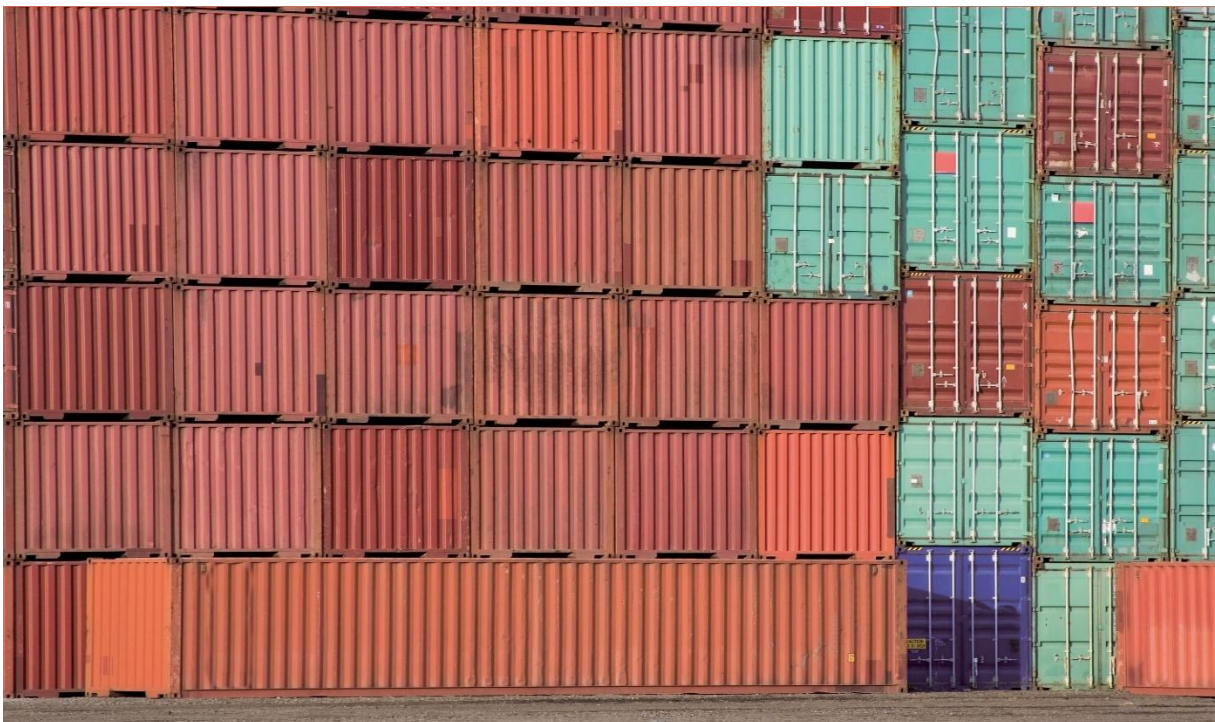


The value of using GS1 standards in Border Procedures Management



Introduction

For over 50 years, GS1 standards have played a crucial role in the global supply chain, enabling seamless communication and data exchange between businesses, industries, and countries. As consumer behavior becomes more sophisticated, with buyers researching products online or in-store, traditional supply chains are evolving into interconnected networks with the consumer at the center. These networks require open, multi-industry standards to function efficiently. GS1 standards, such as GTIN, GLN or SSCC provide a unified system for identifying and sharing different data across various stakeholders, facilitating smooth transactions and improving visibility across the entire supply chain. This approach ensures that products or parcels can be tracked, traced, and managed effectively, supporting a more efficient and transparent global trade ecosystem.

In light of the new EU Customs Reform, which introduces significant changes to the management of border procedures, GS1 standards can become an important tool in facilitating customs processes. The customs reform aims to simplify procedures and increase efficiency, especially in the context of growing cross-border e-commerce trade, and introduces a new approach to data management and supply chain monitoring.

Moreover, GS1 solutions, such as the Global Registries for GTIN and GLN, can support customs processes by enabling accurate product and location identification and easy data exchange between various stakeholders involved in international trade—from manufacturers to customs authorities. With these standards, product data can be easily verified, shared between companies and integrated with new customs systems like the EU Customs Data Hub, which will play a central role in automating and digitizing customs procedures.

By utilizing GS1 standards, e-commerce businesses will be able to streamline customs clearance processes, reducing waiting times, minimizing errors, and ensuring compliance with new regulations. Customs authorities, in turn, will gain better visibility into supply chains and respond more quickly to potential risks associated with goods crossing borders.

