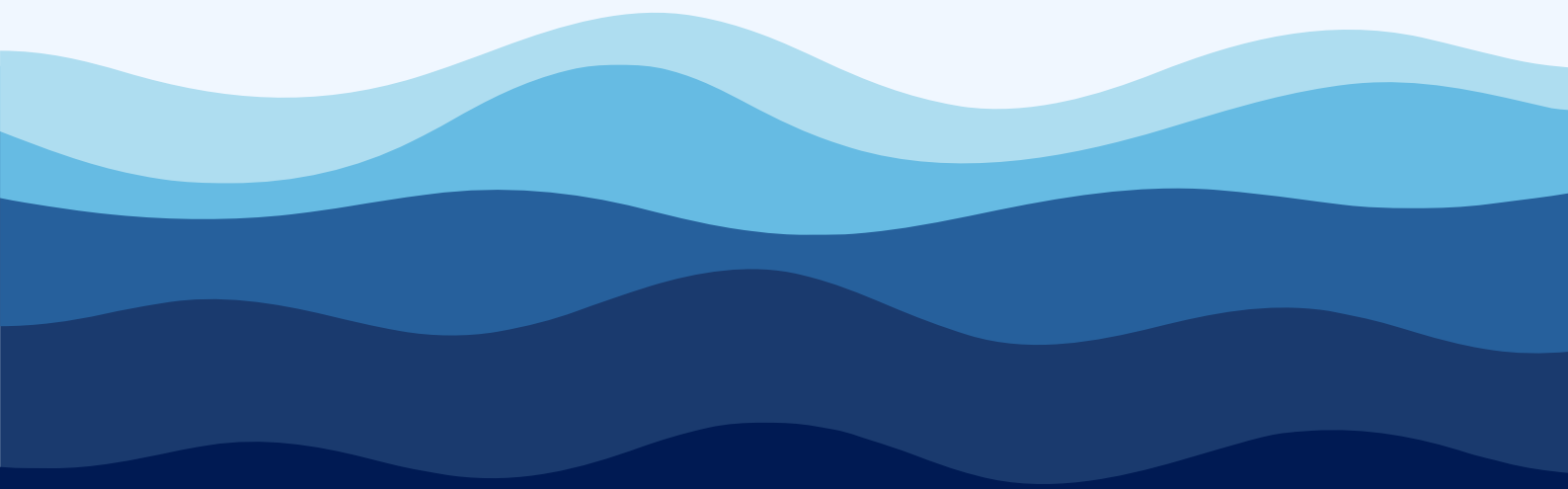


Prepared by DigitalTrade4.EU



Linking Agricultural Sustainability Data with the European Trade Indexes Registry (EUTIR)

Feedback to the EU Commission

August 2025

1. Introduction

The proposed amendments to Implementing Regulation (EU) 2024/2746, as reflected in the Farm Sustainability Data Network (FSDN), demonstrate the European Union's ambition to ensure that agricultural and sustainability-related datasets are collected, reported, and verified in a harmonised manner. These changes—ranging from the adjustment of national thresholds and reporting exemptions to the introduction of new data structures for soil testing, plant protection products, and antimicrobial use—are not only technical corrections but also part of a broader effort to enhance the reliability, comparability, and traceability of sustainability information across the Single Market.

In this context, the **European Trade Indexes Registry (EUTIR)** provides a strategic opportunity to connect sector-specific reporting frameworks such as FSDN with a trusted EU-wide digital verification infrastructure. By anchoring sustainability-related data in a decentralised and interoperable registry, EUTIR can ensure authenticity, streamline compliance checks, and facilitate integration with customs, environmental, and financial systems. This alignment will directly support the EU's competitiveness goals, reduce reporting burdens for farmers and operators, and enable machine-readable sustainability datasets that can be reused across multiple domains, from agri-environmental monitoring to trade finance.

Moreover, the linkage between FSDN reforms and EUTIR reflects the EU's wider policy shift towards **data-driven governance and sustainability-linked digitalisation**. By embedding agricultural data into the same trust environment as trade, customs, and product compliance datasets, the EU can create cross-sector synergies that foster innovation, accelerate the green transition, and strengthen Europe's strategic autonomy. In this way, EUTIR not only complements existing legislative frameworks but also provides the technological and institutional backbone for future policy integration across agriculture, environment, and trade.

1.1. Common Interests between FSDN Amendments and EUTIR Objectives

FSDN Amendments	EUTIR Objectives	Common Interests
1 New structures for soil testing (ST) and mandatory indicators for soil quality (SOC, nitrogen, pH, etc.)	Metadata-based verification of sustainability datasets across the EU	Ensuring that environmental data is authentic, comparable, and machine-readable across Member States
2 Reporting on plant protection product (PPP) use at farm/crop level	Linking product lifecycle data through the Digital Product Passport (DPP) and EUTIR	Enabling traceability of inputs, supporting sustainable farming practices, and aligning with Green Deal targets
3 Antimicrobial use (AU) reporting in livestock	Cross-sector interoperability for health, food safety, and trade compliance	Building trusted datasets that support consumer protection, market surveillance, and international reporting obligations
4 Adjustment of economic size thresholds and reporting exemptions (e.g. Bulgaria, Germany, France)	Flexible, interoperable EU-wide trust framework for operators and authorities	Balancing national specificities with harmonised EU-wide verification and transparency
5 Inclusion of “Interest received on liquid assets” as a separate income item	Financial traceability and linkages between trade finance and sustainability compliance	Integrating economic, financial, and sustainability data into one trusted environment
6 Updated codes for livestock housing systems (e.g. tied stalls, deep litter, free range)	Integration of sector-specific compliance data into EUTIR for verification	Providing regulators and financiers with reliable data on animal welfare and sustainability-linked practices
7 Exemptions for specific countries and reporting years (Annex IX)	Gradual adoption of interoperable verification standards across sectors	Allowing phased implementation while ensuring future EU-wide harmonisation

2. Why a European Trade Indexes Registry (EUTIR) is Needed

The **European Trade Indexes Registry (EUTIR)** — *(in some earlier documents referred to as the Digital Documents Register)* — has been proposed to the European Commission as the **next step in global trade digitalisation** and a catalyst for the **green transition**. Its purpose is to provide a **decentralised, interoperable, and secure infrastructure** for registering and verifying trade-related data sets across the EU and with international partners. EUTIR aligns with the objectives of the **EU Competitiveness Compass**¹, fostering a data-driven trade environment that supports AI/ML-driven trade facilitation, innovation, and sustainable economic growth.

EUTIR acts as a **trust anchor** for Economic Operators, Service Providers, and Competent Authorities, ensuring that all registered data sets — whether related to freight transport, product lifecycle, sustainability compliance, or permits — are **authentic, traceable, and machine-readable**. This not only strengthens legal certainty but also reduces administrative burdens, eliminates duplication, and increases efficiency in cross-border trade.

The strategic value of EUTIR lies in its ability to **harmonise digital verification processes** across sectors, connect with global identifier systems such as **LEI/vLEI** supported by GLEIF², and link to EU identifiers like **economic operators registration and identification (EORI)**. By providing a single, trusted verification layer for multiple types of regulated documents and datasets, EUTIR supports interoperability both within the EU and globally.

