CASE STUDIES & PRACTICAL SCENARIOS

PROJECT NUMBER
2024-1-RO01-KA220-VET-000243739

Strategic partnership to train fashion SMEs in the fight against counterfeits using modern technologies.

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NO FAKE FASHION

BUILD TRUST.
VALUE ORIGINAL.

Co-funded by the European Union

This document presents 10 paired Case Studies and Practical Scenarios designed to ensure the practical application of the Guidelines on Textile Traceability and Authentication Technologies (IT Perspective). Each pair is structured for SME applicability, aligned with Digital Product Passport (DPP) implementation and DigComp competencies.

Co-funded by the European Union

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Content

Case Study 1 – SME Implementing Fiber Traceability

Context / Profile

https://www.naturaprinacsiata.ro/

Natura prin ac și ață is a small textile SME specialized in the design and production of textile toys for children. The company works with a limited but carefully selected supplier base, sourcing certified cotton and blended materials compliant with recognized standards such as OEKO-TEX® and GOTS-certified organic fibers.

The production process combines manual craftsmanship with small-scale material sourcing and relies on partially digitalized workflows, including paper-based documentation, spreadsheets, and email-based supplier communication.

Problem

As a small producer operating in a highly quality-sensitive segment, ensuring reliable fiber traceability and supplier transparency is essential for maintaining product credibility and consumer trust.

The main operational challenge relates to the fragmented nature of supplier documentation management, where information is distributed across certificates, email correspondence, and manually stored records. This creates inefficiencies in verification processes and limits the speed of internal traceability checks.

The company also applies strict sourcing criteria and has previously discontinued supplier relationships when origin and certification data could not be adequately verified.

Technologies Applied

The company currently relies on a basic traceability structure combining:

- Manual batch tracking for incoming fiber and materials
- Supplier-origin verification through direct supplier background research
- Spreadsheet-based material logging
- Digital archiving of certifications and declarations
- Structured email-based supplier documentation exchange

This structure represents an early-stage traceability system that could progressively evolve into a Digital Product Passport-compatible registry.

Implementation Approach

The company's traceability practices are based on progressive verification and selective supplier engagement.

Key implementation measures include:

- Working with a small number of trusted suppliers
- Prioritizing certified materials with verifiable documentation
- Assigning batch identifiers to incoming materials
- Recording material composition and origin data
- Collecting certification and conformity evidence
- Mapping basic material flow from supplier delivery to final product integration
- Rejecting suppliers unable to provide sufficient traceability evidence

A future DPP implementation pathway would involve structuring these existing practices into a unified digital registry and defining a minimum supplier dataset for all material inputs.

Results / Impact

The current approach has enabled:

- Reliable traceability for priority raw materials
- Increased supplier accountability through stricter verification requirements
- Improved consistency in material sourcing decisions
- Reduced risk of unverifiable fiber origin claims
- Strengthened product trustworthiness for end consumers

The company's selective sourcing model has also reduced exposure to supplier-related traceability risks.

Key Lessons for SMEs

This case highlights several practical lessons for small textile businesses:

- Traceability can begin with simple manual systems
- Supplier selection is as important as technology adoption
- Data consistency is more valuable than technological complexity
- Limited supplier networks facilitate stronger traceability control
- Refusing unverifiable materials is an effective preventive strategy
- Traceability should cover both material origin and transformation steps

Link to DPP

This case demonstrates the foundational "material origin and supplier verification" layer of a Digital Product Passport.

Although not yet digitally integrated, the company's existing traceability practices provide a practical starting point for future DPP implementation through structured digitisation and gradual system standardisation.

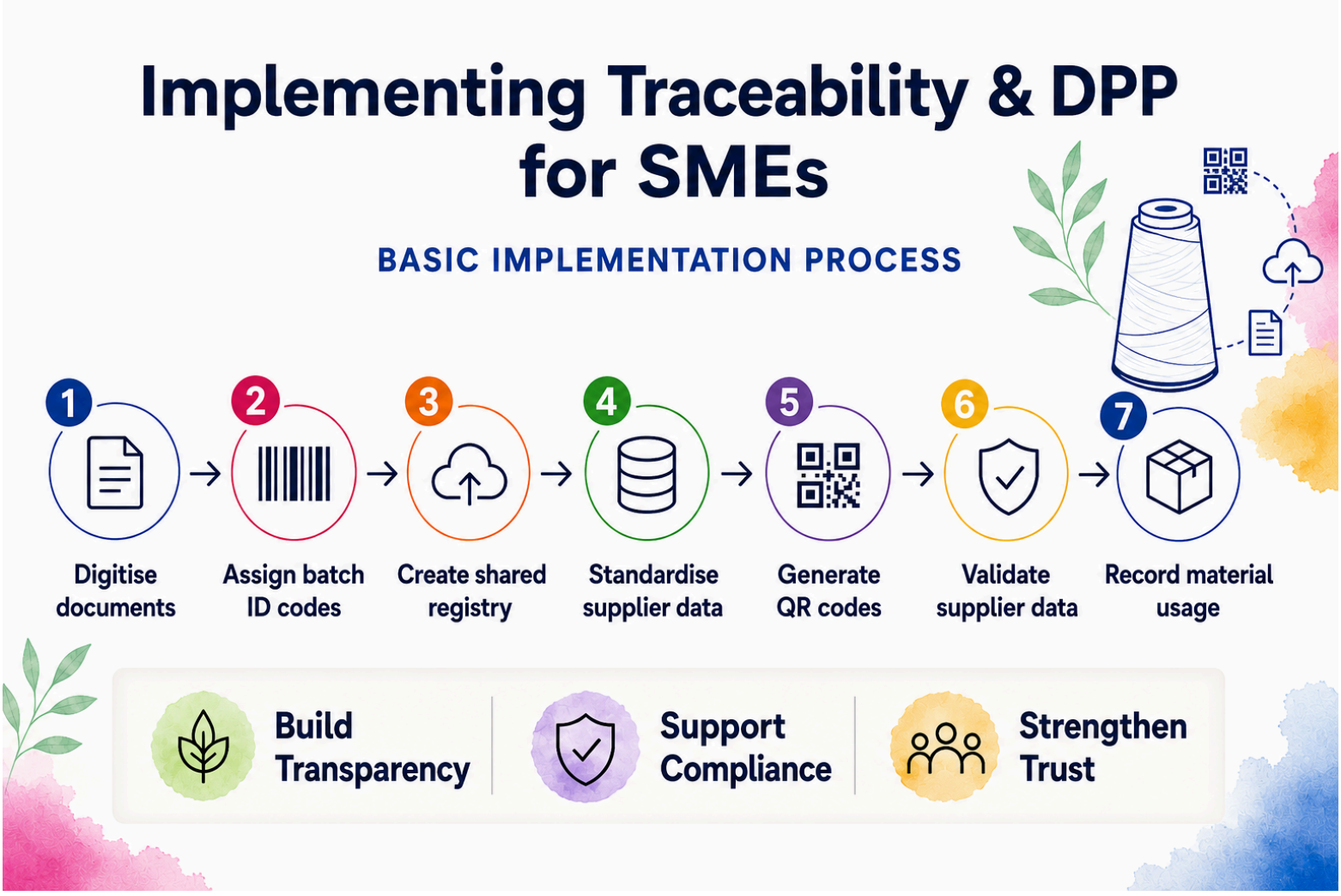
Scenario 1 – Starting Basic Traceability (Level 1 SME)

Profile

A small textile workshop operating with limited digital infrastructure and no formal traceability system. Product-related information is mainly managed through paper records, supplier emails, and manually stored documentation, with limited visibility over material flow and supplier data consistency.

Objective

Establish a low-cost digital traceability baseline that enables basic material origin tracking, improves internal organisation, and creates the first operational layer for future Digital Product Passport (DPP) readiness.



Expected Results

Implementation of these actions enables:

- Improved visibility over material flows
- Reduced dependency on fragmented paper-based systems
- Initial internal traceability capability
- Better organisation of supplier-related information
- Faster verification of material origin and documentation
- Increased operational readiness for progressive digital traceability integration

In practice, SMEs may initially face incomplete supplier information and inconsistent documentation quality. Data accuracy and reliability are typically strengthened progressively through repeated supplier engagement and internal process refinement.

Minimum vs Advanced Option

Minimum Option: Spreadsheet-based registry combined with batch identification codes and manual document validation.

Advanced Option: QR-code-enabled traceability linked to a structured digital database with automated supplier record integration.

For most SMEs, the minimum option represents the most realistic and scalable starting point.

SME Action Point

Begin implementation with a single product line or limited material category before extending traceability practices across the full product portfolio.

