



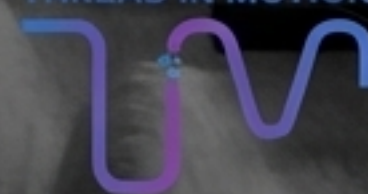
KORDSA

KORDSA SUCCESS STORY

Achieving 100% Raw Material Accuracy and
Zero Waste in Technical Textile Production.

WEARABLE IOT & INTELLIGENT AUTOMATION

THREAD IN MOTION



Executive Agenda

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01 INTRODUCTION

Global Leadership in Technical Textiles

The Standard: Kordsa operates as a global leader in high-performance industrial yarns and reinforcement fabrics, supplying mission-critical materials to the automotive, aerospace, and construction industries.

The Requirement: Maintaining competitive advantage in these sectors requires absolute precision. A core operational mandate is the flawless allocation of raw materials—ensuring the exact yarn bobbin is mounted to the correct machine for every specific product run.

The Vulnerability: Despite operating highly automated facilities, the company identified a critical operational gap: the manual, human-dependent process of bobbin installation.

The Cascading Risk of Manual Material Handling

The Root Cause: Despite advanced automation, yarn bobbin allocation was manual. A subtle visual misjudgment in color or material denier resulted in loading the wrong input.

Phase 1: Faulty Production

An incorrect input instantly compromises the entire weaving process, creating fabric that fundamentally fails to meet strict customer specifications.

Phase 2: Delayed Detection

Errors were historically only caught during end-of-line quality inspections, allowing machinery to run continuously while producing defective outputs.

Phase 3: The Business Impact



- **Material Waste:** Yards of unusable technical textile scrapped entirely.



- **Financial Loss:** Sunk machine time, wasted resources, and costly rework.



- **Ergonomic Strain:** Workers relied on non-ergonomic physical checks, reducing efficiency and safety.

Seamless Integration of Wearable IoT

To eliminate human error at the source, Kordsa deployed the TIM VEGA-X smart glove system, replacing outdated manual checklists with an automated, hands-free verification gateway.

The system was fully integrated into Kordsa's existing work-order architecture in just two weeks, utilizing plug-and-play APIs and Wi-Fi/LoRa connectivity.

Legacy Process	Intelligent Automation
Paper-based job cards and visual guesswork.	Digital work orders beamed directly to the operator's wrist display.
Heavy, cumbersome handheld scanners.	Ergonomic, lightweight wearable technology.
Reactive end-of-line inspection.	Proactive validation at the source.



Poka-Yoke: Multi-Sensory Error Prevention

The VEGA-X acts as a proactive Poka-Yoke device, shifting quality control to the very first millisecond of production.

Step 1: Intelligent Scanning

Operator scans the bobbin barcode hands-free.

Step 2: Real-Time Validation

The system instantly cross-references the specific bobbin against the digital recipe for that specific machine.

Step 3: Instant Feedback Gatekeeper

- **Match (Approval):** Green optic light grants immediate permission to mount.
- ✗ **Mismatch (Hard Stop):** Red optic light, haptic vibration, and acoustic alarms trigger instantly—physically warning the worker and preventing the incorrect yarn from entering the machine.



Flawless Production Achieved

100%

Material Accuracy

Wrong-bobbin errors completely eliminated. Guaranteed first-pass quality from raw material to final fabric.

Zero

Material Waste

Scrap fabric and wasted production runs caused by incorrect inputs have been entirely eradicated.

Accelerated

Throughput

Verification reduced to mere seconds. Eliminated downtime waiting for manual cross-checks and approvals.

Empowered

Workforce

Reduced cognitive load. Operators navigate workflows with hands-free confidence and complete ergonomic safety.