GS1 System of standards

GS1 is an international not-for profit association with Member Organizations in over 116 countries. GS1 is dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains globally and across sectors.

The GS1 system architecture is based on three concepts that are linked to each other:

- Standards to IDENTIFY entities in electronic information that can be stored and communicated between trading partners.

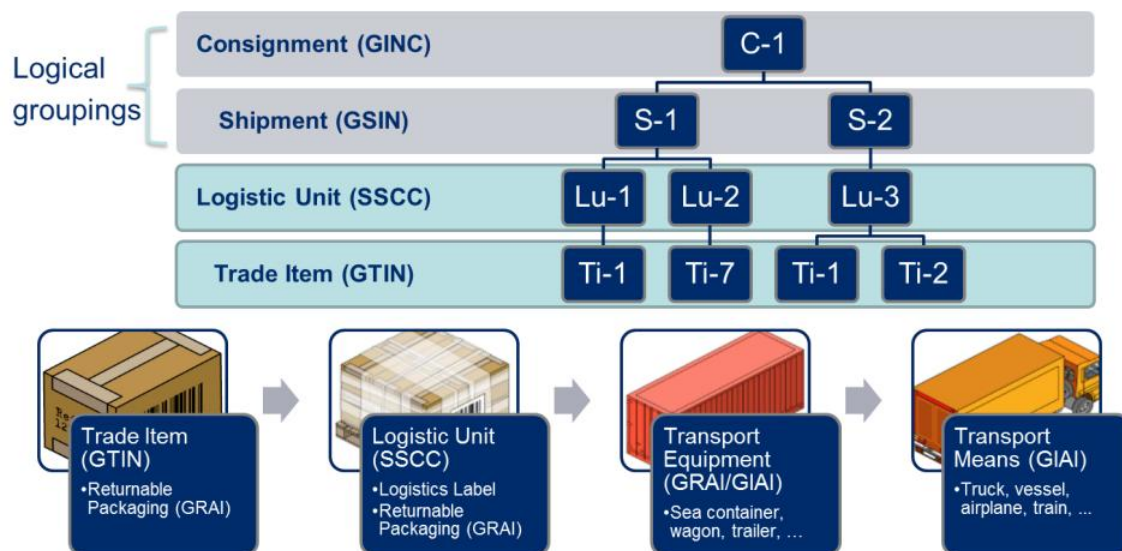
GS1 keys deliver value to companies by providing secure and portable identifiers for all entities involved in their supply chains: locations, products, cases, pallets, assets, logistics units, documents and more. And when the identification data is automatically captured and shared with trading partners, GS1 keys enable companies to seamlessly connect the physical flow of products to the products' information, leading to increased visibility of the products as they travel through the supply chain.

The global uniqueness of GS1 keys makes them especially suitable as identification and reference mechanisms in an international context, enabling interoperability across systems of importers, exporters, logistic service providers, clearing agents and customs agencies.

GS1 keys can help to enhance data quality in declarations and documentation, since they correspond with electronic records in databases that can be used to verify information. This also increases transparency and trust, which will help traders to qualify for trusted trader programs. GS1 keys also add value when tracking and inspecting goods in transport. Scanning a barcode will ease access to related information during inspection, and also will enable the efficient recording of structured data on border procedure related events to enable status monitoring.

One important aspect of the GS1 keys is that they can be used to associate objects with each other, for example which products are contained in a package, which packages are contained in a container, and which packages belong to the same shipment.

Figure 2: GS1 keys used to link objects



Global Trade Item Number (GTIN)

The GTIN is the most widely implemented GS1 standard. Companies use the GTIN to identify products in point-of-sale and order-to-cash processes. On most products traded in Retail the GTIN is present in barcoded form.

The GTIN can be used to identify types of products at any packaging level (e.g., consumer unit, inner pack, case, pallet). Groups of trade items with similar production and usage characteristics such as production batches can be further identified with the help of the batch / lot number, expiry date, and similar data elements.

Individual trade items can be uniquely identified using a GTIN plus serial number.

Value for customs



The GTIN is a globally unique product identification number that allows government to recognize and release low risk products in the supply chain. Additionally, the GTIN helps in identifying the brand owner of the product and thereby enables a monitoring capability that informs anti-counterfeiting defense programs.

The GTIN is also of vital importance for market surveillance. When customs and market surveillance authorities collaborate, it will be easy to follow up on all known instances where that same product of interest has been recently imported into the national market.