Importantly, EUTIR also **enables structured data environments** that can be leveraged by **machine learning (ML)** and **artificial intelligence (AI)** tools for advanced analytics, risk assessment, and trade facilitation. This capability creates a significant **competitive advantage**

¹ European Commission. Competitiveness compass

https://commission.europa.eu/topics/eu-competitiveness/competitiveness-compass_en

² GLEIF – Global Legal Entity Identifier Foundation

<https://www.gleif.org/en>

for the EU on the global stage, allowing faster market access, simplified lending procedures for operators choosing environmentally friendly solutions, and streamlined compliance with sustainability standards.

As a decentralised and interoperable infrastructure, EUTIR can also be adapted for **dual-use applications**, including integration into secure supply chain and defence logistics systems, ensuring resilience and trust in critical goods flows.

The name **EUTIR** was deliberately chosen to:

- **Avoid confusion** with the long-established “TIR Convention” (Transports Internationaux Routiers), which is primarily used for international road transport permits.
- **Emphasise the European dimension** of the registry while retaining the clarity of the “Trade Indexes Registry” concept.
- **Highlight interoperability** with global identity frameworks (LEI/vLEI) and alignment with international supply chain and trade finance systems.
- **Provide legislative clarity**, ensuring that EUTIR is defined as a new, distinct registry with its own technical and legal architecture.

3. Roles in the EU Digital Trade Ecosystem

3.1 Economic Operators

Economic Operators are the primary creators, holders, and users of trade-related information. They include:

- **Financial Institutions** – banks, trade finance providers, insurers.
- **Logistics Providers** – carriers, freight forwarders, warehouse operators.
- **Manufacturers** – producers of goods and intermediate products.
- **Importers / Exporters** – companies engaged in cross-border trade.

Legislative Enhancement:

To ensure global and EU interoperability, Economic Operators should be identifiable by **LEI/vLEI** in addition to **EORI** where applicable. This dual-identifier model allows seamless cross-referencing between EU customs systems and international trade finance networks. It reduces the administrative burden on Economic Operators by eliminating the need for duplicate registrations in different jurisdictions. By embedding this requirement into customs, transport, and environmental legislation, the EU ensures that its digital trade infrastructure remains interoperable with global trust frameworks.

3.2 Service Providers

Service Providers operate specialised digital platforms and registries that structure, store, and exchange regulated trade data:

- **European Trade Indexes Registry (EUTIR)** – EU-level trust and indexing registry built on EBSI-based³ Distributed Ledger Technology (DLT); provides Certified Providers Registry, Data Sets Metadata storage, Traceability, and Verification Services; interoperable with electronic freight transport information (eFTI), Digital Product

³ European Commission. What is European Blockchain Services Infrastructure (EBSI)
<https://ec.europa.eu/digital-building-blocks/sites/display/EBSI/Home>

Passport (DPP), Permit Registries, and EU Carbon Border Adjustment Mechanism (CBAM) platforms.

- **eFTI Platforms** – manage electronic freight transport information; support Digital Business Wallet submissions to third parties without direct platform access; connected to ICS2, Customs SW, and EUTIR for document version verification.
- **DPP Platforms** – manage product lifecycle, ESG/CE compliance, and linked traceability identifiers; interoperable with eFTI, Permit Registries, CBAM, and eInvoicing.
- **Permit Registries** – issue and manage regulatory certificates (veterinary, phytosanitary, chemical); provide Real-Time Verification APIs for legal validity, complementary to EUTIR's technical authenticity checks.
- **CBAM Registries** – record embedded carbon data for imported goods; interoperable with DPP and Customs SW for compliance validation.
- **Etc.**

Legislative Enhancement:

Require that **all registries and platforms**, including EUTIR, that register or validate trade documents in official EU processes are **accredited** under a harmonised EU-wide scheme. This will ensure consistent technical and legal compliance across all sectors, improving trust and operational reliability. Real-time synchronisation of certification status with EUTIR will prevent non-compliant or revoked Service Providers from participating in regulated processes. Such a requirement will also facilitate mutual recognition of trusted platforms in international agreements, strengthening the EU's position in global digital trade governance.

3.3 Competent Authorities

Competent Authorities are the official bodies responsible for overseeing compliance with EU and national regulations in the context of cross-border trade and market operations. In the EUTIR environment, they play a central role in verifying the authenticity, integrity, and compliance status of trade-related data sets.

- **Customs Authorities** – operate systems such as ICS2 and the EU Customs Single Window, receiving trade data from eFTI, DPP, CBAM, and Permit Registries. They use

EUTIR to verify that the data sets presented are authentic, up-to-date, and linked to certified service providers.

- **Market Surveillance Authorities** – oversee product compliance, safety, environmental standards, and conformity assessments across the EU single market. They access EUTIR to validate the traceability and certification status of product-related data sets, ensuring interoperability with DPP platforms, CBAM registries, and permit databases.
- **Tax Authorities** – manage VAT, excise duties, and other fiscal obligations linked to cross-border trade, using EUTIR to cross-check financial and customs-related data.

Legislative Enhancement:

Mandate that all Competent Authorities, including Customs Authorities, Market Surveillance Authorities, and Tax Authorities, have **direct read-access** to EUTIR Verification Services to authenticate data sets without requiring multiple submissions from Economic Operators. This will streamline regulatory processes, reduce transaction costs, and minimise errors from manual data re-entry. It will also strengthen **real-time risk assessment capabilities**, enabling early detection of non-compliance and fraud. Embedding these access rights in sector-specific legislation will ensure a uniform approach across Member States, eliminating fragmentation in digital verification procedures.

3.4 Accredited Certification Bodies

Independent entities responsible for verifying Service Providers' compliance with technical and legal requirements.

- Must issue **LEI/vLEI-based credentials** to ensure global identity assurance.
- Should be part of a **mutual recognition framework** across Member States and sectors.

Legislative Enhancement:

Integrate mutual recognition clauses for accredited Service Providers across customs, transport, and environmental legislation. This will avoid duplication of certification processes and reduce delays in onboarding new platforms into the EU trust framework. By recognising accreditation issued in one Member State across the EU, regulatory coherence is improved, and cross-border trade digitalisation is accelerated. Including LEI/vLEI credentials in certification requirements will further ensure interoperability with non-EU trust ecosystems.

