

# Supporting EUDR Compliance in European Manufacturing

White Paper





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# Introduction into EUDR



## Context and Requirements

- **The European Union Deforestation Regulation (EUDR)** represents a transformative shift in how European businesses source, track, and report on commodities linked to deforestation.
- Enacted to combat global deforestation and forest degradation, the EUDR mandates that companies placing certain products on the EU market must prove their supply chains are deforestation-free and compliant with local laws.
- This regulation is not only a response to environmental imperatives but also a direct answer to growing consumer and stakeholder demand for sustainable, transparent supply chains.
- The EURD treats SMEs and non-SMEs different.
- For the latter, EUDR obligations means:
  - building end-to-end traceability systems;
  - integrating supplier data;
  - satellite of certification inputs;
  - tightening contracts;
  - audits across complex portfolios.
- For SMEs goal are same but scaled:
  - SMEs can provide DDS reference numbers to the products that already undergone due diligence without verification;
  - annual public reporting is not applied to the SMEs;
  - deadline for system implementation is more aggressive for LMEs.

## SMEs and non-SMEs categorization

- EUDR does not create special categorization rules for SMEs and non-SMEs, it uses the EU Accounting Directive’s categories.
- Under that Directive, size is set by meeting at least two of three criteria: balance sheet total, net turnover, and average employees.
- By the term SMEs EUDR means micro, small and medium-sized enterprises.  
Current EU thresholds:

Criterion	Micro	Small	Medium
Balance sheet	≤ €450 thousand	≤ €5 million (Member States may allow up to €7.5 million)	≤ €25 million
Turnover	≤ €900 thousand	≤ €10 million (Member States may allow up to €15 million)	≤ €50 million
Employees	≤ 10	≤ 50	≤ 250

Non-SME – exceeds at least two of:

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Balance sheet

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# EUDR Compliance Overview



## Compliance Timeline and Penalties

- 01 **Large and medium-sized companies** must comply by **30 December 2025**.
- 02 **Micro and small enterprises** have to achieve compliance until 30 June 2026.
- 03 **Non-compliance** can result in severe penalties, including:
  - fines of at least 4% of EU-derived turnover;
  - confiscation of goods;
  - exclusion from public procurement;
  - reputational damage.

## Who is Affected?

- All operators and traders placing or exporting cattle, cocoa, coffee, oil palm, rubber, soya, wood, and their derivatives on the EU market.
- Both EU-based and non-EU companies are subject to the regulation if their products enter the EU market. The regulation applies to manufacturers, importers, exporters, distributors, and retailers involved in these supply chains.

## Adapting Business to Meet EUDR Requirements

- The EUDR does not merely introduce new regulations but also brings substantial challenges for businesses.
  - The regulation's focus on traceability, data integrity, and due diligence means that organizations must rethink how they collect, manage, and share supply chain data.
  - These challenges go beyond adapting existing business processes and IT infrastructure, requiring the implementation of entirely new workflows and systems.
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- At Andersen, we believe that despite the potential complexities associated with compliance, building new systems and adopting a systematic approach to selecting reliable suppliers — those who prioritize regulatory and legal compliance — will ultimately strengthen the business.
  - This approach will not only build a foundation to thrive under strict regulatory conditions but also foster long-term trust with a consistent supplier network:
    - promoting transparency in business relations;
    - establishing a resilient, sustainable supply chain to support the company's growth.



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# Key Business and Technology Challenges



## End-to-End Traceability

Achieving plot-level traceability requires mapping every step of the supply chain down to the origin of raw materials, often spanning continents and multiple tiers of suppliers. This demands not only advanced tracking technologies but also strong collaboration across parties who may not traditionally share such detailed data.



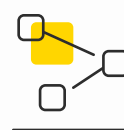
## Data Collection and Quality

Accurate collection of geolocation, supplier, and product data is essential but challenging when working with suppliers who may lack the technological maturity to provide standardized information. Ensuring data integrity requires validation processes and ongoing supplier support to guarantee compliance with regulatory expectations.



## Integration with Legacy Systems

Most organizations already rely on ERP, MES, and other supply chain platforms that were not designed for such detailed compliance requirements. Bridging these gaps involves new integrations, system upgrades, or entirely new IT solutions that can seamlessly handle new data flows.



## Supplier Onboarding and Engagement

Suppliers — particularly smallholders — need guidance, education, and tools to provide the required compliance data consistently. This onboarding process requires significant training effort, communication, and integration of supplier into continuous cycle of standardized reports.



## Regulatory Reporting

Compliance with the EUDR involves preparing detailed due diligence statements and submitting them to the EU Information System in a timely and accurate manner. Automating this process is key, as manual reporting would be inefficient, error-prone, and unsustainable at scale.



## Continuous Monitoring

Sustained compliance is not a one-time effort but an ongoing cycle of risk assessments, verifications, and audits. Implemented system should be capable of real-time monitoring and corrective action to mitigate risks before they become regulatory breaches.



## Data Security and Privacy

The sensitive nature of supply chain and geolocation data makes secure data exchange and storage a top priority. Companies must ensure compliance with GDPR and other privacy laws, while also safeguarding against cybersecurity threats that could undermine trust.



## Change Management

Embedding compliance into daily operations requires more than new processes — it demands a cultural shift within the organization. This includes comprehensive employee training, leadership alignment, and continuous adaptation to evolving regulatory landscapes.



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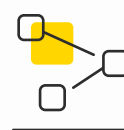
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# Executive Solution Overview



## Implication for European Businesses

- To address the multifaceted requirements of the EUDR, European manufacturers cannot rely on isolated measures but must adopt a holistic approach that integrates:
  - people;
  - processes;
  - technology.
- Compliance will demand not only advanced digital tools but also the redesign of workflows to ensure:
  - transparency;
  - efficiency;
  - accountability;across the entire supply chain.
- At the same time, any solution must be:
  - robust enough to withstand regulatory scrutiny;
  - scalable to support future growth;
  - flexible to adapt as legislation evolves.
- By approaching the challenge systematically, companies can transform regulatory compliance into a foundation for:
  - long-term business resilience;
  - competitive advantage.

## How Andersen Approaches These Challenges

- **Supply Chain Digitalization:** Mapping and digitalization all supply chain actors and flows using global standards (e.g., GS1 GLN, GTIN, SSCC).
- **Traceability System Implementation:** Deployment or upgrade of traceability platforms capable of capturing, storing, and sharing event-based data (e.g., using EPCIS).
- **Integration with ERP/MES and COTS Solutions:** Ensure seamless data flow between core business systems and compliance platforms, leveraging prebuilt connectors where available.
- **Due Diligence and Reporting Automation:** Automation of the collection, validation, and submission of due diligence statements and supporting data to the EU Information System.
- **Supplier Collaboration Enhancement:** Providing tools and training to suppliers for accurate data capture and compliance documentation.
- **Continuous Monitoring:** Real-time analytics, satellite imagery, and risk assessment tools to monitor compliance and flag potential issues.
- **Secure Data Exchange Protocols:** Ensure all data exchanges are secure, authenticated, and compliant with data protection laws.
- **Embedded Compliance in Business Processes:** Redesign procurement, production, and logistics processes to integrate compliance checks and documentation at every stage.



