



The Global Language of Business

# GS1 Made Easy - Global Meat and Poultry Traceability Guideline Companion Document

*Release 1.0, Ratified, Nov 2015*

---



## Document Summary

Document Item	Current Value
Document Name	GS1 Made Easy - Global Meat and Poultry Traceability Guideline Companion Document
Document Date	Nov 2015
Document Version	1.0
Document Issue	
Document Status	Ratified
Document Description	

## Contributors

Name	Organisation
Andrew Steele	GS1 Australia
Angela Schillings-Schmitz	GS1 Germany
Carolyn Lee	GS1 Global
Craig Alan Repec	GS1 Global
Denis O'Brien	GS1 Ireland
Des Bowler	INIT Media
Diana Carrillo	GS1 France
Diana Carrillo	GS1 France
Douglas Hill	GS1 Denmark
Erik Sogard	GS1 Denmark
Gary Hartley	GS1 New Zealand
Greg Rowe	GS1 Global
Isabelle Chatagnier	GS1 France
Jim Bracken	GS1 Global
John Hall	GS1 UK
Kurt Herregodts	GS1 Belgium Luxembourg
Mark Rance	anzcofoods
Michelle Southall	GS1 US
Mike Sadiwynk	GS1 Canada
Paul Lothian	Tyson Foods
Ralph Troeger	GS1 Germany
Roxanna Saravia	GS1 Argentina
Sabine Klaesser	GS1 Germany
Silverio Paixo	GS1 Portugal
Slobodan Romac	GS1 Croatia



## Log of Changes

Release	Date of Change	Changed By	Summary of Change
0.1	17 December 2014	Jim Bracken	Post for community review
0.1	10 March 2015	Des Bowler	Update based upon community review comments
1.0	Nov 2015	D.Buckley & Des Bowler	GS1 branding updated. Text clarifications including variable measure trade item example and inclusion of AI (7003)

## Disclaimer

GS1<sup>®</sup>, under its IP Policy, seeks to avoid uncertainty regarding intellectual property claims by requiring the participants in the Work Group that developed this **GS1 Made Easy - Global Meat and Poultry Traceability Guideline Companion Document** to agree to grant to GS1 members a royalty-free licence or a RAND licence to Necessary Claims, as that term is defined in the GS1 IP Policy. Furthermore, attention is drawn to the possibility that an implementation of one or more features of this Specification may be the subject of a patent or other intellectual property right that does not involve a Necessary Claim. Any such patent or other intellectual property right is not subject to the licencing obligations of GS1. Moreover, the agreement to grant licences provided under the GS1 IP Policy does not include IP rights and any claims of third parties who were not participants in the Work Group.

Accordingly, GS1 recommends that any organisation developing an implementation designed to be in conformance with this Specification should determine whether there are any patents that may encompass a specific implementation that the organisation is developing in compliance with the Specification and whether a licence under a patent or other intellectual property right is needed. Such a determination of a need for licencing should be made in view of the details of the specific system designed by the organisation in consultation with their own patent counsel.

THIS DOCUMENT IS PROVIDED "AS IS" WITH NO WARRANTIES WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY, NONINFRINGEMENT, FITNESS FOR PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF THIS SPECIFICATION. GS1 disclaims all liability for any damages arising from use or misuse of this Standard, whether special, indirect, consequential, or compensatory damages, and including liability for infringement of any intellectual property rights, relating to use of information in or reliance upon this document.

GS1 retains the right to make changes to this document at any time, without notice. GS1 makes no warranty for the use of this document and assumes no responsibility for any errors which may appear in the document, nor does it make a commitment to update the information contained herein.

GS1 and the GS1 logo are registered trademarks of GS1 AISBL.



# Table of Contents

- 1 GS1 – An overview..... 5**
  - 1.1 What is the GS1 System?..... 5
  - 1.2 The Foundations - Identify | Capture | Share..... 5
  - 1.3 GS1 Global Traceability Standard (GTS)..... 6
  - 1.4 Who can use this document? ..... 7
  
- 2 Identify..... 7**
  - 2.1 Trade Items ..... 7
  - 2.2 Global Location Numbers (GLN) ..... 7
  - 2.3 Global Trade Item Number (GTIN) ..... 8
  - 2.4 Serial Shipping Container Code (SSCC) ..... 9
  
- 3 Capture..... 9**
  - 3.1 GS1 standards for data capture ..... 9
  - 3.2 GS1 Barcodes..... 10
    - 3.2.1 EAN/UPC barcodes ..... 10
    - 3.2.2 GS1 DataBar Barcodes ..... 11
    - 3.2.3 One-dimensional (1D) barcodes used exclusively in general distribution and logistics .... 12
    - 3.2.4 Two-dimensional (2D) Barcodes ..... 12
  - 3.3 GS1 Application Identifiers (AIs) ..... 13
  - 3.4 Variable Measure Trade Items – Packages / Containers Not Scanned in General Retail at Point-of-Sale 13
    - 3.4.1 GS1-128 Barcode ..... 13
  - 3.5 Variable Measure Trade Items Scanned in General Retail at POS..... 13
    - 3.5.1 Variable Measure Trade Items Scanned in General Retail at POS Using Restricted Circulation Numbers..... 14
    - 3.5.2 GS1 DataBar Expanded and GS1 DataBar Expanded Stacked (used for variable weight) 14
    - 3.5.3 Business benefits of using GS1 DataBar Expanded and GS1 DataBar Expanded Stacked 15
  