From an SME perspective, establishing internal discipline in data collection and basic material tracking is more critical than investing in complex technological infrastructure during the initial phase.

DPP Link

This scenario establishes the foundational data layer required for Digital Product Passport readiness by enabling structured recording of material origin, supplier declarations, and basic material usage across internal processes.

DigComp:

1.1, 1.2, 2.4, 5.2
1.1: Finding and Managing Relevant Digital Information
1.2: Evaluating the Reliability and Quality of Online Information
2.4: Collaborating through digital technologies
5.2: Identifying digital needs and solutions

Case Study 2 – Detecting Fabric Substitution

Context / Profile

The Italian SME Oscalito operates in the premium garment sector, producing high-quality knitwear based on natural and certified fibres. Its business model relies heavily on product authenticity, material quality and the “Made in Italy” label. To support this, the company collaborates with multiple suppliers, making supply chain transparency essential.

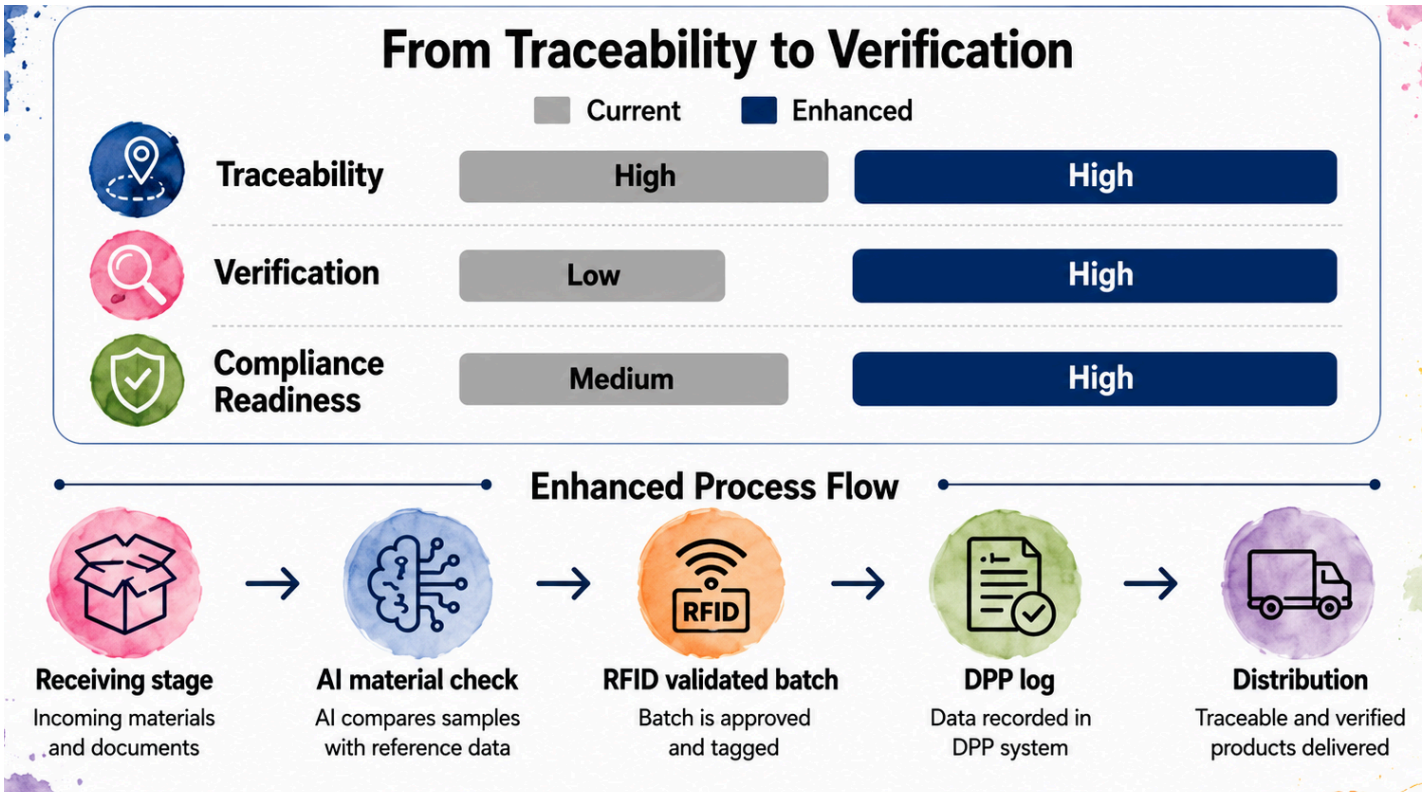
Problem

The company faces a recurring risk of material inconsistency within its supply chain, where suppliers may deliver fibres that do not fully match declared specifications. This issue is difficult to detect early, as traditional quality checks often occur after materials have already entered production. The core challenge lies in the gap between traceability and verification: while the company can track materials, it cannot always confirm their authenticity at the point of entry.

Technologies Applied

Oscalito has implemented RFID batch tagging to enable product identification and tracking throughout the supply chain. This system ensures that each garment is linked to relevant production and origin data. While verification technologies were not originally included, the system can be enhanced through AI-based material recognition and Digital Product Passport (DPP) logs, strengthening the link between traceability and validation.

Implementation Approach



Results / Impact

The use of RFID has improved supply chain visibility and product traceability, reducing the likelihood of undetected inconsistencies. It has strengthened quality control processes and supported the protection of product authenticity and brand reputation. Additionally, it provides a foundation for future integration of advanced verification technologies and compliance with emerging EU requirements.

Key Lessons for SMEs

SMEs should prioritise verification at the receiving stage to avoid costly late-stage corrections. RFID systems are effective for traceability but should be combined with validation tools to ensure material authenticity. Integrating physical tracking with digital systems such as DPP enhances transparency and long-term compliance, even for smaller organisations.

Link to DPP

The DPP builds on systems like RFID by structuring and standardising product data, enabling verification of material composition, origin and sustainability credentials, and supporting the detection of inconsistencies such as fabric substitution.

Scenario 2 – Preventing Supplier Substitution

Profile

This scenario concerns an SME sourcing certified fabrics such as organic cotton, wool, or high-quality blends. The company operates in a market where material authenticity and quality are critical and collaborates with multiple suppliers, increasing exposure to risks related to inconsistencies or substitution within the supply chain.

Objective

The objective is to ensure that all incoming materials fully comply with the agreed technical and quality specifications.

Step-by-Step Implementation

The process begins with the registration of each incoming batch in a tracking system, including key data such as supplier, material type, and certifications. The materials are then compared against predefined reference samples that represent the expected quality and composition. Where available, AI tools can be used to support automated comparison through image or texture analysis. The results of the verification process are systematically recorded, creating a traceable validation history. Finally, this information is integrated into a system compatible with the Digital Product Passport, ensuring transparency and accessibility of product data throughout the lifecycle.

Expected Results

Implementing this approach leads to early detection of material inconsistencies, significantly reducing the risk of fraud or substitution. It strengthens quality control processes, minimizes losses due to rejected materials or rework, and enhances the company's reliability and credibility in the market.

Minimum vs Advanced Option

At a minimum level, the SME can rely on manual inspection procedures supported by supplier documentation and visual checks. At a more advanced level, the company can implement a combination of AI-based verification, RFID tagging for batch traceability, and integration with Digital Product Passport systems to achieve higher levels of automation, transparency, and compliance.

SME Action Point

The SME should initially focus on high-value or high-risk materials, where the impact of substitution is greatest, ensuring a faster return on investment from verification measures.

DPP Link

Incoming material verification is a critical component of the Digital Product Passport, as it ensures that the data associated with products is accurate and reliable from the earliest stage of the supply chain.

DigComp

This scenario supports the development of competences aligned with the DigComp, particularly in areas 1.2 (Evaluating data, information and digital content), 1.3 (Managing data and digital content), and 5.2 (Identifying needs and technological responses).

Case Study 3 – Resolving a Mislabeling Case

Context / Profile

https://es.diesel.com/es/

Diesel is a well-known fashion brand whose supply chains often span multiple countries (e.g. spinning, dyeing, assembly). Within the EU, product origin must reflect the "last substantial transformation", which may not always align with brand positioning. This case reflects export-oriented fashion companies operating under strict origin and labelling requirements.

Problem

Cases in the fashion industry, including investigations involving brands such as Diesel, have shown challenges in correctly applying “Made in” labels when production is distributed across multiple countries. In some instances, products marketed as “Made in Italy” were found to have significant manufacturing stages carried out elsewhere, raising questions about whether the final processing step justified the origin claim.