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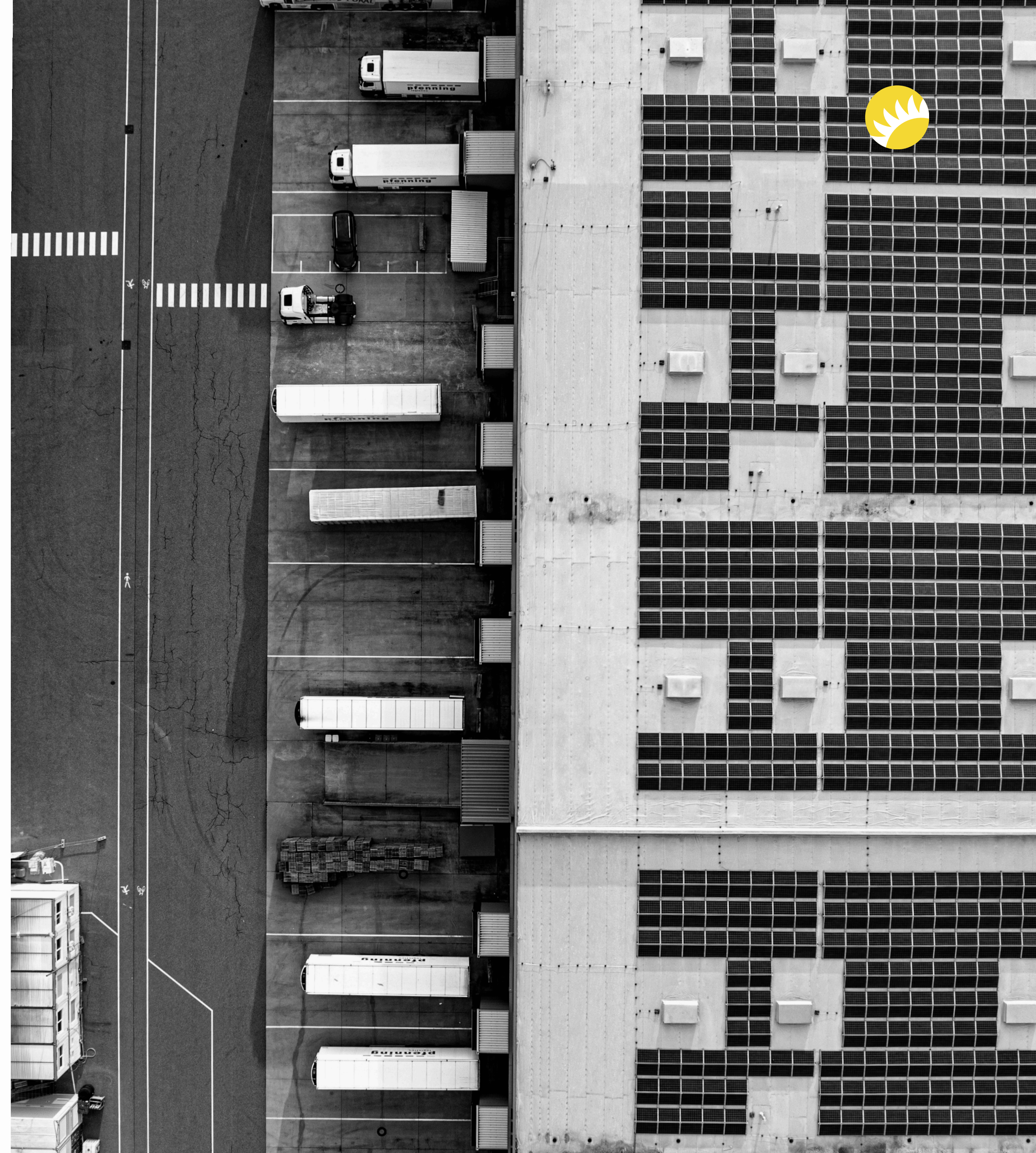
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# Customization and Configuration Needs

## Scalable, Verifiable Compliance: Patterns for EUDR

- Implementing EUDR compliance is not a one-size-fits-all endeavour. The scope and complexity of the impact on systems and processes depends heavily on whether a manufacturer operates with **home-grown ERP/MES solutions** or **leverages commercial off-the-shelf (COTS) platforms**.
- Home-grown systems often require significant customization and development effort to capture, validate, and share sustainability and traceability data, while COTS platforms may offer pre-built integration points but can still involve extensive configuration.
- In both cases, alignment with recognized data standards and interoperability frameworks is essential to ensure seamless information exchange across the supply chain.
- Emerging compliance solutions such as TraceX and GS1-based traceability frameworks can be integrated into either architecture, providing standardized mechanisms for data capture, verification, and reporting.
- This section explores the technical and architectural considerations for both scenarios, with an emphasis on integration patterns, reference architectures, and adoption of global data standards to enable scalable and verifiable compliance.

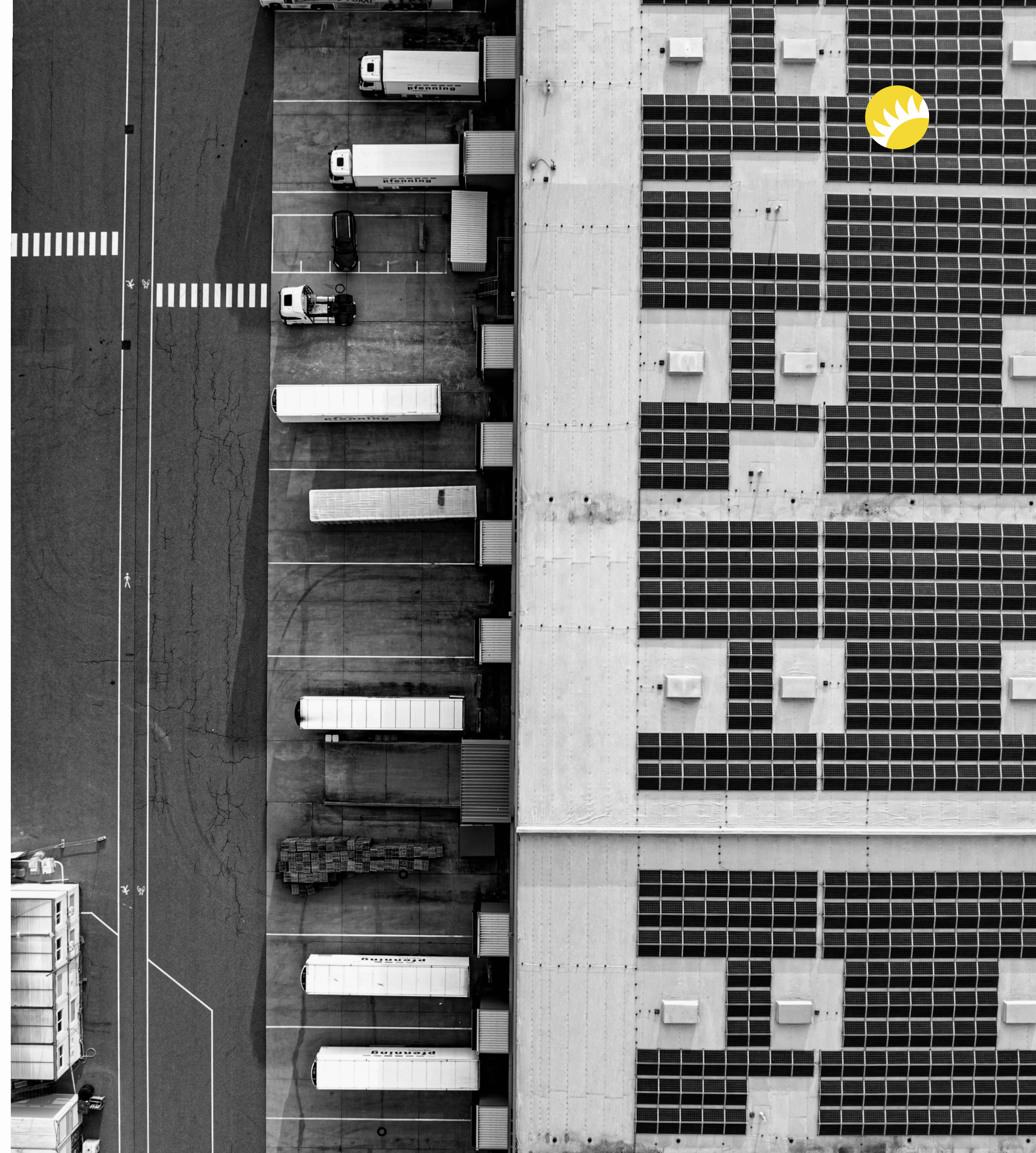




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# I. Home-Grown ERP and MES Solutions



- Many manufacturers rely on custom-built ERP\ MES that have been specifically tailored to their operational workflows and product lines.
- While these bespoke systems provide a high degree of flexibility and alignment with internal processes, they often present significant challenges when it comes to regulatory alignment.
- In particular, most lack built-in support for standardized data models, geolocation data capture, supply chain traceability, and interoperability features that are essential for meeting the EUDR requirements.
- These gaps can lead to delays in compliance, increased risk of reporting errors, and potential exposure to regulatory penalties.

## Key Considerations



### Custom Integration

Development of custom APIs or middleware to capture and share required data (e.g., geolocation, batch/ lot, supplier information) in standardized formats (EPCIS XML/ JSON).



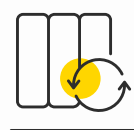
### Data Model Extension

Modification of existing data models to include new fields for geolocation, due diligence status, and compliance documentation.



### Event Capture

Implementation of event-based data capture at critical control points (e.g., harvest, processing, shipping).



### Reporting Engine

Building or integrating a reporting engine capable of generating due diligence statements and supporting regulatory submissions.



### Security Enhancements

Upgrading authentication, authorization, and audit trail capabilities to meet compliance and data protection requirements.



