Prepared by DigitalTrade4.EU

Draft Regulation and Annex Concerning Pest Surveys and Reporting

Feedback to the EU Commission

August 2025

1. Introduction

The DigitalTrade4.EU consortium welcomes the Commission's proposal for strengthening the Union framework on pest surveys, reporting, and outbreak prevention. In light of growing challenges linked to climate change, intensified global trade, and the spread of invasive species, an updated Regulation is both timely and necessary. The proposed measures will significantly enhance the EU's capacity to protect plant health, safeguard biodiversity, and secure agricultural production and trade flows.

At the same time, the complexity of cross-border pest risks requires a more ambitious integration of digital solutions. The Commission has already advanced important initiatives, such as the Digital Product Passport (DPP), electronic Freight Transport Information (eFTI), and the Carbon Border Adjustment Mechanism (CBAM). These frameworks demonstrate that trusted, interoperable digital infrastructures are crucial for managing risks in a systemic way. Pest surveillance data should not remain isolated, but rather be embedded in the Union's wider digital ecosystem, ensuring interoperability, transparency, and long-term resilience. In this regard, the **European Trade Indexes Registry (EUTIR)** provides a central trust environment for indexing outbreak notifications and ensuring that only accredited, certified service providers process sensitive data.

A central priority must be the use of **Artificial Intelligence (AI) and Machine Learning (ML)** to strengthen pest survey design, outbreak prediction, and early prevention. AI/ML can integrate data from multiple EU systems — including eFTI, CBAM, fertiliser and chemical use registries in agriculture, sustainability reporting tools, and trade datasets — to better identify the factors driving pest spread. This ability to analyse diverse datasets makes it possible to assess damages more accurately, anticipate outbreaks, and implement preventive measures before they escalate into costly crises. For the European Commission, supporting the development of AI/ML models for pest management and embedding them into the **daily operational routines of competent authorities** should therefore be a **high priority**.

In addition, the Regulation must be underpinned by strong safeguards for data protection, cybersecurity, and trust. The integration of GDPR compliance, accreditation of service

providers, use of eIDAS 2.0 trust services, and alignment with NIS2 cybersecurity requirements are essential to ensure that pest survey data is reliable, secure, and legally recognised across borders. By linking reporting obligations with broader sustainability and social enforcement goals, and by leveraging EUTIR for cross-border trust and verification, the Union can ensure that pest management measures contribute to biodiversity protection, responsible resource use, and public trust.

Taken together, these elements create a coherent vision for a future-proof EU pest management framework. By combining digital innovation, trusted infrastructures such as EUTIR, and sustainability principles, the revised Regulation can strengthen Europe's plant health security and position the EU as a global leader in digital biosecurity. The nine amendment proposals outlined in this feedback aim to support the Commission in realising this ambition, by providing targeted improvements that enhance interoperability, accountability, and resilience.

1.1. Regulatory Insights and EUTIR Alignment

#	Dimension	Key Elements from Regulation Draft	Relevance for EUTIR	Expected Impact
1	**Political**	EU-wide coordination on survey design, contingency plans, and reporting obligations for plant pests.	Mirrors the governance model of EUTIR, where Member States and EU bodies coordinate through harmonised data exchange.	Stronger alignment of regulatory compliance across borders; reinforcement of EUTIR as a trusted EU-wide authority.
2	**Economic**	Trade restrictions on infected plants/fruits; risk-based surveys influencing supply chain costs.	EUTIR can digitise and standardise compliance documentation, reducing transaction costs and delays in cross-border trade.	Lower administrative burdens for businesses; greater predictability for exporters and importers.
3	**Social**	Raising public awareness of pest risks and ensuring transparency towards operators and citizens.	EUTIR embeds transparency and traceability, including consumer-facing ESG and product lifecycle data.	Increased consumer trust and acceptance of digital verification systems; improved awareness of sustainability requirements.
4	**Technological**	Statistically sound, risk-based surveys (mandatory by 2028/2029); reliance on molecular testing and digital reporting templates.	Direct synergy with EUTIR's data architecture, AI-readiness, and interoperability standards for structured datasets.	Faster detection and reporting; enhanced resilience of supply chains through digital trust infrastructure.
5	**Environmental**	Prevention of citrus greening disease spread, protection of agricultural biodiversity.	EUTIR links regulatory compliance to carbon accounting, DPPs, and ESG monitoring.	Stronger alignment of phytosanitary measures with EU Green Deal goals; contribution to sustainable trade ecosystems.

