



Produce Traceability Initiative GLN Implementation Guide

ABOUT THIS IMPLEMENTATION GUIDANCE

Implementation guidance is generally accepted, informally standardized techniques, methods or processes that have proven themselves over time to accomplish given tasks. The idea is that with proper processes, checks and testing, a desired outcome can be delivered more effectively with fewer problems and unforeseen complications. In addition, implementation guidance can evolve to become better as improvements are discovered. The Produce Traceability Initiative (PTI) is a voluntary U.S. produce initiative. The Implementation Guidance documents are the recommendations created and agreed to by all facets of the produce industry supply chain and PTI Leadership Council.

Consent between trading partners may replace specific recommendations if the minimum traceability information requirements are met in good faith.

The creation of this document was a collaborative effort of industry, standards organizations and trade associations.

Disclaimer: Each company is individually responsible for meeting all statutory and/or regulatory requirements for their company and their products. Consult with your company’s legal counsel or compliance team (regulatory or quality) for more specific information about current statutory and regulatory requirements applicable to your company and products.

Revision History

This section itemizes the changes from the last published Implementation Guidance.

<u>Version No.</u>	<u>Date of Change</u>	<u>Changed By</u>	<u>Summary of Change</u>
Original	01/12/2024	PTI FSMA 204 GLN Working Group	Create and structure the document.



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Sector Term	GS1 Glossary Term	Definition
	Advance Ship Notice/Manifest (ASN)	An Electronic Data Interchange (EDI) transaction that provides the receiving company with advanced data on shipments to better plan workloads and receipt processing. In the implementation of the transaction, the latest the ship notice may be sent is the time of shipment. In practice, the shipping notice must arrive before the shipment. <i>*Source: All references to ASN or EDI 856 refer to X12's Supply Chain Transaction Standards. For more information refer to x12.org/products/transaction-sets</i>
	Bill of Lading	A legal document between the shipper of a particular good and the carrier detailing the type, quantity, and destination of the good being carried. The bill of lading also serves as a receipt of shipment when the good is delivered to the predetermined destination. This document must accompany the shipped goods, no matter the form of transportation, and must be signed by an authorized representative from the carrier, shipper, and receiver.
	Brand Owner	The one who owns or has legal rights to the Label/Brand.
Buyer	(See Trading Partner)	This term is used to refer to the trading partner who issues an order to the supplier. This party can be a retailer, a distributor, or a re-distributor.
	Electronic Data Interchange (EDI)	A standard format for computer-to-computer transmission of business information and transactions between trading partners, such as invoices and purchase orders.
	Global Trade Item Number® (GTIN®)	The globally unique GS1 System identification number for products and services. A GTIN may be 8, 12, 13, or 14 digits in length. The GTIN-14 has been selected for use in the PTI.
Label/Brand	(See Brand Owner)	The name or trademark connected with a product or marketer.
Location Description	GLN Attributes (can be maintained/shared in GS1 Data Hub Location or other Master Data system)	Key contact information for the location where a food is handled, specifically the business name, phone number, physical location address (or geographic coordinates), and city, state/province, and zip/postal code for domestic locations and comparable information for foreign locations, including country.
Private label/brand	(See Brand Owner)	These products typically are manufactured, packed or provided by one or more companies for offer under a brand, which is owned, by a company other than the manufacturing or producing company.

Pallet License Plate	Serial Shipping Container Code (SSCC)	The term used for the Serial Shipping Container Code. The unique identification of a logistic unit using an 18-digit data structure
Supplier	(See Trading Partner)	The trading partner who receives an order from a buyer and ships it. This party can be a grower, a distributor, or a re-distributor.
Traceability Lot Code (TLC)		A descriptor, often alphanumeric, used to uniquely identify a traceability lot within the records of the traceability lot code source. This is similar to what industry currently refers to as a 'lot' or 'lot code'. For the purposes of FSMA 204, GTIN+batch/lot number is used to represent the Traceability Lot Code. Once a TLC is assigned, it must stay the same as the food moves through the supply chain; it can only be changed if the food is transformed.
Traceability Lot Code (TLC) Source		The physical location where a food was assigned a traceability lot code. In certain situations, the Food Traceability Rule requires documentation of either the location description for the traceability lot code source or the traceability lot code source reference.
Traceability Lot Code (TLC) Source Reference		An alternative method for providing the FDA with access to the location description for the traceability lot code source. Examples of a traceability lot code source reference include but are not limited to, the FDA Food Facility Registration Number (FFRN) for the traceability lot code source or a web address that provides FDA with the location description for the traceability lot code source.
	Trading Partner	A party to transactions in the supply chain, such as a supplier (seller) or a customer (buyer).



Introduction

PURPOSE AND SCOPE

Within the Fresh Food sector, companies are focused on improving their business processes in the areas of location identification, product identification, data transport through electronic data interchange (EDI) and ecommerce applications, and the utilization of technologies like barcodes and RFID to realize efficiency benefits. This guideline helps companies in the fruit and vegetable sector and their supply chain partners to understand and share the same information about the unique identification of parties and locations using the GLN (GS1 Global Location Number).

This implementation guidance supports implementation of GLN for any business or regulatory purpose. In particular, GLN may be used to meet the requirements for the FSMA 204 data element, Traceability Lot Code (TLC) Source Reference. For more information, the [PTI FSMA 204 Implementation Guidance](#) and other documents support industry implementation and compliance.

Getting Started with the Global Location Number (GLN)

WHY SHOULD I USE A UNIQUE GLOBAL LOCATION NUMBER?

Legislation and regulations for food safety and traceability increasingly demand the identification of the producer (grower, packer, processor, etc.) and/or the supplier (distributor, trader, importer, broker, dealer, etc.). More and more trading partners, customers, certification bodies, quality organizations and government agencies want to know who is responsible for certain acts in the supply chain or the place where the operation occurred (cultivation field, greenhouse, pack shed, distribution center, loading platform, etc.).

On November 15, 2022, the US Food and Drug Administration (FDA) announced the Food Safety & Modernization Act's (FSMA) Section 204 final rule, establishing additional record keeping requirements for organizations who manufacture, process, pack or hold foods that the FDA has designated for inclusion on the [Food Traceability List \(FTL\)](#).