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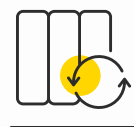
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## 2. COTS ERP Solutions: SAP, Oracle, Microsoft Dynamics



COTS ERP platforms offer robust integration capabilities and are increasingly providing EUDR-specific compliance modules and connectors.

### SAP

- **Prebuilt Connectors.** SAP S/4HANA supports plug-and-play modules for EUDR, with open APIs for integration with traceability platforms and regulatory systems.
- **Automated Data Import.** Supplier profiles, lot IDs, and procurement records can be imported automatically, reducing manual effort.
- **Mobile and Cloud Integration.** Field data (e.g., geolocation, farmer KYC) can be captured via mobile apps and synchronized in real time.
- **Third-Party Integration.** Leading EUDR compliance platforms (e.g., TraceX) offer prebuilt connectors for SAP, enabling automated DDS generation and submission.

### Oracle

- **Open API Architecture.** Oracle Cloud ERP provides open APIs and data mapping engines for EUDR compliance.
- **Certification Integration.** Connectors to certification systems (FSC, PEFC) and regulatory portals are available via API-driven connectors.
- **Automated DDS Filing.** Prebuilt connectors automate DDS:
  - preparation;
  - validation;
  - submission.

### Microsoft Dynamics 365

- **Flexible Integration.** Dynamics 365 offers a wide range of published connectors for supply chain, procurement, and compliance workflows.
- **Power Platform.** Power Automate and Logic Apps enable custom compliance workflows and data integration.
- **Mobile/ Offline Data Capture.** Supports field data collection and synchronization with central compliance systems.

### General COTS Integration Features

- **Open APIs and Prebuilt Connectors.** All major COTS platforms support open APIs and prebuilt connectors for rapid, low-disruption deployment.
- **Data Mapping Engines.** Translate data between ERP systems and EUDR platforms, ensuring consistency and eliminating duplication.
- **Certification and Regulatory Integration.** Direct connectors to FSC, PEFC, and EU TRACES for real-time validation and reporting.



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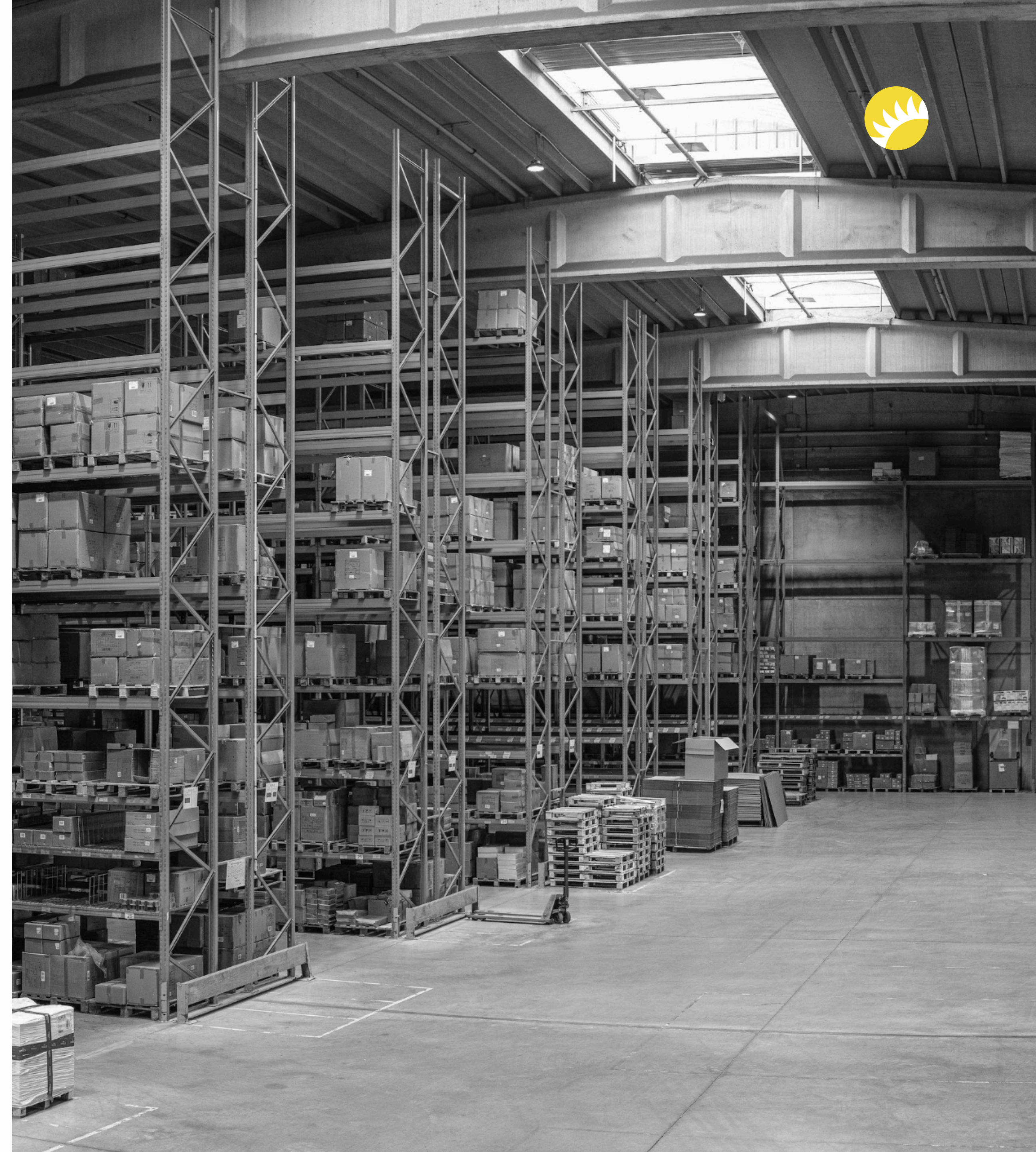
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# 3. Supporting EUDR: What It Takes

## Building EUDR Compliance: Standards, Data, and Security

- **Adoption of GS1 Standards:** Implementing GLN, GTIN, SSCC, and EPCIS for unique identification and traceability.
- **Digitalization and Mapping:** Assigning identifiers at each supply chain node and capturing event data at every critical control point.
- **Automated Data Capture:** Using barcode scanners, RFID readers, and IoT devices to capture GS1-encoded data at source.
- **Centralized Compliance Layer:** Deploying a modular compliance platform that integrates with ERP/ MES and manages due:
  - diligence;
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- **Secure Data Exchange:** Ensuring all data exchanges are:
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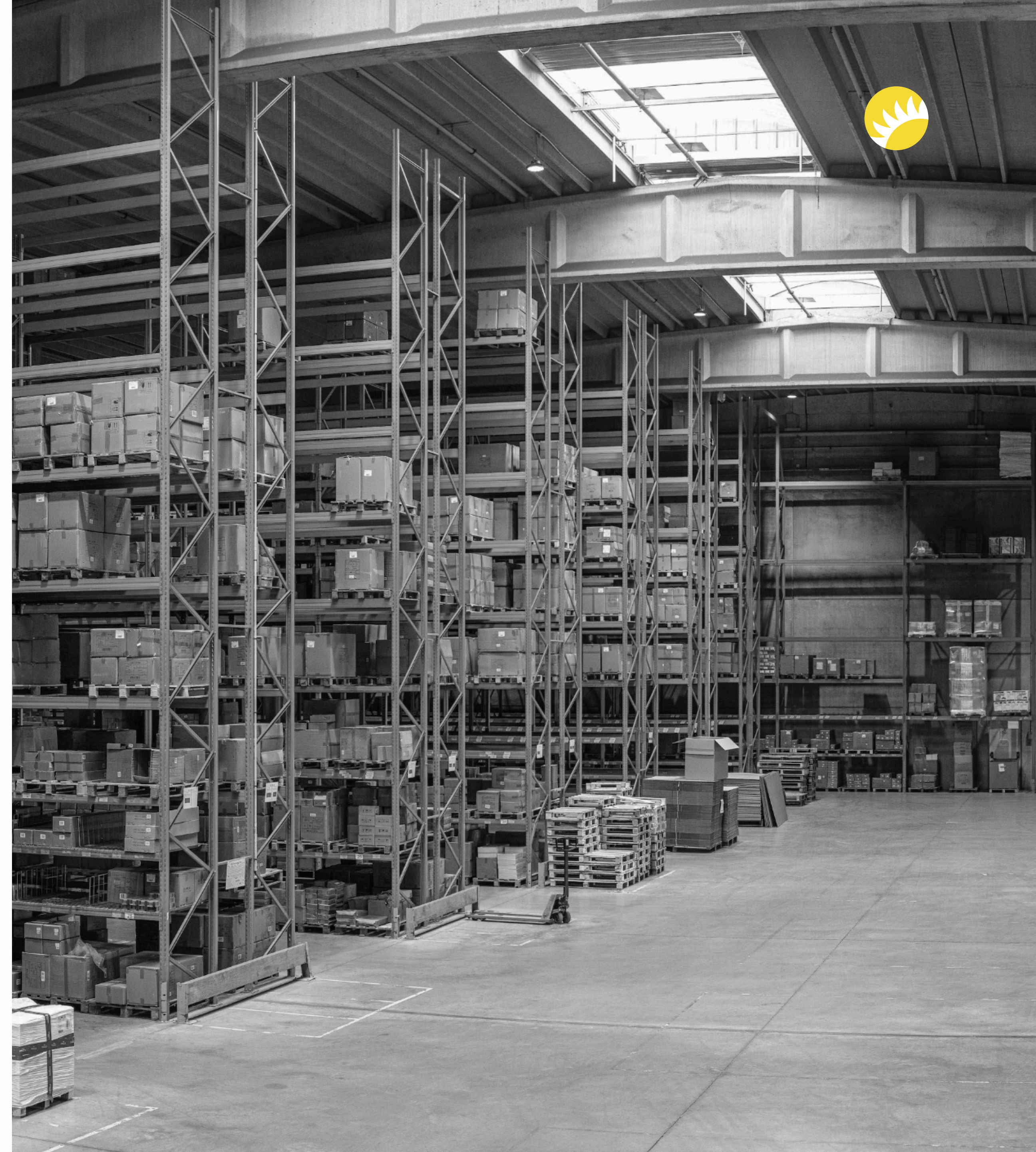