- 4 Share ..... 16**
  - 4.1 GS1 standards for electronic data sharing ..... 16
    - 4.1.1 GS1 eCom ..... 16
  - 4.2 Electronic Product Code Information Services (EPCIS): Enabling visibility from farm to fork.... 17
  
- A Appendix ..... 19**

## 1 GS1 – An overview

GS1 is a leading global organisation dedicated to the development and implementation of global standards and solutions to improve the efficiency and visibility of supply and demand chains, internationally and across sectors. The standard defines a traceability framework according to business processes. The GS1 System of standards is the most widely used supply chain standards system in the world and encompasses the automatic identification of:

- Products
- Locations
- Parties
- Assets
- Logistic units
- Shipments
- Document types

The GS1 System also provides solutions for service relationships order to cash transactions, the tracking and tracing of business processes and associated message standards, global synchronisation of product master data, barcoding and Radio Frequency Identification (RFID) technologies and standards.

GS1 has over 40 years of experience in developing global standards and offer a portfolio of services and solutions to support the implementation of these standards. GS1 is a vendor neutral, not-for-profit global organisation with a network of over 110 GS1 Member Organisations worldwide. GS1 only develops standards for global use and applications. The standards are open and freely available.

It is important to note that, while it is desirable for the retail sector to comply with global standards where possible, their country and region/ state regulations will always override global standards.

For more details, visit: [www.gs1.org](http://www.gs1.org)

For a glossary of terms used in the GS1 global meat and poultry traceability guideline, please click on this link: [GS1 Global Meat and Poultry Traceability Guideline, Glossary](#)

### 1.1 What is the GS1 System?

GS1 standards create a common foundation for business by uniquely identifying, accurately capturing and automatically sharing vital information about products, locations, assets and more. Businesses can also combine different GS1 standards to streamline business processes such as traceability.

The GS1 System is founded on a common set of globally recognised identification numbers called the GS1 Identification Keys, along with the ability to encode Attribute Data (e.g. Serial numbers, Best Before dates, Batch or Lot Numbers).

Identification is the foundation of the GS1 System and is communicated via a barcode, an EPC/RFID tag, via e-Messaging and/or within a network. Using identification helps to facilitate efficient management of a supply chain.

This document describes the process of Identify > Capture > Share - a practice that enables a more efficient and effective supply chain process for all stakeholders. It not only allows for the tracking and tracing of items moving through a supply chain, but also the flow of information about those items in internal systems and between trading partners. For example, the ability to know when cartons of meat products are delivered to a retailer.

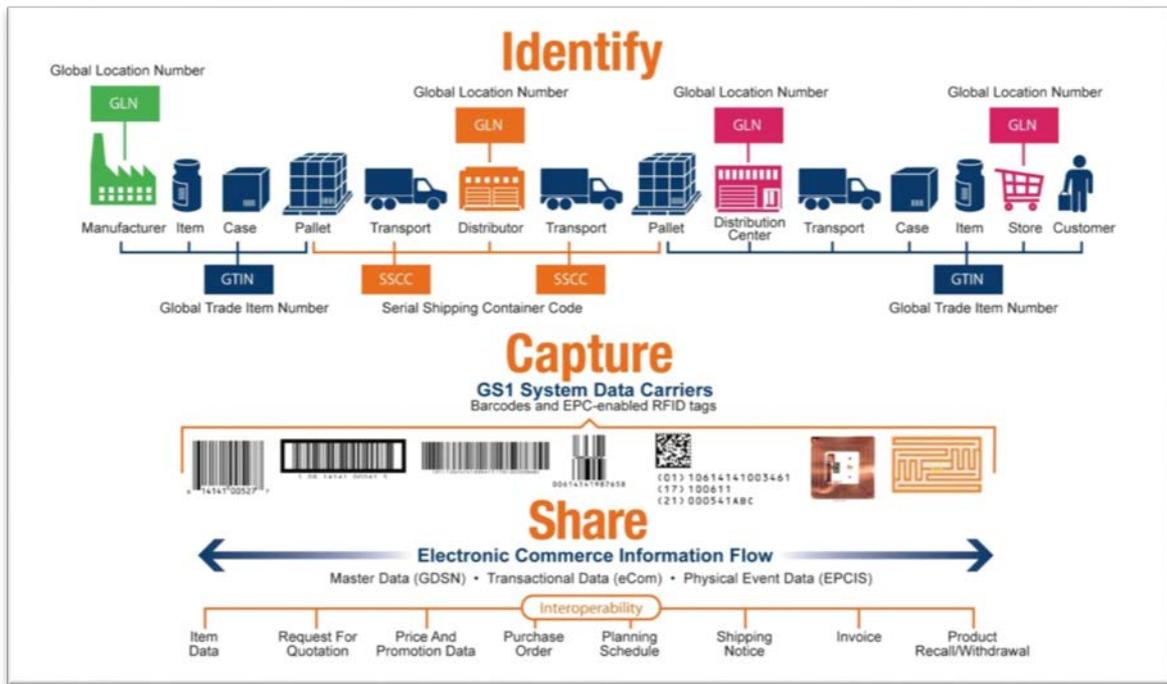
### 1.2 The Foundations - Identify | Capture | Share

The GS1 Standards are based on three key foundations as outlined in Figure 1 below:

- **Identify:** The globally unique/ globally recognisable identification of objects, items, products and locations using GS1 identification standards (i.e. unique numbering standards)