Risks

Such situations create risks of misleading origin claims, regulatory non-compliance, potential legal action, and significant reputational damage.

Technologies Applied

In response, companies have increasingly adopted digital traceability solutions integrated with ERP and supply chain systems. These include batch-level tracking, supplier data management platforms and, in some cases, QR codes to enhance transparency. Certifications and third-party verification schemes are also used to support compliance.

Implementation Approach

The approach focuses on mapping the full supply chain (tiers 1–3), applying EU origin determination criteria based on the “last substantial transformation”, and centralising data in digital systems linked to product batches. Companies also reinforce labelling controls and increase the frequency of supplier audits.

Results / Impact

These measures help reduce the risk of mislabelling and improve alignment with EU regulatory requirements. They also support greater transparency and consumer trust. However, they may involve higher operational costs and require corrective actions, such as relabelling products or restructuring parts of the supply chain.

Key Lessons for SMEs

Product origin is defined by the last substantial transformation, not the perceived brand origin. When production is fragmented, misinterpretation is common. Robust data management and supply chain visibility are essential to avoid mislabelling risks.

Link to DPP

This case aligns with the Digital Product Passport (DPP) by highlighting the need for structured, verifiable product data. Enhanced traceability systems facilitate compliance, transparency, and more reliable origin verification.

Scenario 3 – QR-Based Product Transparency

Profile

This scenario concerns an SME in the fashion sector using a basic ERP system, with limited supply chain digitalisation, seeking to improve product transparency for both consumers and regulatory compliance.

Objective

Provide clear and accessible product information for consumers and regulators, while strengthening transparency and compliance readiness.

Expected Results

Greater consumer trust through increased transparency, improved readiness for compliance and audits, and better organisation of product-related data.

Minimum: static webpage

The minimum approach consists of linking QR codes to a static product webpage containing basic information.

The advanced approach involves dynamic, regularly updated pages connected to Digital Product Passport (DPP) systems, enabling structured and real-time data management.

SME Action Point

Start with key product lines and scale progressively based on internal capacity and results.

DPP Link

This solution acts as a consumer-facing layer of the Digital Product Passport, making product information accessible, verifiable and scalable across the value chain.

DigComp:

1.3: Managing digital data and information
2.4: Collaborating through digital technologies
5.2: Identifying digital needs and solutions

Case Study 4 – Using DPP to Withdraw Counterfeit Products

Context / Profile

Moncler is an Italian luxury fashion brand best known for its premium outerwear and down jackets. Due to its global popularity and high market value, Moncler has long been a target for counterfeiters, with fake products appearing on e-commerce platforms, social media marketplaces, and unauthorized retail channels.

Protecting brand authenticity is particularly important for Moncler because counterfeit products can damage consumer trust, undermine brand reputation, and divert revenue from legitimate sales.

Problem

Moncler faced a growing challenge in identifying and combating counterfeit products across global markets. Traditional anti-counterfeiting measures, such as physical labels and holograms, were becoming easier for counterfeiters to replicate.

The company needed a solution that would:

- Allow consumers to verify product authenticity independently.
- Improve traceability of individual products.
- Help identify counterfeit items circulating in the market.
- Strengthen confidence in both primary and resale markets.

Technologies Applied

Moncler partnered with Certilogo, a digital authentication platform that provides unique digital identities for fashion products.

The solution incorporated several technologies that reflect the principles of today's Digital Product Passports (DPPs):

- Unique digital product identifiers linked to each garment.
- QR codes and alphanumeric authentication codes.
- Cloud-based product authentication database.
- Product traceability and verification systems.
- Consumer-facing digital authentication platform.

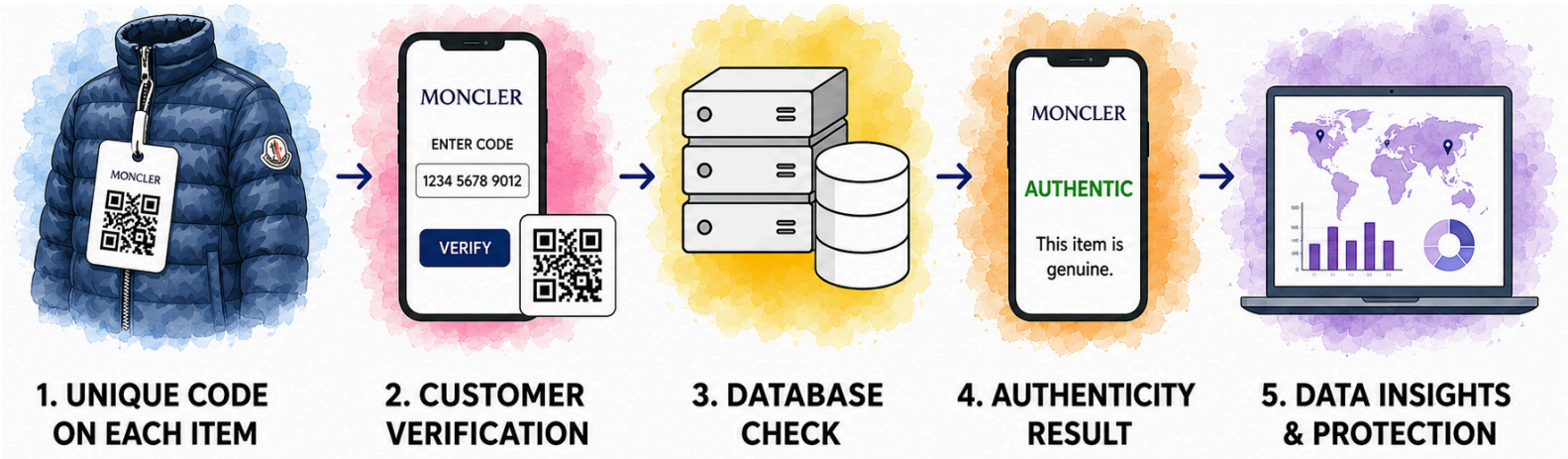
Implementation Approach

Moncler integrated a unique Certilogo code into its garments. Customers could scan the QR code or enter the product code through the Certilogo authentication platform to verify whether an item was genuine.

The system compared the product information against Moncler's secure database and provided an authenticity result.

In addition to helping consumers, the platform generated valuable data about authentication requests. Repeated verification attempts involving invalid, duplicated, or suspicious codes helped identify potential counterfeit products and detect regions or channels where fake goods were being sold.

This approach transformed authentication from a static physical label into a dynamic digital verification system similar to a Digital Product Passport.



Results / Impact

The implementation delivered several benefits:

- Improved consumer confidence through instant product authentication.
- Greater transparency and traceability throughout the product lifecycle.
- Enhanced ability to identify counterfeit products and suspicious sales channels.
- Better protection of Moncler's brand reputation and intellectual property.

- Increased support for authenticated resale and second-hand markets.
- Valuable market intelligence that helped inform anti-counterfeiting efforts.

The Moncler–Certilogo example demonstrates how digital product identities and DPP-like systems can move beyond simple product information management and become powerful tools for protecting authenticity, supporting traceability, and combating counterfeit fashion products.

Key Lessons for SMEs

- **Use digital product identities** to make products easier to authenticate and harder to counterfeit.
- **Give consumers simple verification tools**, such as QR codes linked to product information.
- **Leverage authentication data** to detect counterfeit activity and identify high-risk sales channels.
- **View DPPs as a business opportunity**, not just a compliance requirement, to build trust and transparency.
- **Start with existing solutions** rather than developing costly systems from scratch.
- **Support resale and circularity** by enabling products to be authenticated throughout their lifecycle.

Scenario 4 – Counterfeit Crisis Management

Profile

This scenario concerns a fashion SME producing premium apparel or accessories sold through physical retailers, e-commerce platforms, and secondary resale channels. The company positions itself around quality, authenticity, and brand reputation, making counterfeit products a significant commercial and reputational risk.

As the brand becomes more visible online, products with inferior materials, poor construction quality, and fake branding begin appearing on resale marketplaces and social media sales platforms. Customers increasingly struggle to distinguish authentic products from counterfeit copies, while low-quality items sold under the brand name begin lowering the perceived value of the company's products.

Objective

The objective is to improve the company's ability to identify counterfeit products, verify authentic items, and respond rapidly to potential recall or authentication incidents. The SME aims to strengthen customer trust, improve traceability across resale channels, and reduce reputational damage caused by counterfeit circulation.