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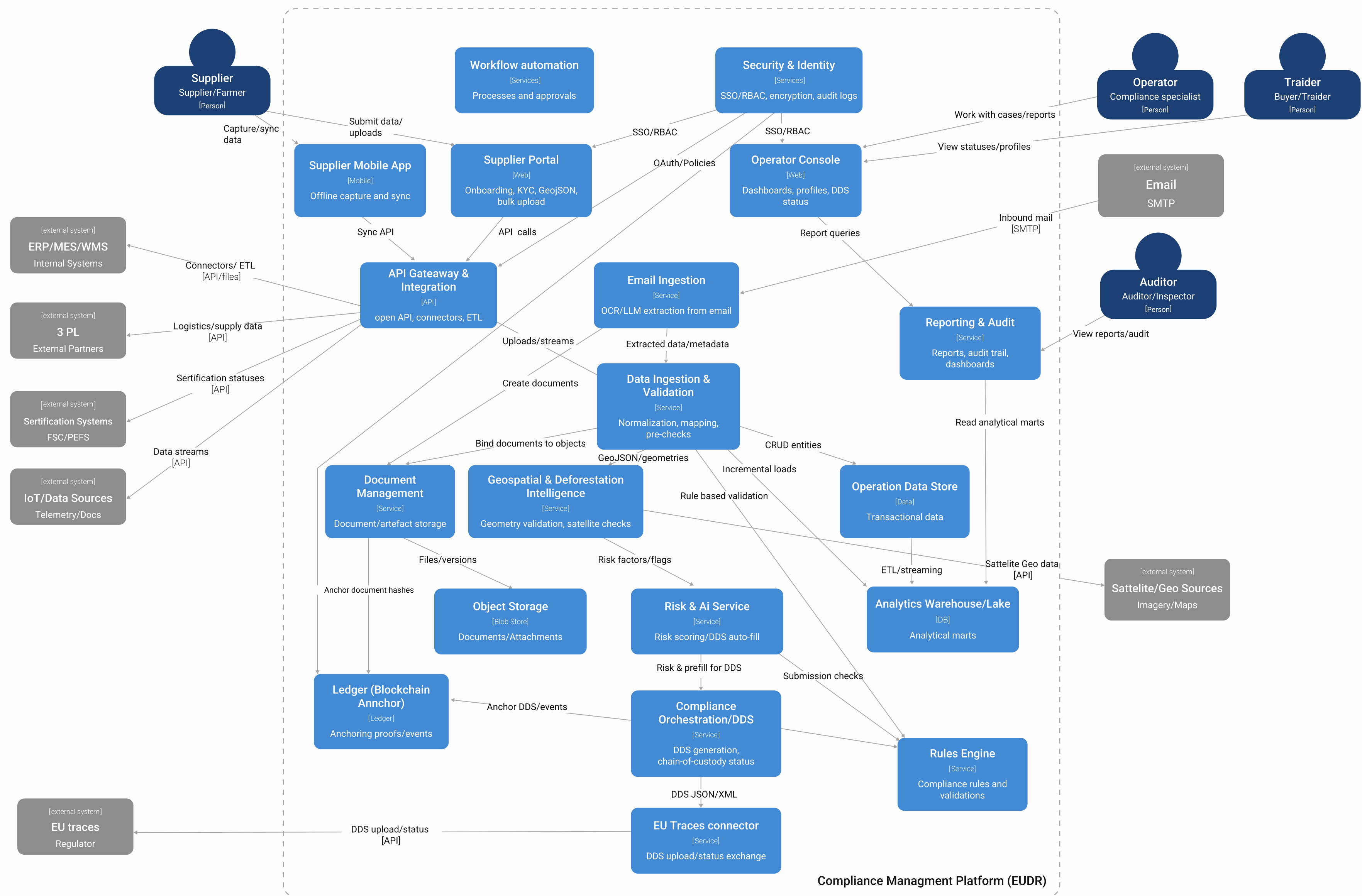
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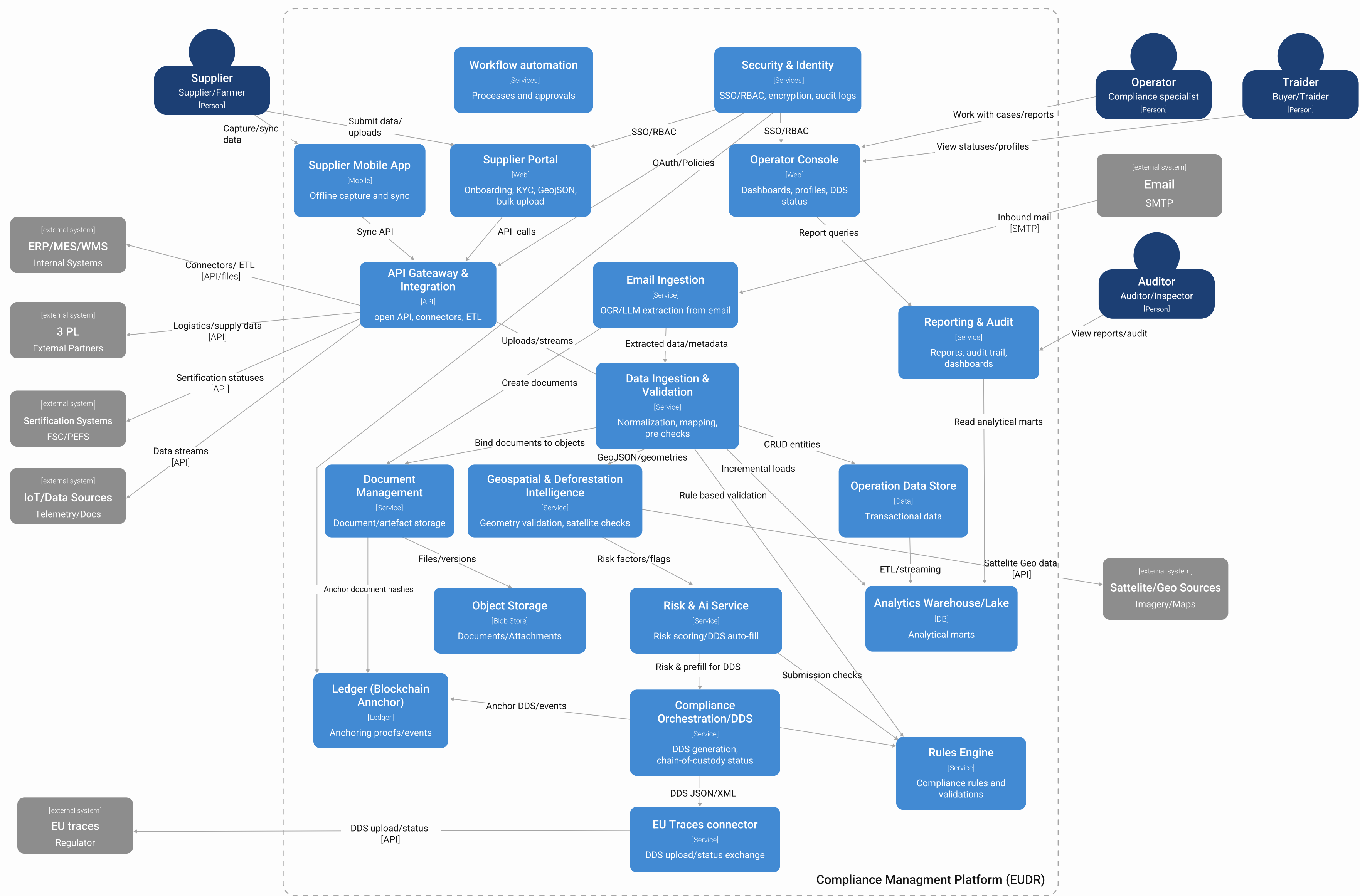


# Refference Architecture — Container Diagram





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# Refference Architecture — Layers



## Core ERP/ MES

Manages procurement, inventory, and supplier data.