3.5. Interoperability Ecosystem for EU Digital Trade and Customs Integration

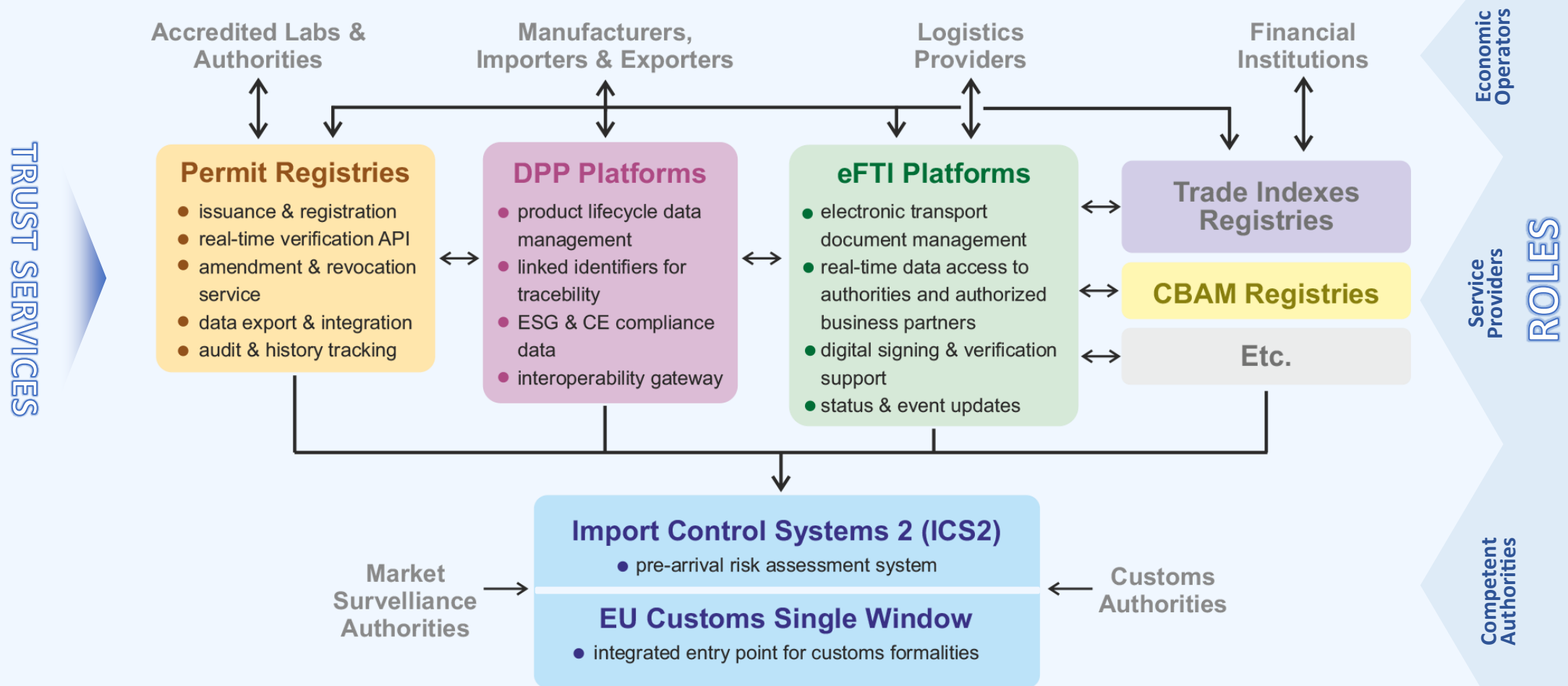


Figure 1. This diagram illustrates the key platforms, data flows, and stakeholder interactions across the EU's digital trade and customs ecosystem. It shows how manufacturers, logistics providers, and regulatory systems connect through structured data platforms—such as eFTI, the Digital Product Passport, and EU Customs systems—while integrating with trusted external sources including TRACES, REACH-IT, and EUDAMED. **Trust Services** supporting this interoperability include LEI/vLEI, Qualified Electronic Signature, Qualified Electronic Seal, Qualified Timestamp, etc. All data exchanges comply with the **General Data Protection Regulation (GDPR)**. The diagram was prepared by Riho Vedler and is presented on behalf of the DigitalTrade4.EU consortium.

3.6. Platform Functions and Trust Roles in the EU Digital Trade Ecosystem

#	Platform	Core Function	Key Actors	Interoperability Role	Trust Features
1	eFTI Platform	Structures and exchanges electronic freight transport information in accordance with EU regulation. Supports Digital Business Wallet submissions to third parties (e.g., warehouses) without granting direct platform access.	Logistics providers, freight forwarders, customs brokers, software vendors	Connected to ICS2, Customs SW, DPP; can interact with TDR for version verification before release to third parties.	Signing-enabled, eIDAS/vLEI, traceable submission logs, TDR-assisted latest-version checks
2	DPP Platform	Digitally represents product lifecycle data, ESG/CE compliance, and traceability information.	Manufacturers, importers/exporters, ESG auditors, platform providers	Linked to eFTI, permit registries, eInvoicing, CBAM Registries, customs declarations; interoperable via linked identifiers.	Verifiable ESG/CE data, linked traceability to other platforms
3	EU Customs Single Window	Single EU-wide gateway for customs and regulatory documentation (incl. permits).	National customs authorities, inspection agencies	Receives data from eFTI, DPP, ICS2, CBAM Registries; pushes to national systems.	Integrated with risk analysis
4	ICS2	Performs pre-arrival cargo risk assessments using Entry Summary Declarations (ENS).	EU customs administrations, transport carriers, EU security agencies	Pulls eFTI/DPP/ permit info	Real-time validation
5	Permit Registries	Hosts and validates official permits and certificates (e.g., veterinary, phytosanitary, chemical). Real-Time Verification API checks legal validity, current status, and conditions — even when TDR provides technical authenticity verification.	National competent authorities (e.g., TRACES, ECHA), EU agencies	Linked from DPP & eFTI; accessible to TDR for live status lookups.	Real-time legal verifiability, amendment and revocation logs
6	EU Trade Indexes Registry (EUTIR)	Anchors and registers metadata (e.g., hashes, signatures, timestamps) of trade documents (e.g., eFTI, eBL, invoices), enabling full document traceability across platforms. Tracks document origin, versioning, Certified Provider ID (LEI/vLEI), and custody history without exposing content.	Registry operators (EU or delegated), customs, logistics integrators, financial institutions	Reference point for document verification and linking across eFTI, DPP, CBAM, and Customs SW.	Tamper-proof identifiers, issuer verification, Certified Provider registry, MLETR compliance, traceable audit trails with DocumentCustodyHistory
7	CBAM Registries	Record and manage embedded carbon emissions data for imported goods under the EU Carbon Border Adjustment Mechanism.	Importers, customs authorities, national CBAM authorities, accredited CO ₂ verifiers, ESG auditors	Linked with DPP for product-level emission data, Customs SW for compliance validation, trade finance systems for tariff adjustments.	Verified emission declarations, EU-accredited verifier network, secure transmission to customs
–	Business Wallet	Decentralised environment for securely holding and sharing credentials and electronic documents under user control.	Traders, SMEs, logistics operators, authorised representatives, identity providers	Interacts with all above	vLEI identity, eIDAS 2.0

4. European Trade Indexes Registry (EUTIR) as the Trust Anchor

The **European Trade Indexes Registry (EUTIR)** is a proposed EU-level trust and indexing layer for electronic trade documents, designed to ensure authenticity, integrity, and traceability across platforms and jurisdictions. It is best suited for development on the **EBSI infrastructure**, leveraging Decentralised Ledger Technology (DLT) to provide tamper-resistant storage of document metadata and verifiable credentials. **EUTIR does not store the actual electronic documents themselves, only the metadata necessary to verify their authenticity, current validity, and the identity of the document's rightful holder.**

A key proposed feature of EUTIR is its interoperability with the **Global Legal Entity Identifier Foundation (GLEIF)** infrastructure, enabling integration of both **Legal Entity Identifiers (LEI)** and **verifiable LEIs (vLEI)**. This alignment would ensure seamless entity identification across jurisdictions, support regulatory compliance, and strengthen trust in cross-border transactions.

