VERITY 27

Persistent Identity Standard for Global Textile Compliance

Executive Summary

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The Problem: 2027 Regulatory Deadline

The EU Ecodesign for Sustainable Products Regulation (ESPR) and U.S. Uyghur Forced Labor Prevention Act (UFLPA) establish mandatory compliance deadlines effective 2027. Regulatory non-compliance results in market restrictions and fines up to 4% of global turnover.

Current supply chain systems fail on two critical fronts:

Physical Persistence: Removable identifiers (QR codes, hang-tags, external RFID) disappear after retail. Once separated from the garment, compliance evidence is lost. Brands cannot prove conditions for returned, resold, or recycled products.

Labor Verification Integrity: Top-down audit models are vulnerable to fraud. They cannot generate immutable, point-of-manufacture evidence of actual labor conditions at the factory level.

The Solution: Integrated Binding Architecture

Verity 27 addresses both requirements through an integrated system architecture consisting of three technological pillars, working together at the terminal manufacturing stage (the "Final Stitch"):

Pillar 1 - Structural Persistence: NFC/RFID filament integrated into load-bearing structural seams survives the complete product lifecycle (post-retail phases including returns, resale, recycling). Physical removal requires destruction of garment structural integrity.

Pillar 2 - The Final Stitch Handshake: At final assembly, a cryptographic method binds the structural identifier to the worker's Professional Verifiable Credential (PVC). This binding occurs through three steps: (1) scanning the structural identifier, (2) authenticating the worker's credential, (3) generating a cryptographic attestation linking garment ID to verified labor conditions. This creates an immutable connection at point of manufacture.

Pillar 3 - The Regulatory Bridge: A data-interoperability layer designed to receive and cryptographically bind external forensic data (Tier-3 material tracers such as DNA-marked fibers or chemical isotopes) to the persistent structural identifier, creating a singular compliance record covering both material provenance and labor verification.

Maker Ledger (Worker-Sovereign Credentials): The worker credential system that enables the Final Stitch Handshake. Workers own portable professional credentials verified at point of manufacture. Brands receive forensic proof of labor conditions. No top-down audits. No fraud vulnerability.

These three pillars are integrated—they work together at the Final Stitch to create ground-truth supply chain evidence.

Verity 27 addresses both requirements through cryptographic binding at the terminal manufacturing stage (the "Final Stitch"):

Technical Status

Patent Status: Provisional utility patent filed April 18, 2026 (Application 64/043,173). 12-month intellectual property protection with pathway to non-provisional filing by April 18, 2027.

Architecture: Complete technical specification provided in patent disclosure. System design is fully documented.

Next Phase: Real-world manufacturing integration and validation testing.

For detailed technical specifications, see the complete Verity 27 White Paper.