- **Capture:** Capturing the unique identification of objects, items, products and locations using automatic data capturing technologies (e.g.: barcode scanning, radio frequency identifying technologies)
- **Share:** Sharing the information about objects, items, products and locations internally within the business and with trading partners in a standardised manner using computer networks and messaging standards

**Figure 1-1** – Integrated view of the GS1 Standards (Identify, Capture and Share)



### 1.3 GS1 Global Traceability Standard (GTS)

GS1 standards are often referred to as the “*common language of business*” that provides the framework required to support the traceability business process. This industry best practice implementation guideline is based on the GS1 Global Traceability Standard (GTS) which was developed by industry for industry. The standard defines the globally accepted method for uniquely identifying the following:

- **Trading partners** – processors, value adders, distributors, wholesalers, food service operators, retails, customers (including internal), and third parties
- **Trading locations** - a trading entity or a physical/ functional location such as a warehouse, packing line, storage facility, receiving dock or store
- **Products** – that a company manufactures, produces or uses
- **Logistics units** - that company receives or ships
- **Shipments** - inbound and outbound

The GS1 Global Traceability Standard also defines the essential information that must be collected, recorded and shared to ensure what is known as “one step up, one step down” traceability. It defines minimum requirements on data needed for traceability, independent of any choice of technologies. The standard is applicable to companies of all sizes and geography.

While the GS1 Global Traceability Standard may be implemented independent of any specific technology, best business practices require the adoption of barcoding on cases/ cartons, consumer items and logistics units (e.g., pallets). Businesses are further encouraged to adopt electronic messaging to exchange essential business information.

## 1.4 Who can use this document?

This is a practical guide that is made up of several parts as well as local country annexes. The collective documents are primarily intended for those responsible for implementing traceability in their company's operations and supply chain.

These documents provide a guide for traceability practices for meat and poultry processors, value adders, distributors, wholesalers, food service operators and retailers.

## 2 Identify

### 2.1 Trade Items

A trade item is any item (product or service) upon which there is a need to retrieve pre-defined information and that may be priced, or ordered, or invoiced at any point in any supply chain. This definition covers services and products, from raw materials through to end user products, all of which may have pre-defined characteristics.

The identification and marking of trade items enables the automation of the Point-of-Sale (through Price Look Up (PLU) files), of goods receiving, inventory management, automatic reordering, sales analysis, and a wide range of other business applications.

If the item is of variable measure, the respective measure or price information will often be of critical importance to business applications. Attributes relating to trade items (e.g., dates, lot number) are also available as standardised Element Strings.

Each trade item that is different from another in design and/or content is allocated a unique identification number, which remains the same as long as it is traded. The same identification number is given to all trade items sharing key characteristics. Such numbers must be treated in their entirety throughout the supply chain.

The serialised identification of trade items, which enables total connectivity of information and communication systems (including full tradability), is achieved through the use of Application Identifier AI (01) GTIN and AI (21) Serial Number.

These keys are used to uniquely identify and distinguish items, products, logistics units, locations, assets and relationships across the supply chain, from raw materials to consumer units. GS1 identification numbers provide the link between an item or location and the information about them.

Figure 2 illustrates an example of a GS1 Identification Key represented by the numbers below the barcode. In this example, the number represents a unique identifier for an item or a product and is known as a *Global Trade Item Number* (GTIN).

Figure 2-1 Example: GTIN-13



### 2.2 Global Location Numbers (GLN)

The GLN makes possible the unique and unambiguous identification of physical locations and parties used in the supply chain. Identification in this manner is a prerequisite to efficient Electronic Commerce between trading partners (e.g., Electronic Data Interchange (EDI), electronic catalogues).

The GLN is a 13-digit number created by a GS1 Company Prefix, a Location Reference and a Check Digit.

Each company or organisation that is a member of a GS1 Member Organisation may use GLNs to identify locations under the terms of its membership.

In the meat and poultry industry, it is recommended that trading partners assign GLNs to all their physical locations in order to provide globally unique location identification for traceability processes.

To learn more about GLN assignment visit [www.gs1.org](http://www.gs1.org)

## 2.3 Global Trade Item Number (GTIN)

### What is a global trade item number?

A Global Trade Item Number (GTIN) is the globally standardised and globally unique way to identify items or products traded in the supply chain. Where there is a requirement to accurately identify, order, invoice, price or receive a product, the GTIN is used to enable this. The GTIN is part of a series of unique identifiers that are used to establish what is often referred to as a *common language of business* to support multiple business practices, including traceability.

### How is a GTIN assigned to items an organisation produces?

Ordinarily, it is the brand owner who is responsible for assigning the GTIN to an item or product. If the company is the brand owner, the first step is to approach your local GS1 member organisation and apply for a *GS1 Company Prefix*. The GS1 Company Prefix uniquely identifies an organisation globally and serves as the basis for identifying each product in the organisation's catalogue of products across all the packaging configurations. The assignment and allocation of GTINs is managed by a set of rules known as the *GTIN Allocation Rules*.

A complete list of GS1 Member Organisations is available on the GS1 global website at [www.gs1.org](http://www.gs1.org).

Figure 3 illustrates an example of the GS1 Company Prefix (9501101) (NOTE: The number of digits that comprise the company prefix varies between GS1 Member Organisations.) which makes up part of the GTIN.