- **LEI** ensures globally unique identification of legal entities in compliance with ISO 17442.
- **vLEI**, aligned with the GLEIF trust framework, provides cryptographically verifiable credentials, allowing **real-time machine-verifiable proof of entity identity**.
- This integration allows EUTIR to validate Certified Providers instantly, support **cross-border mutual recognition** of identities, and align with international trade finance and compliance systems already using LEI.
- The combination of **EORI** for EU-specific customs processes and **LEI/vLEI** for global interoperability ensures a dual-identifier model that is both policy-neutral and technically future-proof.

Core Functionalities:

1. **Certified Providers** – organisations, companies, and other accredited entities, each uniquely identified via LEI/vLEI and EORI where applicable.
2. **Data Sets Metadata** – *Refers to the structured descriptive information about each registered data set, without storing its full content. This metadata enables the identification, verification, and traceability of trade-related data across platforms and jurisdictions.*
 - a) **Registration** in EUTIR assigns a globally unique identifier (UUID) to each data set, ensuring it can be unambiguously referenced in cross-border transactions. In addition to the core registration process, an electronic document can be linked to:
 - **Insurance information** – allowing stakeholders to confirm the existence and scope of coverage.
 - **Financing Reference** – enabling secure linkage to financing arrangements.

Why Financing Reference is important:

- **For banks** – prevents multiple pledging of the same document as collateral.
 - **For customs and market surveillance authorities** – provides immediate visibility into whether a document is under financial obligations.
 - **For service providers** – enables quick API checks before further document processing.
- b) **Traceability** in EUTIR ensures that the lifecycle of a registered data set — including all updates, transfers, and changes of custody — is fully recorded and linked across the supply chain. **EUTIR does not store the actual content of any document**, but instead maintains structured metadata that enables:

- Confirmation that the document presented to a stakeholder is **authentic**.
- Confirmation that it is the **latest valid version** of the data set.
- Identification of the **current legal holder** (owner) of the valid version, which is essential in cases where the document changes hands multiple times during the supply chain — for example, with **Negotiable Cargo Documents**⁴, including **electronic Bills of Lading (eBL)**.

This mechanism guarantees that even if a document is modified by multiple Certified Providers in the supply chain, the receiving party can instantly verify its validity and rightful holder before proceeding with any transaction or operational step.

- c) **Verification** confirms the authenticity and current validity of a registered data set.
- EUTIR provides **base verification** – confirming whether the data set is valid and whether the source is authentic.
 - In cases involving **special conditions** defined by EU Member State legislation (e.g., sector-specific compliance checks, additional technical validations), the additional verification process may be performed by a **Service Provider**.
 - EUTIR guarantees that the verification process always uses an **authentic source of truth**, preventing reliance on unverified or tampered data.

Legislative Enhancement:

1. Recognise EUTIR as the official EU-level trust service for registering and verifying trade data set metadata.

⁴ United Nations. Working Group VI: Negotiable Cargo Documents
https://uncitral.un.org/en/working_groups/6/negotiablecargodocuments

2. Mandate that only Certified Providers listed in EUTIR may participate in regulated trade data exchange processes.
3. Define the admissibility of metadata (UUID, file hash, financing and insurance references) as legal proof of authenticity and integrity in administrative and judicial proceedings.
4. Ensure all Competent Authorities have direct read-access to EUTIR's verification services, avoiding multiple submissions by Economic Operators.
5. Harmonise metadata standards across the EU to guarantee cross-border interoperability and machine-readability.
6. Integrate LEI/vLEI identifiers in sector-specific regulations to ensure global recognition of EU-certified entities.

Relevant EU Legislation:

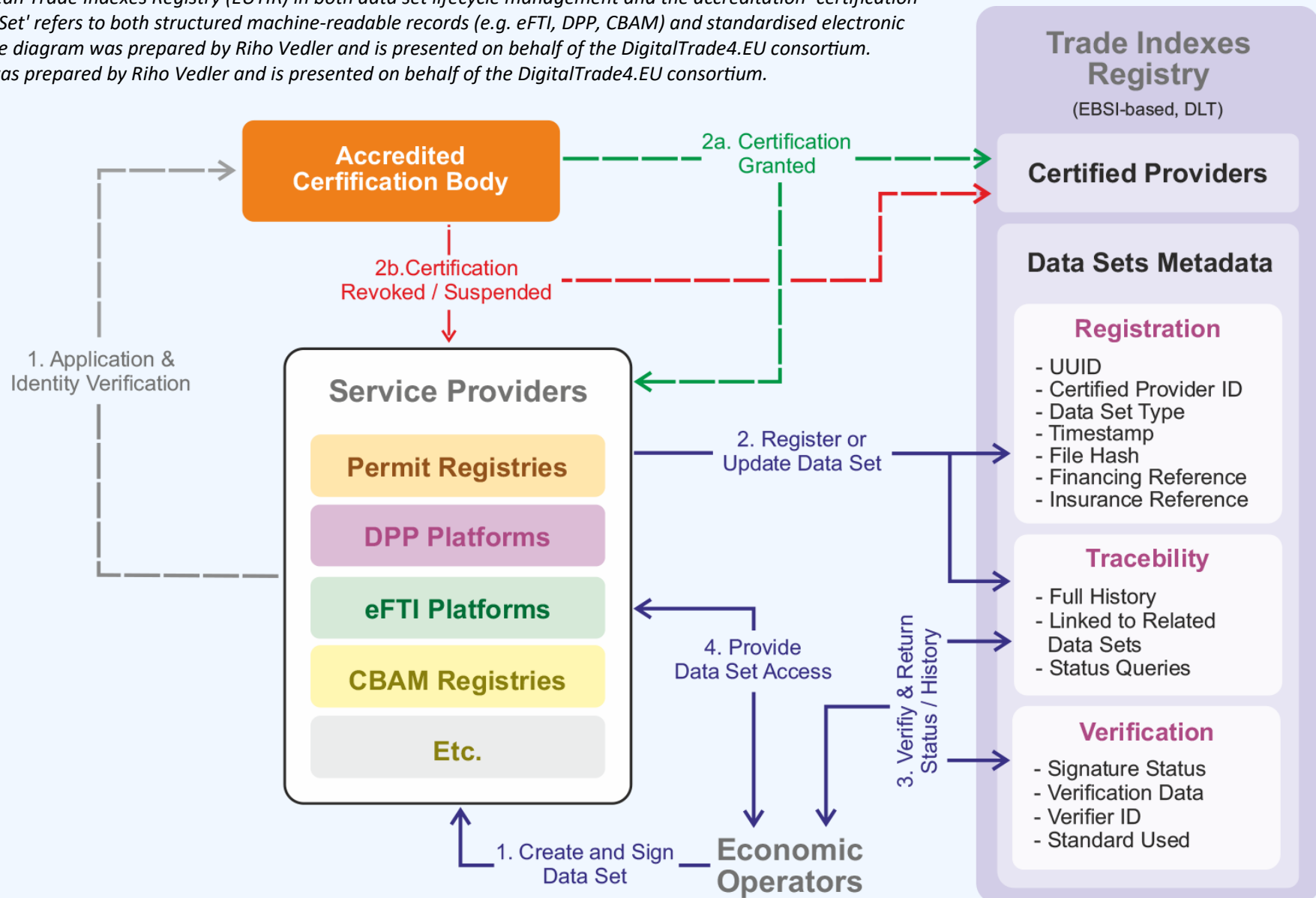
- **Regulation (EC) No 765/2008** – establishes EU accreditation framework; relevant for recognising Certified Providers in EUTIR.
- **Decision No 768/2008/EC** – harmonised rules for product marketing and conformity assessment bodies.
- **Regulation (EU) 2019/1020** – market surveillance and product compliance; can be extended to digital trade data set verification.
- **Regulation (EU) 2020/1056** – eFTI; can integrate EUTIR as a trust verification layer.

