EU Meat and Poultry Traceability Implementation Guideline

Physical Product and Information Flow

Release 0.9, Draft for Ratification, 26 June 2015
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Partners involved in the development of this document

GS1 in Europe

GS1 in Europe is a collaboration of 46 GS1 Member Organisations and leads the creation and implementation of harmonised, user-driven solutions for improving the supply and demand chains of European companies. Further information on GS1 in Europe and the activities in the area of fruit and vegetables can be obtained from www.gs1.eu.

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1. Introduction

The identification of the origin of feed and food ingredients and food sources is of prime importance for the protection of consumers, particularly when products are found to be faulty. Traceability facilitates the withdrawal of foods and enables consumers to be provided with targeted and accurate information concerning implicated products. (European Commission, 2007)

It is a challenge for farmers, slaughterhouses, processors, retailers and third party logistics providers (3PL) to create efficient and effective traceability of their physical products and associated data flows.

This guideline addresses the traceability needs within the European meat and poultry supply chain. It demonstrates how to apply the GS1 system in this sector so that stakeholders are able to exchange data and create a tightly connected information flow of traceability data.

The objective of this guide is to create industry recommendations that are built on the global GS1 standards whilst adhering to European legislation in the EU Member States. This guide shows how to apply the GS1 tools to create product and information visibility for end users and simplify the traceability process between food value chain participants.

There are three drivers behind the creation of this guideline:

- The EC regulatory framework which mandates tighter controls on products’ traceability pedigree.
- A requirement from industry to have clarification on how to apply the GS1 system to minimise national and intra-community divergent traceability business practices.
- To improve the availability of information to the end consumer through better supply chain management (SCM).

A priority of SCM is to protect the consumer through faster and more precise product identification and information. This is especially critical if the product needs to be withdrawn from the supply chain. The focus of the guide therefore is on the implementation of product identification and digital information exchange based on the global GS1 standards for supply chain management.

These standards have been developed by industry to optimise business practices across the open supply chain. If implemented as prescribed in this guideline, the GS1 standards will address all three drivers above. It will ensure that stakeholders in the meat and poultry sector are able to adhere to EU regulations and EU directives.

The GS1 system allows an efficient track and trace infrastructure which will provide safe, reliable and comprehensive information on the product to the partners in the supply chain as well as to the end consumer.

This guideline gives an overview of the main legal requirements applying to the meat industry. It is not exhaustive and companies in this sector are advised to make themselves aware of the full details of current legal requirements. Since the guideline is primarily related to origin labelling and traceability, further relevant requirements are described in the annex.

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1.1. Process and Regulation Disclaimer

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1.2. Intention and Focus of the document

This GS1 in Europe EU Meat and Poultry Traceability Guideline is intended to help all actors in the meat value chain, especially within the European Union, to become compliant with European Union labelling and traceability regulations as well as with customer requirements on meat and poultry. The best practices recommended are based on GS1 global standards and services for supply chain management and product identification. The document focuses on the entire meat value chain throughout the EU comprising of meat and poultry imported from third countries into the EU.

1.3. Basis of this Guideline

This European Guideline is related to the GS1 Global Meat & Poultry Guideline describing the implementation of GS1 standards in fresh meat on a global level. This series of documents deals not only with meat and poultry, but as well with all other kinds of meat products and it is not geographically restricted. It is therefore intended to be an appendix to the global guidelines. For additional information, please refer to:

- GS1 Industry Guideline – Global Meat and Poultry Traceability; Part 1. The GS1 System
- GS1 Industry Guideline – Global Meat and Poultry Traceability Companion Document
- GS1 Industry Guideline – Global Meat and Poultry Traceability, Part 5. Poultry Supply Chain
- GS1 Industry Guideline – Meat and Poultry Glossary

1.4. Who can use this Document?

This practical guide addresses those responsible for implementing legal or customer requirements related to meat and poultry labelling or traceability as well as GS1 standards in their company’s operations and across company supply chains. The document provides a guide for slaughterhouses, cutting and processing plants, importing / exporting companies and distributors as well as wholesalers, retailers and food service companies. Individual organisations may perform any combination of these roles. As this implementation guide cannot address all target market legal and regulatory requirements, the party responsible for fulfilling labelling and traceability requirements should be acquainted with and consider additional requirements, e.g. on a national level within their target markets.
1.5. Content and Scope

The purpose of this document is to describe best practice recommendations on the labelling and traceability of products in scope. They rely on identification and communication standards already implemented in the market, like the globally unique identification of products (Global Trade Item Number – GTIN) encoded in an EAN/UPC (or GS1 DataBar) symbol on a consumer unit or in a GS1-128 (or GS1 DataBar) symbol on a trade unit. Though the meat sector has been a pioneer in traceability, it is confronted with new challenges, especially with regard to legal requirements stipulated by the European Union.

