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Traceability Glossary

A

Aggregation
The process of combining discrete units or batches.

Application Identifier (AI)
An Application Identifier is a number at the beginning of a string of data that identifies the intended interpretation of the data that follows. It also identifies the size of the data.

API
Application Programming Interface (API) is a set of definitions and protocols to build and integrate application software.

Audit Trail
A chronological record of activities, transactions, and changes in the supply chain, providing transparency and accountability for traceability purposes

Automatic Identification and Data Capture (AIDC)
A technology used to capture data automatically. AIDC technologies include barcodes, smart cards, biometrics, and radio frequency identification devices.

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B

Barcode
A visual representation of data that is readable by a barcode scanner, used to identify and track products in the supply chain.

Batch (aka lot)
Individual products are often produced simultaneously in a process (as a batch) rather than individually. A batch number helps a manufacturer identify when, where, and how a set of products were produced.

Batch-level or Lot-level data
Granular information pertaining to a defined quantity of a material or product that is processed together.

Batch Traceability
Ability to track information about a group of products (referred to as batch) that have similar attributes.

Bill of Lading
A document detailing the type, quantity, and destination of a product shipment. The bill of lading serves as a contract between the shipping party and the transporter. It also serves as a receipt of shipment when the shipment is delivered to the receiving party.

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B

Bill of Material (BOM)

A list of the raw materials and components, plus the quantities of each, needed to manufacture a product.

C

Catch Documentation and Traceability (CDT)

Catch Documentation and Traceability (CDT) is the practice of documenting key information about the harvest, processing, and transportation of a fisheries product to enable traceability of the seafood product back through each step of its journey - from its import or point of final sale back to its harvest and point of origin.

Certificate

A document certifying that one has fulfilled the requirements of and may practice in a field.

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Certificate of Origin (aka declaration of origin)

A document widely used in international trade transactions which attests that the product listed therein has met certain criteria to be considered as originating in a particular country.

Certificate of Scope

Companies that have demonstrated the ability to comply with the relevant standard requirements by an approved certification body (CB) will be issued a scope certificate (SC). The SC means that the company is eligible to process the certified products on their list. This does not automatically mean the product you are ordering is certified unless there is a transaction certificate (TC) to accompany it.

Certificate of Transaction

Transaction Certificate (TC) is a document issued by the Certification Body that verifies the goods being shipped (or delivered) from one organization to the next conform to a given standard.

Centralized Database

A centralized database is basically a type of database that is stored, located as well as maintained at a single location only. This type of database is modified and managed from that location itself. This location is thus mainly any database system or a centralized computer system.

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Chain of Custody
This is the sequence of ownership as a product moves through a supply chain. The precision that material is tracked through a supply chain is defined by various different chain of custody models, such as certificate trading, identity preservation, mass balance, and certification.

Circular Business Model
Circular businesses are deeply involved in the product usage phase. Instead of selling physical products, they generate revenue by providing services. This often means rethinking traditional producer-consumer relationships, value creation activities, and value chain structure. Environmental and social impact benefits then complement the overall business culture and philosophy.

Circular Economy
Opposed to a linear economy where materials are extracted, used and disposed of, a circular economy keeps materials in continuous use. These loops reduce process inefficiency and prevent material leaving systems in the form of waste or pollution.

Cold Chain
Supply chain that also serves to maintain products at or below a particular temperature through refrigerated storage and transport.

Compliance
Adhering to requirements that are decreed by laws and regulations.

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Corporate Social Responsibility (CSR)

The commitment of firms to incorporate environmental, social, and governance responsibilities into their businesses and supply chains.

Critical Control Point (CCP)

A point or step within the food-production process (from raw material to finished product) at which control can be applied in order to prevent, eliminate, or reduce (to an acceptable level) a food safety hazard.

Critical Tracking Event (CTE)

A specific point a long a supply chain where certain key data elements need to be captured for the purpose of enabling traceabilit of a product. CTEs can include harvest, landing, primary processing, aggregation, packaging, shipping, receiving, and sale.

CRUD

CRUD is an acronym that comes from the world of computer programming and refers tot he four functions that are considered necessary to implement a persistent storage application: create, read, update, and delete.

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D

Data Architecture
Data architecture is composed of models, policies, rules, or standards that govern how data is stored, managed, and utilized in an information system.

Data Capture
The process of collecting and recording relevant data points associated with the movement and handling of products within the supply chain.

Data Carriers
Labels or tags containing data that are physically attached to a unit in order to pair data with a product. Data carriers can be machine-readable, such as barcodes and RFID tags, or may be human-readable, such as standard labels or both, such as hybrid labels.