Step-by-Step Implementation

1. The SME begins by assigning unique digital identities to products through QR codes or NFC tags linked to product records.
2. Each product is connected to a Digital Product Passport containing key information such as batch number, production date, material composition, and authentication status.
3. Retailers, customer service teams, and consumers gain access to verification tools that allow products to be authenticated through smartphone scanning.
4. The company establishes an internal process for recording counterfeit reports and suspicious products received from customers, retailers, or resale platforms.
5. Products flagged as suspicious are compared against official DPP records to identify inconsistencies in batch information, authentication data, or product specifications.
6. When counterfeit activity is confirmed, the SME activates communication procedures with distributors, resale platforms, and customers to limit further circulation of affected products.
7. Verification activity and recall progress are monitored through the DPP system to improve visibility and response coordination.

Expected Results

Implementing this approach improves the SME's ability to detect counterfeit products quickly and manage authentication requests more efficiently. Consumers and retailers gain greater confidence in product authenticity, while the company improves transparency and internal coordination during counterfeit incidents.

The system also helps:

- reduce reputational damage
- strengthen customer trust
- improve batch traceability
- support recall management
- reduce manual verification processes

Minimum vs Advanced Option

Minimum Option: The SME uses QR-linked product records, manual verification procedures, and basic batch tracking supported by spreadsheets or cloud-based databases.

Advanced Option: The company integrates NFC authentication, automated verification systems, cloud-based DPP platforms, and real-time monitoring of counterfeit reports across retail and resale channels.

SME Action Point

The SME should prioritise authentication systems for high-value or frequently counterfeited products, especially items sold through online marketplaces or secondary resale channels.

DPP Link

Digital Product Passports support product authentication by connecting products to structured traceability and verification data, improving transparency, recall management, and counterfeit detection across the product lifecycle.

DigComp: This scenario supports competences related to DigComp areas 1.2 (Evaluating data, information and digital content), 2.4 (Collaborating through digital technologies), and 5.2 (Identifying needs and technological responses).

Case Study 5 – Reseller Monitoring and Control

Context / Profile

Blue Banana is a Spanish fashion brand operating through a rapidly expanding omnichannel distribution network that includes ecommerce, owned stores, El Corte Inglés corners, wholesale partners, and international multi-brand retailers across several countries.

https://www.bluebananabrand.com/

Problem

As Blue Banana expanded through multiple retail partners, wholesale channels, ecommerce platforms, and international distributors, the company faced increasing difficulties controlling product distribution and protecting brand positioning. The brand publicly reported the growing presence of counterfeit Blue Banana products sold through street markets ("mercadillos"), informal retail channels, and unauthorized online sellers in Spain.

According to the company's co-CEO, counterfeit products had become increasingly widespread and sophisticated, creating confusion among consumers and damaging the perceived value and quality of the brand (more info here). In addition to direct financial losses, unauthorized resale and counterfeit distribution created risks related to inconsistent pricing, reduced visibility over product movement, reputational damage, loss of consumer trust, and weaker control over authorised distribution networks.

The company therefore required stronger digital monitoring and traceability mechanisms capable of supporting distribution control across increasingly complex omnichannel operations.

Technologies Applied

- RFID product tracking: Each garment is assigned a unique RFID identifier, enabling traceability across logistics, warehousing, and retail distribution.

- Digital product identification: RFID tags are linked to digital information systems that improve inventory management, shipment verification, and product visibility.
- ERP integration: Blue Banana implemented an ERP system to improve coordination between logistics, retail, supply-chain, and commercial operations across its omnichannel network.
- Supply-chain transparency: Through its *Blue Banana Conscious* programme, the company strengthened supplier auditing and visibility over production and distribution processes.
- DPP-ready infrastructure: The RFID and digital traceability system provides a foundation for future QR-linked Digital Product Passports (DPPs), supporting authentication, traceability, and anti-counterfeit verification.

Implementation Approach

Products were assigned unique digital identifiers linked to distribution and inventory records, enabling traceability throughout the supply chain. Shipments, warehouse movements, and retail destinations were recorded in shared digital systems to improve visibility across distribution channels. The company monitored sales activity and online marketplaces to identify suspicious pricing patterns, unauthorized resellers, and counterfeit products outside approved networks. Based on the information collected, distribution agreements and reseller controls were progressively strengthened to improve channel management and reduce grey-market leakage.

Results / Impact

The implementation of digital traceability and monitoring systems improved visibility across distribution channels and enhanced control over product movement within the company's omnichannel network. They achieved greater pricing consistency across authorised sales channels and reduced risks related to grey-market leakage and unauthorized resale. The strengthened monitoring infrastructure improved oversight of retail partners while supporting greater transparency and readiness for future Digital Product Passport (DPP) requirements.

Key Lessons for SMEs

Omnichannel expansion increases the complexity of distribution management and requires continuous monitoring across retail, ecommerce, and wholesale channels. Product control should continue beyond the warehouse, particularly in sectors exposed to unauthorized resale and counterfeiting. SMEs do not need highly advanced technologies from the outset; simple digital tracking and traceability systems can provide a strong foundation before scaling towards AI-supported analytics and automated monitoring. Integrating sales, logistics, and traceability systems also improves operational scalability and strengthens long-term control over distribution networks.

Link to DPP

The case demonstrates how Digital Product Passport-oriented systems can support product traceability, distribution monitoring, and transparency across complex retail and wholesale networks.

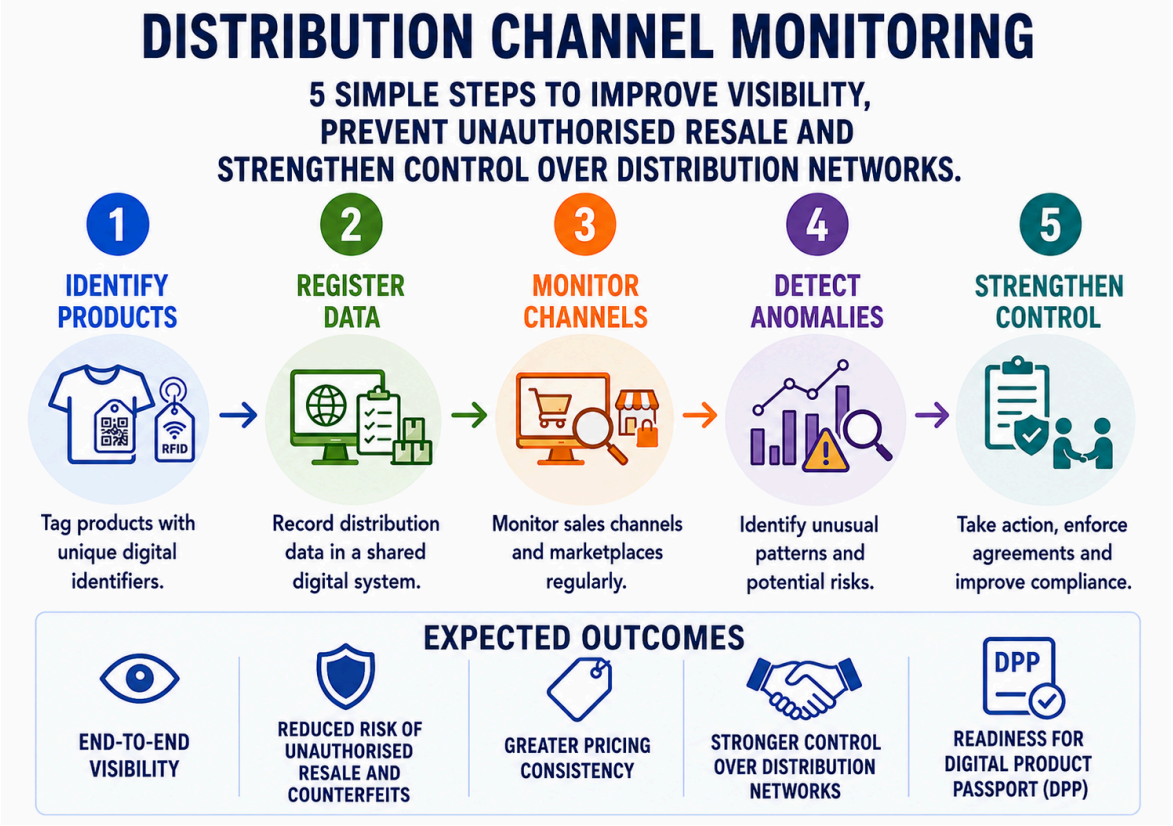
Scenario 5 – Monitoring Distribution Channels

Profile

This scenario concerns a growing fashion SME operating through multiple sales and distribution channels, including ecommerce, physical retail stores, wholesale partners, department stores, and international distributors. As the company expands across different markets, maintaining visibility and control over product movement becomes increasingly complex. The brand is also exposed to risks related to counterfeit products sold through street markets, unauthorized online sellers, and grey-market resale channels that may damage pricing consistency, customer trust, and brand reputation.