The FSMA 204 Food Traceability Rule requires persons who manufacture, process, pack or hold foods on the FTL to maintain and provide to their supply chain partners, Key Data Elements (KDEs) for certain Critical Tracking Events (CTEs) in the food's supply chain. This framework forms the foundation for effective and efficient tracing and clearly communicates the information that FDA needs to perform such tracing.

If you are subject to the requirements of the Rule, you must establish and maintain a traceability plan containing information which includes the following:

If you grow or raise a food on the Food Traceability List (other than eggs), a farm map showing the areas in which you grow or raise such foods. The farm map must show the location and name of each field (or other growing area) in which you grow a food on the Food Traceability List, including geographic coordinates and any other information needed to identify the location of each field or growing area. The GLN provides a standardized means of identifying field map locations.

Under [21 CFR 1.1340](#) shippers of food on the Food Traceability List (FTL) must keep and provide certain Key Data Elements (KDEs), including the **Traceability Lot Code (TLC)**, the quantity and unit of measure,




the product description, the location description for the immediate subsequent recipient, the location from which you shipped the food, the date you shipped the food, the TLC Source and/or TLC Source Reference and the reference document type and number (keep only). For additional guidance on when to transmit the TLC Source Location Description attributes versus just the TLC Source Reference, please refer to the Produce Traceability Initiative FSMA 204 Traceability Lot Code Source and Reference Guidance.

The Traceability Lot Code Source or physical location where the Traceability Lot Code was assigned and/or packed is important for FDA to ascertain the initial packing or transformation records. The Produce Traceability Initiative (PTI) recommends three ways of identifying the TLC Source Reference to assist FDA in determining the initial packing or transformation records. The three recommended TLC Source References are:

- GS1 Global Location Number (GLN),
- A URL to a website where authorized FDA personnel or representatives may enter the TLC (i.e. GTIN + Lot) into a web form or click a link to display (or receive via email) the TLC Source location information when needed.
- An FDA Facility Registration Number for the packing location

This document provides guidance to implement GLN as the TLC Source Reference solution and/or to meet location identification needs for other organizational needs. The GLN provides an optimal solution for organizations to meet the FSMA 204 reporting requirements given that it is a globally unique and interoperable identifier that can be used to identify parties and locations in a consistent, standardized manner.

 *It is important to note that the GLN is NOT the lot number. A GLN uniquely identifies a party or location while lot numbers identify a specific instance of an item(s). (See TLC above.)*

Advantages of using a GLN

The use of GS1 Global Location Numbers (GLNs) provides companies with a method of identifying parties and locations, within and outside their company, that is:

Simple

An easily defined data structure with integrity checking that facilitates processing and transmission of data.

Unique

GLNs are globally unique if used according to the GS1 GLN Allocation Rules.

Multi-sectorial

The GLN allows any party or location to be identified, regardless of its activity and where it is located throughout the world. This allows for the GLN to be used across many industry sectors.

U.S.

GLNs have been recognized by FDA as one means of establishing and providing the TLC Source Reference as part of FSMA 204 compliance. If you ship within, or to, the U.S. and choose to use the GLN for this purpose, it is important to note that its use is limited by FDA's ability to have ready access to a GLN database that returns the information per their requirements. The GS1 US Data Hub | Location tool is available and can be used for this purpose.

Global

Implemented around the world and supported by the international network of the GS1 Member Organizations covering more than 110 countries.

Referenceable

GS1 provides URL endpoints that can be used to enter the GLN and find the party or location information for the entered GLN.

The GLN is the GS1 Identification Key for used it identify parties and locations. The GLN can be used to identify any party or location where there is a need to retrieve pre-defined information to improve efficiency of communication within the supply chain to add value to those involved and consumers.

Organizations use GLNs whenever they communicate business transactions with suppliers and other trading partners outside of their organization. The GLN is used for business communications because it uniquely identifies organizations and locations across the entire supply chain with all suppliers, group purchasing organizations (GPOs), etc. Here are some more specific examples of when it is used:

- Ordering and delivering products.
- Processing supplies related order and invoicing inquiries.
- Identifying parties, locations of assets, products, and activities
- Claiming manufacturer rebates.
- Corresponding with trading partners.
- For all other standard business transactions with producers, cooperatives, suppliers, distributors, wholesalers, retailers; Identifying locations where audits have been undertaken (i.e. Food Safety, Environmental, etc.)
- GLNs are a prerequisite for electronic communication or to access information from the Global Data Synchronization Network for product master data.





FSMA 204 APPLICABLE PHYSICAL LOCATIONS

Location Where CTE occurs: Physical location where product is being harvested, cooled, manufactured, processed, packed or held such as farms, plants, distribution centers, third party storage warehouses, etc.

Receiving Location (Ship To): Location of the immediate subsequent recipient (other than a Transporter) of the food

Ship From: Location from which you shipped the food.

TLC Source: Location where a food was assigned the TLC (Traceability Lot Code) which is the product batch/lot. This can include where a product was initially packed, transformed, first land-based receiving occurred, or location in which an FTL food was received from an exempt entity. GS1 US FSMA 204 Guideline recommends that the TLC contain both the GTIN and product batch/lot.

TLC Source Reference: An alternative method for providing information about the TLC Source to the U.S. FDA. Examples include FDA Facility Registration Number, GLN or web address.

Growing Area Coordinates: The Final Rule includes requirements for farms to keep a record of fields, growing areas, or aquaculture containers as a part of their Traceability Plan. Farms that grow or raise a food on the FTL (other than shell eggs), are required to include a map of the areas where the food is grown or raised.

WHAT IS A GLOBAL LOCATION NUMBER?

The Global Location Number (GLN) is a unique 13-digit number that identifies a party (i.e., legal entity, function) or location (i.e., physical location, digital location) that has meaning within a supply chain and/or business scenario.

Between party and location identification, there are five GLN type options. These GLN types specify specifically what the GLN is identifying. The GLN type options are legal entity, function, fixed physical location, mobile physical location and digital location.

What data can be associated to a GLN and how it is used is based on what that GLN identifies. For example, a fixed physical location could have an associated name, address, and class of trade are “tied” to each unique number and are specific to only one exact and very precise location within the world while a legal entity could be operating out of multiple locations.