**Figure 2-2** Example: GS1 Company Prefix



### General GTIN allocation rules

GS1 publishes general rules and guidance on how GTINs should be allocated by an organisation. The meat and poultry supply chain has product characteristics that are different from general grocery items and, therefore, additional GTIN allocation guidance is necessary. In addition to the general GTIN allocation guidelines, meat and poultry suppliers and brand owners should allocate GTINs in accordance with the following specific rules:

- Assign a separate GTIN for each product/item
- Assign a separate GTIN for each different packaging type such as carton-ready, tray-ready, and store-processed product
- Assign a separate GTIN for each primary refrigeration state that a product is marketed (e.g., if a product is normally marketed in both a chilled and frozen state, then assign a different GTIN to each refrigeration state)
- Assign a separate GTIN to product lots that have different marketing claims or production methods when such characteristics are an important marketing feature to buyers (e.g., free-range versus conventional poultry)

- Assign a separate GTIN for each different logistic unit (e.g., pallet) and carton/case configuration

For more information about GTIN allocation rules, visit [www.gs1.org](http://www.gs1.org)

## 2.4 Serial Shipping Container Code (SSCC)

The Serial Shipping Container Code (SSCC) is a unique identification code that can be used by companies to identify a logistic unit. An example of a logistic unit is a pallet or a combination of cases/cartons packaged together for storage and/or transport purposes. The SSCC enables track and trace options for logistics units to enable efficient order and transport management, automated delivery and receipt of goods.

The SSCC can be encoded into a Barcode ensuring the logistic unit can be accurately and easily identified as it moves between trading partners through the supply chain.

When SSCC data is exchanged electronically, it allows supply chain partners to share important information about the status of logistic units during transit and provides a reliable link to important shipment information. As the SSCC provides a unique number for the delivery of a shipment, it can also be utilised as a look-up number to provide detailed information regarding the contents of the consignment and also as part of a Despatch Advice process.

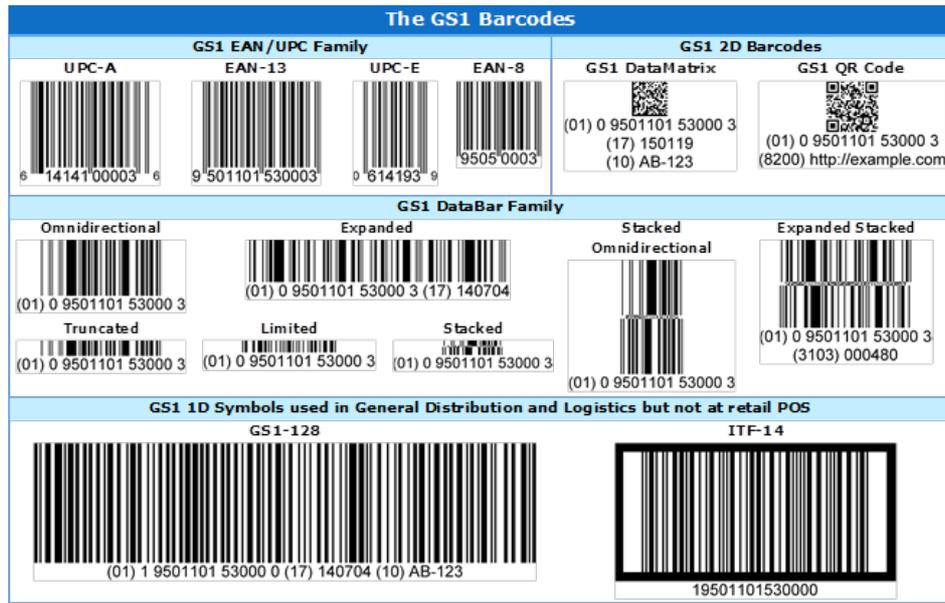
## 3 Capture

### 3.1 GS1 standards for data capture

In terms of capturing information encoded in a barcode or RFID tag, GS1 Data Carriers are used for Automatic Identification and Data Capture (AIDC) purposes. This typically involves the use of a scanning device, usually a barcode scanner or RFID reader. The encoded data is the information that identifies the item or product and is used for different business processes and trading partner requirements. While uniquely identifying the item or product at every level of packaging, the data often provides additional product information, such as batch or lot number information, allowing visibility of the item or product as it moves through the supply chain.

There are a number of standards documents that support the GS1 standards suite. This industry guideline provides an overview of the standards relevant to the sector and supporting recommendations. Reference should be made to the GS1 standards to ensure consistency with the global standards. For more information on the GS1 Architecture view: <http://www.gs1.org/architecture> or contact your local GS1 Member Organisation.

**Figure 3-1** Examples of GS1 barcodes



### 3.2 GS1 Barcodes

Barcodes are symbols that can be scanned electronically using laser or camera-based systems.

They are used to encode information such as product numbers, serial numbers and batch or lot numbers. Barcodes play a key role in supply chains, enabling parties like retailers, manufacturers, transport providers and hospitals to automatically identify and track products as they move through the supply chain.

GS1 manages several types of barcodes. Each is designed for use in a different situation.

#### 3.2.1 EAN/UPC barcodes

Instantly-recognisable, EAN/UPC barcodes are printed on virtually every consumer product in the world. They are the longest-established and most widely-used of all GS1 barcodes.

The EAN/UPC barcode family has transformed the world of retail.

**Figure 3-2** Types of EAN/UPC barcodes

EAN-13



UPC-A



EAN-8



UPC-E



### 3.2.2 GS1 DataBar Barcodes

DataBar barcodes are often used to label fresh foods. These barcodes can hold information like an item's batch or lot number, or expiry date, in addition to other attributes used at the point-of-sale such the item weight.