The GTIN is often present in barcode format on the product packaging. This provides authorities a reliable and fast way to confirm the identity of the product and allow follow-up action to be taken with confidence.

Value for traders and logistic service providers



When looking at the border procedure management processes of a company the GTIN can add value in compliance rules management by associating the various types of classification codes and so help companies to point to the applicable regulatory requirements.

In documentation and declaration management the GTIN can be used to unambiguously identify trade items at various packaging levels, ensuring that the goods being shipped are aligned with the goods being declared.

In tracking and inspection the GTIN can also add value, mainly in product safety related inspections such as anti-counterfeit and consumer safety. Precise communication on the exact product being inspected will greatly ease the analysis and sub-sequent action when an issue occurs.

GS1 Global Products Registry Platform

The GS1 GTIN Registry Platform can significantly enhance the efficiency of customs processes by providing reliable, standardized product data to the EU Data Hub, resulting in faster customs clearance, improved regulatory compliance, and more effective fraud prevention.

The Global Product Registry managed by GS1 currently encompasses over 600 million products and is dynamically expanding. The product data, which identifies individual products, includes seven mandatory attributes: GTIN (Global Trade Item Number), product name, brand, unit of measure, product category, country of sale, and language of description. The responsibility for entering product data into the registry lies with the manufacturer, brand owner, or importer. The registry is updated periodically, and each GTIN in the registry is assigned one of three statuses: active, inactive, or discontinued.

Global Location Number (GLN)

GLNs can be used as a standard party/location identifier by all relevant parties. The GLN is widely applied in EDI (Electronic Data Interchange) messaging because is critical to message processing. Therefore, most larger size companies and companies trading with larger size companies will have assigned GLNs to its key parties and physical locations.

Value for customs



The GLN can be used to ease the identification of importers and exporters by providing an alternative to the name and address based identification of companies. This may help to streamline declaration processes.

Customs agencies often operate in large facilities such as harbors, airports and auction premises. The GLN can be used to identify the various parties and locations at the point of entry and across the distribution chain including the point of production (which can be critical for pest management control), and when linked to electronic registries, will help ensure availability of the latest address information.

Value for traders and logistic service providers



In compliance rules management companies can benefit from GLN based identification of trading partners by linking compliance requirements and admission history to each of their recurring trading partners.

In declaration and documentation management processes GLN based identification will help to ensure that a company uses the same information as in their supply chain and logistics

processes, ensuring that the shipment information is in line with what is being declared. For LSPs that work with large numbers of shippers, the benefit of recognizing recurring shippers will have even larger benefits, since they typically do not have access to trader data in their systems. In tracking and inspection processes the GLN offers a way to unambiguously identify the physical location where production, processing, storage, and inspection events have occurred. By integrating GLN-based location data into customs systems, authorities can streamline operations, enhance compliance, and improve overall efficiency in border management.

GS1 Global Locations Registry Platform

The GS1 Registry Platform for GLNs can be used to verify the company, location or party in a global supply chain.

The GS1 Global Registry Platform for GLN can enhance customs processes by providing a standardized and reliable way to identify physical locations involved in trade and logistics.

By ensuring accurate identification of entry points such as ports, airports, and warehouses, customs agencies can reduce errors caused by inconsistent address-based data and improve the traceability of goods throughout the supply chain. This allows for better tracking and inspection, enabling customs authorities to monitor shipments from production to distribution, assess risks more effectively, and conduct targeted inspections.

Serial Shipping Container Code Unit (SSCC)

The Serial Shipping Container Code can be used by companies to identify a logistic unit, which can be any combination of trade items packaged together for storage and/ or transport purposes such as a case, pallet or parcel.

Value for customs



A declaration often contains references to the packages contained. The SSCC provides a globally unique reference number for the identification of pallets, cases, parcels, bundles etc. Customs and OGAs can use the SSCC to identify all packages belonging to a particular shipment.

Value for traders and logistic service providers



GS1 advocates the SSCC as the main key to be marked on packages, providing end-to-end visibility from origin to destination. By scanning the barcoded SSCC or reading the SSCC encoded in an EPC/Rfid tag companies and agencies can

efficiently capture the ID and access related information, such as information provided in customs declarations.

Figure 3: One label for all parties



Global Shipment Identification Number (GSIN)

The Global Shipment Identification Number (GSIN) is a number assigned by a seller and shipper of goods to identify a shipment comprised of one or more logistic units that are intended to be delivered together. The GSIN can be marked on transport labels to help identify which logistic units belong to the same shipment. Compared to its close relative, the SSCC, adoption of the GSIN by trade is still relatively low.

