

# Transforming Traceability and Ergonomics with Wearable IIoT

End-to-End Optimization from Industry 4.0 to Industry 5.0



**01** Introduction: The  
Groupe Atlantic İzmir  
Ecosystem

**02** Hidden Costs of  
Operational  
Inefficiency

**03** From Manual  
Operations to  
Intelligent Automation

**04** Flawless  
Manufacturing:  
Results & Gains

**05** Vision for the Future:  
Industry 5.0

# Engineering Excellence at Scale

Groupe Atlantic operates with a 'High Well-Being / Low Carbon' vision as a global HVAC leader. The İzmir Eye Free Zone facility is a masterclass in high-volume, flawless execution, integrating advanced robotics and a dedicated FabLab to set European manufacturing standards.

Global Footprint

**11,782+**

Employees | 19  
International Facilities

İzmir Output

**2,500**

Units/Day (High-quality  
towel warmers & radiators)

Workforce

**350-500**

Technical Professionals

Compliance

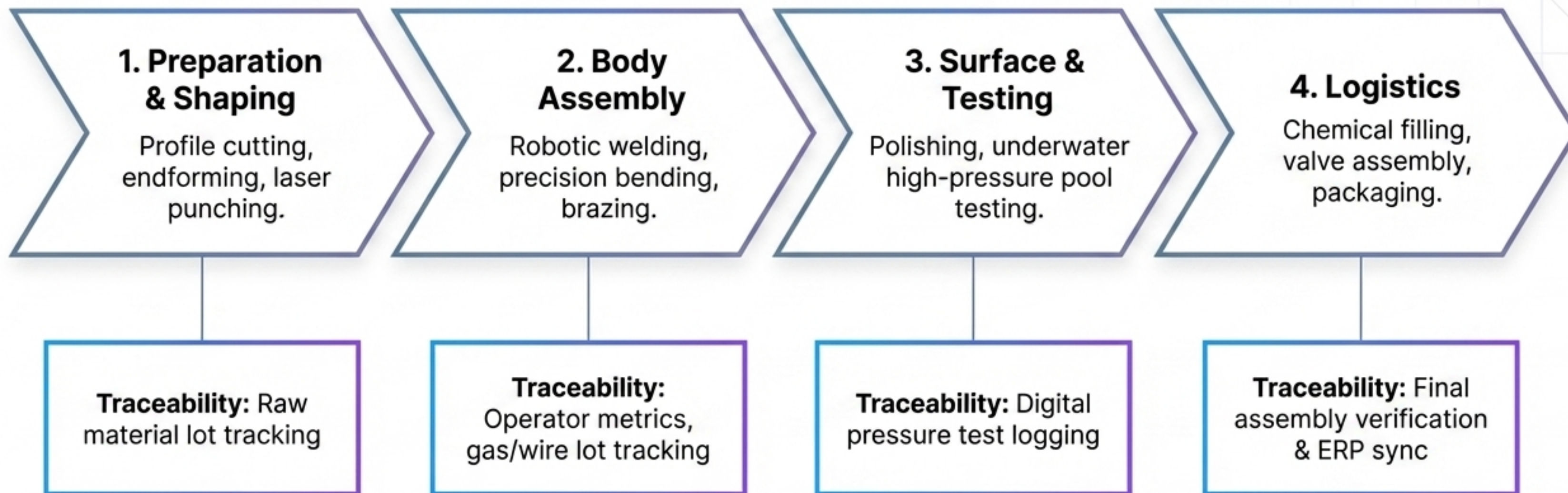
**ISO/IEC**

27001:2013 Certified



# The Anatomy of Flawless HVAC Manufacturing

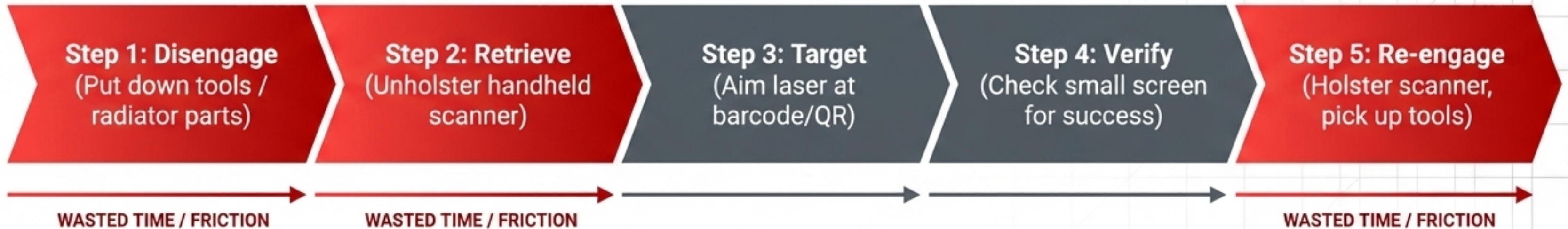
Radiator production requires a microscopic level of precision. Every unit must be **100% leak-proof** and pressure-resistant. Success depends on a **continuous, error-free digital footprint** across tens of **thousands** of components.