Objective

The objective is to strengthen control over product distribution and identify unauthorized resale activity through the implementation of digital traceability and monitoring systems. The SME aims to improve visibility across its distribution network, reduce grey-market leakage, and protect brand positioning while progressively preparing for Digital Product Passport (DPP) implementation.



Expected Results

The implementation of distribution monitoring systems improves visibility across sales and logistics channels while reducing risks associated with unauthorized resale and counterfeit distribution. The SME achieves better pricing consistency, stronger control over authorised retail networks, and improved protection of brand reputation and customer trust. In addition, the company strengthens its readiness for future Digital Product Passport requirements by creating more structured and reliable distribution data.

Minimum vs Advanced Option

At a minimum level, the SME can implement basic shipment tracking and sales monitoring using spreadsheets, ERP systems, or QR-based product identifiers. At a more advanced level, the company can integrate RFID tracking, automated marketplace monitoring, AI-supported anomaly detection, and blockchain-compatible traceability systems to achieve higher levels of transparency and distribution control.

SME Action Point

The SME should initially focus on high-risk markets, products, or distribution channels where unauthorized resale and counterfeit activity are most likely to occur, allowing a gradual and cost-effective implementation of monitoring technologies.

DPP Link

This scenario supports the distribution and ownership layer of the Digital Product Passport by enabling product traceability beyond manufacturing and into retail, resale, and post-distribution monitoring processes.

DigComp

This scenario contributes to the development of competences aligned with DigComp, particularly in areas 1.2 (Evaluating data, information and digital content), 1.3 (Managing data and digital content), 2.4 (Collaborating through digital technologies), and 5.2 (Identifying needs and technological responses).

Case Study 6 – AI for Textile Origin Verification

Context / Profile

Authentique, part of the Paris-based ORDRE Group, specialized in connecting physical luxury and textile goods to Digital Product Passports. The company operates in an environment where material consistency, supplier reliability, and origin verification are critical for maintaining product quality and supporting upcoming EU traceability regulations within textile production chains.

Problem

The company experienced difficulties verifying the authenticity and consistency of incoming fabrics during production-stage inspections. Traditional tracking markers like QR codes or RFID tags were vulnerable to supplier swapping, cloning, or physical removal. Meanwhile, manual material inspection processes were time-consuming and highly dependent on operator experience, increasing the risk of incorrect material identification and potential supplier-related fraud.

Technologies Applied

Optical AI surface-scanning software (FeaturePrint® technology via the Authentique platform by The ORDRE Group), industrial machine vision cameras, and integrated Digital Product Passport (DPP) logging software.

Implementation Approach

Instead of relying on physical tags, the company turned the fabric itself into its own uncopyable digital identifier by deploying the Authentique platform:

- The Fabric Fingerprint: Utilizing Authentique's underlying FeaturePrint® technology, the company established a reference dataset using verified fabric samples. When new textile batches arrived, a standard digital camera scanned the fabric surface.
- Automated Baseline Comparison: The system compared the incoming fabric's scanned "fingerprint" against the approved baseline dataset. If the microscopic weave pattern deviated from the reference standard.
- The Verification Loop: Batches that successfully matched the baseline were cleared for production. Detected anomalies were immediately flagged for manual human review to assess potential quality issues or supplier fraud.

Results / Impact

By shifting from manual visual checks to Authentique’s optical AI, the system achieved a detection and accuracy rate of approximately 95% for identifying unapproved variations in selected material categories.

Key Lessons for SMEs

This case demonstrates that optical AI-based verification systems function best when designed to complement, rather than replace, human expertise within quality assurance workflows. It also highlights that system performance depends entirely on the precision of the initial reference dataset; SMEs must ensure that the baseline material information provided to the Authentique platform during setup is accurate and highly consistent.

Link to DPP

This case supports the material verification layer of the Digital Product Passport. By utilizing the Authentique platform, the physical fabric's unique microscopic structure is securely bound to its digital twin. This prevents "tag-swapping" fraud and records structured digital evidence directly to the item's DPP, ensuring compliance with EU Ecodesign standards.

Scenario 6 – AI-Assisted Material Verification

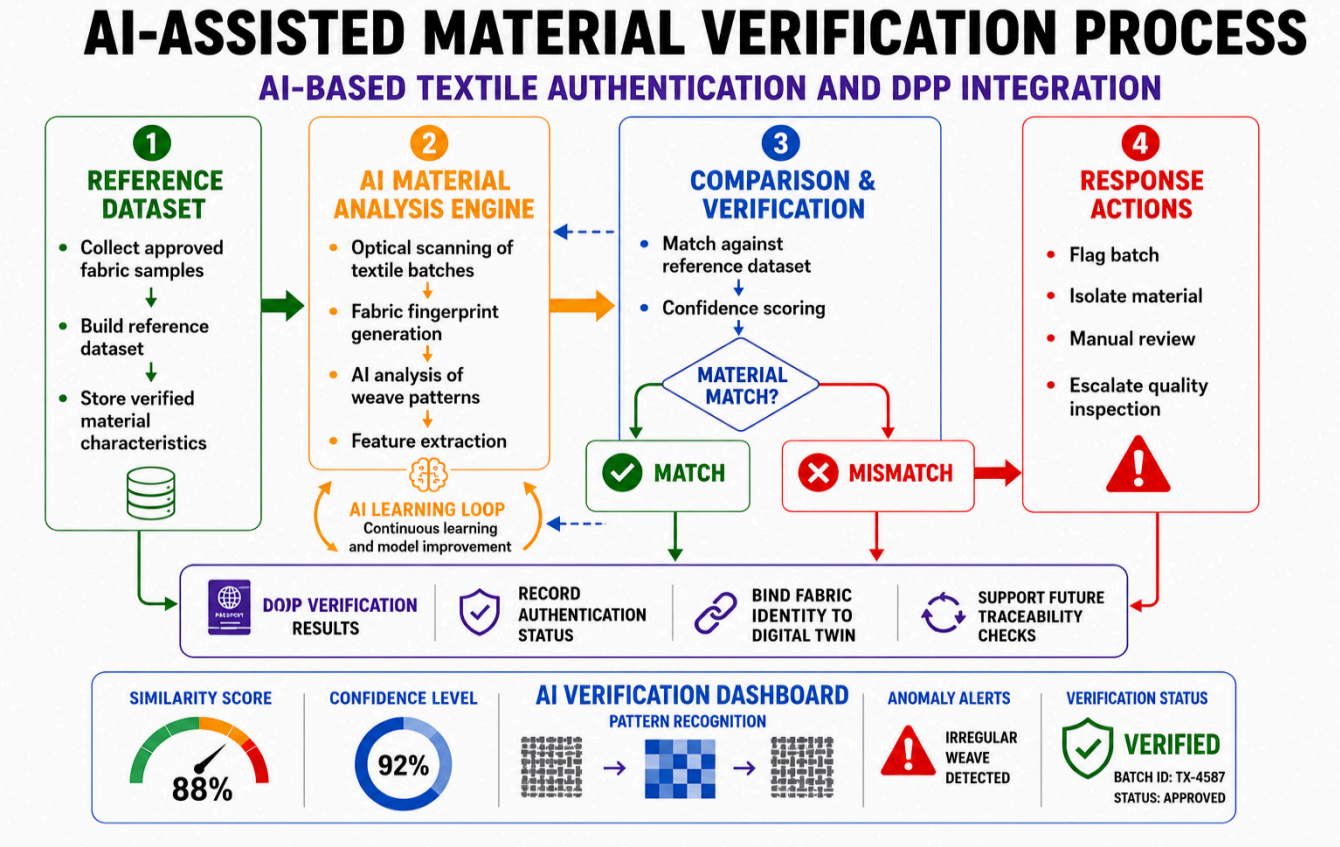
Profile

Small or medium-sized textile manufacturer managing varied material inputs from multiple suppliers, operating with limited automated verification capabilities during production-stage quality control processes.

Objective

Improve the reliability, consistency, and traceability of material verification procedures by deploying the Authentique platform to turn physical fabrics into their own uncopyable digital identifiers, eliminating the risk of supplier-related fraud or incorrect textile inputs entering production.

Step-by-Step Implementation



Expected Results

- **Eradication of Label Fraud:** Complete protection against "tag-swapping" or QR-code cloning, as the fabric itself functions as the security marker.
- **Objective Quality Assurance:** Drastic reduction in human-eye error and reliance on operator experience for consistency checks.
- **High-Precision Detection & Regulatory Compliance:** Automated generation of audit-ready traceability records linked to the Digital Product Passport to meet EU Ecodesign standards.