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 GLEIF[2], 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-based[3] 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

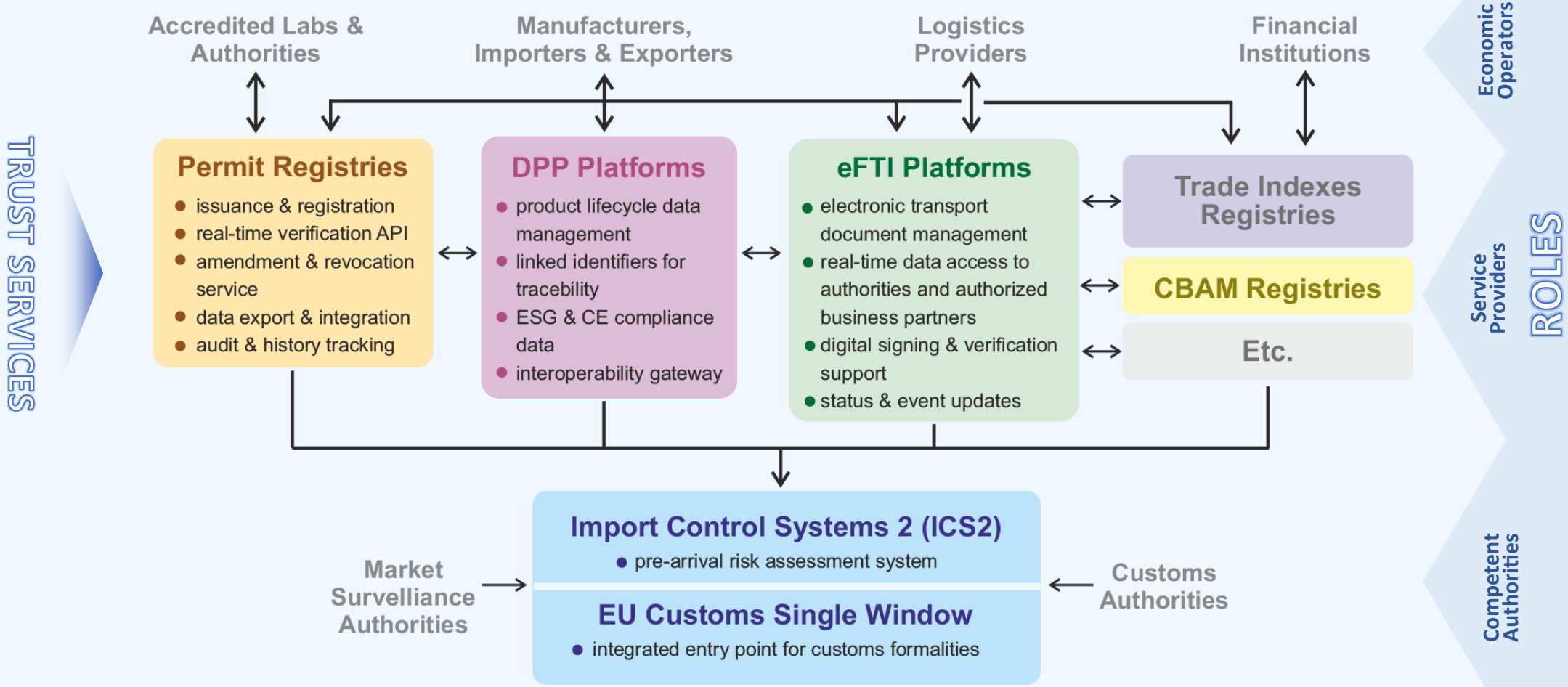

Figure 1. This diagram illustrates the key platforms, data flows, and stakeholder interactions across the EU's digital