In relation to GLN, a party is defined as an entity that needs to be represented in a business-related transaction. A GLN identifying a party answers the question of “who” is involved within the use case. This may be a legal entity or function that defines who is transacting in a scenario.

- A **legal entity** is any business, government body, department, individual, or institution that has standing in the eyes of the law and has the capacity to enter into agreements or contracts.
 - This might be whole businesses, companies, subsidiaries or divisions, cooperative, traders, distributors, freight carriers, wholesalers, retailers, etc.
- A **function** is an organizational subdivision or department that is commonly segmented based on the specific tasks being performed.



- Functions could be specific roles based on business processes and reflected in EDI communication. (e.g., invoice issuer/recipient, payer, payee, ship-to/ship-from, message sender/receiver)
- Other examples include departments within legal entities, accounting departments, returns departments, cleaning stations, wards, etc.

GLN identifying locations are used to answer the question of “where” something has been, is, or will be. A location can be either physical or digital in nature.

- A **physical location** is a tangible place that may be represented by an address, coordinates, or other means.
 - **Fixed physical locations**, like buildings always remain in the same place.
 - Examples include a greenhouse, growing field, pack shed, packing line, particular room in a building, warehouse, warehouse gate, loading dock, delivery point, etc.
 - **Mobile physical locations**, like cargo ships and trucks, are expected to move, though still may need identified in specific situations to answer the question of “where” something is.
- A **digital location** is an electronic (non-physical) address that is used for communication between computer systems.

You can find more detailed information about the GS1 Global Location Number and how to assign GLNs at the website of GS1 (www.gs1.org/1/glnrules): [GS1 GLN Allocation Rules](#)

How do I create a GLN?

There are three (3) basic steps for creating GLNs:

1. In the U.S.: License a GS1 Company Prefix or a single GLN via the GS1 US Website.
 - GS1 US licenses a “[GS1 Company Prefix](#)” that provides the basis for generating GS1 Identification Keys, such as GLN, GTIN, and more.
 - The organization assigns and generates their own GLNs based on their GS1 Company Prefix, GS1 Standards, and GLN Management Rules.
 - It is highly suggested that no logic be put into the location reference number and that the numbers are assigned sequentially.
 - For all other countries, contact your GS1 Member Organization to assist with GLN assignment. Find your country contact at <https://gs1.org/contact>
2. When an organization generates its GLNs, they specify a predetermined set of data which defines the party or location. This data is considered the fundamental information required to allow use cases and create relationships (e.g., party/location name, address, parent company, coordinates, roles, etc.).



3. The GLN and correlated party or location data is then saved in a database, such as GS1 US Data Hub | Location, and distributed / shared among supply chain partners.

***For businesses that need to define a small number of parties/locations, individual GLNs can be licensed outside of a GS1 Company Prefix.*

Note: GS1 US offers an online tool, known as [GS1 US Data Hub® | Location](#), to assist users in developing GLNs, specify associated information, and sharing details. This tool also allows to map an internal identifier (Collaborative ID) to each GLN.

How is the GLN structured?

The GS1 GLN's have special features that ensure they are not confused with any other identification key, for example on a barcode label. The GLN has a 13-digit numeric data structure and is usually composed of:

- GS1 Company Prefix: Assigned by your local GS1 Member Organization
- Location Reference: Allocated by the company to a specific party or location.
- Check Digit: Calculated according to the standard algorithm.

The management of the GS1 GLN is carried out locally by GS1 Member Organizations established in over 110 countries. GS1 Member Organizations use their assigned prefix to allocate GS1 Company Prefixes to their member companies to enable them to create GS1 Identification Keys.

The general structure of a GLN is as follows:



Example of a GLN structure:


Example Company Name

7887 WASHINGTON VILLAGE DR STE
300
DAYTON, OH
45459-3988
United States of America

GLN (GS1 Company Prefix) assigned by
GS1 US

N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13
0	6	1	4	1	4	1	1	1	1	1	1	4



 **Note:** The example above is shown with a 7-digit GS1 Company Prefix. Companies will often have different length prefixes.

The length of the company prefix varies according to the desired numbering capacity and country. Only the complete 13-digit code is unique.

N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	N13
0	8	5	0	0	0	6	0	0	0	0	7	4

In some countries single GLNs are issued, meaning a single 13-digit GLN is issued to a company. These numbers do not have the possibility for self-assigning GLNs, but for example serve for small companies which only need one GLN to identify their business.

Where can you request a GS1 GLN?

If a company does not have an assigned GS1 GLN or GS1 Company Prefix, contact the GS1 Member Organization in your country to obtain a membership application. If a company already has a GS1 GLN or GS1 Company Prefix, the company can begin assignment now!

To get your own GLN or GS1 Company Prefix, contact your local GS1 Member Organization:

<https://gs1.org/contact>

A GS1 Company Prefix not only allows you to create your GLNs. It gives access to all the applications using GS1 Identification Keys, i.e. identification of items (e.g., GTIN for consumer or trade units (see brochure *“It all depends on the right GTIN”* or *GTIN-part of this Integrated Guideline*), services, locations, logistic units, returnable containers, etc.

Note: If your company has operations in a single location and only needs a single GLN, GS1 offers single GLN licenses for purchase. This is the most straightforward option if you only need one GLN for a single location or entity. The process is simple:

1. Visit the GS1 US website: <https://www.gs1us.org/industries-and-insights/standards/global-location-number/get-a-global-location-number>
2. Click on "Get a Global Location Number."
3. Choose the option for "Single GLN."
4. Add the Single GLN to your cart and complete the checkout process.
5. You will receive your GLN and access to the GS1 US Data Hub

Registering a GLN on GS1 US Data Hub

These are the steps to register a GLN on the GS1 US Data Hub. These are general guidelines. The specific steps may vary depending on your individual needs and subscription. If you encounter any difficulties or have questions, you can contact GS1 US for support. You will need your GS1 Company Prefix to proceed with registering your locations.