## EUDR Compliance

**01 Data Capture & Onboarding Layer**

Supplier portal + mobile app (offline → sync); bulk file uploads; email ingestion (OCR\ GPT) for KYC, land reports, invoices.

Artifacts captured: supplier\ KYC, farm\ plot polygons (GeoJSON), batch\ lot events, certifications.

**02 Integration Layer**

Open API\ API-first approach: connectors for COTS\ custom-build ERP; certification systems (FSC\ PEFC); EU TRACES API integration for DDS submission.

Data mapping\ validation APIs run pre-checks before filing.

**03 Geospatial & Deforestation Intelligence**

Geometry validation for point\ polygon GeoJSON; automated checks with satellite sources; highlight of high-risk plots or geometry errors that can trigger DDS rejection.

**04 Risk & AI service**

Agentic AI:

- scores supplier\ plot risk;
- fills DDS;
- keeps regulation information up to date.

**05 Compliance Orchestration**

DDS Generation (JSON\ XML); EU TRACES upload; dashboards with centralized supplier profiles, chain-of-custody DDS status.

**06 Ledger & Data Stores**

Blockchain ledger to anchor chain-of-custody and proved immutability and shared state; cloud databases\ object storage for operational data, documents, and analytics.

**07 Security & Identity**

- RBAC;
- encryption in transit\ at rest;
- immutable audit logs;
- GDPR-aligned handling of sensitive data.

**08 Operations**

Cloud-native and scalable, mobile + cloud compatibility, built to handle growing plot and transaction volumes; role-based views for operators, traders, auditors.



# Refference Architecture — Layers



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# COTS Tracing Solutions: TraceX



## 01 Automated Supplier Onboarding

- System allows to digitally onboard suppliers with GPS-verified plots, KYC documents, and certification records in local format.
- Systems allow to track the total number of added suppliers, check their profiles and properties such as type of supplied product, location, supplier category (e.g. individual farmer, cooperative, aggregator, etc.), status of GPS plot verification, certifications, etc.

## 02 AI-Driven Risk Scoring & EUDR Standards Management

- Smart SAQs and real-time risk scoring aligned to benchmark country classifications. Real-time updates of regulatory changes and specifications.
- System provides dashboard with overall risk score, EUDR benchmark Country Classifications, AI-recommended mitigation steps, Real-time alerts for EUDR compliance violation by supplier, EUDR guidelines updates, risk score changes.

## 03 GeoJSON Capture & Validation

- Producers capture precise plot location using mobile app. AI validates geometries to prevent Due Diligence Statement (DDS) rejection.
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## 04 Satellite-Backed Geolocation & Deforestation Checks

- System automatically analyse land history, forest cover loss, land use change using satellite datasets.
- AI provides key findings about the supplier such as hectares compliant with EUDR, hectares with deforestation activity, EUDR non-compliant zones, and provides recommendations.

## 05 Automated DDS Generation + TRACES Upload + ERP Integration

- Seamless integration with internal ERP Systems.
- One-click generation of fully EUDR-compliant DDS in JSON/XML. API Integration with EU TRACES Portal for Auto-Upload of the Statement.

## 06 EUDR Compliance Dashboard

- Automative creation of:
  - audit-ready dashboard featuring compliance trends;
  - risk mitigation recommendations;
  - documents statuses.



# COTS Tracing Solutions: TraceX



## 01 Automated Supplier Onboarding

- System allows to digitally onboard suppliers with GPS-verified plots, KYC documents, and certification records in local format.
- Systems allow to track the total number of added suppliers, check their profiles and properties such as type of supplied product, location, supplier category (e.g. individual farmer, cooperative, aggregator, etc.), status of GPS plot verification, certifications, etc.

## 02 AI-Driven Risk Scoring & EUDR Standards Management

- Smart SAQs and real-time risk scoring aligned to benchmark country classifications. Real-time updates of regulatory changes and specifications.
- System provides dashboard with overall risk score, EUDR benchmark Country Classifications, AI-recommended mitigation steps, Real-time alerts for EUDR compliance violation by supplier, EUDR guidelines updates, risk score changes.

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# COTS Tracing Solutions: GSI Platform



## 01 Supplier Identification

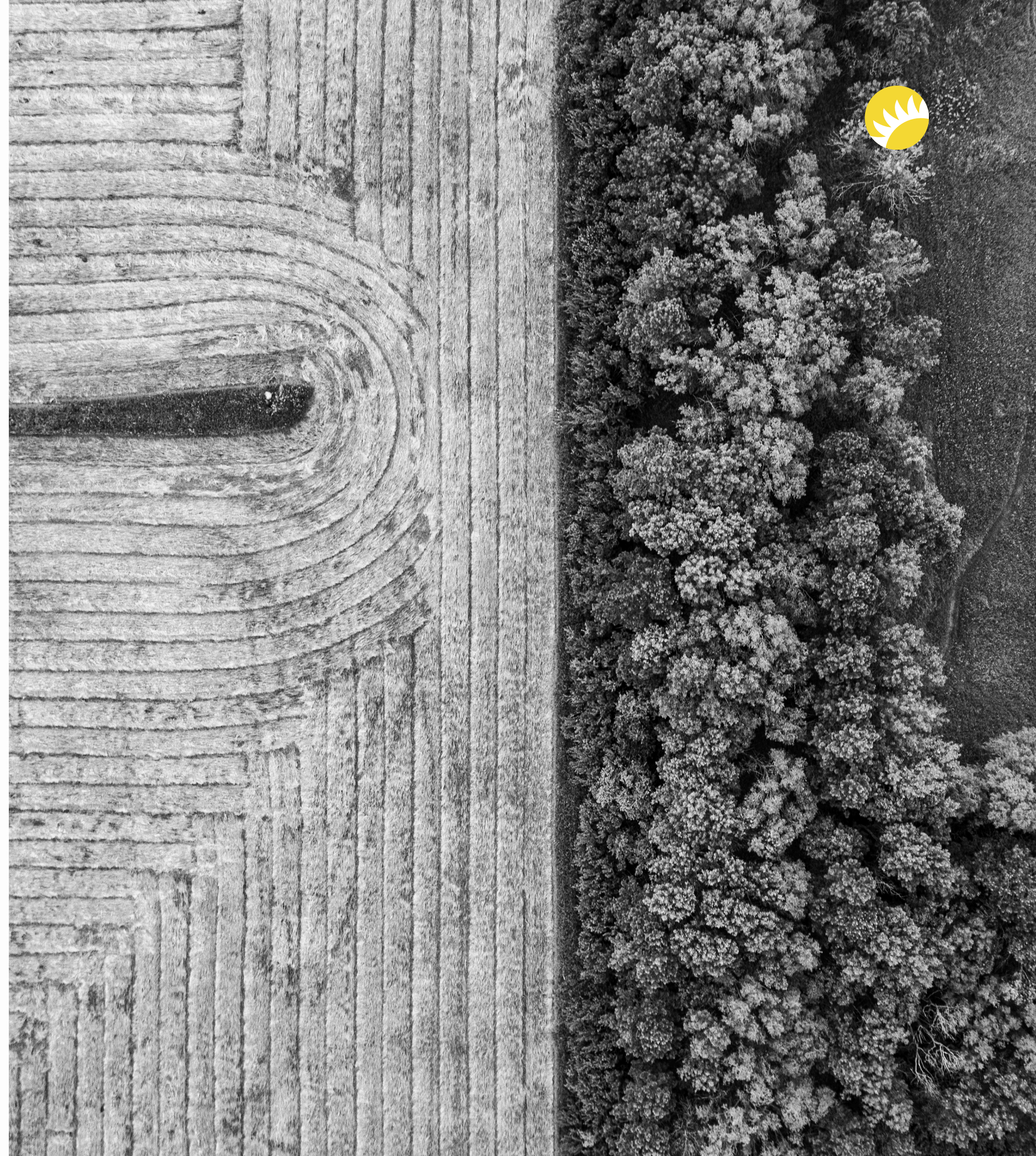
- Suppliers, locations, products, batch and logistics special identification keys assignment. Through these keys company can quickly access all necessary data for further analysis and tracking.

