

LDM360-TraceAuditReady

Technical & Product Supporting Briefing — EIT Food Seedbed TeamUp 2026

1. Executive Summary

LDM360-TraceAuditReady is an ecosystem composed of proprietary Edge IoT industrial hardware and an integrated Cloud SaaS ERP, specifically engineered to eliminate traceability blind spots and enforce Poka-Yoke quality control on the shop floor of Small and Medium-Sized (SME) food manufacturers. By combining resilient edge data acquisition with a dynamic Time-Window Traceability algorithm, LDM360 protects food operations from compliance failures, costly product recalls, and material waste, directly strengthening **Food System Resilience**.

Core Value Proposition

Transforms a traditionally chaotic, high-stress regulatory audit into a non-event through real-time automated data validation and instant "Audit-Ready" automated report generation.

2. The Industrial Problem (The Shop Floor Reality)

Food manufacturing SMEs operate under stringent compliance frameworks (IFS, BRC, FSSC 22000, ISO 22000). However, their operational reality is plagued by a major disconnect:

- **The Human Factor & Paper Dependency:** Critical tracing steps rely heavily on manual data entry, paper logs, or simplistic spreadsheets. Operators frequently make entry errors, lose track of active raw material batches, or bypass critical regulatory checks under high-speed production pressure.
- **Enterprise Software Mismatch:** Standard corporate ERP systems are too complex, expensive, and fragile for direct shop floor exposure. They lack real-time connection to physical machinery and cannot handle harsh production environments.
- **Audit Vulnerability & Food Waste:** When a quality issue occurs, tracing a batch takes hours or days instead of minutes, resulting in massive, conservative batch blocks, product destruction, or high-risk consumer recalls.

3. LDM360 Solution Architecture

LDM360 bridges the critical gap between raw physical manufacturing and cloud infrastructure through a robust, two-tier architecture:

A. Edge Intelligence Layer (Industrial IoT Hardware)

Instead of exposing delicate tablets directly to heavy machinery or relying purely on active cloud webhooks, LDM360 deploys rugged, IP65-sealed industrial IoT nodes directly on the assembly and packaging lines. These stations use Edge Computing via optimized local logic boards. They handle immediate machine inputs (photoelectric cells, current sensors, industrial push buttons) and process operations locally.

Edge Resiliency: If the factory internet drops or if the cloud database becomes temporarily delayed, the local hardware caches critical telemetry data and operates autonomously, ensuring zero data loss and absolute data integrity.

B. Cloud ERP & Poka-Yoke Software Layer

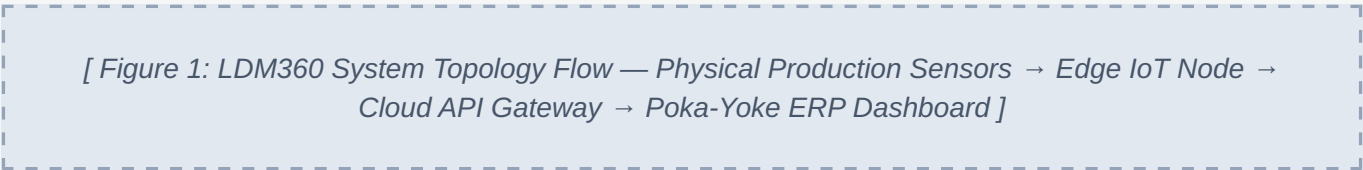
The backend architecture processes data via standardized I2C and API gateways, turning raw shop-floor signals into actionable tracking data. It features a proprietary **Time-Window Traceability** algorithm that mathematically links incoming raw material lots to final physical pallets by tracking the exact, dynamic processing intervals.

SYSTEM FEATURE	SHOP FLOOR OPERATIONAL IMPACT
Poka-Yoke Logic Gates	Proactively blocks human error. Operators cannot proceed to the next stage unless valid batch codes are scanned or verified by smart form inputs.
Zero-Latency Local Alerts	If a flow bottleneck or critical process deviation is caught by the IoT sensors, a physical on-site siren is triggered instantly at the edge without waiting for cloud round-trip times.
Zero-Prep Audit Engines	Generates instantly downloadable, comprehensive PDF traceability reports compliant with HACCP, BRC, and IFS standards.

4. Current Technology Readiness Level (TRL) & MVP Status

The system is currently positioned at **TRL 4/5**. The core tech stack is 100% functional in a controlled laboratory and simulation environment:

- **Hardware Status:** Fully working, custom-wired IoT prototype featuring industrial sensor integration, local edge-caching mechanics, and local alarm arrays.
- **Software Status:** High-fidelity AppSheet Cloud ERP deployment, with functional automated webhooks, custom item registries (Μητρώο Ειδών), and dynamic tracking views.
- **Next Milestones:** Transitioning from simulated testing to a live factory floor environment. The next phase requires physical, industrial validation via a designated Pilot Program.



5. Commercial Model & Go-To-Market Strategy

LDM360 utilizes a highly strategic B2B pricing model customized to the financial realities of food manufacturing SMEs, ensuring rapid technology adoption:

REVENUE STREAM	PRICING STRUCTURE	WHAT IT INCLUDES
Initial Setup & Deployment	€4,000 / upfront	Hardware procurement, manufacturing-line sensor integration (IP65 nodes), custom software mapping, and employee onboarding.
SaaS Core Subscription	€150 / month	Continuous access to the Poka-Yoke ERP software, automated cloud report compilation, database maintenance, and live security updates.

Pilot Validation Plan

To accelerate early market validation, LDM360 will launch a targeted **Proof of Value (PoV) Pilot Program**. For the initial manufacturing facilities, the upfront setup cost will be heavily discounted to base hardware costs. In exchange, the pilot facilities provide access to production line operational data, operator feedback, and the rights to publish a comprehensive business Case Study. This case study will serve as our primary B2B marketing engine to secure our first 10 scale-up clients.

6. Team Composition & Seedbed TeamUp Objectives

The project is driven by deep domain expertise, combining decades of real-world factory direction, quality control consulting, and hands-on auditing experience with modern software development and electronics engineering.

Why We Are Applying to TeamUp: While our technical stack, product vision, and operational workflows are fully mature, we recognize that market penetration requires a dedicated commercial lead. We are looking to match with a **Business Co-Founder** possessed of proven B2B SaaS marketing or industrial technology sales experience to manage legal scaling, large-scale financial planning, and international growth.