Registering a location on Data Hub:

1. To access the GS1 Data Hub go to <https://www.gs1us.org/tools/gs1-us-data-hub> and log in using your GS1 account credentials.
2. Navigate to the Location section: Click on Location in the main menu, then select Manage.
3. Create your Top Level GLN: This represents your legal entity. Click Create Location and choose the Top Level GLN option. Select the Legal Entity GLN type and ensure it's active.
4. Publish your Top Level GLN: Click Publish to make your location information visible to trading partners (optional).
5. Create a new location: Click Create Location again and choose the appropriate location type (e.g., manufacturing facility, warehouse).
6. Assign a GLN: You can either let GS1 assign a GLN or choose one from your available prefix capacity.
 1. Fill in location details: when creating a new GLN using Data Hub, You will have the choice to select a Street Address, GPS Coordinates, or a GEO Shape (circle, line, or polygon based on a series of coordinates).
 2. Publish your new location: Click Publish to make it visible to trading partners.

X New Location: Fixed Physical GLN: 0196618321382

Name 2

Address

Address Types (select at least one) *required

Street or Postal Address

GPS Coordinates

GEO Shape

GPS Coordinates

Latitude *required

Longitude *required

GeoShape

Geoshape Type *required

Select

Select the GeoShape Type to unlock this section

<https://www.gs1us.org/resources/data-hub-help-center/introduction-to-location-qln>



SHARING GLN INFORMATION WITH FDA

It is recommended that data shared with FDA should include the corporate address and physical location of the packing location or where the TLC was assigned.:

Below are two examples of how this data can be shared:

Example 1:

Ranch GLN: **1234567890123** (FDA has access to a Master Data System or GS1 US Data Hub | Location and can retrieve information linked to the GLN – include the GLN in the appropriate sortable spreadsheet under TLC Source Reference – see Resources.)

Or

Example 2:

<http://gs1us.org/gln/1234567890123> {must be registered in database that FDA can readily access}

Business Name: **Ed’s Produce Co.**

Business HQ Address: 104 Main Street, Salinas, CA 20231

Traceability Team Phone Number: **+1.888.123.4567**

Traceability Team Email: FSMA204@edsproduce.com


Physical Packing Location Address or Geocoordinates Lat/Lon: **+12345.-234234**

(Include the information in the appropriate sortable spreadsheet under TLC Source Reference – see Resources.)

Helpful Hint: Uploading and managing your physical locations in GS1 US GS1 US Data Hub| Location allows your trading partners and/or FDA to access to view and use your location data as you provide access to them. For more information visit: Add and Manage GLNs in GS1 US Data Hub

Table 1: GS1 Data Model Attributes for Location Description KDEs

Data Attributes Of Location Description	GS1 Data Model Or GS1 US Data Hub Location Attribute
Business Name	gs1:organizationName
Phone Number	gs1:telephone attribute
Physical Location Street Address or GPS Coordinates (alternative)	gs1:streetAddress gs1:GeoCoordinates or gs1:GeoShape
City	gs1:addressLocality
State/Province/Region	gs1:addressRegion
ZIP code or Postal Code	gs1:postalCode attribute
Country	gs1:addressCountry

 **Important Note:** The Location Description KDEs reflect the typical attributes that make up an address for a US based location. The definition for Location Description notes that comparable information is expected for non-US locations including the country. The GLN Data Model can accommodate the country of an address through the [gs1:addressCountry](#) attribute which accommodates a code value representing a country.

The **GLN Data Model** and **GS1 US Data Hub | Location** is flexible for accommodating both US and non-US addresses when exchanging data between trading partners.

Roles and Scenarios in the Supply Chain

Within this chapter the basic scenarios in the fruit and vegetable supply chain as well as the roles and the information flows are introduced. These basic scenarios are the reference for the subsequent chapters of this guideline.

ROLES AND ACTORS IN THE FRUIT AND VEGETABLE SUPPLY CHAIN

We distinguish different responsibilities in the fruit and vegetable supply chain, i.e. the main responsibilities are reflected in the role's, specialized responsibilities are reflected in the different actors. An organization may carry out its activities in a combination of the following roles.

The different actors in the supply chain fulfil different roles. The explanations below show the different actors that are relevant in the fresh fruit and vegetable supply chain and their activities:

Grower

The grower is primarily responsible for growing the crop but may also engage in the coordination, planning and execution of the harvesting, cooling and distribution functions.

Grower Agricultural Cooperative

An Agricultural Cooperative (a producer co-op) is a group of agricultural producers who pool resources for mutual benefit. Cooperatives can be formal membership organizations with legal entity structures, or they can be federations of independently owned businesses in a geographic location who pool and share common resources for mutual benefit, such as a common cooling facility, shared equipment, shared marketing personnel, or shared branding.

Harvester

The harvester role typically field/orchard harvests product into containers that may be used only to transfer product to the cooler/packshed or packs directly into containers which will be considered a packaged product. (See packer below.)

Cooling/Pre-Cooling

The Cooler role is primarily responsible for the rapid cooling and initial storage of the product after it leaves the packing location. Coolers also can act as distribution centers and are responsible for the logistics and distribution of the product to the next actor in the supply chain.



Packer/Initial Packer/Re-packer

As noted in Harvester, packing can occur in the field or may go to another location (e.g. packshed) for the pack/initial pack. Product may come direct from a field or orchard close to the Packer but a Packer can also receive product from an importer or another packer. After that, the packer may dispatch the product either to a cooling facility or directly to a third party, wholesaler or retailer. Packing can include cutting, trimming, etc. (e.g. bagged salad).

Shipper

The Shipper can cover many functions in the produce supply chain, but they are primarily responsible with the selling relationship with the retail or food service customer or the broker and distribution networks. The Shipper will engage with Growers, Harvesters and Coolers and coordinate the movement of the product into the supply chain. The Shipper its is worth noting will likely be the primary role in assigning a traceability lot code to a product.

Broker

A Broker for fruit and vegetables is a person or company that buys and sells products without physically handling them. While not directly implicated for compliance to FSMA 204, depending on the business relationship, Brokers can have a data capture/share role to play to ensure the flow of traceability information along the supply chain.

Wholesaler/Distributor/Terminal Market

A wholesaler/distributor/terminal market buys goods in large quantities from their suppliers or importers, and then sells smaller quantities to the next actor in the supply chain (e.g. retailers/foodservice/distributor, etc.).

Importer

The importer is a person or company that imports products into a country and sells them there. The importer may receive merchandise from an agricultural cooperative or a packer and send it to a packer, wholesaler or retailer.