Value for customs



The Shipment is the key entity in customs import and export clearance processes, used as the basis for duty and fee collection, and linked to the importing and exporting trading parties. The GSIN provides a globally unique identification number, and **has been approved by ISO and officially noted by the WCO as fulfilling the requirements for the Unique Consignment Reference (UCR)**. It facilitates customs-to-customs communication to recognize one custom's export shipment as the next custom's import shipment.

Value for traders and logistic service providers



When companies are already using GTIN, GLN, and SSCC adoption of the GSIN is relatively easy. Companies will be able to benefit from increased interoperability when applying the same key in their internal systems and in their border procedure management communications.

Global Identification Number for Consignment (GINC)

The Global Identification Number for Consignment can be used by companies to identify a consignment comprised of one or more logistic units that are intended to be transported together.

Logistic units in a particular shipment may be associated with different GINCs during various transport stages; for example, when the shipment gets consolidated with other shipments during its journey, and deconsolidated again before it reaches the consignee. The GINC allows freight forwarders and transport providers to keep track of the logistic units being transported together.

The GINC can be marked on transport labels to help identify which packages belong to the same consignment.

Value for customs



To enter a customs territory, LSPs will be required to provide a manifest of all cargo contained in the truck, vessel, aircraft, railcar or barge. The GINC can be used as a uniform identification scheme encompassing the master bill-of-lading, master air way bill, etc.

Value for traders and logistic service providers



LSPs often apply proprietary or transport mode specific identification schemes for bill-of-lading, air waybills, etc. The GINC provides them with an overarching identification scheme. In this way the GINC can be used to enhance interoperability between the systems of shippers, LSPs and authorities. This will enhance the data quality in the declaration and documentation management process, such as the data in cargo manifests, enabling all parties to refer to the consignment using the same identifier. The GINC will also be present on the physical documentation that accompanies the goods in transport, and having a unique and potentially barcoded ID will enable more efficient inspection and monitoring.

Global Individual Asset Identifier (GIAI)

For the identification of transport means such as a vessel, aircraft, truck, train, often non-GS1 keys are applied, such as vessel name, license plate. Also for the identification of transport equipment such as containers, rail wagons, trailers, ULDs often other ID keys are applied.

The GIAI can be used as a uniform identification scheme to enable interoperability. In recent years the GIAI is being implemented more and more on transport equipment, to a large extent caused by the success of GS1's EPC/RFID standard.

Value for customs



Officials of customs equipped with readers or scanners may benefit from automatic identification of transport equipment, both to locate the equipment and when recording inspection results.

Value for traders and logistic service providers



The GIAI can be used in barcoded or EPC/RFID form to enable the automatic identification of containers, wagons, trailers, ULDs, etc. This can help in identifying the piece of transport equipment that needs to be inspected and so speed up procedures.

In the inspection and monitoring process companies can benefit from having access to real-time information on the movements of transport equipment, and in that way have more accurate information on the expected time of arrival, including expected arrival at inspection locations.

GS1 Traceability Standard (GTS)

Traceability is the ability to trace the history, application or location of an object [ISO 9001:2015]. When considering a product or a service, traceability can relate to:

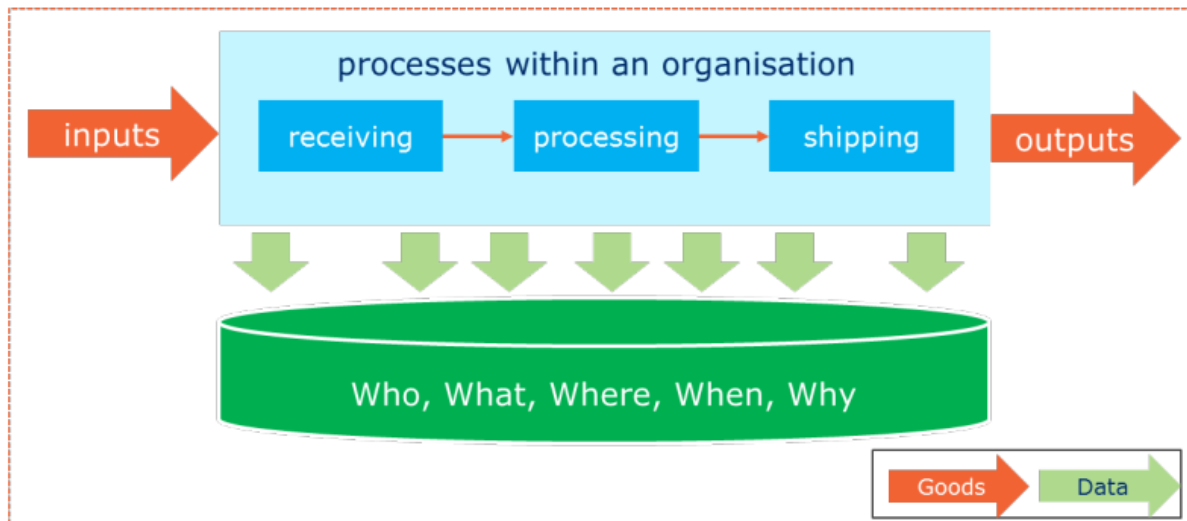
- origin of materials and parts;
- processing history;
- distribution and location of the product or service after delivery.

