

MARTUR FOMPAK

INTERNATIONAL

MARTUR SUCCESS STORY

Transforming Just-in-Sequence Logistics with Hands-Free IoT and LoRa Technology

2025





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01 | INTRODUCTION

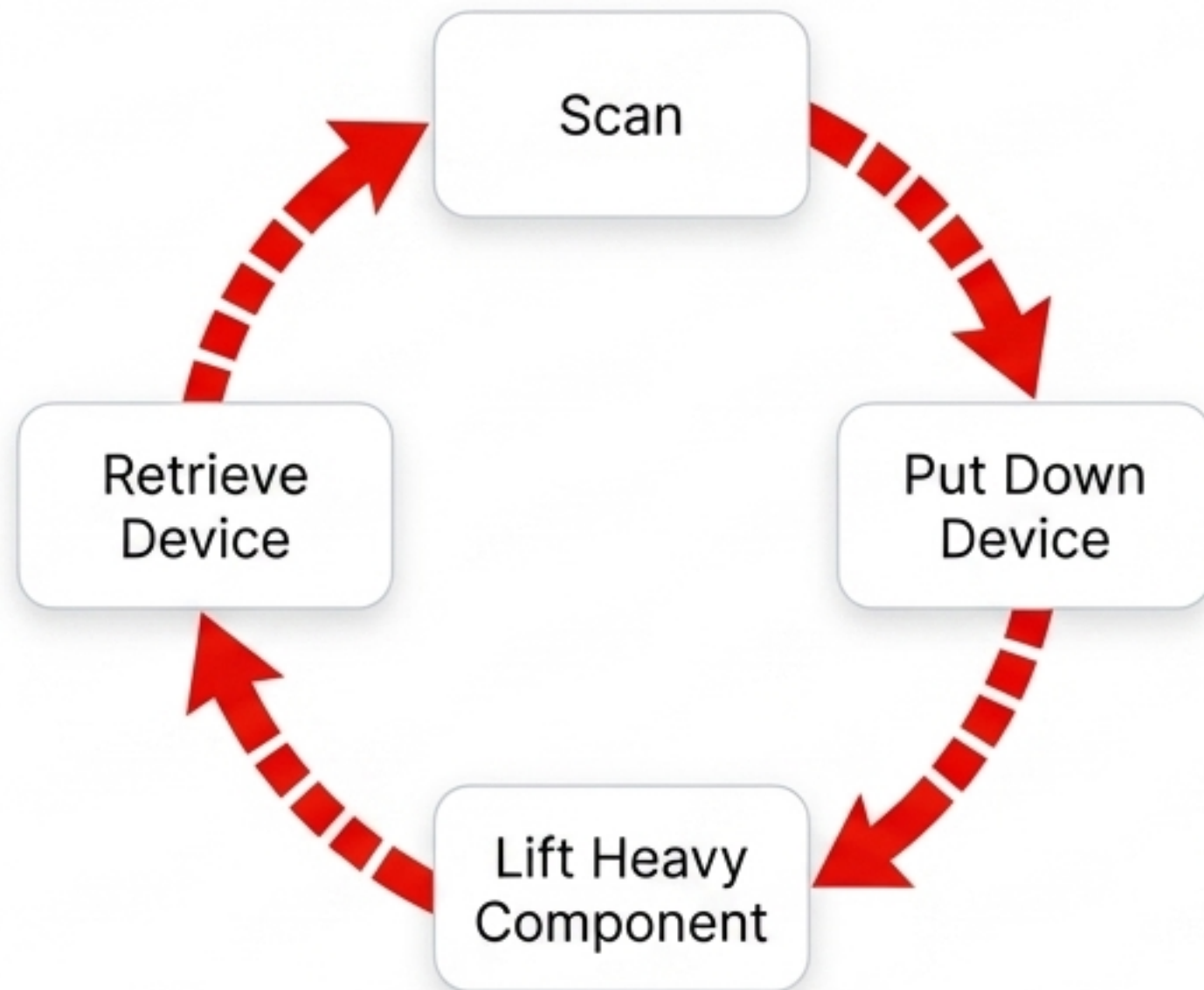
The Imperative of Just-in-Sequence Precision

Martur Fompak International operates as a premier global Tier-1 automotive supplier, specializing in complex seating systems. Supplying major automotive brands demands absolute precision through Just-in-Sequence (JIS) manufacturing.