Retailer/e-tailer/Foodservice

A retailer buys goods or products in large quantities from manufacturers or importers, either directly or through a wholesaler, and then sells individual items or small quantities to the general public or end user customers, usually in a shop, also called store. Retailers are at the end of the supply chain.

GLN USE BY ROLE IN THE FRUIT AND VEGETABLE SUPPLY CHAIN

As mentioned above, the Global Location Number (GLN) is the globally unique GS1 Identification Key used to identify locations as well as parties (e.g., legal entities and/or activities/roles) within a business or organizational entity. Each location/party is allocated a unique identification number. One GLN can identify different roles/functions if there is no need to distinguish it in the business process. For details on allocating a GLN to parties and locations, see section 2.2 of the [GS1 GLN Allocation Rules Standard](#).

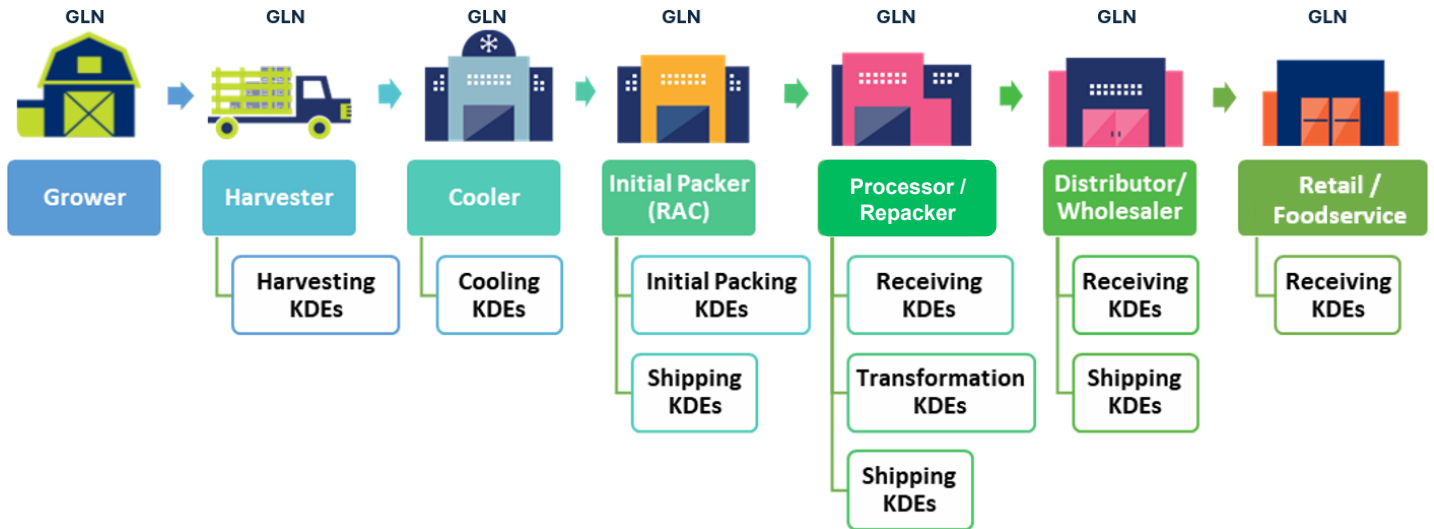


How many GLNs are needed depends on your business needs, on your role, on your position in the supply chain and the agreements with your business partners. When you are a SME in the fruit and vegetable supply chain with only 1 or 2 roles on 1 location, you can decide (and agree) that 1 GLN is enough to identify your organization. But if you want to distinguish your quality activities from your logistics activities, you might decide to use 2 or more GLNs. In a complex scenario, it is recommended that each role and activity be identified with its own GLN.

This section identifies specific use cases by role and activity and suggests best practices for GLN assignment.

Fruit and Vegetable Supply Chain

The following captures a simple supply chain including examples of typical GLN use at various points. This is not exhaustive as other points (e.g. transportation assets) can use GLN to uniquely identify those assets.



Grower

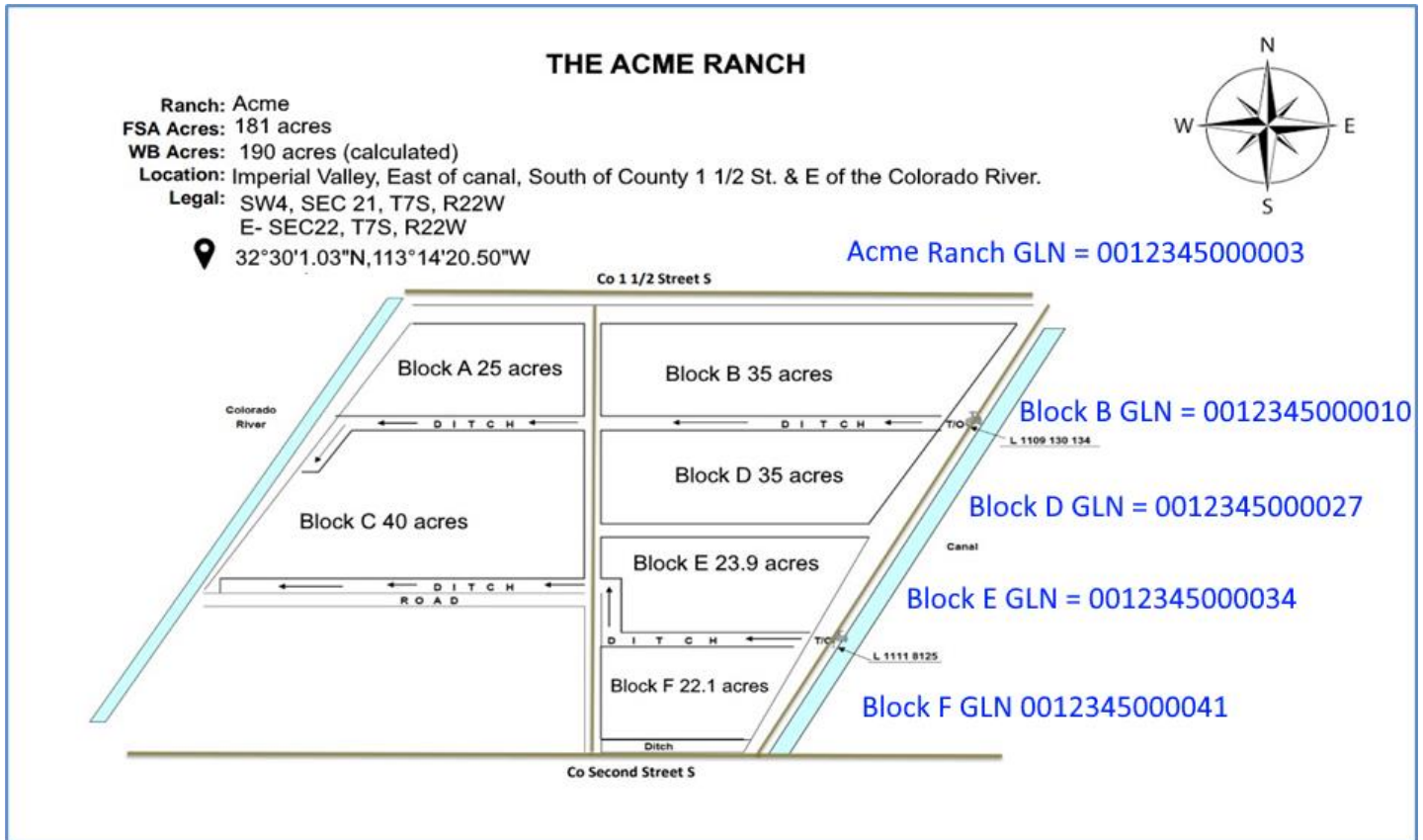
Do I assign a GLN for FSMA 204 compliance?