GS1's approach to enabling supply chain traceability is focused on the use of open standards to provide visibility of objects that are relevant to supply chains.

The objective of the GS1 Global Traceability Standard (GTS) is to assist organisations and industries in the design and implementation of traceability systems based on the GS1 system of standards.

Traceability systems are powered by traceability data. Traceability data is generated through execution of a variety of business processes carried out by each organisation.

Figure 4: Generation of traceability data - single company view

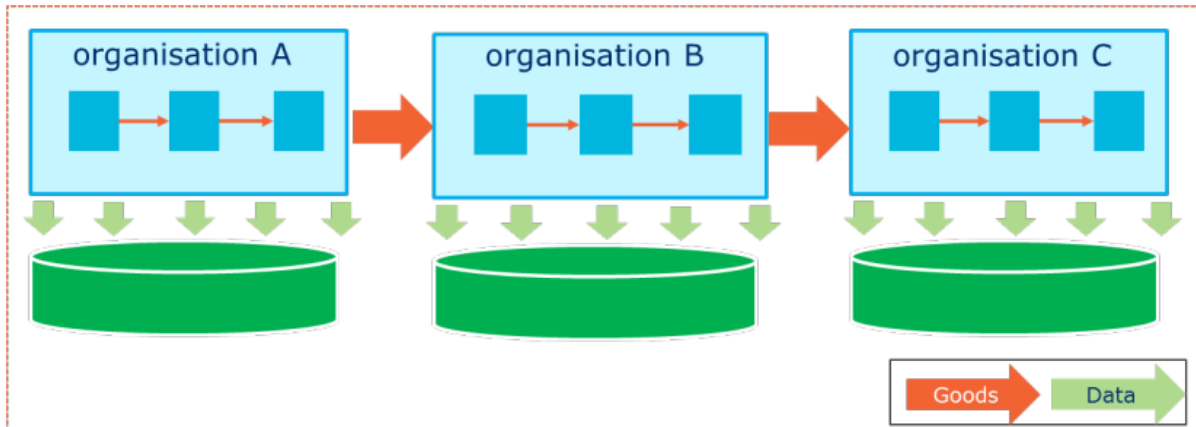


Each time a traceability-relevant process is executed in any organisation, traceability data is generated. This data provides business content to applications that use the data, and includes information that spans five important dimensions: Who, What, Where, When and Why:

- Who: Which parties are involved?
- What: What is the primary object being traced? Which related objects need to be traced?
- Where: Where did these movements or events take place?
- When: When did a movement or event that included that object occur?
- Why: What happened? What business process was happening at the time the event took place? What business transactions were taking place? Why was the object at that location at that time?

When we extend the view to a full supply chain, it becomes clear that each organisation will manage its own set of traceability data. In order to achieve end-to-end supply chain traceability, it will be necessary to access and combine data from multiple organisations.

Figure 5: Generation of traceability data - supply chain view



GS1-enabled traceability solutions provide the best path to interoperability, protect companies' investments and scale up. Greater levels of digitalisation, speed and data accuracy become possible. Each trading partner in the chain becomes free to choose the solution on the market that best meets its specific needs.

The benefits of using GS1 keys in border procedure management

Border procedure management is the process that aims to ensure companies comply with regulatory requirements of countries they are exporting to or importing from in the most cost effective manner, while following all procedures and providing the correct information to authorities.

Parties involved in Border Procedure Management can be grouped as follows:

1. Exporters such as manufacturers, traders, growers and material suppliers;
2. Importers such as retailers, distributors, manufacturers, e-commerce platforms;
3. Logistic Services Providers (LSPs) including freight forwarders, carriers, terminal/depot/warehouse operators;
4. Authorities such as customs and other government agencies.