trade and customs ecosystem. It shows how manufacturers, logistics providers, and regulatory systems connect through structured data platforms—such as eFTI, the Digital Product Passport, 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.
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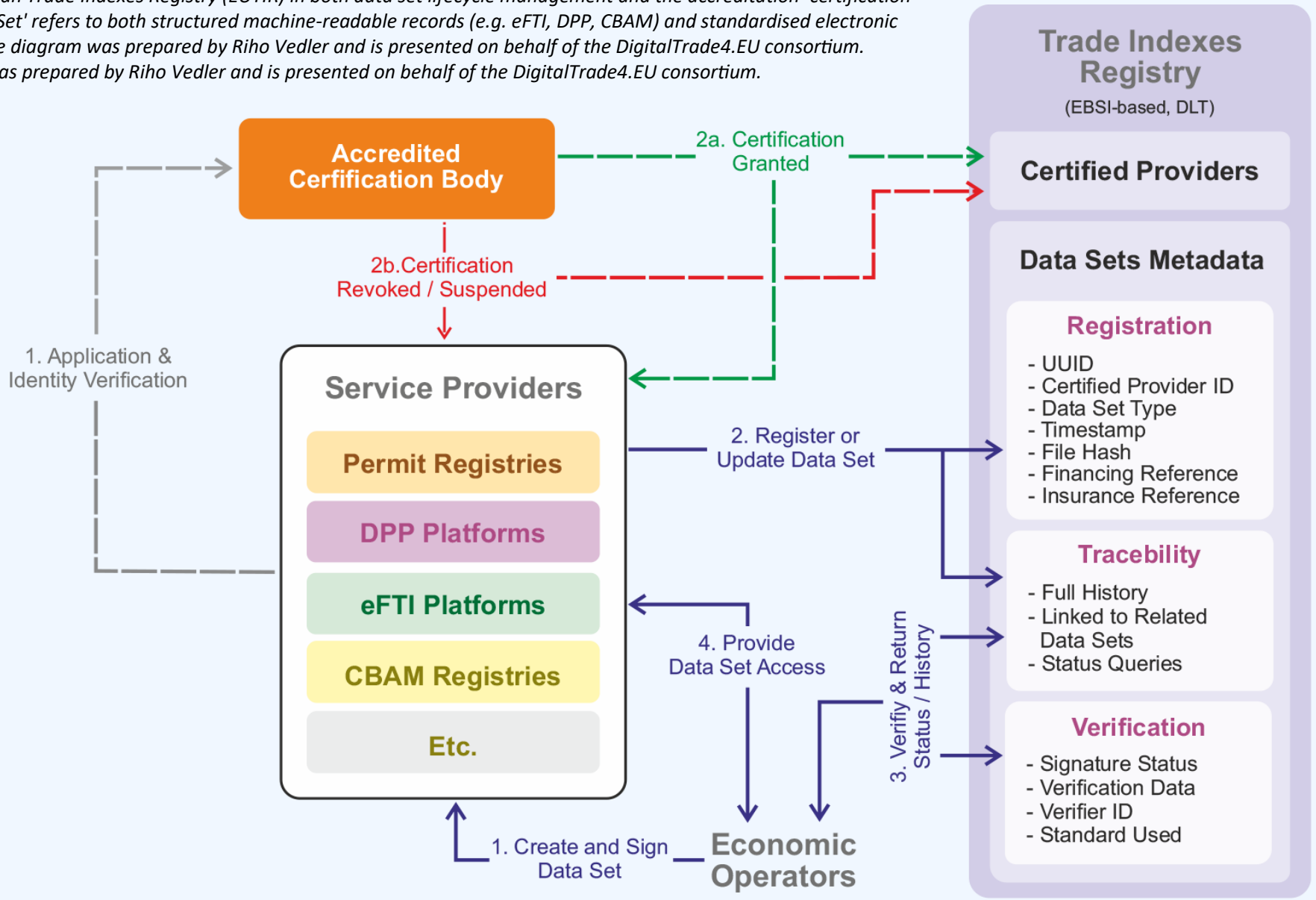