Yes. If you are a Grower and you either lease your land or own it outright, then GLN can be used as an option to identify a Traceability Lot Code Source and TLC Source Reference. Although growers are not subject to the Rule if they DO NOT also perform the Harvest role, the Grower could still assign GLNs to function as the TLC Source Reference. This can then be communicated to Harvesters and Shippers or other trading partners as they harvest, receive and ship the items you have grown and can be included in their record keeping in compliance with FSMA 204 for downstream critical tracking events (CTE) and GLN is one method of capturing that information.

If yes, what do I assign a GLN to?

Growers have several potential options in which to assign a GLN. Some possible scenarios might be:

1. A GLN could be assigned for a Ranch/Farm, orchard or plantation and this could be shared as a TLC Source Code Reference.
2. A GLN could be assigned at the Block level of a Ranch/Farm, orchard or plantation.
3. A Grower may decide to leverage GLN and extension to identify blocks or specific fields on Ranch/Farm as seen in the Ranch map diagram below.
4. GLN can be used as a unique reference to assist in record keeping and application of crop protection materials (e.g. pesticides), irrigation, weeding, etc.



If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

GLN can be used to denote the application of pesticides/herbicides, fertilizers, harvest readiness, water sources etc. In essence, any need for precision within the ranch can be supported by assigning GLNs to the level of location-precision required. For example, a GLN could be assigned to water sources on a Ranch/Farm, orchard or plantation to assist in water management and asset management.

Grower/Agricultural Cooperative

Do I assign a GLN for FSMA 204 compliance?

The FSMA 204 rule provides flexibility regarding what identifier a covered entity can use as a TLC source reference. GLN can be used as an option to identify a Traceability Lot Code Source and TLC Source Reference. It would be acceptable to use a GLN as the TLC source reference if the FDA can use the GLN to access the location description for the TLC source.

If yes, what do I assign a GLN to?

The traceability lot code (TLC) source is defined as the place where a food was assigned a traceability lot code. The location description of the TLC source does not have to be as precise as the location of the field where the TLC was applied. We recognize that many farms consist of a main building surrounded

by several different fields. In this situation, the address of the main building could be used for the location description of the TLC source.

The FDA must be able to access the full location description for the TLC source, including the business name, phone number, and address.

If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

An Agricultural Cooperative with its own unique GLN for a central office may choose to assign separate unique GLNs to each of its members when members of the cooperative choose to farm in different locations and assign their own lot codes. This is important so that the FDA can access the full location description for the TLC source, including the business (or farmer) name, phone number, and address.

Harvester

Do I assign a GLN for FSMA 204 compliance?

A Harvester may not need to establish their own GLNs specifically for FSMA 204 compliance, but they will need to understand and interact with GLN to meet the requirements of the Shipper(s) that employs their services and for their own record keeping responsibilities. FSMA 204 also dictates that the Harvester maintains harvesting records that include location information for the harvest location as well as the subsequent receiver. For example, a Shipper may ask a Harvester to include the GLN for the Ranch they are harvesting from for the TLC Source Reference and the destination GLN for the next recipient.

A GLN can also be assigned to the specific field, in order to share the Field Name KDE.

Food Traceability Rule: Critical Tracking Events (CTEs) and Key Data Elements (KDEs)

FDA U.S. FOOD & DRUG ADMINISTRATION

Harvesting	Cooling (before Initial Packing)	Initial Packing (RAC)	First Land-Based Receiver	Shipping	Receiving	Transformation	Traceability Plan
<p>Harvesting KDEs (Raw agricultural commodities (RACs) not obtained from a fishing vessel)</p> <ul style="list-style-type: none"> Location description for the immediate subsequent recipient (other than a transporter) of the food Commodity and, if applicable, variety of the food Quantity and unit of measure of the food Location description for the farm where the food was harvested For produce: <ul style="list-style-type: none"> Name of the field or other growing area from which the food was harvested (must correspond to the name used by the grower), or Other information identifying the harvest location at least as precisely as field or growing area name For aquacultured food: <ul style="list-style-type: none"> Name of the container (e.g., pond, pool, tank, cage) from which the food was harvested (must correspond to the container name used by the aquaculture farmer), or Other information identifying the harvest location at least as precisely as the container name Date of harvesting Reference document type and reference document number 		<p>Provide to the Initial Packer</p> <ul style="list-style-type: none"> Business name Phone number Harvesting KDEs (except the reference document type and reference document number) 					

If yes, what do I assign a GLN to?