Data Governance
The development, execution, and supervision of policies, programs, and practices that standardize, collect, control, protect, deliver, and enhance the value of data and information assets.

Data Synchronization
The process of maintaining the consistency and uniformity of data instances across all consuming applications and storing devices.

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Data Verification
The capacity to cross-check product or company-level information at any point in the supply chain with data supplied by other stakeholders or vetted by third parties. Data verification is critical for proving the legitimacy of the data and for preventing what might develop as traceability fraud.

Decentralized Data
The process of attaching data to a product, rather than the owner of a product, using blockchain technology.

Digital Product Passport (DPP)
A virtual record associated with an individual product, often providing information about the product's origins and environmental impact. These are designed to inform consumers about the wider impact of their purchasing decisions and also make it easier for materials to be repurposed once a product reaches the end of its life.

Digital Transformation
The term used to describe the adoption of digital technologies to improve existing efficiencies and outputs of current workflows, production processes, and communications in any organization. This is often by replacing legacy non-digital methods.

Digital Twin
A Digital Twin is essentially virtualization technology and enable transparency and tracking at every point of the product lifecycle.

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Digitization
The process of converting, streamlining and convergining analogue information from emails, PDFs and Excel spreadsheets into a digital format on a unified system.

Disclosure
The sharing of information by a corporation that informs its stakeholders about its actions to enable equal access to facts about the company. This might take the shape of press releases, sustainability reports, or other media.

Due Diligence
The process of auditing your supply chain to identify, mitigate, and account for potential environmental and social issues.

E

Electronic Traceability
The ability to trace the history, application or location of an entity by means of recorded identifications.

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End-of-life (EoL) Processing
In the context of manufacturing and product life cycles, this is the final stage of a product's existence. EoL processing involves the reuse, repurposing, or recycling of the components in a product.

Environmental, Social, and Corporate Governance (ESG)
A measurement that companies use to evaluate the extent to which their operations impact three core pillars of sustainability.

EPCIS Standard
GS1 Electronic Product Code Information Services (EPCIS) is an open standard which allows businesses to capture and share supply chain information about the movement and status of goods, both within their enterprise and with their business partners.

EPC
The Electronic Product Code (EPC) is designed as a universal identifier (using a idiosyncratic numerical code for each different commodity) that provides a unique identity for every physical object anywhere in the world, for all time.

ERP System
Enterprise Resource Planning (ERP) refers to a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations.

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Evidence Request

The process of contacting suppliers, either digitally or manually, to ask for information about their operations in relation to a specific risk area.

F

Fiber Forward Traceability

This refers to the bottom-up process of tracing a product from the raw material phase to the end product in real-time.

Fishery Information System (FIS)

A general term used to describe an electronic data system to collect, manage, and share fisheries information for a wide variety of uses.

Food Safety Modernization Act (FSMA)

The Food Safety Modernization Act was signed into law in 2011 and enables the Food and Drug Administration (FDA) to better protect public health by strengthening the food safety from farm to table.

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FNC1

Every GS1-128 barcode begins with the (FNC1) "Function Code One" character and an Application Identifier (AI) number. The AI defines a specific purpose for the data field after it. The combination of the AI and its data field is referred to as the element string.

Fragmentation

This refers to data that has been broken up into different formats or across different platforms, leading to inefficiencies and inaccuracies.

G

GDST

The Global Dialogue on Seafood Traceability (GDST) is an international, business-to-business platform established to advance a unified framework for interoperable seafood traceability practices.

Global Location Number (GLN)

The GS1 identification key used to identify physical locations or parties. The key comprises a GS1 Company Prefix, location reference, and check digit.

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Global Trade Item Number (GTIN)
The GS1 identification key used to identify trade items. The key comprises a GS1 Company Prefix, an item reference, and check digit.

GS1
A neutral, not-for-profit, global organization that develops and maintains the most widely used supply chain standards in the world.

GS1-128 Linear Barcode
A barcode symbology using bars and spaces in one dimension that leverages a subset of Code 128 that is used exclusively for GS1 system data structures.

GS1 Application Identifier
The field of two or more digits at the beginning of an element string that uniquely defines its format and meaning.

GS1 Company Prefix
A globally unique string of four to twelve digits assigned to an entity and used to issue GS1 identification keys. The first digits are a valid GS1 prefix, and the length must be at least one longer than the length of the GS1 prefix. The GS1 Company Prefix is issued by a GS1 Member Organization. As the GS1 Company Prefix varies in length, the issuance of a GS1 Company Prefix excludes all longer strings that start with the same digits from being issued as GS1 Company Prefixes.