DataBar barcodes are often used in retail, and can be read by laser scanners.

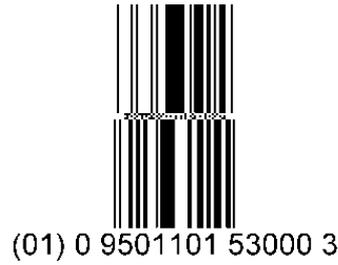
The GS1 DataBar family consists of seven symbols in total: four for use a point-of-sale and three not for use at point of sale. The symbols for use at point-of-sale are shown below.

**Figure 3-3** Types of GS1 DataBar barcodes

DataBar  
Omnidirectional



DataBar  
Stacked  
Omnidirectional



DataBar  
Expanded Stacked



DataBar  
Expanded



### 3.2.3 One-dimensional (1D) barcodes used exclusively in general distribution and logistics

GS1-128 and ITF-14 are highly versatile 1D barcodes that enable items to be tracked through global supply chains. The GS1-128 barcode can carry any of the GS1 ID keys, plus information like serial numbers, expiration dates and more. The ITF-14 barcode can only hold the Global Trade Item Number (GTIN) and is suitable for printing on corrugated materials.

Figure 3-4 Types of 1D barcodes

ITF-14



GS1-128



### 3.2.4 Two-dimensional (2D) Barcodes

Two-dimensional (2D) barcodes look like squares or rectangles that contain many small, individual dots.

A single 2D barcode can hold a significant amount of information and may remain legible even when printed at a small size or etched onto a product. 2D barcodes are used in a wide range of industries, from manufacturing and warehousing to logistics and healthcare.

### 3.3 GS1 Application Identifiers (AIs)

In some circumstances it is necessary to share, within a barcode, more detailed information about an item or product with trading partners. The GS1 identification system can provide for this requirement through the use and application of *Application Identifiers (AI)*. Examples of application identifiers typically used in the meat and poultry industry are harvest date, batch or lot number, weight and serial number, among others. A list of GS1 application identifiers relating to meat and poultry, including their content and structure, is contained in the Appendix.

### 3.4 Variable Measure Trade Items – Packages / Containers Not Scanned in General Retail at Point-of-Sale

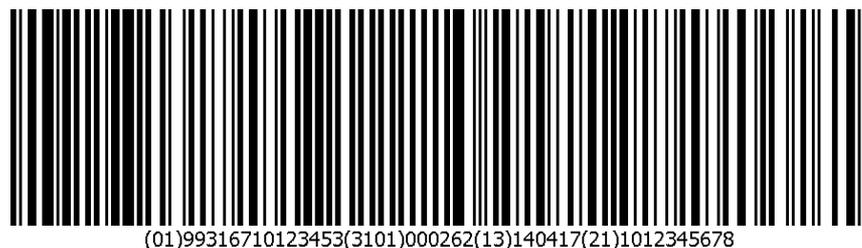
Trade items in the meat and poultry industry are often variable measure because the production process results in a wide range of weights for the same product or because the products are created to meet a special order that states a specific quantity or weight.

A trade item is considered a Variable Measure Trade Item if its measure is variable at any point in the supply chain. For example, a supplier may sell cases/cartons of meat by counts of cases/cartons and invoice by weight. Each of the cartons is likely to be a different weight. The customer, a retailer in this example, may need to know the exact number of cases/cartons in order to organise the distribution to his stores. In this example, the supplier label the trade item by using a variable measure Global Trade Item Number (GTIN) and the variable weight Element String.

#### 3.4.1 GS1-128 Barcode

The GS1 barcode used to encode product data on cartons, cases, logistic units (e.g., pallets), and reusable packaging or transport equipment (returnable assets) is called a GS1-128 barcode. Use of the GS1-128 Barcode is particularly helpful in managing the sharing of product information (including application identifiers), to enable fast and accurate tracking of inventory throughout the supply chain. The type of information that can be encoded into a GS1-128 barcode include best before date, batch or lot number, serial number and a Serial Shipping Container Code (SSCC), which adds security and sustainability to products moving through a supply chain.

**Figure 3-5** Example: GS1-128 barcode containing the unique identifier for the product and Application Identifiers (3101) – weight, (13) – packaging date (21) – serial number



### 3.5 Variable Measure Trade Items Scanned in General Retail at POS

Like a Fixed Measure Trade Item, a Variable Measure Trade Item is an entity with pre-defined characteristics, such as the nature of the product or its contents. Unlike a Fixed Measure Trade Item, a Variable Measure Trade Item has one measure (such as weight) that varies continuously while other characteristics remain the same.

Variable measure trade items that are scanned at Point-of-Sale have two main GS1 applications that are available. In some instances due to trading partners (e.g. Retailer) requirements both options may be applied to the one variable measure fresh food trade item. **Before implementation of any GS1 applications for variable measure trade items that are scanned at Point-of-Sale mutual agreement should be obtained between the trading partners.**

The two main GS1 applications for variable measure fresh food trade items are:

- Variable Measure Fresh Food Trade Items using a GTIN and additional attributes encoded with GS1 DataBar Expanded or Expanded Stacked.
- Variable Measure Trade Items using a Restricted Circulation Number (RCN) encoded with the EAN/UPC symbology family.