# The Friction of Conventional Hardware

While conventional handheld scanners function reliably, their physical form factor inherently interrupts the natural biomechanical flow of the operator. In a facility producing 2,500 units daily, these micro-interruptions compound into critical operational delays.

## The Anatomy of a Bottleneck: The “Pick-Scan-Drop” Loop



Modern competitive advantage is built on the aggregation of marginal gains. The conventional barcode scanner forces the operator to act as a machine, rather than enhancing their natural workflow.

# The Human Cost: Ergonomics and Cognitive Load

## Column 1: Biomechanical Strain



Repetitive motion (lifting, aiming, twisting wrists) creates long-term ergonomic risks.



Threatens workplace safety with potential for micro-traumas and carpal tunnel syndrome.



Directly conflicts with Groupe Atlantic's "Respect for People" philosophy.



## Column 2: The 'Mistake-Proofing' Gap



Factory environments are loud (pneumatic presses, robotic arms, metal cutting).



Conventional scanners rely on faint "beep" sounds or small screens for error alerts.



Missed alerts lead to incorrect parts entering the assembly line, causing downstream rework and scrap.

# Enter VEGA: Human-Centric IIoT

Groupe Atlantic İzmir transitioned from rigid hardware to Thread in Motion's VEGA Smart Glove. This lightweight, wearable IIoT device seamlessly merges machine precision with human dexterity, replacing the "Pick-Scan-Drop" loop with true hands-free agility.