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GS1 DataMatrix
GS1 implementation specification for the use of the DataMatrix.

GS1 Healthcare
A global, voluntary user group that develops standards to advance global harmonization. GS1 Healthcare consists of manufacturers, wholesalers, distributors, hospitals, and pharmacy retailers and maintains close contacts with regulatory agencies and trade organizations worldwide. It drives the development of GS1 standards and solutions to meet the needs of the global healthcare industry and promotes the effective use and implementation of global standards for the industry.

H

Hard Technology
This refers to asset-intensive, physical, science-based technology, including innovations that integrate into existing production systems.

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Integrated Hardware Traceability
Includes bar codes, readers, RFID tags, and scanners to record information related to products for traceability purposes. Integrated systems typically dovetail with a company's computer systems, such as financial, information technology, and inventory management systems.

Internal Traceability
The ability of a company to both track and preserve information about individual batches or units as they move through its facility. The tracking and data preservation must exist throughout all internal processes, such as when a batch or unit is aggregated, disaggregated, transformed, transported or otherwise altered.

Interoperability
The ability of different systems, devices, applications or products to connect and communicate in a coordinate way, without effort from the end user.

Inventory
The physical amount of products on hand and available for sale.

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IIoT

The Industrial Internet of Things (IIoT) is a network of connected devices in the industrial sector. It is a subset of the Internet of Things IoT. The defining characteristic of connected devices on IIoT networks is that they transfer data without human-to-human or human-to-computer interaction.

IoT

The Internet of Things (IoT) describes the network of physical objects - "things" - that are embedded with sensors, software, and other technologies for the purpose fo connecting and exchanging data with other devices and systems over the internet.

ISO

International Organization for Standardization (ISO) is an independent, non-governmental, international organization that develops standards to ensure the quality, safety, and efficiency of products, services, and systems.

K

KDE - Key Data Element

Key Data Element (KDE) also referred to as Critical Data Element (CDE) can be defined as elements with material impact on your organization's business operations, decisions, and other data demands i.e regulartory, compliance, and market demands.

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L

Life Cycle Assessment (LCA)
A methodology for assessing environmental impacts associated with all the stages of a product's life, from manufacturing to disposal.

Legislation
Laws and regulations made by a government that businesses must adhere to.

Logistics
A management process of coordinating and moving resources - people, materials, inventory, and equipment - from one location to storage at the desired destination.

M

Material-based Claims
This refers to any declaration made by a business relating to the materials used to manufacture their products.

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Materiality Assessment
A type of stakeholder engagement designed to obtain insight into the relevance of specific environmental, social, and governance (ESG) problems. The knowledge is most typically used to guide sustainability reporting and communication initiatives, but it is also useful in strategic planning, operational management, and capital investment choices.

Medical Device
Any instrument, apparatus, implement, machine, appliance, implant, in vitro reagent or calibrator, software, material, or other similar or related article, intended by the manufacturer to be used, alone or in combination, for human beings for any medical purpose.

Manufacturer
An entity that makes or produces drugs, pharmaceuticals, or medical devices through a process involving raw materials, components, or assemblies, usually on a large scale.

N

Node
A distinct entity in a supply chain that may be responsible for capturing, inputting, storing, or sharing data.

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P

Product
An object with a defined set of attributes or characteristics.

Product Backward Traceability
Otherwise known as top-down traceability, this refers to the process of tracking the supply chain of a product after it has been manufactured.

Product Identification
The linking of a physical product throughout a firm's operations, including when the product is disaggregated or transformed. Common practices include the use of barcodes, QR codes, physical stamps, and labels.

Product Lifecycle Management (PLM)
Organizations use this to develop new products, as well as track and share data along the entire supply chain.

Procurement
The process of purchasing goods or services and is usually in reference to business spending.

Purchase Order (PO)
This is a document issued by a brand to a supplier which indicates the styles, quantities, and prices of products they have purchased.

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Q

QR Code
A QR code (quick response code) is a type of two dimensional (2D) bar code that is used to provide easy access to online information through the digital camera on a smartphone or tablet.

R

Real-time Data
This refers to when information is collected about a material or product, in this case, it is recorded as the item moves through the value chain.

Recall
Recall or Product recall is a process of retrieving and replacing defective or unsafe consumer goods.

Regulatory Due Diligence
A comprehensive assessment of compliance with existing regulation related to social and environmental concerns.

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Reporting
The collection and presentation of information about practices to a reporting organization which ensures compliance.

Responsible Sourcing
The implementation of ethical, environmental, and socially conscious concepts into sourcing, procurement, and overall supply chain management procedures. This method assures that a buyer's and its suppliers' business is handled in a way that does not have a detrimental impact on society or the environment.