The main custom processes, where GS1 standards can be used are:



1. Compliance Rules Management

Sub-process: Assuring Product Compliance (before product offer/listing on a platform)

Compliance Rules Management refers to the process of ensuring that products introduced to the EU market comply with legal requirements before being offered on sales platforms. This is a key component of the process.

- **Responsible parties:** AEO non-fiscal or "responsible person," depending on the situation (e.g., manufacturer, importer, representative).
- **Required Data:** This requires detailed product data, such as description, reference number, origin, quality certificates, and tariff classification.

Proposal of using GS1 standards:

- GS1 Global Registries for GTINs and GLNs.

By integrating the GS1 GTIN and GLN Global Registry with the Customs Database (eg. EU Data Hub), the responsible parties can automatically verify information about imported goods and physical locations.



2. Declaration & Documentation Management

Sub-process: Transaction – the sale of goods destined for the EU market

Declaration & Documentation Management is essential for the correct and legally compliant declaration of goods during the import process. This process involves gathering and providing all the necessary data and documents required by customs authorities for customs declarations and ensures compliance with customs and tax regulations through the appropriate submission of data to customs systems (e.g., ICS2, CDH) and adjusting customs declarations to relevant tax rules (VAT, customs duties).

- **Responsible party:** Deemed importer, carrier, as well as other entities such as customs agents.
- **Required Data:** Customs declarations, goods data (e.g., reference number, transaction value, VAT data), and documents required for handling different customs regimes (e.g., IOSS).

Proposal of using GS1 standards:

- GSIN (Global Shipment Identification Number) can be used as unique reference of the consignment (transaction/order ID)

GSIN is a number assigned by a seller or shipper (deemed importer) of goods to identify a shipment comprised of one or more logistic units that are intended to be delivered together. GSIN also meets the requirements for a Unique Consignment Reference - UCR according to the World Customs Organisation.



3. Tracking & Inspection

Sub-processes: Transport of the goods to the EU; Goods brought into the customs territory of the EU

Tracking and Inspection are processes that ensure monitoring of the transportation of goods and checking their compliance with requirements upon arrival in the EU.

- **Responsible party:** Carrier (for submitting goods to customs authorities), customs authorities (for conducting risk control and physical inspection of goods), and the designated importer upon goods' arrival in the EU.
- **Required Data:** Shipment data (e.g., carrier, consignee, route data, transport means identification) and customs declaration data (e.g., tariff classification, goods value, control status).

Proposal of using GS1 standards:

- SSCC (Serial Shipping Container Code) can be used to identify every single e-commerce parcel. SSCC could be a key tool in managing shipments in customs processes, enabling better visibility and tracking of shipments.
- GINC (Global Identification Number for Consignment) can be used as a unique reference for the consignment. GINC can be used by carrier to identify a consignment comprised of one or more logistic units that are intended to be transported together (group of SSCCs and GSINs)
- EPCIS is a traceability event messaging standard that enables supply chain visibility through sharing event data using a common language across, between and within enterprises.

Summary:

The adoption of GS1 standards in border procedure management presents a significant opportunity for enhancing the efficiency of customs operations globally. GS1 standards offer a standardized way of identifying and tracking goods, enabling seamless communication of critical data between various stakeholders involved in cross-border trade, such as exporters, importers, logistics service providers, and government agencies. By using globally recognized identifiers like the Global Trade Item Number (GTIN) and the Global Location Number (GLN), businesses can ensure compliance with customs regulations and improve the speed and accuracy of border procedures.

GS1's Global Registries, such as the GTIN and GLN, provide essential data that can be used by customs authorities to track products and verify their origin, value, and other important attributes. These identifiers help streamline the customs process by facilitating the sharing of accurate and real-time information between trading partners and authorities. This allows for faster customs clearance and more efficient risk assessment, reducing the likelihood of delays.

Given the requirements under new regulations such as: EUDR and DPP, the use of GS1's Global Registers allows EU traders to share or transfer necessary data with customs.

With the ongoing digitalization of customs processes and the introduction of the EU Customs Reform, GS1 standards can play a crucial role in simplifying the management of border procedures. The integration of the EU Data Hub allows for seamless access to information from global GS1 registries, supporting the efficient exchange of data necessary for compliance with new customs regulations. The ongoing digital transformation of border procedures promises not only to reduce paperwork and administrative costs but also to enhance global trade flows, ensuring faster and more predictable deliveries across borders.

Contact Us:

 biuro@gs1pl.org

 + 48 61 62 81 590