**Ultra-Lightweight**  
40-50g module design.

**Hands-Free Form Factor**  
Zero restriction on finger dexterity or grip strength.

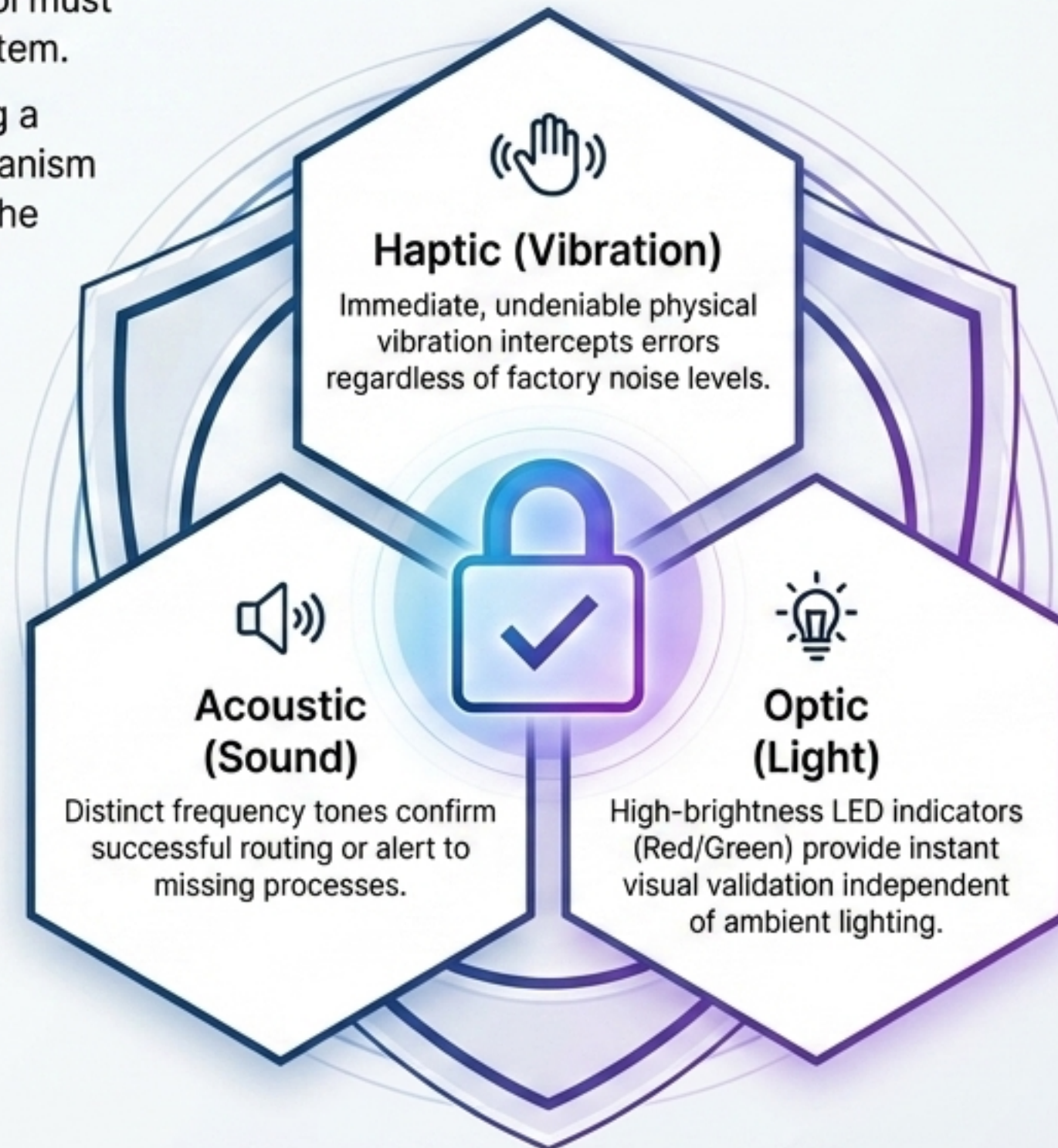


**Instant Trigger**  
Activated via a natural thumb-to-index micro-movement.

# The Proactive 'Mistake-Proofing' Shield

To eliminate scrap and rework, quality control must happen before an error reaches the ERP system.

VEGA operates as a digital assistant, utilizing a zero-latency, Multi-Layered Feedback Mechanism to enforce Poka-Yoke principles directly on the operator's hand.



# Enterprise-Grade Connectivity & Uptime

Engineered for uninterrupted, high-volume industrial environments, VEGA ensures the assembly line never stops for IT or hardware limitations.



## Unlimited Power Architecture

Removable 450mAh - 900mAh Li-Po batteries. Swappable in seconds. Up to 15,000 scans per single charge. Zero charging downtime during shift changes.

## 14-Meter Scan Range

Advanced 1280x800 image sensor captures barcodes from up to 14 meters away, including highly reflective metallic surfaces and difficult angles (360° roll capacity).

## Industrial Communication

2-in-1 communication module utilizing secure Wi-Fi, Bluetooth, and LoRa protocols to eliminate factory dead-zones.

# Holistic Optimization Realized

The integration of VEGA delivered radical, measurable, and permanent improvements across all critical operational vectors.

## Q1: Speed & Flow (Just-in-Sequence)

Micro-second savings per scan aggregate into massive cycle time reductions, ensuring parts hit the line exactly when needed.

## Q2: Quality (Zero Rework)

Proactive multi-sensory alerts prevent wrong parts from being assembled, drastically reducing scrap rates and rework labor.

## Q3: Ergonomics (Zero Static Effort)

Total elimination of device lifting/aiming weight. Biomechanical strain, wrist fatigue, and injury risks are neutralized.

## Q4: Traceability (100% Transparency)

Seamless synchronization with the digital ecosystem ensures an unbreakable, error-free digital footprint for every HVAC unit produced.

# Leading the Industry 5.0 Paradigm

Operational excellence is not a destination; it is an infinite journey of adaptation. By integrating Thread in Motion's wearable IIoT, Groupe Atlantic İzmir has made a philosophical leap.



## Beyond Automation

Industry 5.0 is not about replacing humans with machines, but seamlessly merging machine precision with human intelligence and dexterity.