Parts must be kitted and delivered to the exact sequence of the assembly line. A single deviation, missing part, or incorrect sequence causes cascading production disruptions and severe quality drops.

The Bottleneck of Fragmented Workflows

Micro-Inefficiency Loop



Motion Waste: The traditional logistics protocol relied on handheld barcode scanners, forcing workers into a repetitive, stop-start handling cycle. Micro-delays multiplied across thousands of daily picks, severely restricting throughput.

Quality Risk: Disconnected scanning introduced human error, risking the injection of incorrect parts into the strict JIS sequence.

Ergonomic Strain: Handling bulky automotive seats while continuously juggling hardware elevated fatigue, musculoskeletal strain, and workplace safety risks.

03 | FROM MANUAL OPERATIONS TO INTELLIGENT AUTOMATION

Hands-Free Execution and Proactive Mistake-Proofing

Ergonomic Liberation:

Embedding the scanner into a lightweight wearable eradicates 'put-down/pick-up' motion waste. Operators handle bulky parts with natural, bi-manual dexterity, cutting several seconds per pick.



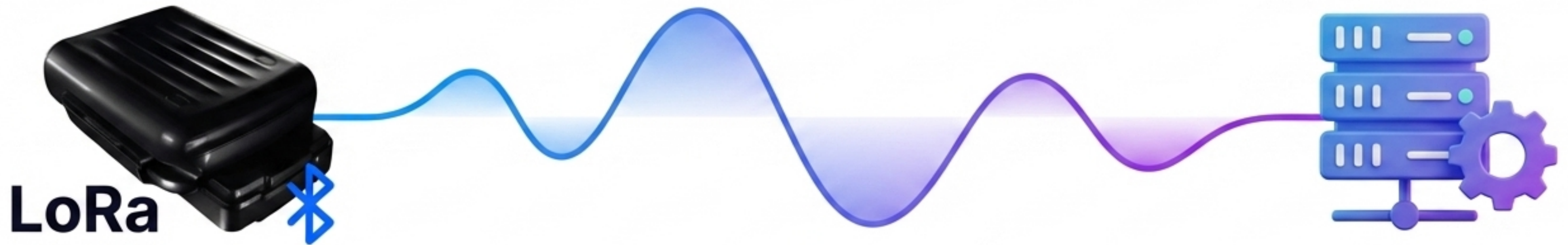
Intelligent Poka-Yoke:

The system proactively blocks errors. Multi-modal feedback (haptic vibration, acoustic alerts, and optical signals) intervenes instantly if a part is picked out of sequence, preventing defects from leaving the shelf.

Continuous Flow:

Repetitive reaching motions are eliminated, allowing staff to move quickly and continuously from one item to the next.

Bypassing Infrastructure Limits with LoRa



Expansive Wireless Range

Deployed LoRa (Long Range) architecture guarantees up to 1 kilometer of uninterrupted connectivity across expansive warehouse floors—eliminating the need for complex, dead-zone-prone Wi-Fi networks.

Real-Time MES Synchronization

VEGA gloves directly integrate into Martur's Manufacturing Execution System (MES). Scan data flows instantly to update pick lists and inventory counts.

End-to-End Visibility

Every scan translates to instantaneous inventory updates and timestamps, transforming a siloed process into a fully traceable, data-rich supply chain operation.

05 | FLAWLESS JUST-IN-SEQUENCE LOGISTICS

Measurable Impact and Operational Gains

15–30% Productivity Uplift

Eliminated motion waste, saving ~3-5 seconds per scan and driving continuous picking velocity.