### 3.5.1 Variable Measure Trade Items Scanned in General Retail at POS Using Restricted Circulation Numbers

Restricted circulation Variable Measure Trade Items are those sold in random quantity against a fixed price per unit quantity and intended to cross a Point-of-Sale (e.g., meat sold at a fixed price per kilogram). These items are either marked in the store by the retailer or are marked at the source by the supplier. National solutions are available for this purpose.

Contact your GS1 Member Organisation who will assign one or several of the GS1 Prefixes 02, 20 through 29 for the identification of Variable Measure Trade Items in their territory. GS1 Member Organisations will make part of this capacity available to user companies for company internal applications.

Contract your trading partners to determine how restricted circulation Variable Measure Trade Items in general retail for POS are to be applied.

### 3.5.2 GS1 DataBar Expanded and GS1 DataBar Expanded Stacked (used for variable weight)

The GS1 DataBar Expanded and GS1 DataBar Expanded Stacked are comparable to a GS1-128 barcode as it can contain the product identifier (GTIN) as well as Attribute Identifiers (e.g. best before date, serial number, etc.). It is useful where space is limited for a product label or for variable measure and difficult-to-mark products such as loose produce. It is also the only variable data symbology accepted globally for use at retail POS systems, despite limited implementations around the world. For this reason, **GS1 advises companies to contact their trading partners before implementing and labelling products using a GS1 DataBar.**

The GS1 DataBar Expanded and GS1 DataBar Expanded Stacked provide a useful solution for meat and poultry products when moving through the meat supply chain for the following:

- Fixed weight case-ready pre-priced – allows for encoding the GTIN, price or net weight, best before date or use-by date and batch or lot number or serial number
- Fixed weight case-ready in-store priced – allows for encoding the GTIN, use-by date and batch or lot number or serial number
- Variable weight case-ready pre-priced – allows for encoding the GTIN, net weight, price, use-by date and batch or lot number or serial number
- Variable weight case-ready in-store priced – allows for encoding the GTIN, net weight, use-by date and batch or lot number or serial number



**Figure 3-7** Example: GS1 DataBar Expanded Stacked used for variable weight



### 3.5.3 Business benefits of using GS1 DataBar Expanded and GS1 DataBar Expanded Stacked

Implementation and use of GS1 DataBar Expanded and GS1 DataBar Expanded Stacked provide many business benefits including:

- **Sell-by/expiration date management:** The GS1 DataBar Expanded and GS1 DataBar Expanded Stacked permits systematic identification of product dates. A ‘stop-sale’ notification can be enacted at the POS when a product has exceeded its expiration date. Further, automated price markdowns can be enabled as a product approaches its sell-by date and stock rotation in display areas is easier to manage. The GS1 DataBar Expanded and GS1 DataBar Expanded Stacked can also bridge any differences between regional market usages.
- **Consumer buying habits:** Understanding consumer buying trends based on sell-by date can assist retailers with price markdown strategies and improved sales tracking analysis for specific producers or distributors can assist with replenishment decisions.
- **Product weight management:** The ability to encode weight into the barcode would assist with measuring profitability where weight is used for pricing.
- **Sales area identification:** The GS1 DataBar Expanded and GS1 DataBar Expanded Stacked could assist in identifying sales of the same product from different sales locations in the business e.g., fresh over-the-counter and pre-packaged.
- **Data synchronisation:** Replacing localised variable measure codes on variable weight consumer products with industry standard GTINs and using standard application identifiers to code variable attribute(s) would better align with GDSN GTIN product identification practices. Evaluation and management tools commonplace in other departments could be used.
- **Traceability:** Traceability outcomes are enhanced from point of slaughter to point of consumer sale as items can be uniquely identified and traced using common identifiers and barcodes throughout the supply chain.

## 4 Share

### 4.1 GS1 standards for electronic data sharing

Because barcodes have limited traceability information, additional information can be exchanged by means of electronic and real-time traceability methods.

#### 4.1.1 GS1 eCom

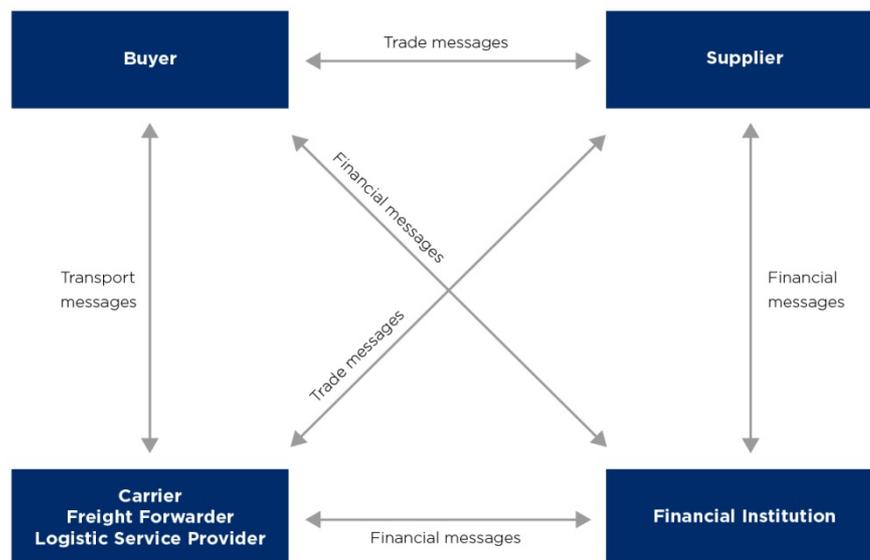
GS1 eCom provides global standards for electronic business messaging that allow automatic electronic transmission of agreed business data between trading partners. This automation ensures that the exchange is done in rapid, efficient and accurate manner.