As stated above it is unlikely a Harvester will need to assign a GLN for FSMA 204 compliance, but they need to store this information with their harvest forms including the following key data elements:



- Location description for the Immediate subsequent recipient
- Location information for the farm where the food was harvested

If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

A Harvester must manage a lot of equipment often across wide geographical areas and could leverage GLN to assist with asset tracking of harvest equipment and machinery.

Packer/Initial Packer/Re-packer

Do I assign a GLN for FSMA 204 compliance?

Yes, Initial packers and re-packers (performing a transformation which includes repacking or commingling) are required to record critical tracking events (CTEs) and their key data elements (KDE's) require tracking locations and TLC Source or TLC Source Reference. GLN is one method of capturing that information.

If yes, what do I assign a GLN to?

Initial packers are required to track the Harvest location, Field Name, Cooling location, and Initial packing location. These could all use GLN references.

Re-packers are required to track the transformation KDEs including Transformation location, this could have further GLN extensions defined to breakdown the table or equipment used to pack the product within the location.

If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

As defined above the GLN extension could further identify a more specific area of the packing facility to isolate specific equipment or tables to pack the product allowing narrowing down the scope of a recall if the root cause of the contamination was specific to a piece of equipment.

Shipper

Do I assign a GLN for FSMA 204 compliance?

Yes. As a Shipper you will perform both Shipping and Receiving critical tracking events (CTEs) and will be required to send and receive a TLC Source or TLC Source Reference from your shipping locations and GLN is one method of capturing that information.

If yes, what do I assign a GLN to?

1. A Shipper may assign a GLN to their distribution centers or cooling facilities that will be referenced as the TLC Source Reference on Receiving and Shipping CTE's. NOTE: this could also be used as the Shipping point or Ship from location.
2. A Shipper may assign a GLN to its Grower entities and may assign them as a TLC Source Reference.
3. A Shipper may also establish Ranch/Farm GLNs on behalf of its Growers.

✓ **Note:** Shippers will need to store the GLN locations for their trading partners or immediate subsequent recipients as well so they can be shared on subsequent shipments and included on Shipping CTEs


Food Traceability Rule: Critical Tracking Events (CTEs) and Key Data Elements (KDEs) FDA U.S. FOOD & DRUG ADMINISTRATION

Harvesting	Cooling (before Initial Packing)	Initial Packing (RAC)	First Land-Based Receiver	Shipping	Receiving	Transformation	Traceability Plan
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Shipping KDEs (maintain and provide)
KDEs must be linked to the traceability lot for the food

- Traceability lot code for the food
- Quantity and unit of measure of the food
- Product description for the food
- Location description for the immediate subsequent recipient (other than a transporter) of the food
- Location description for the location from which you shipped the food
- Date you shipped the food
- Location description for the traceability lot code source or the traceability lot code source reference
- Reference document type and reference document number (maintain only)

*This section does not apply to the shipment of a food that occurs before the food is initially packed (if the food is a raw agricultural commodity not obtained from a fishing vessel).



If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

For a Shipper, there are many potential cases for the use of GLN and GLN extension. Here are some examples:

- A distribution center may have a GLN assigned, and its dock doors are assigned GLN+extension.
- If the Shipper is vertically integrated, they may be the assignee for GLN for the Ranches their crop is grown on.



Broker

Do I need to assign a GLN for FSMA 204 compliance?

Brokers may need to assign a GLN to comply with FSMA 204, particularly if they are involved in Critical Tracking Events (CTEs) such as shipping, receiving, or other key supply chain activities. Although brokers typically serve as intermediaries between suppliers and buyers, their role in facilitating the movement of goods or managing supply chain data may require the identification of locations through GLNs (or another identification for Traceability Lot Code Source Reference) for enhanced traceability and transparency.

What should I assign a GLN to?

If you are a broker and need to assign a GLN for FSMA 204 compliance, GLNs can be assigned to the following:

- **Trading Partners' Locations:** When facilitating transactions between suppliers and buyers, brokers may need to capture and share GLNs for locations involved in key activities (e.g., growing, packing, shipping, receiving, or retail). This includes growers, distribution centers, retailers, and logistics providers.
- **Your Own Office or Facility Location:** If you manage shipping, storage, or oversee the handling of critical documents, assigning a GLN to your own offices or facilities can improve traceability and visibility in the supply chain. It ensures your role in the supply chain is properly documented and accounted for.

If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

GLNs can provide a range of business advantages for brokers in addition to meeting regulatory requirements:

- **Streamlined Communication with Trading Partners:** GLNs provide precise location identifiers that facilitate clearer and more efficient communication with partners throughout the supply chain. This enhances coordination of shipments, deliveries, and inventory management by accurately identifying each entity's location.
- **Improved Location Tracking:** If you operate warehouses, distribution centers, or manage third-party logistics, using GLNs for each facility or section within a warehouse can enhance tracking, audit processes, and inventory accuracy.
- **Asset Identification and Management:** GLNs can be used to track physical assets such as office locations, storage units, or parts of a warehouse, enabling brokers to manage physical and logistical assets more efficiently.

Wholesaler/Distributor/Terminal Market

Do I assign a GLN for FSMA 204 compliance?



Yes. As a wholesaler, distributor or a terminal market operator, you will perform both Receiving and Shipping critical tracking events (CTEs) and will be required to capture Ship Form and Ship To Locations KDEs - GLN is one method of capturing that information.

If yes, what do I assign a GLN to?

- You may assign a GLN to your distribution centers, warehouses or terminal market operations. Your GLN will be referenced as the TLC Source Reference if your operation transforms product (create a new item) on the FTL. The GLN can also be used as a location identifier on Receiving and Shipping CTE's as the Shipped-From or Ship-To location.

If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

For a wholesaler, distributor or a terminal market operator, there are many potential cases for the use of GLN and GLN extension. Here are some examples:

- A facility may have a GLN assigned, and its dock doors are assigned GLN+extension.
- **Streamlined Communication with Trading Partners:** GLNs provide precise location identifiers that facilitate clearer and more efficient communication with partners throughout the supply chain. This enhances coordination of shipments, deliveries, and inventory management by accurately identifying each entity's location.
- **Improved Location Tracking:** If you operate warehouses or distribution centers, using GLNs for each facility or section within a warehouse can enhance tracking, audit processes, and inventory accuracy.
- **Asset Identification and Management:** GLNs can be used to track physical assets such as office locations, storage units, or parts of a warehouse, enabling operations to manage physical and logistical assets more efficiently.