Near-Zero Defect Rate

Real-time validation and multi-modal feedback eradicated logistics-related quality drops, safeguarding the assembly line.

Optimized Ergonomics

Drastically reduced musculoskeletal strain and fatigue, driving higher occupational safety and boosting employee morale.

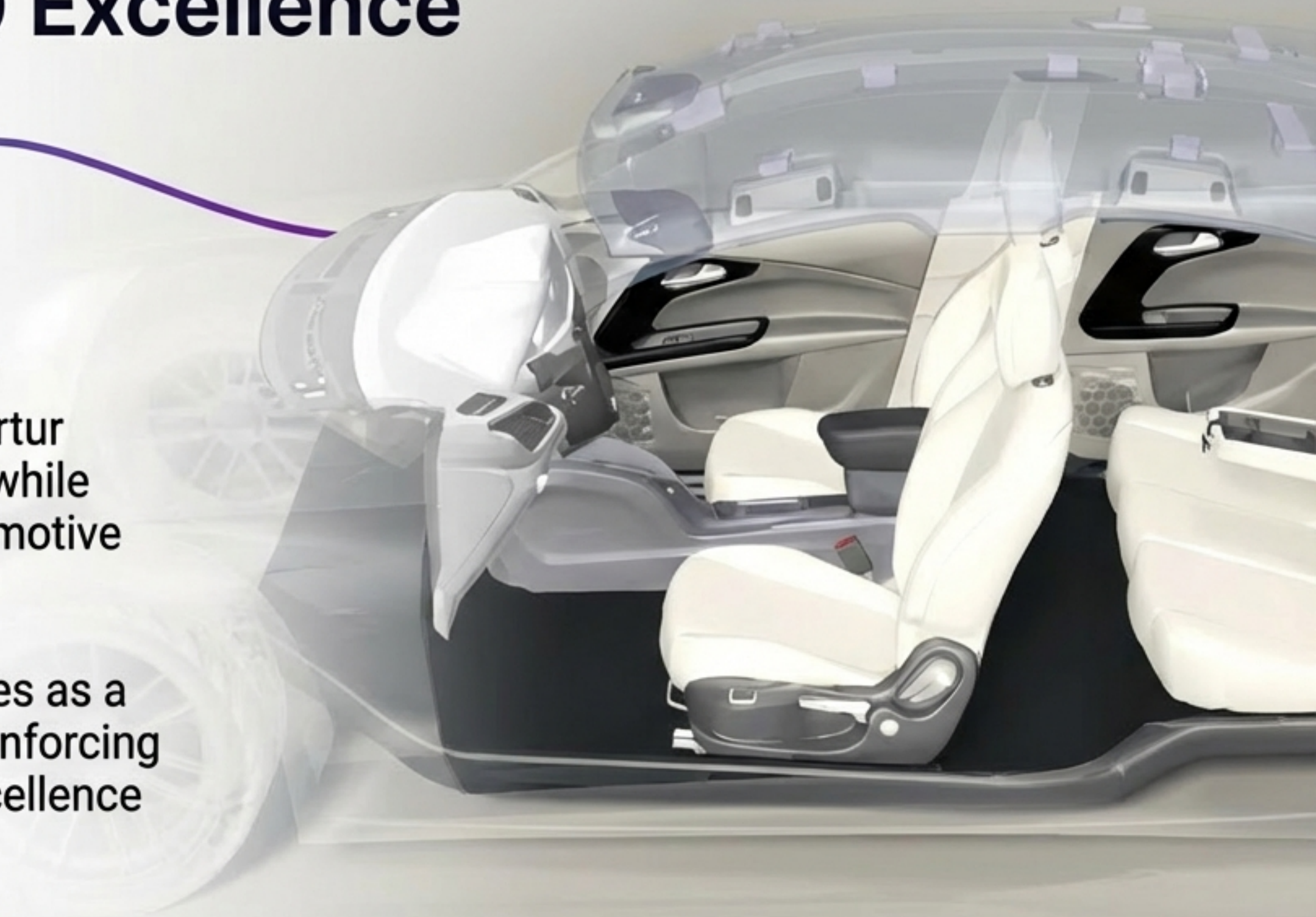
2 Weeks to Live

Agile, zero-downtime deployment of 50 connected devices, seamlessly integrating with existing MES protocols.