GS1 has currently two sets of complementary eCom standards:

- GS1 EANCOM®
- GS1 XML

GS1 EANCOM® are GS1 eCom Electronic Data Interchange (EDI) standards that integrate information sent electronically with the physical flow of goods.

**Figure 4-1** GS1 eCOM data flows



For more detailed information on the GS1 eCom standards view: <http://www.gs1.org/ecom> or contact your local GS1 Organisation.

#### 4.1.1.1 Despatch Advice

The Despatch Advice (DESADV) is an electronic data file sent from a supplier to a receiver (usually a trading partner). Retailers for example, can process a DESADV to get information about a logistic unit ( e.g., a Pallet) identified using a serial shipping container code (SSCC). In turn, the SSCC could contain the following information:

- The GTIN of items loaded on the logistic unit(s)
- Serial number(s)
- Batch or lot number(s) of items/carton(s) on the logistic unit
- Number of items in the logistic unit (count)

When a shipment is received by a retailer capable of using the DESADV's, they only need to scan the SSCC of the logistic unit in the shipment rather than each carton in the shipment to get information about the entire consignment. There are standardised processes and procedures that should be complied with when DESADVs are utilised.

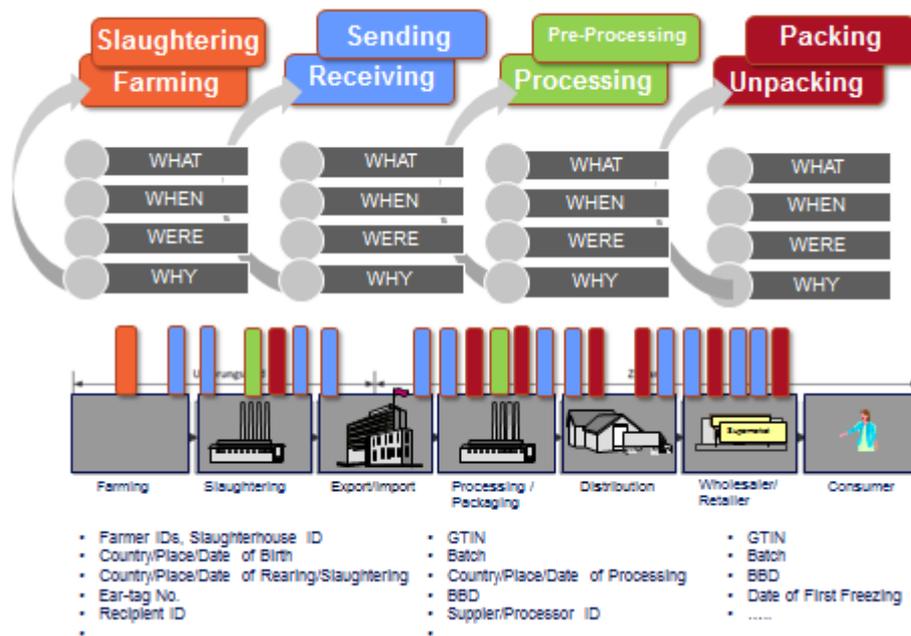
A Despatch Advice (DESADV) is a notification of pending deliveries, similar to a packing list. The Despatch Advice (DESADV) can be used to list the contents of a shipment of goods as well as additional information relating to the shipment, such as order information, product description, physical characteristics, type of packaging, markings, carrier information and configuration of goods within the transportation equipment. The Despatch Advice (DESADV) enables the sender to describe the contents and configuration of a shipment in various levels of detail and provides an ordered flexibility to convey information.

DESADV is the related GS1 EANCOM message; in GS1 XML the related message calls Despatch Advice. (Note: In the U.S. the ANSI X.12 message ASN (Advanced Shipping Notice) is used for these purposes).

## 4.2 Electronic Product Code Information Services (EPCIS): Enabling visibility from farm to fork

EPCIS is GS1' emerging data exchange standard which provides the visibility required to improve business processes, comply with regulations, increase consumer safety and fulfil customer demands. This is due to the fact that EPCIS can be utilised to capture and share information on all relevant business processes of the meat value chain such as slaughtering, processing, packing and receiving – batch or lot number based as well as for serialised products, as illustrated in the following figure:

Figure 4-2 EPCIS Event Dimensions with dynamic data



Taking the example of a slaughtering process, EPCIS event data documents the specific animal which was slaughtered (what), the date and time of slaughter (when), the business step “slaughtering” (why), and the location of the slaughterhouse (where).

EPCIS defines interfaces for sharing visibility event data - with other supply chain stakeholders. EPCIS is complemented by its companion standard, the Core Business Vocabulary (CBV), which defines data values for a broad set of business processes and scenarios. This vocabulary is used to populate EPCIS events, ensuring that all trading partners have a common and consistent understanding of the business meaning of that information. EPCIS works well with all GS1