SME Action Point

Prioritize implementing the **Authentique** platform onboarding and reference dataset training for high-risk, high-value, or frequently counterfeited materials before expanding the optical AI verification process across broader fabric categories.

DPP Link

Supports the material verification layer of the Digital Product Passport. By utilizing the Authentique platform, the physical fabric's unique microscopic structure is securely bound to its digital twin, creating an unforgeable record of inspection outcomes, supplier compliance, and authenticity verification activities.

DigComp

This scenario contributes to the development of competences aligned with DigComp, particularly in areas 1.2 (Evaluating Data, Information and Digital Content), 1.3 (Managing Data, Information and Digital Content), and 5.2 (Identifying Needs and Technological Responses).

Case Study 7 – Implementing an RFID System

Context / Profile

A growing textile and apparel manufacturer in Northern Portugal managing high-volume production of garments across manufacturing, packaging, and central distribution hubs. As business activity expanded, the company experienced greater operational complexity in bulk inventory handling, item-level visibility, and logistics coordination between subcontracted production stages and the central warehouse. A collaboration between Portuguese automation specialist **Accurex**, apparel software company **MacWin-Tek**, and tech provider **Primo1D**. It is modeled around an apparel supply chain hub in Northern Portugal.

Problem

The company faced recurring inventory errors, including mixed-up sizes, human packing mistakes, and incredibly slow stock reconciliation processes. Manual checking and visual sorting of incoming apparel shipments created massive operational bottlenecks. Furthermore, data was siloed, causing limited visibility over product movement within the supply chain, which reduced the reliability of logistics data used for real-time customer fulfillment planning.

Technologies Applied

- **Primo1D E-Thread™ RAIN RFID technology:** An ultra-slim, invisible RFID microchip woven directly into the textile yarn/seams during early manufacturing.
- **MacWin Apparel ERP Platform:** Integrated backend software for automated inventory synchronization.
- **Digital Product Passport (DPP) Data Infrastructure:** Cloud-based backend supporting lifetime traceability and component origin records.

Implementation Approach

Instead of sticking external tags onto finished goods, the company introduced durable, embedded RFID threads directly into the garment structures during the initial sewing and fabric assembly stages. Fixed RFID bulk scanners were installed across warehouse receiving bays and sorting checkpoints to automatically capture product movement data without unpacking cartons or hanging garments. The data was integrated seamlessly with the company's apparel-specific ERP platform, functioning as a permanent physical anchor connected to the Digital Product Passport (DPP) infrastructure to support traceable, lifelong logistics records.

Results / Impact

The implementation drastically optimized warehouse efficiency. The processing time required to read, check, and cross-reference massive incoming batches of over 5,000 items was **slashed from 40 minutes to under 10 minutes—an 87% reduction in processing time**. Inventory accuracy reached near **100%**, human picking/packing errors were virtually eliminated, and the durable embedded thread successfully laid the groundwork for future automated textile recycling sorting.

Key Lessons for SMEs

This case demonstrates that moving from traditional external hangtags to embedded textile RFID solutions provides a seamless, tamper-proof tracking system that cannot be lost or detached. For manufacturing SMEs, the pilot highlights that integrating RFID tech early in the production line—rather than at the final packaging stage—unlocks data synchronization across the entire supply chain. It also emphasizes that picking the right software partner (like an apparel-specific ERP) simplifies technical deployment.

Link to DPP

By utilizing a permanent, unremovable E-Thread inside the clothing, this case fulfills the exact compliance requirements of the EU Ecodesign for Sustainable Products Regulation (ESPR). It establishes a permanent "digital twin" link to the DPP backend, carrying traceable data regarding fabric composition, assembly origins, and logistics logs that survive up to 200 industrial wash cycles.

Scenario 7 – RFID for Warehouse Control

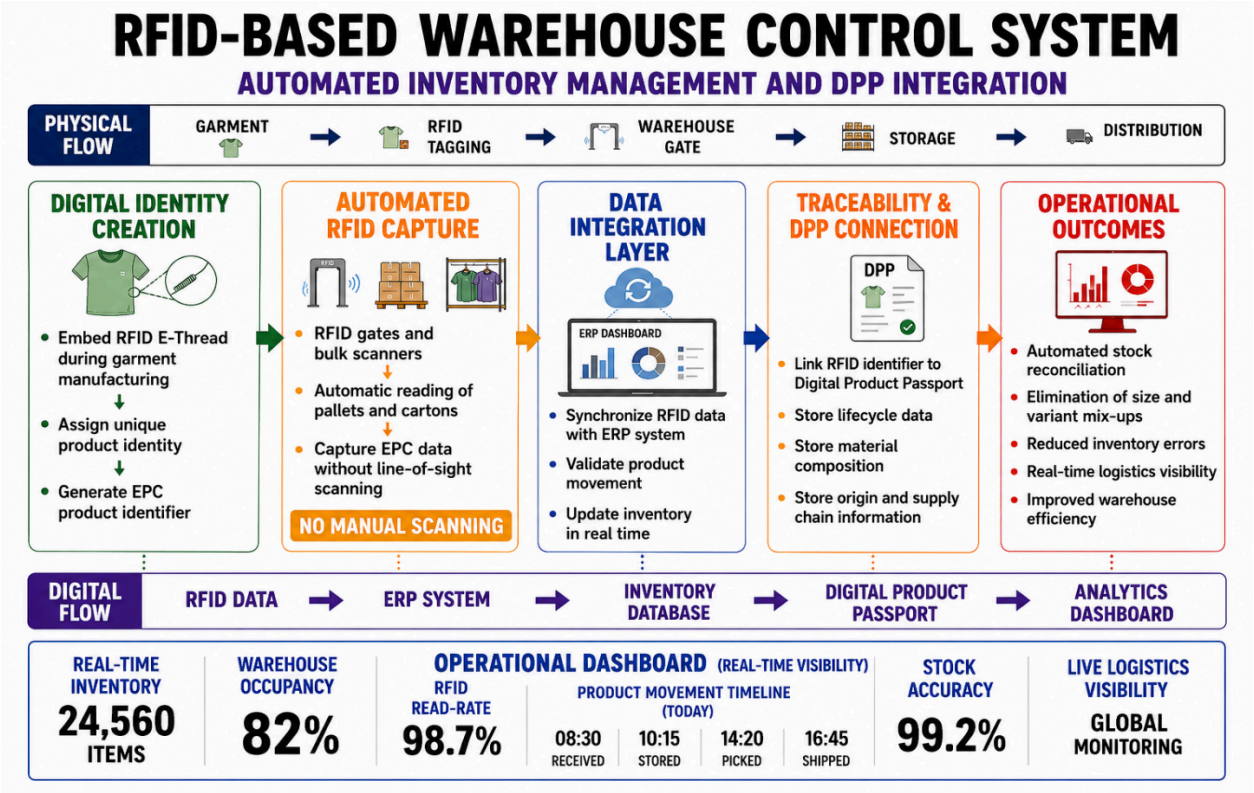
Profile

Small or medium-sized apparel manufacturer experiencing size mix-ups, slow logistics verification, and inefficiencies in bulk warehouse receiving and tracking processes. The collaboration between Portuguese automation specialist **Accurex**, apparel software company **MacWin-Tek**, and tech provider **Primo1D**. It is modeled around an apparel supply chain hub in Northern Portugal, investigate the situation.

Objective

Automate bulk inventory tracking, eliminate manual apparel sorting errors, and establish a permanent digital identity to streamline logistics and future DPP compliance.

Step-by-Step Implementation



Expected Results

An 80%+ reduction in warehouse check-in and audit times (e.g., scanning 5,000+ items in under 10 minutes), automated validation of garment sizes/variants, near-perfect inventory accuracy, and an ESPR-compliant physical tracking framework.

Minimum vs Advanced Option

- **Minimum:** External barcode or adhesive RFID stickers applied to packaging units, requiring manual line-of-sight scanning and offering no product lifecycle tracking after sale.
- **Advanced:** Invisible, embedded RFID thread integrated into the textile yarn, synchronized with an apparel ERP and connected to a full DPP infrastructure for automated bulk reading and permanent lifecycle traceability.

SME Action Point

Launch a pilot implementation tracking one specific product category or high-volume item line from the factory sewing floor to the central distribution center before expanding embedded RFID infrastructure across all manufacturing lines.

DPP Link

Supports both the logistics layer and the circular end-of-life layer of the Digital Product Passport by permanently attaching an unremovable, washable cloud-pointer containing verified composition and supply chain origin data to the physical garment.