05 VISION FOR FUTURE

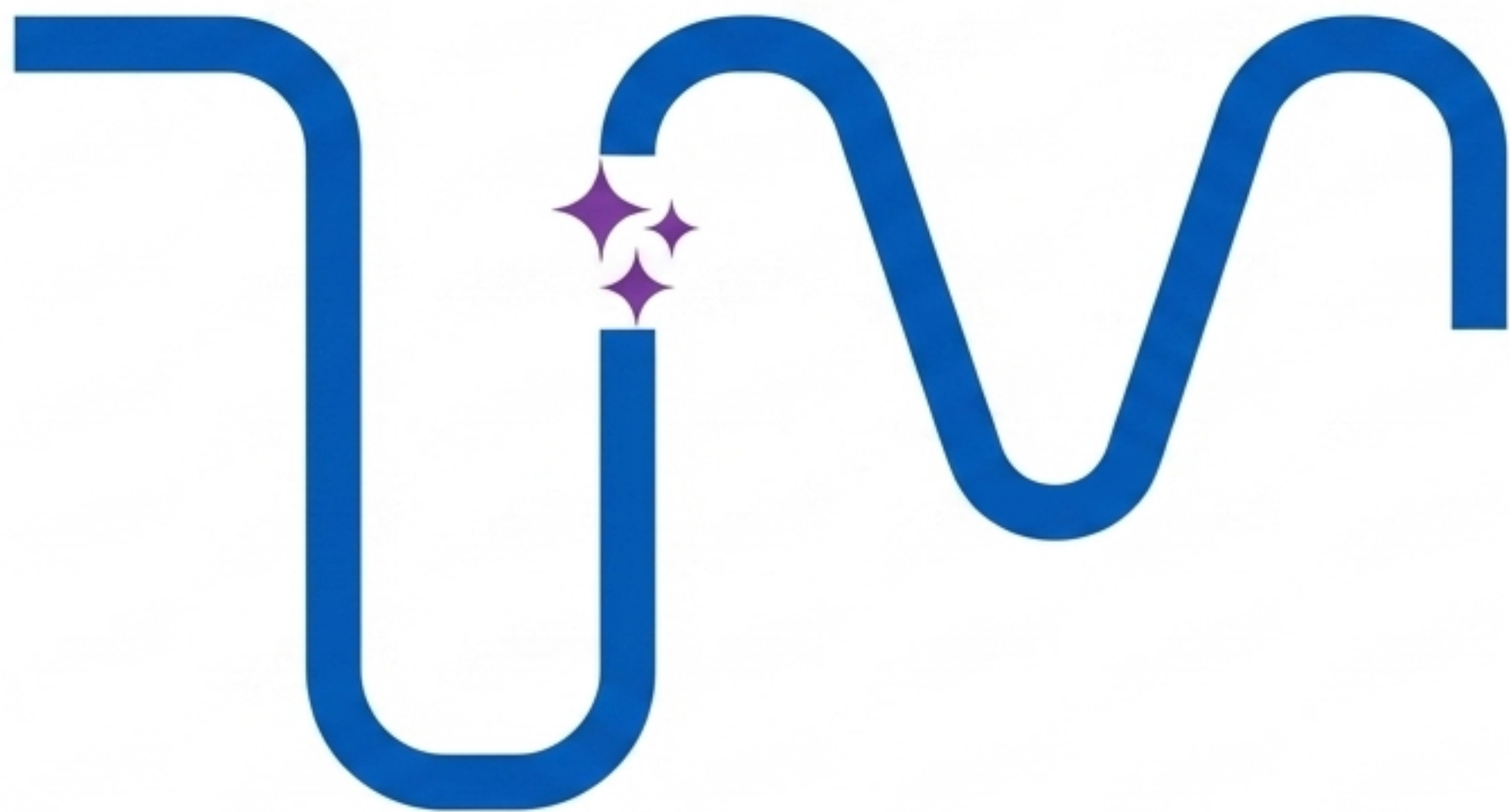
A Strategic Leap Towards Industry 4.0

By resolving a foundational operational vulnerability, Kordsa has successfully embedded proactive quality control into the DNA of its manufacturing process.

This transformation moves beyond simple error reduction; it establishes a highly scalable, digital-first framework for 'first-time-right' production.

The integration of TIM's wearable IoT technology not only safeguards Kordsa's strict quality standards but actively drives their global sustainability goals by conserving resources and eliminating industrial waste at the source.

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