Potential Amendments:

- Amend eFTI and customs implementing acts to require EUTIR verification for all relevant logistics and trade datasets.
- Extend market surveillance scope to include trade dataset metadata verification.
- Incorporate LEI/vLEI into regulated trade documentation requirements.

4.1. EUTIR Environment: Data Set Lifecycle and Accreditation–Certification Flow

Figure 2. This diagram illustrates the interaction between Economic Operators, Service Providers, Accredited Certification Bodies, and the European Trade Indexes Registry (EUTIR) in both data set lifecycle management and the accreditation–certification process. 'Data Set' refers to both structured machine-readable records (e.g. eFTI, DPP, CBAM) and standardised electronic documents. The diagram was prepared by Riho Vedler and is presented on behalf of the DigitalTrade4.EU consortium. The diagram was prepared by Riho Vedler and is presented on behalf of the DigitalTrade4.EU consortium.



4.2. Accreditation and Certification Framework within the EUTIR Environment

EUTIR operates in close alignment with an EU-wide accreditation and certification framework to ensure that all Service Providers meet harmonised technical and legal requirements before participating in regulated data exchange.

- **Accreditation** – Performed by an **Accredited Certification Body (ACB)**, verifying compliance with applicable EU regulations, security standards, and interoperability protocols.
- **Certification** – Granted upon successful accreditation, with the Certified Provider immediately registered in EUTIR.
- **Continuous Compliance** – Certification status (active, suspended, revoked) is synchronised in real-time with EUTIR to ensure only valid providers participate in official processes.
- **LEI/vLEI Integration** – All Certified Providers receive globally unique, verifiable identifiers, enabling cross-border trust and interoperability.

This model ensures that both the **technical authenticity** of data (via EUTIR's Verification Service) and the **legal compliance** of the Service Provider (via ACB certification) are guaranteed.

Legislative Enhancement:

1. Require that all Service Providers participating in regulated trade data exchange processes undergo accreditation by an EU-recognised **Accredited Certification Body (ACB)**.
2. Mandate that certification data, including status changes (active, suspended, revoked), be synchronised in real-time with EUTIR.
3. Integrate **LEI/vLEI** and **EORI** identifiers as mandatory elements in certification records.
4. Require that all issued certificates be machine-readable and cryptographically verifiable.

5. Ensure that suspension or revocation of certification results in immediate access revocation across all regulated digital trade platforms.

Relevant EU Legislation:

- **Regulation (EC) No 765/2008** – accreditation requirements and recognition within EA framework.
- **Decision No 768/2008/EC** – common framework for conformity assessment.
- **Regulation (EU) 2020/1056** – certification model for digital trade platforms (eFTI).
- **Regulation (EU) 2023/956** – authorised declarant framework (CBAM) can integrate EUTIR trust layer.

Potential Amendments:

- Require that all ACB-issued certifications be registered in EUTIR as a condition for legal validity in regulated processes.
- Create a unified EU template for digital accreditation and certification records, linked to LEI/vLEI.
- Introduce real-time API-based status updates from ACBs to EUTIR.

4.3. Data Exchange Between Stakeholders

In the EUTIR environment, data exchange follows a **federated trust model**:

1. **Create and Sign Data Set** – The Economic Operator generates and digitally signs a trade-related data sets (e.g., eFTI, DPP, CBAM).
2. **Register (Update) Data Set** – The Service Provider registers the data set’s metadata in EUTIR, including UUID, type, timestamp, file hash, **financing reference**, **insurance reference**, and Certified Provider ID.
3. **Provide Data Set Access** – EUTIR facilitates access to authorised parties (e.g., customs, tax, banks), enabling them to verify the authenticity and traceability without handling full document content.

Dual Verification Path:

- **Technical Authenticity** – Checked in EUTIR via metadata and hash matching.
- **Content Validity** – Verified by sector-specific registries (e.g., permit registries, CBAM registry) using their own APIs.

This approach avoids unnecessary duplication of verification functions and ensures that each layer of the system performs its most efficient role.

Legislative Enhancement:

1. Require that all trade data sets used in regulated processes be technically verified via EUTIR before acceptance by Competent Authorities.
2. Clearly define the division of responsibilities between **EUTIR** (technical authenticity / integrity) and **sector-specific registries** (content validation).
3. Mandate that Service Providers perform automated pre-checks before registering data sets in EUTIR.
4. Grant Competent Authorities direct API access to EUTIR for authenticity checks.
5. Ensure interoperability between EUTIR and EU-wide systems such as **EU Customs Single Window, ICS2, CBAM Registry, and eFTI platforms**.
6. Require machine-readable, standardised data formats to enable AI and ML-driven analytics.

Relevant EU Legislation:

- **Regulation (EU) 2020/1056** – eFTI Regulation; extend to include mandatory EUTIR verification.
- **Regulation (EU) No 952/2013** – Union Customs Code; integrate EUTIR in customs data workflows.
- **Regulation (EU) 2023/956** – CBAM; require certificate authenticity checks via EUTIR.
- **Regulation (EU) 2019/1020** – Market Surveillance Regulation; link surveillance data to EUTIR metadata.

- Sector-specific permit regulations (veterinary, phytosanitary, chemical) – include UUID/hash verification in EUTIR as a precondition for official acceptance.

Potential Amendments:

- Modify customs and eFTI implementing acts to require an EUTIR verification step before processing.
- Require sector-specific permit registries to register document metadata in EUTIR upon issuance.
- Allow AI-based monitoring tools to use EUTIR datasets for fraud detection and compliance risk scoring.