4.2. Accreditation and Certification Framework within the EUTIR Environment

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

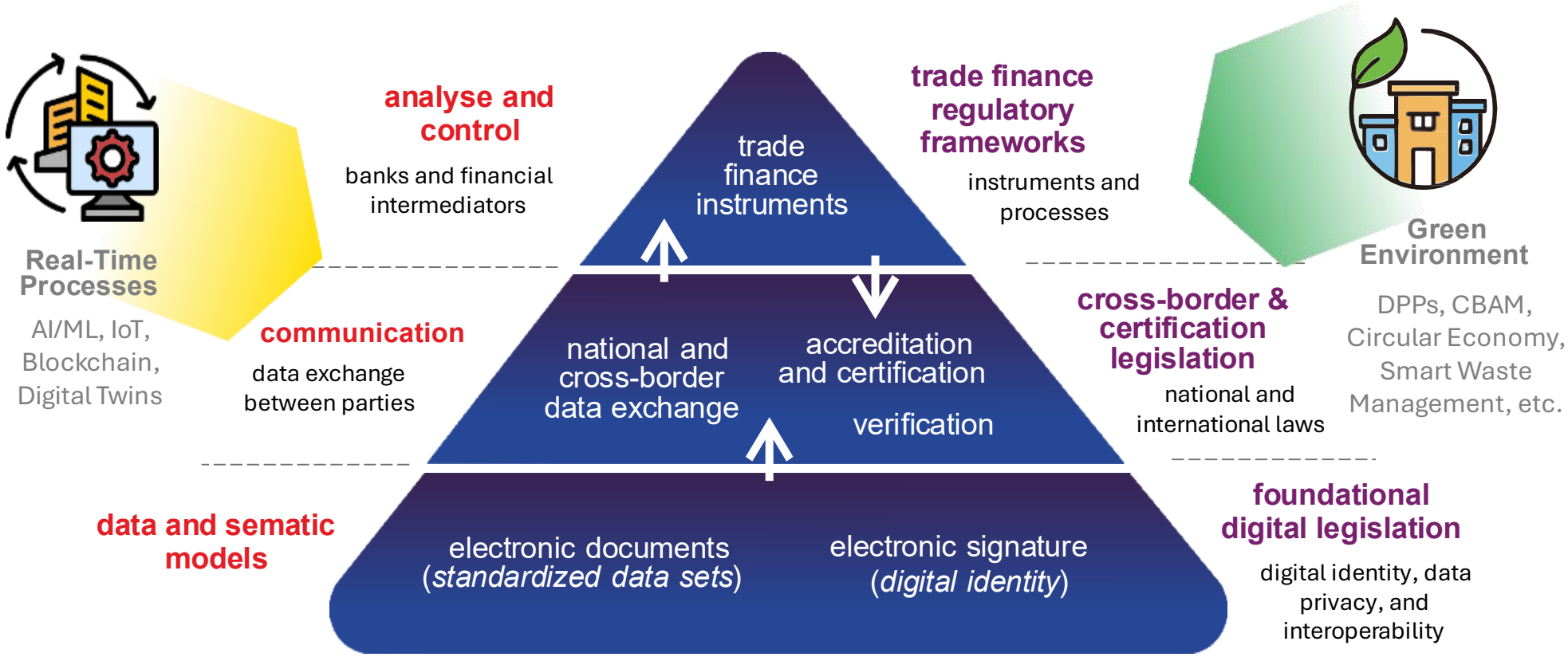

Figure 3 This visual model bridges the European Commission's strategic objectives with the proposed regulatory and operational solutions, illustrating how digital requirements and compliance mechanisms can be implemented in a technologically neutral and future-proof manner. All digital requirements and 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. Integration of Pest Risk Data into EU Digital Product Passports and Registries

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States) and Annex – templates, Part A and Part B:

> *Survey results submitted under this Regulation shall, where applicable, be interoperable with the Digital Product Passport (DPP) established under Regulation (EU) 2024/1781 on Ecodesign for Sustainable Products (ESPR) and with other relevant Union digital registries. Pest-related risk information, treatments applied, and traceability of plant products may be included as linked datasets within these passports and registries, in accordance with sectoral legislation.*

Justification: This broader formulation ensures that pest-related data is not limited to the DPP framework but can also be linked to other EU-level digital registries (e.g. agricultural sustainability data, electronic freight transport information). It makes the integration flexible and future-proof, allowing sector-specific approaches while maintaining interoperability. The reference to "other relevant Union digital registries" avoids overloading the DPP with information outside its strict scope, yet ensures that pest risk data contributes to a unified EU digital ecosystem. This approach maximises the value of pest survey results, improves transparency across supply chains, and supports both phytosanitary and sustainability objectives.

6.2. Environmental and Social Enforcement (ESE) Dimension

Proposed Legal Text, Draft Regulation, Preamble (recitals), after recital (5):

> *Member States shall ensure that surveys and eradication measures contribute to Environmental and Social Enforcement (ESE) obligations, including biodiversity protection, sustainable resource use, and safeguarding fair working conditions in eradication campaigns, in alignment with Union sustainability goals.*

Justification: By explicitly embedding Environmental and Social Enforcement (ESE) requirements, the Draft Regulation goes beyond technical pest eradication and reflects the EU's broader policy commitments. Pest outbreaks and eradication campaigns may have unintended ecological or social side-effects, which should be carefully managed. Linking pest management measures to ESE ensures that biodiversity is preserved, sustainability principles are upheld, and social safeguards are respected during field operations. This approach also increases public trust and improves acceptance of pest control measures by demonstrating coherence with EU environmental and social values.