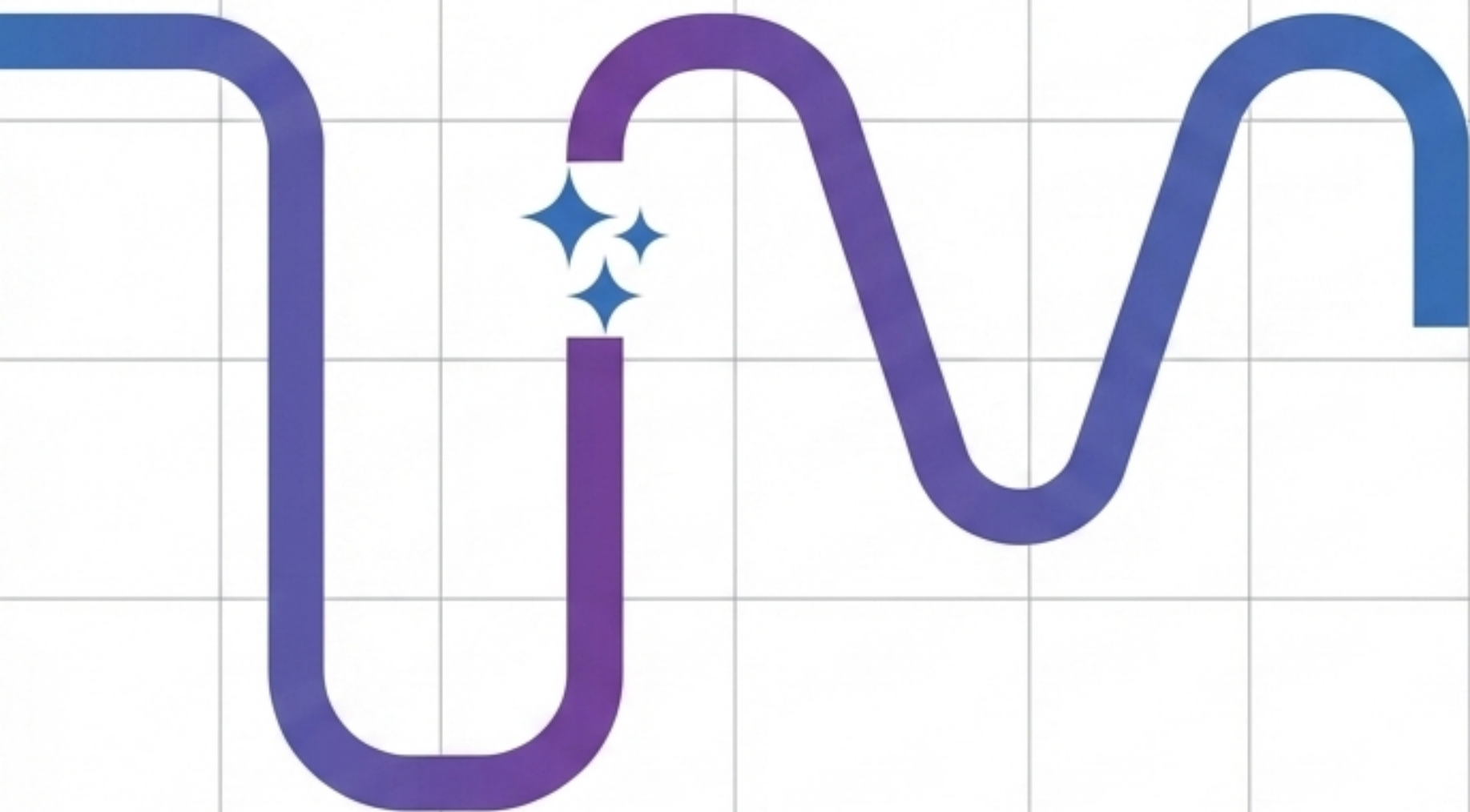
## Future-Proofing

Transforming a traditional assembly line into an agile, human-centric, and digitally flawless ecosystem.

## Global Standard

Setting a new benchmark for 'High Well-Being' and operational perfection in the global HVAC market.

# THREAD IN MOTION



## GET IN TOUCH WITH US

### Website

[www.threadinmotion.com](http://www.threadinmotion.com)

### Phone

+44 20 4587 4397

### E-mail

[info@threadinmotion.com](mailto:info@threadinmotion.com)

### HQ address

7 Henrietta Street, WC2E 8PS,  
London, United Kingdom