.

HOW AN ENGAGEMENT RUNS

1. **Discovery call + live demo**
   Your use cases and site; we show the live map and the AI agent working on real data.
2. **NDA & detailed pack**
   Full datasheets, architecture, pricing and reference results.
3. **Site survey & pilot**
   Anchor plan on your floor plan; a scoped pilot in one bay or line.
4. **Scale**
   Plant-wide rollout, integrations and analytics on the same stack.

ASKED AT FIRST CONTACT

Does our solution work in a dense factory environment?

Yes. UWB's wide bandwidth separates the direct path from reflections, and on top of it our multipath-mitigation and AI-based NLOS (non-line-of-sight) algorithms keep positions stable around racking, metal and moving vehicles. Anchor density is tuned per zone.

Do we need to run cables?

No data or sync cabling. Anchors sync over the air and backhaul over Wi-Fi; they need only power (DC or PoE).

Can we start with one bay?

Yes. Most customers pilot one bay or line, prove the numbers, then scale on the same AmIHub instance without re-instrumenting.

Ready to see it on your floor plan?

Book a discovery call with a live demo of the RTLS and its AI agent. Detailed specifications, pricing and pilot options are shared under NDA.

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