DigComp: This scenario contributes to the development of competences aligned with DigComp, particularly in areas 1.3 (Managing Data, Information and Digital Content), 5.2 (Identifying Needs and Technological Responses), and 2.4 (Collaborating Through Digital Technologies).

Case Study 8 – Losses from Superfakes

Context / Profile

Burberry is a global luxury brand producing high-value fashion products such as trench coats, handbags, and accessories. These products are positioned in the premium segment, making them highly attractive targets for counterfeiters. The rise of high-quality counterfeits (that is “superfakes” that are usually better than the original products) poses a significant threat, as they can closely imitate original products and are difficult for consumers to distinguish, leading to substantial financial losses and brand dilution.

Problem

Burberry faced increasing pressure from high-quality counterfeit goods entering the market, which not only reduced revenues but also undermined consumer trust and brand exclusivity. Traditional authentication methods (labels, serial numbers, visual inspection) were no longer sufficient, as counterfeiters were able to replicate them with high accuracy. The challenge was therefore to develop a system that ensures reliable, scalable, and real-time authentication, both internally (supply chain) and externally (retail and customer level).

Technologies Applied

RFID embedded directly into products, unique digital identifiers linked to each item and integration with internal systems for tracking and verification. These technologies allow each product to carry a unique, verifiable identity, which cannot be easily replicated by counterfeiters.

Implementation Approach

Burberry integrated RFID tags into its products during manufacturing, enabling each item to be tracked throughout the supply chain and retail lifecycle. The RFID system links physical products to digital records, allowing staff to verify authenticity instantly using scanning devices. This creates a secure connection between the product and its data, ensuring that any inconsistency or missing information can signal potential counterfeiting. In addition to authentication, the system also improves inventory management and enhances customer experience through interactive retail applications.

Results / Impact

The implementation of RFID technology significantly strengthened Burberry's ability to detect and prevent counterfeit products, while also improving transparency and operational efficiency. The brand achieved better control over its distribution channels and ensured that only authenticated products reached customers. This contributed to protecting brand value, maintaining consumer trust, and reducing the economic impact of counterfeiting. Additionally, the system enabled real-time verification, which is critical in environments where high-quality fakes are difficult to distinguish visually.

Link to DPP

Building on such approaches, luxury groups like LVMH have developed blockchain-based solutions (e.g., Aura platform) to create digital certificates of authenticity and track products across their lifecycle. These systems further enhance transparency and trust by storing immutable product data and enabling consumers to verify authenticity directly.

Scenario 8 – Multi-Layer Authentication Strategy

Profile

This scenario concerns a small or medium-sized enterprise (SME) or premium brand offering high-value product lines such as luxury fashion items, designer accessories, or specialised textiles. These products represent a core part of the company's brand identity and, due to their high market value and visibility, are particularly vulnerable to high-quality counterfeits (superfakes).

Objective

The objective is to protect products against superfakes by implementing a multi-layer authentication strategy that ensures reliable verification across the entire value chain, from production and distribution to the final consumer.

Step-by-Step Implementation

Expected Results

The implementation of a multi-layer authentication strategy leads to improved protection of high-value products and a significant reduction in counterfeit-related risks. It enhances customer trust, safeguards brand reputation, and strengthens overall control over the product lifecycle.

Minimum vs Advanced Option

At a minimum level, the SME can implement QR codes to provide basic product verification. At an advanced level, the company can combine artificial intelligence for anomaly detection, RFID for traceability, and blockchain for secure and tamper-proof data storage, creating a robust and scalable authentication system.

SME Action Point

The SME should prioritise high-value product lines, where the financial and reputational impact of counterfeiting is greatest, ensuring a faster and more measurable return on investment.

DPP Link

This strategy directly supports the implementation of the Digital Product Passport, enabling end-to-end product validation and ensuring that reliable data accompanies the product throughout its lifecycle.

DigComp

This scenario contributes to the development of competences aligned with the DigComp, particularly in areas 1.2 (Evaluating data, information and digital content) and 5.2 (Identifying needs and technological solutions).

Case Study 9 – Leftover Production Control

Context / Profile

Prada operates within a global luxury fashion distribution network characterised by seasonal collections, limited production cycles, and strict inventory control requirements. As a producer of high-value fashion products, Prada manages post-season inventory and surplus units that require controlled tracking across distribution and resale channels. Public reporting has documented cases of authentic Prada products appearing on unauthorised resale platforms, highlighting challenges related to product visibility and control after primary distribution.

Problem

Seasonal leftover inventory may circulate through unauthorised resale channels when post-production visibility is limited. This reduces traceability over product destination, weakens pricing consistency, and increases exposure to grey-market distribution of authentic products.

Technologies Applied

Embedded NFC and RFID product identification, blockchain-enabled digital authentication through the Aura Blockchain Consortium, and digital product identity verification systems.

Implementation Approach

Prada integrates embedded digital identifiers into products to create unique digital identities linked to blockchain-supported authentication records. These identifiers enable verification of authenticity across official distribution and resale environments while supporting lifecycle traceability from production through consumer ownership. This digital infrastructure improves post-production visibility and strengthens control over product circulation beyond primary retail distribution.

Results / Impact

Improved inventory visibility across post-production stages, stronger authentication control, reduced exposure to unauthorised resale activity, enhanced lifecycle transparency, and greater protection of distribution integrity.

Link to DPP

This case supports the post-production inventory lifecycle layer of the Digital Product Passport by enabling digital identity, authentication, and traceability of surplus inventory beyond initial retail placement.

Scenario 9 – Managing Surplus Materials

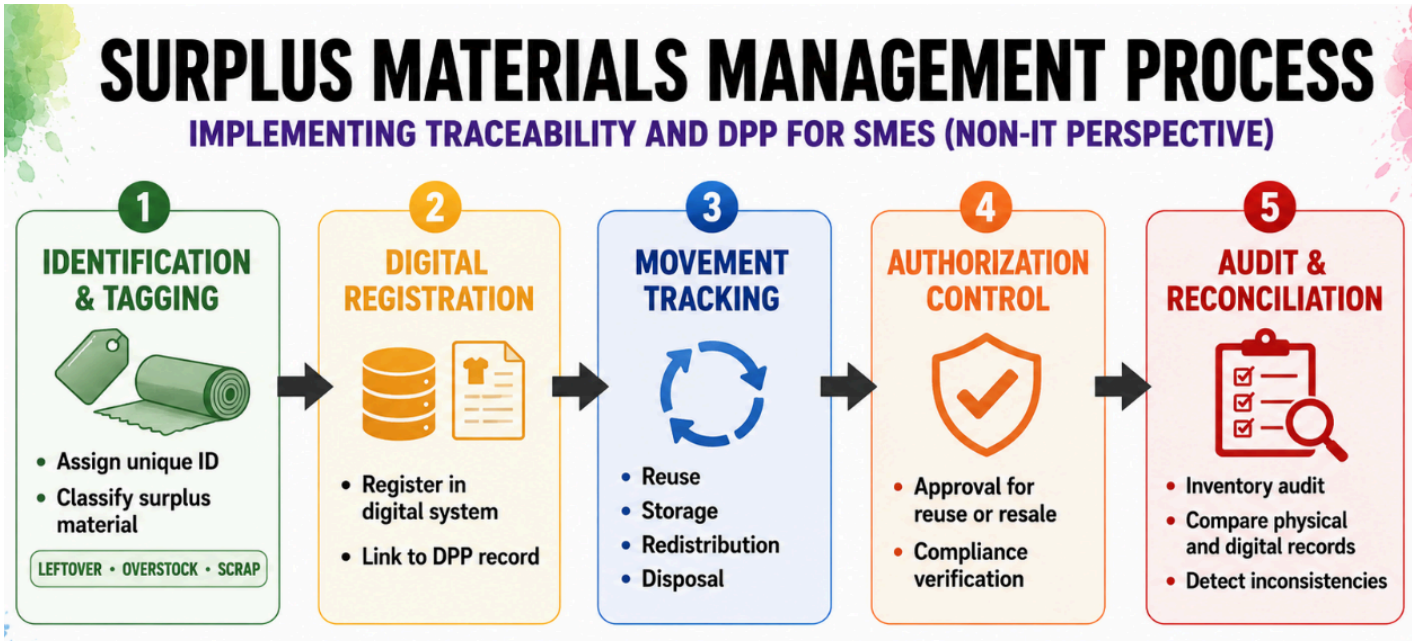
Profile

Small or medium-sized textile manufacturer managing seasonal overstock, unsold finished products, or post-production leftover materials with limited digital traceability systems.