6.3. GDPR and Data Protection Obligations

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States) and Annex – Instructions for filling in templates:

> *All personal data and operator-related information collected during pest surveys shall be processed in accordance with Regulation (EU) 2016/679 (General Data Protection Regulation – GDPR). Only pseudonymised or aggregated datasets shall be stored in the central reporting templates.*

Justification: Pest survey operations often involve the collection of sensitive information, such as farm locations, operator identities, and detailed production data. Without proper safeguards, such information could be misused, leading to privacy violations or competitive disadvantages. By embedding GDPR compliance directly into the Draft Regulation, the EU ensures that data handling respects the principles of lawfulness, fairness, and proportionality. Explicit reference to pseudonymisation and aggregation prevents unnecessary disclosure of individual-level data while still ensuring that epidemiological and statistical needs are met.

6.4. Use of Artificial Intelligence and Machine Learning for Pest Prevention

Proposed Legal Text, Draft Regulation, Article 3 (Surveys) and Annex – Part B (risk-based survey details):

> *Competent authorities, in cooperation with universities, research organisations, and private companies, may apply artificial intelligence and machine learning tools to*

enhance survey design, predict pest spread, assess potential economic and environmental damages, and support early adoption of preventive measures. The Commission shall provide technical guidance to ensure transparency, explainability, and interoperability of such tools.

Justification: The scale and complexity of pest outbreaks require advanced analytical methods that exceed the capacity of traditional monitoring approaches. Artificial Intelligence (AI) and machine learning (ML) can provide predictive models to identify high-risk areas, anticipate pest dispersal patterns, and optimise resource allocation. Allowing not only Competent Authorities but also universities, research organisations, and private companies to contribute ensures that the EU can harness the best available expertise and innovation. This public–private–academic collaboration encourages faster development of advanced tools, ensures scientific rigour, and fosters Europe's leadership in digital biosecurity solutions.

In addition, since pest-related data is interoperable across multiple systems and registries (including eFTI, CBAM, fertiliser and chemical use registries in agriculture, and sustainability reporting frameworks), AI/ML models can integrate these diverse datasets to identify drivers of pest outbreaks more effectively. Such interoperability allows for cross-sector analysis of risk factors — including climate, trade flows, and chemical use — and thereby strengthens preventive measures at both national and EU level.

Finally, for the European Commission it should be a **high priority** to actively support the development of AI/ML models dedicated to pest damage assessment and prevention, and to ensure their integration into the daily operational routines of competent authorities. Embedding such digital tools into standard workflows will enable faster detection, better preparedness, and more cost-effective responses across the Union.

6.5. Trusted Data Exchange via the European Trade Indexes Registry (EUTIR)

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States):

Survey results and pest outbreak notifications shall be indexed in the European Trade Indexes Registry (EUTIR), ensuring that only Certified Service Providers may process and transmit such data. EUTIR shall provide a cross-border verification environment

for Competent Authorities, particularly in cases of pest spread across Member State borders.

Justification: Cross-border pest outbreaks require fast, reliable, and trusted data exchange between Member States. By using the **European Trade Indexes Registry (EUTIR),** the EU can ensure that only accredited and certified service providers handle sensitive pest data, thereby preventing manipulation or loss of trust. EUTIR also guarantees that outbreak notifications are indexed with secure metadata, making them tamper-proof and easily verifiable. This approach reduces duplication of reporting, ensures interoperability with other EU systems (e.g. eFTI, DPP, CBAM), and strengthens Europe's resilience in managing plant health threats.

6.6. Accreditation and Certification of Service Providers

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States) – new paragraph after (3):

Only accredited and certified service providers, recognised under an EU-wide scheme, may process, transmit, or store pest survey and outbreak notification data submitted under this Regulation. Accreditation shall be carried out by EU-recognised certification bodies, and certification status (active, suspended, revoked) shall be synchronised in real time with the European Trade Indexes Registry (EUTIR).