5. Strategic Digital Models for Sustainable Trade and Logistics

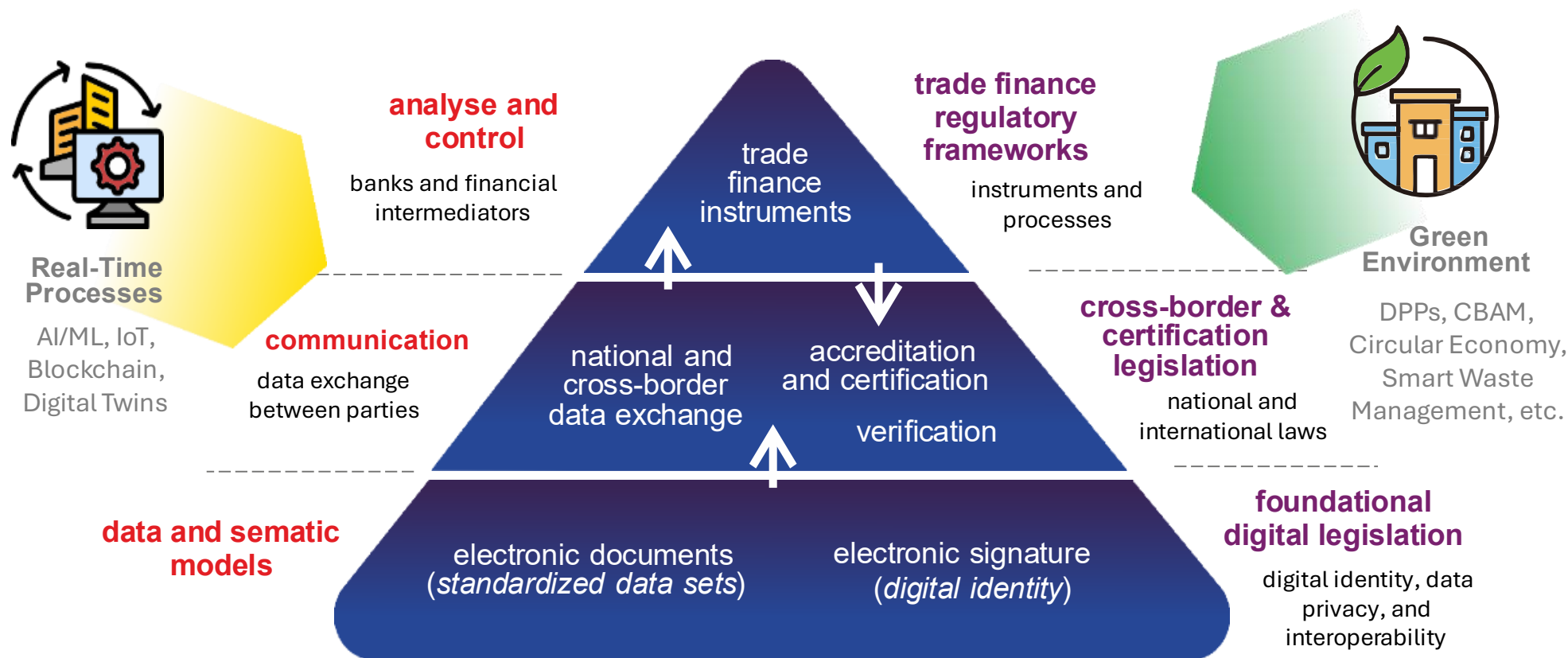


Figure 3 This visual model bridges the European Commission's strategic objectives with the proposed regulatory and operational solutions, illustrating how digital requirements and compliance mechanisms can be implemented in a technologically neutral and future-proof manner. All digital requirements and compliance mechanisms must remain technologically neutral and future-proof, allowing companies to select and reuse their preferred IT solutions.

The diagram was prepared by Riho Vedler and is presented on behalf of the DigitalTrade4.EU consortium, icons by Flaticon.

6. Amendment Proposals to Draft Regulation

6.1. Digital Product Passport (DPP) Integration

Proposed Legal Text, Annex VIII (Tables I, J, ST, I1, J1) – Reporting structures for crops, livestock, soil, PPP, and antimicrobial use:

*In all tables under Annex VIII, Member States shall ensure that collected and reported FSDN data are **interoperable with the Digital Product Passport (DPP) framework established under Regulation (EU) 2024/1781 (Ecodesign for Sustainable Products Regulation – ESPR)**. Data shall be made available in a machine-readable format, with unique identifiers enabling linkage to DPP records, product lifecycle information, and CBAM declarations.*

Justification: This amendment ensures that farm-level sustainability data are not siloed but directly reusable across multiple EU initiatives, including CBAM, ESG reporting, and circular economy monitoring. Linking FSDN datasets to DPP strengthens traceability from primary production to final product, reducing duplication of reporting obligations for farmers. Moreover, it accelerates the implementation of the Green Deal by embedding environmental data into product compliance regimes. Without this integration, the EU risks creating parallel and incompatible reporting structures, undermining efficiency and digital transformation goals.

6.2. Environmental, Social, Economic (ESE) Indicators

Proposed Legal Text, Annex VIII – Table A (General information on the holding) and Table C (Labour):

*Annex VIII shall be amended to include mandatory **Environmental, Social, and Economic (ESE) indicators**, covering:*

- a. social aspects (e.g. gender balance, employment conditions, inclusion of vulnerable groups);*

- b. economic aspects (e.g. access to digital markets, SME participation in value chains);*
- c. environmental aspects (complementary to soil, PPP, and antimicrobial use indicators).*

Justification: While FSDN already captures extensive environmental data, it overlooks social and economic sustainability dimensions, which are equally critical under the EU Green Deal and the UN Sustainable Development Goals. Adding ESE indicators ensures holistic monitoring of farming sustainability, aligning EU policy with international reporting frameworks. It also enhances comparability between Member States and provides a stronger evidence base for CAP reforms. Without these additions, sustainability reporting remains fragmented and does not reflect the full spectrum of ESG compliance.

6.3. GDPR and Data Protection Compliance

Proposed Legal Text, Annex VIII – Table C (Labour) and cross-cutting provisions on data reporting:

All FSDN data collection and reporting involving personal data shall comply with the General Data Protection Regulation (GDPR). Member States shall ensure the use of pseudonymisation or anonymisation where possible, and limit the processing of personal data to what is strictly necessary. Data transmitted to EU-level systems shall consist only of aggregated or pseudonymised datasets.

Justification: FSDN reporting on labour and social indicators inevitably involves personal and potentially sensitive data. To maintain compliance with GDPR Articles 6 and 9, strong safeguards are necessary. Introducing explicit references to pseudonymisation and aggregation ensures farmers and workers are protected, while still enabling policymakers to access the required statistical evidence. Without this amendment, there is a risk of inconsistent GDPR application across Member States, leading to legal uncertainty and possible data breaches.

6.4. eIDAS 2.0 and Qualified Trust Services

Proposed Legal Text, Article 1 (general amendment clause) + Annex VIII (all reporting tables):

*All data submitted under the Farm Sustainability Data Network shall be digitally signed using **qualified electronic signatures or seals** compliant with Regulation (EU) 2024/1183 (eIDAS 2.0). Where organisations or legal entities submit data, they shall use **verifiable Legal Entity Identifiers (vLEI)** anchored in the EU trust framework.*

Justification: The use of qualified trust services ensures authenticity, integrity, and legal admissibility of sustainability data. eIDAS 2.0 provides a harmonised EU-wide framework for digital identity and signatures, making it the most future-proof mechanism for securing FSDN data flows. By requiring vLEI identifiers, the EU aligns agricultural reporting with global trade finance and customs systems, enhancing interoperability. This reduces fraud risks, builds trust among stakeholders, and ensures that sustainability data can be reused in legal and financial processes without additional verification burdens.