## 02 Data Capture

- System converts necessary information, assigned with special identification keys, into machine-readable formats such as barcodes, QR codes, or RFID tags so information can be scanned and shared automatically.
- Process is adapted to work with different business needs (e.g. products, logistics, raw materials, of locations).

## 03 Data Exchange

- Sharing of master data, transactional data, and event data across supply chains using GDSN (additional solution required), EDI, EPICS.
- Master data (e.g. product details, HS codes) ensures consistent information, while transactional data (e.g. purchase orders, shipping details) supports process alignment, and event data (e.g. time, location, business process steps) provides traceability.
- For EUDR compliance, companies can use GS1 registries and standardized codes to ensure whether products are in scope of EU deforestation regulations.





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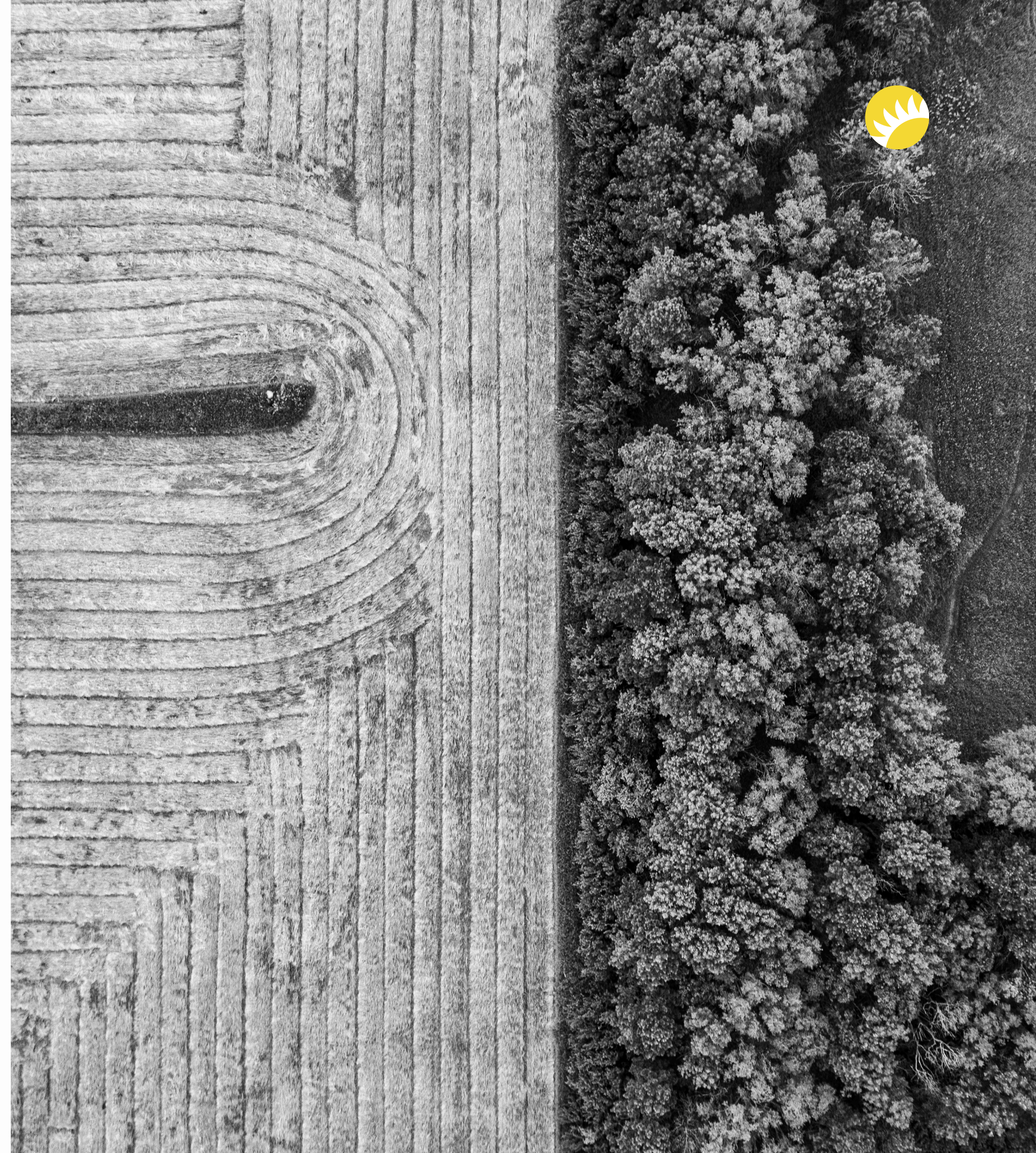
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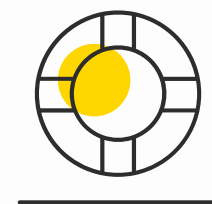


# Value for client



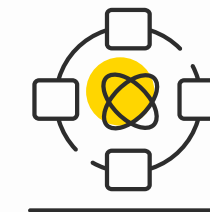
While the primary business value is straightforward — meeting the EUDR requirements, the implementation of the system also modernizes the customer’s IT infrastructure. By standardizing data flows, hardening identity and audit the company becomes more flexible and scalable, with platform that can quickly adapt to new or evolving regulations — not just EUDR.

## Business value



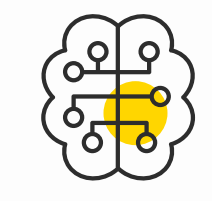
### Regulatory assurance with lower risks

The platform operationalizes EUDR due diligence collecting plot geolocation and submitting a DDS through EU TRACES, so company can prove “deforestation-free” and legal origin of products with auditable evidence.



### Stonger, long-term supplier relationships

Digitalized traceability and shared data improve transparency and performance management, which creates links to resilience and cost-efficiency, especially if company actively invest in supplier partnerships.



### Foundation for AI introduction to day-to-day operations

Nowadays many companies prioritize AI as resilience and efficiency driver, having a platform with deployed AI Agents creates a foundation for further integration of the Agents in business processess, promoting automation and speeding decision cycles.



### Improved decision quality and resilience across the value chain

Digital supply-chain capabilities (visibility, analytics, and risk mitigation) help firms navigate disruptions and maintain service levels while balancing resilience and efficiency.

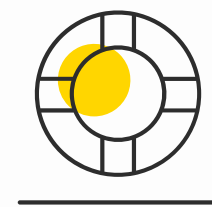


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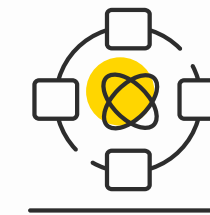
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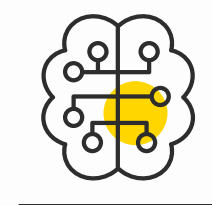
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## Guiding EU Manufacturers to Scalable EUDR Compliance

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- Beyond advisory, we have successfully integrated GS1 framework-based solutions to standardize master data and chain-of-custody records, embedded third-party compliance tools into both COTS and custom-built ERP landscapes, and designed a custom supplier onboarding solution purpose-built for EUDR requirements.
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# Customer Success Story