Justification: The handling of pest survey and outbreak data requires the highest level of trust and security, given its direct implications for trade, food security, and cross-border plant health protection. By requiring accreditation and certification of service providers under a harmonised EU framework, the Draft Regulation ensures technical reliability, legal compliance, and interoperability across Member States. Real-time synchronisation of certification status with EUTIR prevents unaccredited or revoked providers from accessing or transmitting sensitive data. This measure also creates a clear chain of accountability, avoids duplication of certification processes, and strengthens mutual recognition of trusted platforms in international trade agreements. Ultimately, it enhances resilience, transparency, and confidence in the EU's pest management system.

6.7. Application of eIDAS 2.0 and Qualified Trust Services

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States) – new paragraph after accreditation requirements (Amendment 6):

> *Service providers processing pest survey and outbreak notification data under this Regulation shall apply the trust services framework established by Regulation (EU) 2024/1183 (eIDAS 2.0). All transmitted data shall be digitally signed using qualified electronic signatures or electronic seals, ensuring authenticity, integrity, and identification of the data originator, including in the case of IoT sensor-generated data. Where appropriate, qualified electronic delivery services shall be used for secure cross-border transmission.*

Justification: Reliability of pest survey data depends not only on accreditation of service providers but also on the technical trust framework used for data exchange. By mandating compliance with eIDAS 2.0 and the use of qualified trust services, the Draft Regulation ensures that all transmitted data is authentic, tamper-proof, and linked to a verifiable data originator. The requirement for digital signatures and electronic seals (including for IoT-generated data) prevents manipulation and strengthens accountability across Member States. Using qualified electronic delivery services guarantees secure and legally recognised cross-border data flows. This measure brings pest survey data management in line with the broader EU strategy for digital trust, cybersecurity, and interoperability, reinforcing confidence among stakeholders.

6. 8. Cybersecurity Requirements under NIS2

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States):

> *All digital systems used for the processing, transmission, and storage of pest survey data shall comply with Directive (EU) 2022/2555 (NIS2 Directive) on measures for a high common level of cybersecurity across the Union.*

Justification: Cybersecurity is a critical aspect of pest data management, as disruptions or breaches could compromise plant health surveillance, trade flows, and food security. The NIS2 Directive already establishes EU-wide rules for cybersecurity risk management and incident reporting. By explicitly requiring compliance with NIS2, the Draft Regulation ensures that pest data systems meet the same high standards as other critical infrastructures. This

strengthens resilience against cyberattacks, improves incident response coordination, and creates consistency across Member States. It also reassures operators that their sensitive information is protected under the strongest possible legal and technical safeguards.

6.9. Open Data and Research Access

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States) – add new paragraph:

> *After appropriate pseudonymisation and anonymisation, pest survey results shall be made available through EU open data platforms to support scientific research, innovation, and public awareness, while ensuring full compliance with data protection obligations.*

Justification: Making anonymised pest survey data openly available supports the EU's goals of transparency, scientific excellence, and innovation. Researchers, universities, and technology developers can use such datasets to develop predictive models, new monitoring tools, and sustainable pest control methods. This measure maximises the value of the data already collected by Member States, avoids duplication of effort, and ensures that the EU remains at the forefront of digital plant health research. At the same time, the explicit reference to pseudonymisation and anonymisation guarantees compliance with GDPR and protects sensitive information.

6.10. Use of EORI, LEI and vLEI for Operator Identification

Proposed Legal Text, Draft Regulation, Article 11 (Annual reporting by Member States) – add new paragraph:

> *All operators and service providers involved in pest survey reporting and outbreak notifications shall be identified using the Economic Operators Registration and Identification number (EORI) and, where applicable, the Legal Entity Identifier (LEI) or verifiable Legal Entity Identifier (vLEI). Competent Authorities shall ensure that such identifiers are included in reporting templates and are interoperable with the European Trade Indexes Registry (EUTIR).*

Justification: Accurate and trusted identification of operators is essential for reliable pest survey reporting and cross-border data exchange. By requiring the use of **EORI**, the Regulation ensures consistency with existing customs and trade systems, facilitating traceability in the movement of plants and goods. The inclusion of **LEI and vLEI** provides a globally recognised standard for legal entity identification, with vLEI offering verifiable, cryptographically secure credentials in line with the EU's digital identity framework. This combination strengthens trust in the reporting process, prevents fraud, and ensures that data can be linked unambiguously to responsible operators. Integrating these identifiers with **EUTIR** creates a seamless chain of accountability and supports interoperability with financial, trade, and regulatory datasets at both EU and international levels.

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 CEFACT, 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/

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