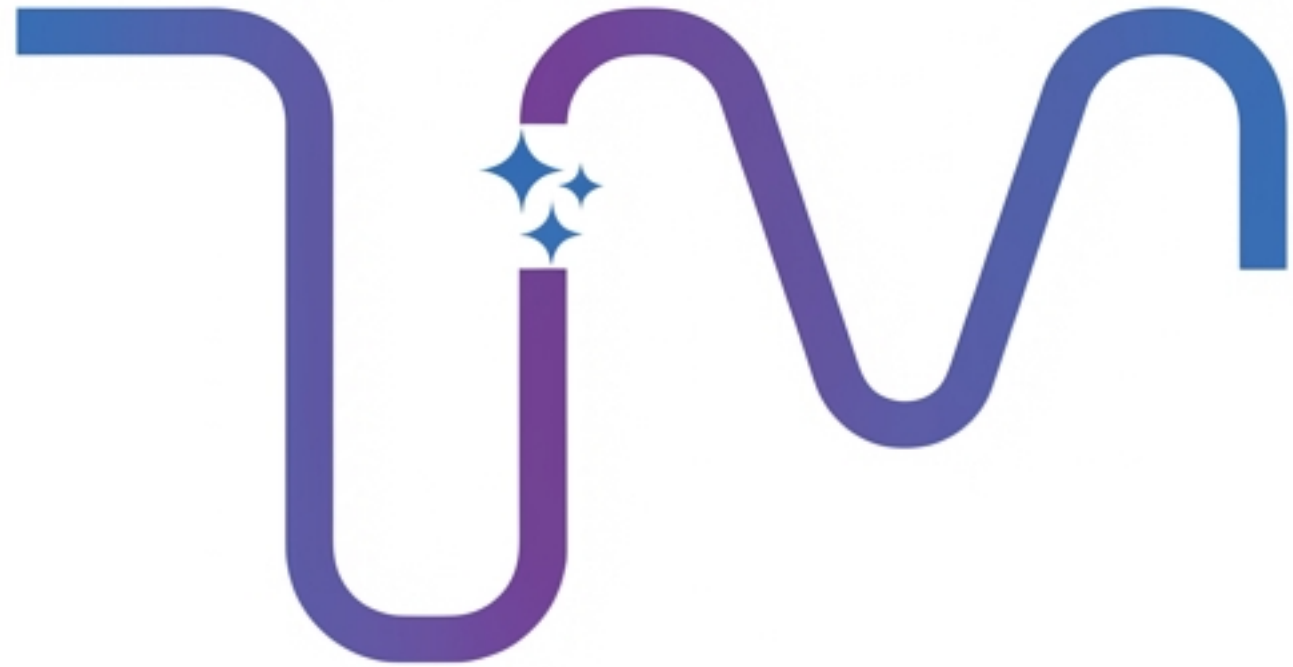
Scaling Industry 4.0 Excellence

By modernizing its internal logistics with hands-free IoT and LoRa technology, Martur successfully mitigated production risks while setting a new benchmark for Tier-1 automotive supply chain efficiency.

This rapid, high-impact deployment serves as a scalable template for global facilities, reinforcing Martur's commitment to Industry 4.0 excellence and zero-defect manufacturing.



THREAD IN MOTION



GET IN TOUCH WITH US

Website

www.threadinmotion.com

Phone

+44 20 4587 4397

E-mail

info@threadinmotion.com

HQ address

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