6.5. EORI + LEI / vLEI Dual Identification

Proposed Legal Text, Annex VIII – General provisions on operator identification:

*Economic operators participating in the FSDN shall be identified using both **EORI (Economic Operator Registration and Identification)** for EU customs-related processes and **LEI/vLEI (Legal Entity Identifier / verifiable LEI)** for international interoperability. The dual-identifier model shall apply to producer organisations, cooperatives, and other legal entities submitting sustainability data.*

Justification: Introducing a dual-identifier model ensures seamless interoperability between EU and global trust frameworks. EORI is widely used in EU customs systems but lacks international scope, while LEI/vLEI provides global recognition and machine-verifiable proof of identity. Together, they enable consistent identification of economic operators across agriculture, trade, finance, and customs. This reduces duplication of registrations, increases efficiency for SMEs, and aligns FSDN with international best practices (ISO 17442, GLEIF). Without this step, EU operators risk being disadvantaged in global trade digitalisation.

6.6. European Trade Indexes Registry (EUTIR) Integration

Proposed Legal Text, Annex VIII – Technical provisions on data verification:

*Verification of FSDN datasets shall be anchored in the **European Trade Indexes Registry (EUTIR)**. Only metadata (e.g. UUID, file hash, signature, Certified Provider ID) shall be registered in EUTIR, without storing raw data. Access shall be restricted to certified service providers, accredited organisations, and competent authorities. All FSDN-related metadata registered in EUTIR shall constitute legal proof of authenticity and integrity in administrative and judicial proceedings.*

Justification: Integrating FSDN with EUTIR provides a trusted, tamper-proof environment for verifying sustainability data. By storing only metadata, EUTIR guarantees privacy and compliance with GDPR, while enabling full traceability of dataset custody. This amendment prevents duplication of verification efforts and ensures interoperability with customs, CBAM, and DPP platforms. It also strengthens the EU's strategic autonomy by embedding agricultural data into the same trust ecosystem as trade and product compliance. Without EUTIR integration, Member States will continue to face fragmented verification systems, reducing efficiency and trust.

6.7. Artificial Intelligence (AI) and Machine Learning (ML) Analytics

Proposed Legal Text, Annex VIII – General provisions on data use and reporting:

*Member States and the Commission shall ensure that FSDN datasets are provided in **machine-readable and standardised formats** enabling the use of Artificial Intelligence (AI) and Machine Learning (ML) tools for compliance monitoring, environmental risk assessment, and policy evaluation.*

Justification: FSDN produces large volumes of structured data on soil, inputs, livestock, and sustainability practices. To maximise policy value, this data should be AI/ML-ready, allowing automated detection of anomalies (e.g. excessive pesticide use), predictive modelling of environmental risks, and early warning for food security challenges. This supports the EU's Competitiveness Compass, digital sovereignty, and AI Act objectives. Without ensuring AI/ML compatibility, FSDN data risks being underused, remaining locked in static tables rather than powering smart analytics and digital policymaking.

6.8. SME-Friendly Compliance Framework

Proposed Legal Text, Annex IX – Exemptions from reporting obligations:

*Small and medium-sized agricultural holdings shall benefit from **tiered reporting obligations**. For holdings below thresholds defined in Article 19 of Regulation (EC) No 1217/2009, simplified FSDN reporting structures shall apply, reducing administrative burdens while ensuring proportional data coverage.*

Justification: SMEs represent the majority of EU farms but face disproportionate compliance costs under sustainability reporting. By introducing tiered requirements, the EU ensures fairness while still collecting robust data from larger holdings. This amendment aligns with SME relief initiatives under the Single Market and Digital Compass. It also encourages SME participation in the FSDN, rather than discouraging compliance due to high costs. Without this change, the digital and green transition risks creating uneven burdens, undermining inclusivity in EU agriculture.

6.9. Cybersecurity and Zero Trust Architecture

Proposed Legal Text, Article 1 + Annex VIII – Technical provisions for data transmission:

*All digital systems used for FSDN data collection, processing, and transmission shall comply with **Regulation (EU) 2022/2555 (NIS2 Directive)** on cybersecurity. FSDN systems shall apply a **Zero Trust Architecture**, ensuring continuous authentication, least-privilege access, and cryptographic verification of data integrity.*

Justification: Agricultural sustainability data is economically and strategically sensitive. Ensuring secure handling through NIS2 compliance and Zero Trust Architecture protects against cyber threats, manipulation, and data theft. It also increases trust from farmers and operators that their information is safeguarded. Without a harmonised EU-level cybersecurity requirement, Member States may apply uneven standards, creating vulnerabilities in the Single Market. A Zero Trust approach ensures resilience and aligns with wider EU digital security policy.

6.10. Green-Digital Finance Linkage

Proposed Legal Text, Annex X – Payments to Member States and financial traceability:

*FSDN financial reporting shall be linked to **green and sustainability-linked finance instruments**. Where holdings demonstrate compliance with sustainability indicators (e.g. soil quality, organic conversion, reduced antimicrobial use), FSDN data shall be made available for use in **green loan, insurance, and guarantee schemes**, verified through EUTIR.*

Justification: Sustainability data should not only inform policy but also unlock financial benefits for farmers. By linking FSDN data to green financing instruments (InvestEU, CSRD-aligned reporting, CBAM rebates), farms can access lower-cost capital and insurance. This creates positive incentives for adopting sustainable practices, beyond compliance alone. Without connecting FSDN data to green finance, reporting remains a bureaucratic obligation rather than a tangible opportunity for farmers. Embedding this link supports the EU's objective of mobilising private capital for the green transition.

7. Conclusion – The Strategic Value of EUTIR

EUTIR is a strategic enabler for Europe's future competitiveness, sustainability, and security. By providing a trusted, decentralised verification environment, it accelerates trade, strengthens resilience, and supports the EU's green and digital ambitions. Its adoption would not only modernise cross-border processes but also position Europe as a global leader in transparent, ML/AI-ready trade ecosystems.

Key reasons for establishing EUTIR:

1. **Global Unique Identification** – International trade involves vast flows of data across multiple stakeholders, systems, and jurisdictions. Without globally unique identifiers, there is a high risk of duplication, misassociation, and fraud.
2. **Interoperability Across Platforms** – Modern trade relies on multiple specialised registries and platforms (eFTI, DPP, CBAM, permit registries). EUTIR functions as the **index layer**, enabling automated cross-referencing between systems without requiring manual reconciliation.
3. **Traceability & Accountability** – EUTIR maintains a full custody chain, showing the entire lifecycle of a document or shipment, including transfers between different Certified Providers, enabling transparent compliance checks.
4. **Single Source of Truth** – By acting as the authoritative reference, EUTIR ensures that both authorities and market actors can confirm that the information they use is the latest, valid, and authentic version.
5. **Support for Digital Trust Infrastructure** – Full interoperability with **GLEIF's LEI/vLEI** framework and EBSI-based DLT creates a trust environment that extends beyond the EU, enabling recognition in global supply chains and finance networks.

Now is the time to integrate EUTIR into the EU's digital policy framework and make it a cornerstone of the Single Market's next evolution.