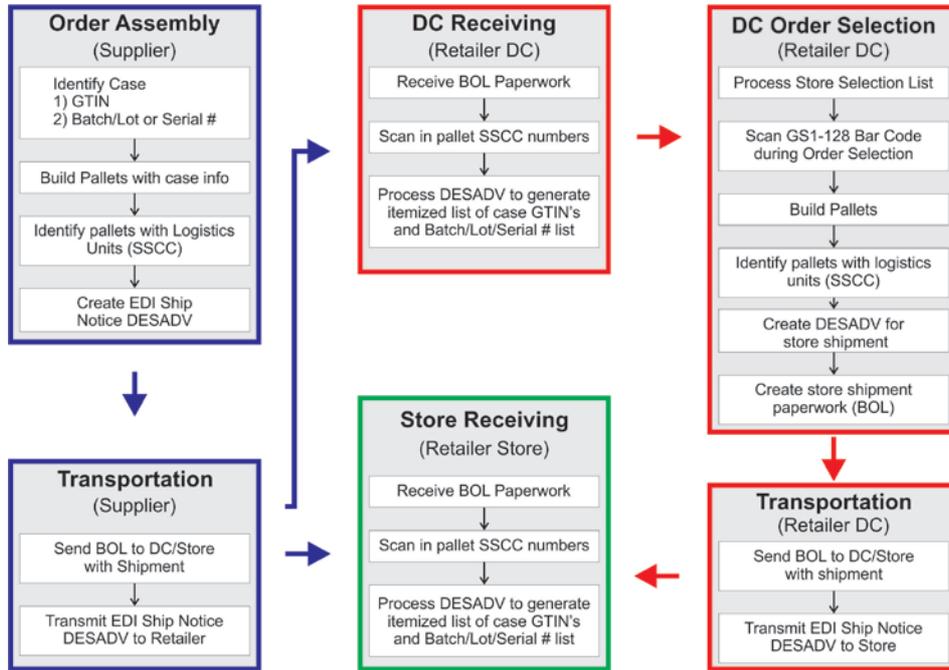
identification keys (GTIN, in combination with batch or lot number, or Serialised Global Trade Item Number (SGTIN)), regardless of whether they are encoded in GS1 barcodes or on EPC/RFID tags.

It is vital to comprehend that EPCIS can be leveraged regardless of data carrier and existing information systems. Equally importantly, there are market solutions available, usually including web-based user interfaces or easy-to-implement web services, which serve as a convenient platform for EPCIS-based traceability. For instance, even very small companies in the meat value chain do not require more than a web browser to exchange visibility event data with their trading partners. Usually, these cloud-based traceability platforms also offer an effective access rights management in order to ensure full data ownership.

For more Information view: <http://www.gs1.org/gsmc/kc/epcglobal/epcis> or contact your local GS1 Organisation.

## A Appendix

### Best practices for case level traceability:



### GS1 Application Identifiers relating to meat and poultry:

(For a full list of GS1 Application Identifiers visit [www.gs1.org](http://www.gs1.org))

All GS1 Application Identifiers indicated with (FNC1) are defined as of variable length and shall be delimited unless this Element String is the last one to be encoded in the symbol.

AI	Data Content	Format*	FNC1 Required
00	SSCC (Serial Shipping Container Code)	N2+N18	
01	Global Trade Item Number (GTIN)	N2+N14	
02	GTIN of Contained Trade Items	N2+N14	
10	Batch or lot number	N2+X..20	(FNC1)
11 (**)	Production date (YYMMDD)	N2+N6	
13 (**)	Packaging date (YYMMDD)	N2+N6	
15 (**)	Best before date (YYMMDD)	N2+N6	
17 (**)	Expiration date (YYMMDD)	N2+N6	
21	Serial Number	N2+X..20	(FNC1)
251	Reference to Source Entity	N3+X..30	(FNC1)
254	GLN extension component	N3+X..20	(FNC1)
30	Count of items (variable measure trade item)	N2+N..8	(FNC1)
310 (***)	Net weight, kilograms (variable measure trade item)	N4+N6	
320 (***)	Net weight, pounds (variable measure trade item)	N4+N6	

AI	Data Content	Format*	FNC1 Required
330 (***)	Logistic weight, kilograms	N4+N6	
37	Count of Trade Items	N2+N..8	(FNC1)
390 (***)	Applicable amount payable, local currency	N4+N..15	(FNC1)
391 (***)	Applicable amount payable with ISO currency code	N4+N3+N..15	(FNC1)
392 (***)	Applicable amount payable, single monetary area (variable measure trade item)	N4+N..15	(FNC1)
393 (***)	Applicable amount payable with iso currency code (variable measure trade item)	N4+N3+N..15	(FNC1)
410	Ship to - deliver to global location number	N3+N13	
411	Bill to - invoice to global location number	N3+N13	
412	Purchased from global location number	N3+N13	
413	Ship for - deliver for - forward to global location number	N3+N13	
414	Identification of a physical location - global location number	N3+N13	
415	Global location number of the invoicing party	N3+N13	
422	Country of origin of a trade item	N3+N3	(FNC1)
423	Country of initial processing	N3+N3+N..12	(FNC1)
424	Country of processing	N3+N3	(FNC1)
425	Country of disassembly	N3+N3	(FNC1)
426	Country covering full process chain	N3+N3	(FNC1)
7002	UN/ECE Meat Carcasses and Cuts Classification	N4+X..30	(FNC1)
7003	Expiration Date and Time	N4+N10	(FNC1)
7006	First Freeze Date	N4+N6	(FNC1)
7007	Harvest Date (for meat and poultry this can be the Date of Slaughtering)	N4+N6..12	(FNC1)

(\*\*): If only year and month are available, DD must be filled with two zeroes.

(\*\*\*): The fourth digit of this GS1 Application Identifier indicates the implied decimal point position.

Example:

□ 3100 Net weight in kg without a decimal point

3102 Net weight in kg with two decimal points