## Empowering Smallholder Engagement for a Wood Products Manufacturer



**Duration**  
2.5 months



**Budget**  
~ €170 thousand



**Location**  
Europe



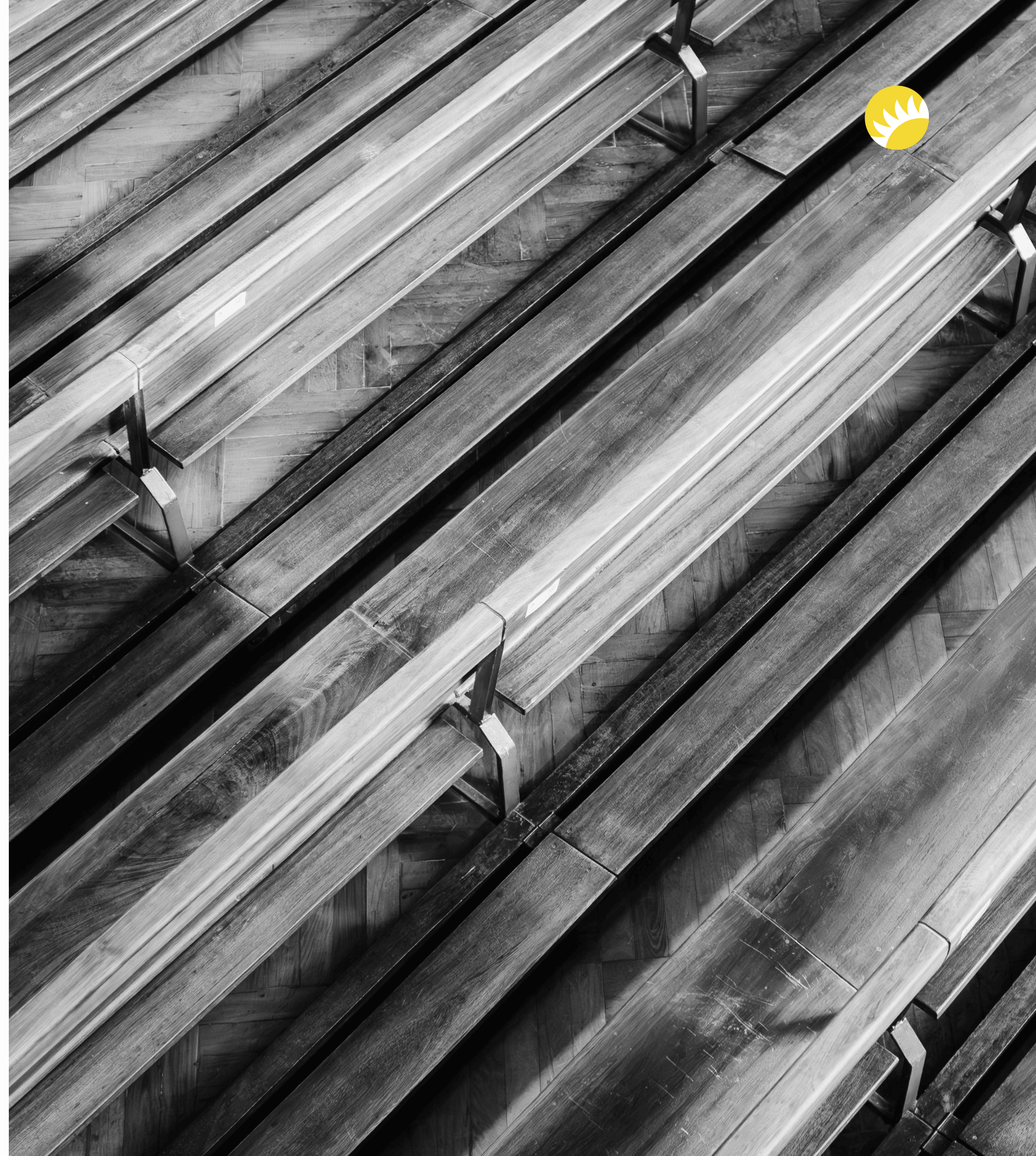
**Resources**  
5 specialists

### Business Challenge

A wood-furniture manufacturer needed to automate EUDR compliance end-to-end. While internal material traceability was in place, preparing the Due Diligence Statement (DDS) was still manual and error-prone, and risk/ supplier data was not consolidated into a formal, audit-ready view. The company required a system integrated with its internal platforms and the EU TRACES portal to centralize all compliance data in a single dashboard and to automatically generate, validate, and submit DDS to TRACES.

### Solution

Andersen implemented a turnkey EUDR compliance solution that automates the end-to-end workflow. The platform ingests supplier and risk data from internal systems, unifies it in a single dashboard, and integrates with the EU TRACES portal to automatically compose, validate, and upload DDS while generating audit-ready reports on demand. Integration was seamless — delivered without disruption to existing material tracing process and other systems.





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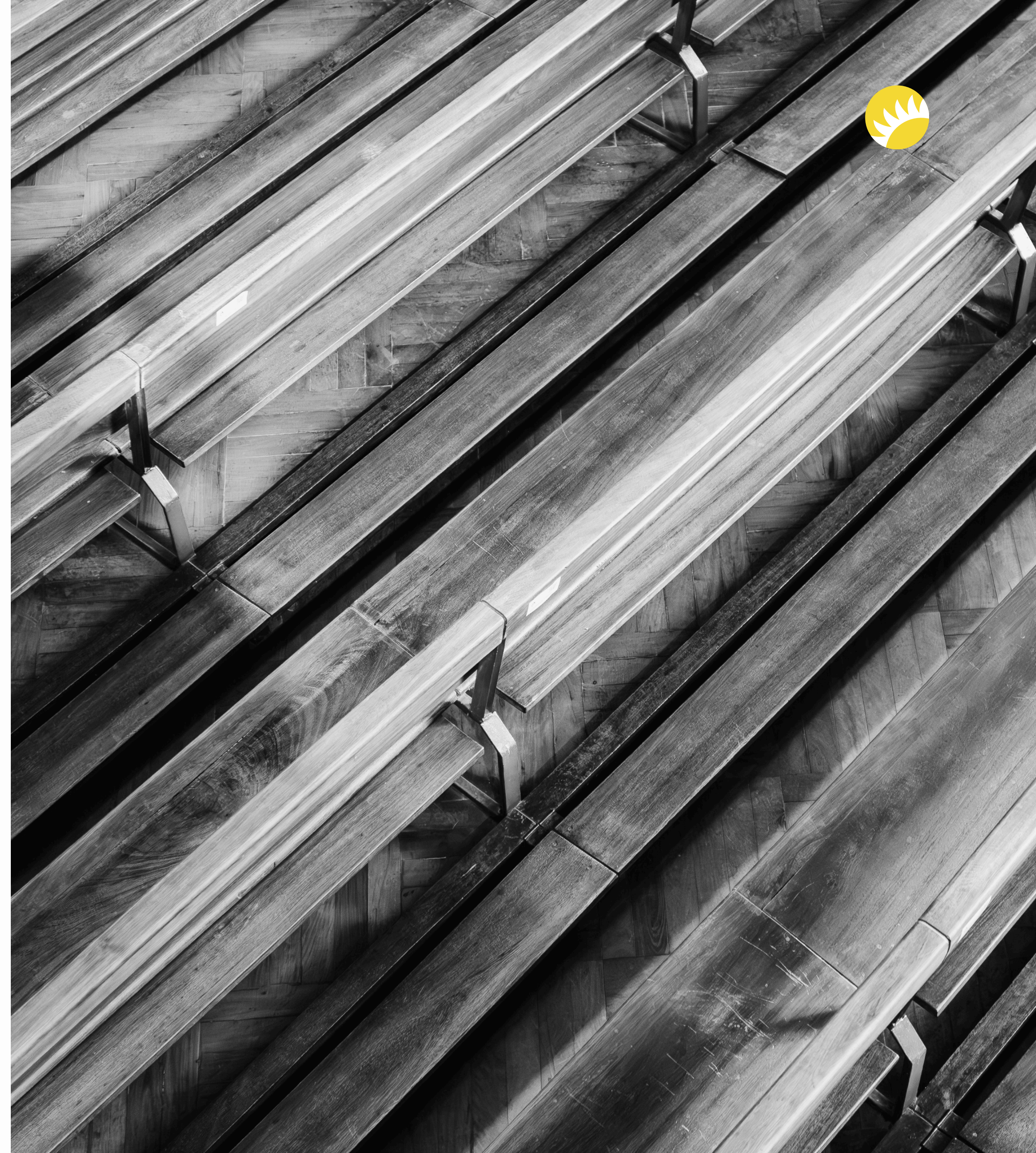
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## Rapid Compliance for a Mid-Sized Food Manufacturer