Annex 1. Digital Trade & Capital Markets Integration Roadmap (DigitalTrade4.EU 2025)

#	activity	objective	indicative metrics	tools/enablers
1	Establish EU Trade Indexes Registry (EUTIR)	Decentralize and secure cross-border trade/ESG data for supervision using a distributed architecture, enabling trusted and interoperable access to regulatory and ESG information across the EU.	- 30% reduction in duplicate filings by 2027 - 100% fraud detection rate	Zero Trust Architecture & cross-border verification (e.g., blockchain-based systems like EBSI), MLETR-compliant systems, PSD3-PSR/FiDA APIs, vLEI
2	Digitalise Tax & Customs Interfaces	Integrate trade, tax, and customs data flows to reduce friction and fraud	- 50% faster customs clearance - 30% reduction in VAT fraud - Full uptake of EU Single Window by 2028	EU Customs Data Hub, Single Window for Customs, VAT in the Digital Age (ViDA), vLEI for trader authentication, eFTI/eCMR linkages
3	Adopt MLETR + eIDAS 2.0	Enable seamless digital negotiable instruments and cross-border recognition	- 70% faster transaction times - 95% SME adoption of e-signatures	MLETR framework, eIDAS 2.0 digital identity wallets, EU legal harmonization tools
4	Develop RegTech supervision tools	Enhance real-time oversight of capital markets and ESG compliance	- 50% reduction in supervisory costs - 80% automated ESG data collection	AI/ML dashboards, Legal Sandboxes, ETDR-linked reporting systems
5	Digital Bonds & Convertibles	Enable automated, ESG-linked debt instruments	- 30% reduction in issuance costs - 20% lower interest rates for ESG-compliant bonds - 100% real-time conversion execution	ETDR registry, smart contracts, DPP/ESG data integration, eIDAS 2.0 authentication
6	SME-friendly compliance frameworks	Ensure SMEs benefit from digital reforms without disproportionate burden	- 40% increase in SME participation - 60% cost savings for SMEs	Tiered compliance thresholds, Green-Digital Trade Academy, Erasmus+ grants
7	Pilot CBAM-DPP Corridors	Link trade finance to verifiable ESG metrics for tariff incentives	- 20% CBAM compliance cost reduction - 50% adoption of DPPs by 2030	Digital Product Passports (DPPs), IoT carbon trackers, CBAM rebate schemes, CBAM certificate registry integration, EU Customs Single Window
8	Harmonize e-document laws	Eliminate legal fragmentation for digital trade documents	- 90% mutual recognition of e-Bills of Lading - 0 paper-based processes	EU Transport Law updates (e.g. eFTI, eCMR), UN/UNECE protocols, Legal Harmonization Sandboxes
9	ESG-linked finance incentives	Reward sustainable supply chains with cheaper capital	- €10B/year green trade finance unlocked - 30% lower Scope 3 emissions	InvestEU guarantees, FinTech platforms, CSRD-aligned reporting templates

Annex 2. EU Green-Digital Trade Leadership Roadmap (DigitalTrade4.EU 2025)

#	activity	objective	indicative metrics	tools/enablers
1	EU-Singapore DTA & Expand DEPA Partnerships	Strengthen digital trade diplomacy in Asia through high-standard agreements.	- 5+ new digital trade agreements with key Asian partners (e.g., Japan, India, ASEAN) by 2030 - 15% increase in EU-Asia digital services trade by 2028	DEPA framework, EU-Singapore DTA, Global Gateway Initiative, eIDAS 2.0
2	Implement Digital Product Passports (DPPs)	Ensure traceable, sustainable supply chains aligned with EU Green Deal.	- 50% adoption of DPPs by 2030 - 20% reduction in supply-chain carbon intensity by 2030	EU Sustainable Products Initiative, CBAM incentives, UNECE Recommendation 49
3	Fund Secure Digital Corridors in Asia	Build interoperable digital infrastructure for EU-Asia trade.	- ~€2B allocated via NDICI-Global Europe - 10+ blockchain-based traceability pilots by 2027	NDICI-Global Europe, ASEAN digital customs systems, EU Customs Data Hub
4	Harmonize Digital Standards (MLETR/eIDAS 2.0)	Enable cross-border recognition of e-documents and digital identities.	- 90% mutual recognition of e-signatures by 2028 - 70% SME adoption of eIDAS wallets	MLETR framework, eIDAS 2.0, EU Transport Law updates, UN/UNECE protocols
5	Implement LEI and vLEI for Supply Chain Trust	Harmonise and simplify legal entity identification across borders	- 90% entity coverage with LEI by 2030; 50% vLEI use in customs and eFTI transactions	ISO 17442, vLEI, eIDAS 2.0, UNECE UID
6	Launch Green-Digital Trade Academy	Upskill SMEs and officials on DPPs and carbon accounting.	- 40% increase in SME participation by 2027 - 60% cost savings for SMEs	Erasmus+ grants, COSME programme, tiered compliance thresholds
7	Integrate ESG into Trade Finance	Link trade finance to sustainability metrics for cheaper capital access.	- €10B/year unlocked for green trade finance - 30% lower Scope 3 emissions by 2030	InvestEU guarantees, CSRD-aligned reporting, FinTech platforms
8	Enforce Platform Interoperability	Prevent vendor lock-in and empower SMEs.	- 100% compliance with CJEU rulings by 2026 - 50% reduction in platform dominance	Court of Justice of the European Union (CJEU) Case C-233/23, DEPA, eIDAS 2.0, Digital Markets Act (DMA)
9	Global Digitalisation Projects with EU Standards	Extend EU digital infrastructure and norms globally.	- 20+ co-funded projects by 2030 - 80% interoperability with EU systems	Digital Europe Programme, CEF funding, EU-Asia Digital Standards Taskforce
10	Advance UNECE Transparency Protocols	Globalize EU sustainability standards for supply chains.	- 100% alignment with UNECE Rec. 49 by 2028 - 30% reduction in greenwashing claims	UNECE CEFAC, W3C Verifiable Credentials, EU CBAM registry
11	Pilot CBAM-DPP Corridors	Link trade finance to verifiable ESG metrics for tariff incentives.	- 20% CBAM compliance cost reduction - 50% DPP adoption by 2030	IoT carbon trackers, CBAM rebate schemes, EU Customs Single Window

About Us

The **DigitalTrade4.EU consortium** envisions a **seamlessly interconnected Europe** and **neighbouring regions** powered by harmonized standards for the digitalisation of trade documents and processes. By fostering the digital transformation of trade, we aim to promote economic integration, enhance cooperation, and ensure long-term trade facilitation across borders.

Our consortium is made up of **experts in their field**, including **108 full partners**—trade associations, logistics providers, shipping lines, banks and insurances, technology innovators, etc.—**from 17 European Union countries** (*France, Belgium, Netherlands, Austria, Estonia, Finland, Italy, Latvia, Spain, Germany, Sweden, Poland, Luxembourg, Lithuania, Slovenia, Denmark, Bulgaria*) and **22 non-EU countries** (*United Kingdom, Switzerland, Montenegro, Japan, Singapore, Hong Kong, Australia, New Zealand, India, Nepal, Canada, United States of America, Cameroon, Morocco, Egypt, Kenya, Pakistan, Nigeria, Brazil, Uzbekistan, Turkey, Ukraine*).

Our consortium is already **aligned with the fundamentals** of the **EU Competitiveness Compass**.
Learn more:

- How DigitalTrade4.EU Can Help Achieve the Objectives of the EU Competitiveness Compass (February 2025)
<https://www.digitaltrade4.eu/how-digitaltrade4-eu-can-help-achieve-the-objectives-of-the-eu-competitiveness-compass/>

Web page: www.digitaltrade4.eu

EU Transparency Register: 355266197389-94

Contact person: Riho Vedler

Email: riho.vedler@ramena.ee