Importer

Do I assign a GLN for FSMA 204 compliance?

Yes. As an Importer you will perform both Receiving and Shipping critical tracking events (CTEs) and will be required to receive and send a TLC Source or TLC Source Reference from your receiving/shipping locations - GLN is one method of capturing that information.

If yes, what do I assign a GLN to?

4. An Importer may assign a GLN to their distribution centers or cooling facilities that will be referenced as the TLC Source Reference on Receiving and Shipping CTE's. NOTE: this could also be used as the Shipping point or Ship from location.
5. An Importer may assign a GLN to its Grower entities and may assign them as a TLC Source Reference.
6. An Importer may also establish Ranch/Farm GLNs on behalf of its Growers.

NOTE: Importers will need to store the GLN locations for their trading partners or immediate subsequent recipients as well so they can be shared on subsequent shipments and included on Shipping CTEs



If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

For an Importer, there are many potential cases for the use of GLN and GLN extension. Here are some examples:

- A distribution center may have a GLN assigned, and its dock doors are assigned GLN+extension.
- If the Importer is vertically integrated, they may be the assignee for GLN for the Ranches their crop is grown on.

Retailer/e-tailer/Foodservice

Do I need to assign a GLN for FSMA 204 compliance?

Retail and foodservice companies are required to assign GLNs (or another Traceability Lot Code Source Reference) to meet FSMA 204 traceability requirements. End users play a vital role in receiving, storing, and distributing food products, particularly those on the FDA's high-risk food list. FSMA 204 mandates traceability for these products, and retail/food service companies must document where and how food is handled within their operations. Assigning GLNs ensures compliance and strengthens traceability throughout the supply chain.

If yes, what do I assign a GLN to?

- **Receiving Locations:** Every location where food products are received from suppliers or distributors must be assigned a GLN.
- **Storage Facilities:** Any area or facility used to store food before picking, shipping or preparation must have a GLN for traceability and inventory management purposes.
- **Food Preparation Areas:** For larger foodservice chains, GLNs should also be assigned to specific food preparation or processing areas to ensure traceability from receiving to final preparation.
- **Distribution Points (if applicable):** If the company handles its own distribution, GLNs should be assigned to distribution centers or hubs.

If I use GLN for other business purposes (location or asset identification), how could GLN benefit my business and where could I use GLN?

- **Improved Traceability and Food Safety:** GLNs help track food products from suppliers to end users, ensuring faster response times during recalls and enhancing food safety efforts. This is crucial for high-risk food categories.
- **Operational Efficiency:** GLNs streamline inventory management, making it easier to track stock levels, manage orders, and ensure that all products are accounted for at every stage of the supply chain.
- **Regulatory Compliance:** Proper GLN assignment ensures compliance with FSMA 204 regulations and supports easy traceability and reporting, which reduces the risk of non-compliance and associated penalties.



Frequently Asked Questions (FAQ)

GS1 Standards make it easy to do business globally using a unique set of identification numbers for products, companies, locations, assets, logistic units or customers at any point in the supply chain. No matter where in the world a business is based or what language you use, trading partners can always understand one another using these standards. The GLN provides the global supply chain solution for identification of parties and locations.

GLNs are widely used on a daily basis by more than 1,000,000 GS1 user companies involved in a variety of business activities, including food, chemicals, electronics, banking, healthcare, retailing and do-it-yourself (DIY) sectors.

The GLN is recognized by the United Nations working party responsible for UN/EDIFACT and by the International Standard Organization (ISO 6523).

WHO IS ALREADY USING THE GLN IN THE FOOD SECTOR?

In the food sector, the GLN is used by most of the retailers, suppliers and producers; also governmental and regulatory organizations also leverage the GLN. Trade partners use the GLN in their digital information exchange.

More and more public and private Quality Control and Certification Agencies take the GLN in their applications; they allow their own identifications key is replaced by the GLN; e.g. the Dutch public Quality Control Bureau KCB (Kwaliteits-Controle-Bureau) also accepts the GLN in place of the internal KCB-number.

GLN IMPLEMENTATION IN GS1 STANDARDS

Using Global Location Numbers on barcoded labels:

The GLN can be physically marked e.g. in a GS1-128 bar code symbol, using the appropriate Application Identifier, on a given location to enable an efficient delivery and routing of goods, e.g. room in the building, warehouse, warehouse gate, loading dock, delivery point, cabinet, cabinet shelf, etc. Additionally, they can be used on logistic units for providing transport information or for identifying parties on payment slips. The bar code symbology employed for this physical marking is GS1-128, with standard prefixes identifying the role of the GLN in the particular context in which it is used.

The Application Identifiers used with the GLN have been defined as:

- "Deliver to" location AI (410)
- "Invoice to" location AI (411)
- "Purchased from" location AI (412)
- "Ship to - Deliver to - Forward to" location AI (413)
- Physical Location AI (414)
- Location Number of the Invoicing Party AI (415)



Data is associated with a Global Location Number (GLN)

GLN is a reference key for retrieving information from databases such as:

- postal address
- type of location (manufacturing centre, warehouse, sales office, corporate headquarters)
- region
- telephone, fax numbers
- contact person
- delivery requirements or restrictions
- any other fixed attributes of a business party.



ADDITIONAL RESOURCES

- [FSMA 204 Rule](#) – Additional Traceability Records for Certain Foods
- [FSMA Traceability Plan Example for Farms](#)
- [Harvester/Cooler/Initial Packer/Transformer Sortable Spreadsheet](#)
- [Receiver Sortable Spreadsheet](#)
- [Shipper Sortable Spreadsheet](#)
- [Final Distributor Sortable Spreadsheet](#)
- [Retail Store Sortable Spreadsheet](#)
- [Foodservice Operation/Restaurant Sortable Spreadsheet](#)
- [GS1 US GLN Recommendation for FSMA 204](#)
- [GS1 Member Organizations](#)
- [GS1 Global Office](#)
- [GLN-Allocation Rules](#)

[Check Digit Calculator](#)

[GS1 Identification Keys \(ID Keys\)](#)

[Global GS1 GLN Landing Page](#)

[PTI FSMA 204 Resources](#)