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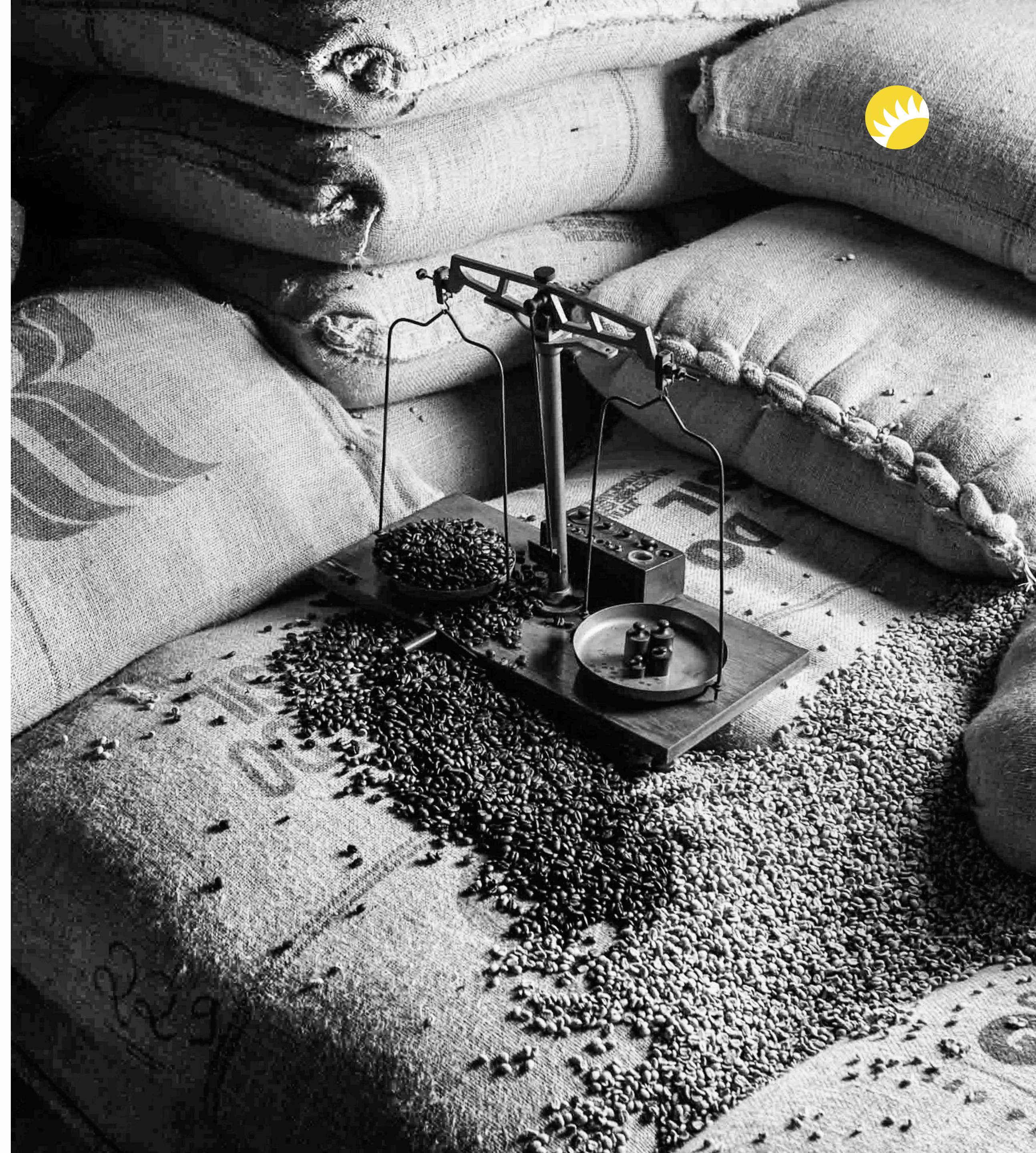
**Resources**  
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A mid-sized European food manufacturer needed to map its cocoa and coffee supply chains to meet EUDR requirements. With no traceability capability in its IT landscape, the company lacked visibility into origin, supplier risk, and compliance documentation, jeopardizing timelines and audit readiness. The business need was clear: a robust, rapidly deployable solution that integrates quickly and seamlessly with existing systems without disrupting current operations while enabling end-to-end supply chain mapping and compliance reporting.

### Solution

Andersen integrated a third-party EUDR platform with the client's legacy ERP, enabling rapid, low-friction connections to existing data flows. The systems capture supplier information via mobile app, structured email intake, and digitalized paper/ scans, traces the origin of cocoa and coffee, assesses risks, produces audit-ready reports and automatically generates, validates, and submits DDS to the EU TRACES portal. The integration was seamless and did not disrupt any existing processes or operations.





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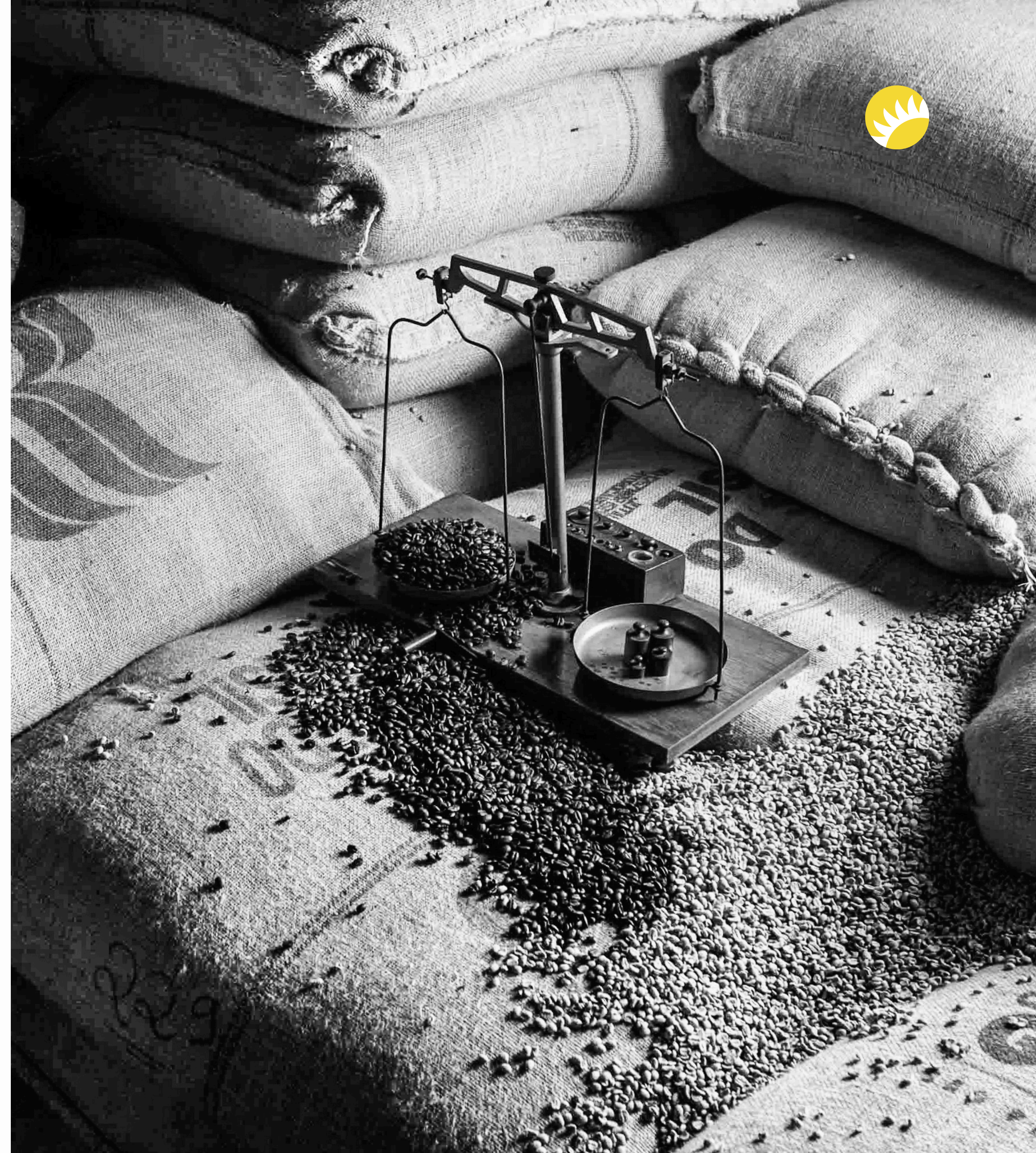
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# Potential Options for Project Duration and Budget



## Introduction

- Implementation can take multiple paths with different scope, coverage, and timelines. Teams may pilot or scale enterprise-wide; outcomes depend on objectives and readiness.
- Costs will vary based on the organization’s current IT infrastructure, the technologies already in place, and desired coverage of the final solution.

## Key Cost Drivers

- Data collection and cleansing.
- System integration (ERP, MES, compliance platforms).
- Supplier onboarding and training.
- Regulatory reporting automation.
- Change management and ongoing support.

## Estimation Approach

- Start with a pilot to validate approach and refine estimates.
- Leverage COTS solutions and prebuilt connectors to reduce custom development.
- Include contingency (10–20%) for unforeseen regulatory or technical challenges.

## Project Duration and Budget Options

Type	Duration	Budget	Scope
Pilot Projects	3–6 months	€50 thousand — €200 thousand	Single product line, limited suppliers, rapid prototyping and validation.
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