RFID
Radio Frequency Identification (RFID) refers to a wireless system comprised of two components: tags and readers. The reader is a device that has one or more antennas that emit radio waves and receive signals back from the RFID tag.

S

Scope 1 Emissions
Direct emissions from owned or controlled sources.

Scope 2 Emission
Indirect emissions from the generation of purchased energy.

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Scope 3 Emissions

All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. This includes the impact of raw material extraction, material processing, all other transportation, distribution, product use impact, waste production, and end-of-life processing.

SDG

Sustainable Development Goals (SDG) were setup in 2015 by the United Nations General Assembly (UN-GA) comprising a "blueprint to achieve a better an more sustainable future for all". It includes 17 interlinked goals to be achieved by 2030, which comprises the global challenges we face today, such as poverty, hunger, good health, quality education, gender equality, clean water, clean energy, economic growth, etc.

Self-sovereign Identity (SSI)

A means of demonstrating the unique identity of a person or entity using digital technologies to provide an individual with control of their identity. This system allows two parties to verify each other's identities without having to share specific identity documents with each other. Validation is instead provided by an external third party (usually via a decentralized blockchain).

Serial Number

A unique identifier assigned to an individual product or component that enables its traceability throughout the supply chain.

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Serial Shipping Container Code (SSCC)
The GS1 identification key used to identify logistic units. The key comprises an extension digit, GS1 Company Prefix, serial reference, and check digit.

Soft Technology
This refers to digital B2C solutions like rental and resale platforms, as well as B2B solutions like traceability software.

SQL
Structured Query Language (SQL) is a standardized programming language that is used to manage relational databases and perform various operations on the data in them.

Standardized Data
This refers to the process of establishing common identifiers so that multiple systems auditing different or overlapping issues can exchange and collate information.

Supplier
An entity with which a procurement agent has a contractual relationship for providing one or more trade items. The supplier is involved or plays a role in the buying, selling, or production of the pharmaceutical or medical device and can be a manufacturer, brand owner, wholesaler, or distributor.

Supply Chain
Series of parties that conduct processes or activities to produce and distribute material or product.

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Supply Chain Management (SCM)
Managing the flow of goods and services through a business to optimize quality, on-time delivery, and profitability.

Supply Chain Traceability
The ability to track and trace the movement of products or components throughout the supply chain, from raw materials to the end consumer.

Supply Chain Transparency
Transparency relates to the degree to which information on processes, procedures, material, and product information is disclosed in a clear, factual, neutral, and understandable manner (i.e., an audit trail).

Supply Chain Visibility
The ability to know information about the companies supplying products - specifically where they are located, what they do, how they do it, and whether their licenses and practices fall within legal limits. The focus of supply chain visibility is at the company or facility level, not at the product level.

T

Third-party Audits
Independent groups that perform on-the-ground assessments of facilities to ensure that they're working in compliance with certifications.

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Third-party Verification
The use of an outside party to check internal claims regarding sustainability progress for public disclosure.

Tier
Supply chains are commonly divided into tiers where different functions are performed to transform raw material into a finished product.

Tobacco Products Directive (TPD)
The Tobacco Products Directive aims to improve the functioning of the internal market for tobacco and related products, while ensuring a high level of health protection for European citizens.

Traceability
The ability to trace the history, application, or location of a material or product through recorded identifications.

Traceability Provider
A business or organization that offers software or hardware designed to fulfill one or more of the five core business functions of traceability.

Traceability Systems
The method used to record traceability data for products and raw materials.

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Track and Trace
The process of monitoring and recording the past and present whereabouts of a shipment as it passes through different handlers on its way to its destination through a network. Tracing refers to where the product has been, while tracking refers to where it is going next.

Transformation
Any change made to a traceable item (such as a batch or individual item) that affects its identity or characteristics. The transformation includes aggregation, disaggregation, processing, value-added activities, packing, and repacking traceable items.

Transparency
A principle of information sharing between companies and stakeholders to provide a clear understanding of the company's activities, including its environmental and social impacts.

Triple Bottom Line (TBL)
A framework that evaluates a company's performance in terms of environmental, social, and economic impact.

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U

Unique Identifier
A code or number that uniquely identifies a specific item, enabling its differentiation from other items.

UUID
A Universal Unique Identifier (UUID) is a 128-bit value used to uniquely identify an object or entity on the internet.

V

Verification
The process of ensuring that a claim, assertion, or statement is true, accurate, or compliant with relevant standards, regulations, or requirements.

Virtualization
The creation of a virtual version of something, such as a device or resource.

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