Objective

Prevent unauthorised use or uncontrolled circulation of surplus materials while improving inventory visibility and lifecycle traceability.

Step-by-Step Implementation



Expected Results

Improved visibility of surplus material flows, reduced risk of unauthorised circulation, stronger inventory governance, and better traceability across post-production lifecycle stages.

Minimum vs Advanced Option

Minimum: spreadsheet-based inventory logs with batch identifiers and manual reconciliation.
Advanced: RFID-enabled automated tracking integrated with Digital Product Passport infrastructure for real-time inventory validation.

SME Action Point

Include all leftover materials and surplus inventory within traceability systems rather than limiting tracking to active commercial stock.

DPP Link

Supports inventory lifecycle traceability by ensuring post-production visibility of surplus materials and enabling controlled redistribution or reuse documentation.

DigComp

1.3, 2.4, 5.2. This activity supports **DigComp 1.3 – Managing Data, Information and Digital Content** by developing the ability to organise, store, access and manage digital information effectively; **DigComp 2.4 – Collaborating Through Digital Technologies** by encouraging the use of

digital tools for communication, information sharing and coordinated work across stakeholders; and **DigComp 5.2 – Identifying Needs and Technological Responses** by fostering the capacity to recognise organisational needs and select appropriate digital technologies and solutions to address traceability, transparency and compliance challenges.

Case Study 10 – Protection Against Design Copying

Context / Profile

FILA is a global sportswear and fashion brand known for its distinctive logos, graphics, and apparel designs. Like many fashion brands with strong visual identities, FILA faces ongoing challenges from unauthorized sellers and businesses that reproduce its protected designs, branding, and products without permission.

Problem

As FILA's products gained popularity online, the company faced increasing levels of intellectual property infringement across e-commerce platforms and digital marketplaces. Unauthorized sellers were using FILA's trademarks, imagery, and product designs to market imitation products, creating confusion for consumers and damaging the brand's reputation.

Manual monitoring of online channels was time-consuming and made it difficult to identify infringements quickly and at scale.

Technologies Applied

To strengthen its brand protection strategy, FILA implemented an AI-powered monitoring solution through **Red Points**, a digital brand protection platform.

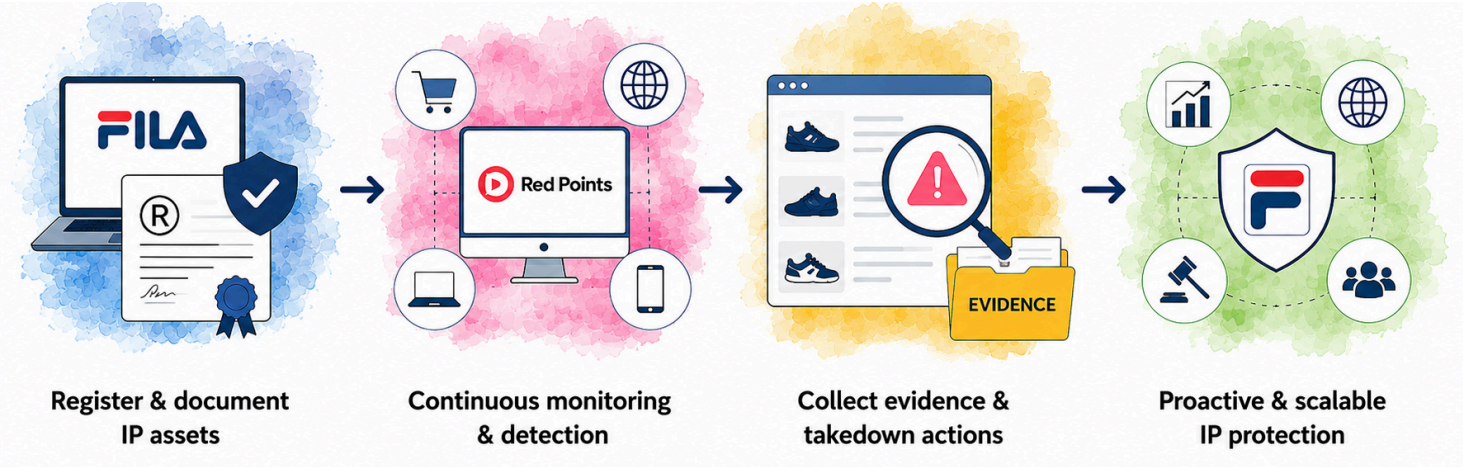
Technologies included:

- AI-powered image and pattern recognition
- Automated online marketplace monitoring
- Digital evidence collection and management
- Intellectual property protection and enforcement tools

Implementation Approach

- FILA first ensured that its trademarks, logos, and protected design assets were properly registered and documented.
- The Red Points platform then continuously scanned online marketplaces, websites, and digital sales channels to identify potentially infringing products and unauthorized use of FILA's intellectual property.
- When suspicious listings were detected, the system automatically collected supporting evidence and helped initiate takedown procedures against infringing sellers.

- This enabled FILA to move from reactive enforcement to a more proactive and scalable approach to intellectual property protection.



Results / Impact

The implementation delivered several benefits:

- Faster identification of copied and infringing products.
- Reduced time spent on manual monitoring and enforcement activities.
- Improved protection of FILA's intellectual property rights.
- More efficient removal of unauthorized listings.
- Enhanced protection of brand reputation and consumer trust.

The case demonstrates how AI-powered monitoring tools can help fashion companies identify and respond to design copying more effectively in increasingly complex digital marketplaces.

Key Lessons for SMEs

- **Register and document original designs** before bringing products to market.
- **AI-powered monitoring tools** can automate the detection of copied products and design infringements.
- **Digital records strengthen enforcement efforts** by providing evidence of ownership and originality.
- **Proactive monitoring** is more effective than relying solely on customer reports or manual searches.
- **Future Digital Product Passports (DPPs)** could further support intellectual property protection by linking products to verified digital records of origin, ownership, and authenticity.
- **Combining AI detection with DPP data** may create stronger systems for identifying copied products and demonstrating design ownership throughout a product's lifecycle.

Scenario 10 – Protecting Design Assets

Profile

This scenario concerns a small fashion or textile SME whose business is strongly based on original prints, textile patterns, garment silhouettes, or surface design innovation. The company promotes its collections through social media, e-commerce platforms, trade fairs, and digital marketing channels, increasing the visibility of its creative work but also its exposure to design copying.

Objective

The objective is to improve the SME's ability to detect copied designs early, document original authorship, and strengthen protection of intellectual property (IP) through structured digital systems and traceable design records.

Step-by-Step Implementation

1. The SME begins by creating a structured digital archive of original design assets, including sketches, textile patterns, technical drawings, prototypes, and final product images.
2. Each design is linked to metadata such as creation date, designer name, collection information, and production records.
3. Key design information is connected to Digital Product Passport (DPP) systems to create traceable evidence of authorship and provenance.
4. The company regularly monitors online marketplaces, social media platforms, and competitor websites to identify visually similar products.
5. Where available, AI-supported image comparison or pattern recognition tools are used to help detect potential copies more efficiently.
6. Suspected copies are documented through screenshots, product links, timestamps, and comparison records linked to the original design files.
7. The SME defines internal procedures for evaluating potential infringements and deciding whether to contact marketplaces, issue takedown requests, or seek legal support.

Expected Results

Implementing this approach improves visibility over copied products and strengthens the company's ability to demonstrate ownership of original creative work.

The system can help:

- detect copied designs earlier
- improve organisation of design archives
- strengthen IP documentation
- support faster response to infringement cases
- improve transparency around product provenance and authorship

Minimum vs Advanced Option

Minimum Option: The SME manually archives design files and performs periodic online checks for copied products using screenshots, image searches, and marketplace monitoring.

Advanced Option: The company integrates AI-supported pattern recognition, automated online monitoring tools, cloud-based design archives, and DPP-linked provenance records for stronger digital IP protection.

SME Action Point

The SME should prioritise protection measures for its most commercially important or visually distinctive designs, especially products that receive strong online visibility or are more vulnerable to imitation.

DPP Link

Digital Product Passports can support intellectual property protection by linking products to structured provenance, authorship, and design documentation records that strengthen evidence of originality and authenticity.

DigComp

This scenario supports competences related to DigComp areas 1.2 (Evaluating data, information and digital content) and 5.2 (Identifying needs and technological responses).

NFF
NO FAKE FASHION

No Fake Fashion (NFF) is a strategic partnership dedicated to empowering fashion SMEs with the skills, tools and modern technologies needed to fight counterfeits and protect creativity, authenticity and consumer trust.

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PROJECT NUMBER:
2024-1-RO01-KA220-VET-000243739

Co-funded by the European Union