Not all requirements refer to all product groups in scope. Labelling of origin or the first freezing date are, for example, just required for fresh meat without any further treatment such as seasoning. However, declaration of nutritional information or allergens in turn are mandatory for meat products and preparations.

1.5.1. In Scope

This guideline takes into consideration unprocessed fresh meat as well as meat preparations. The scope is as follows:
- The guideline is focused on fresh red meat and poultry, meat products and meat preparations for human consumption.
- The meat supply chain is considered as a whole.
- Logistic units, trade items and consumer items are considered.
- The process scenarios in the meat and poultry supply chain include:
  - Normal business (business weeks)
  - Auction business and seasonal events (e.g. turkey at Easter, goose for Christmas...)

1.5.2. Out of Scope

Out of scope of the guideline is processed meat (e.g. sausage products like sausages, ham, salami ...).

1.6. Processes and Actors in the Meat Supply Chain

A generic supply chain typically consists of manufacturers, carriers, distributors, retailers and consumers like illustrated in the following figure:

```
FARMER       TRANSPORT       MANUFACTURER       TRANSPORT       DISTRIBUTOR       TRANSPORT       DISTRIBUTION CENTRE       TRANSPORT       RETAILER       CONSUMER
```

Figure 1 – Generic Supply Chain
Broken down for the supply chain of fresh meat & poultry and meat products we get the following deeper insight including single process stages, actors, critical tracking and tracing events as well as relevant key data elements:

**Figure 2 – Meat Supply Chain**

**LIVESTOCK BIRTH**
- Breeding
- Birth
- Batch/lot creation
- Unique animal identification

**LIVESTOCK FATTENING**
- Fattening / rearing
- Batch/lot creation

**SLAUGHTER-HOUSE**
- Slaughtering
- Classification
- Cutting
- Deboning
- Batch/lot creation

**PROCESSOR 1**
- Cutting
- Processing
- Freezing
- Packaging
- Weighing
- Labelling
- Batch/lot creation

**PROCESSOR 2**
- Picking / cross docking
- Aggregation

**WHOLESALER RETAIL DISTRIBUTOR**
- In-store processing
- Packaging
- Displaying
- Selling / Replenishing

**RETAILER AND FOOD SERVICES**
- Storing, Sending, receiving, labelling

**CRITICAL TRACKING TRACING EVENTS**
- Auctioneer / broker
- Importer / exporter

**KEY DATA ELEMENTS**
- Slaughter date & place
- Approval number
- New product ID & new batch/lot or serial number
- Approval number
- New product ID & new batch/lot or serial number
- Logistic unit ID

**Storing, Sending, receiving, labelling**
2. Regulatory Framework

Depending on the animal type regarding traceability, marking and labelling, different legal requirements apply with respect to B2B and B2C information. In the EU, a variety of both horizontal and vertical regulations are in force related to the meat sector. Some EU regulations and EU directives (with corresponding national implementation regulations) apply to all member states and importing companies, whereas other, national laws only apply in that country.

Companies are being recommended to inform themselves in detail about the current national legal requirements in the respective country of destination.

2.1. List of Most Relevant EU Regulations

The list below lists the most relevant EU regulations regarding the meat sector:


2.2. Mapping table for key data elements and legal requirements

The requirements derived from these EU Regulations can be covered with 22 attributes as listed in the following table:

<table>
<thead>
<tr>
<th>Attribute / Key Data Element</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 GTIN</td>
<td>Art. 3 Reg. (EU) No 1337/2013</td>
</tr>
</tbody>
</table>
| 2 Lot                        | (1) 2: identification and registration system  
(a) a link between the meat and the animal or group of animals  
(b) transmission of the information together with the meat, to the operators at the subsequent stages of production and distribution  
All packs with the same batch code shall correspond to the same indications  
| 3 Quantity or Net Weight     | Art. 9 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
1: appropriate marking or labelling  
(e) the net quantity of the food  
| 4 Best Before Date or Expiry Date | Art. 9 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
1: appropriate marking or labelling  
(f) The date of minimum durability  
| 5 Name of the food           | Art. 9 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
1: appropriate marking or labelling  
(a) The name of the food  

- Article 26 (2) Reg. (EU) No 1169/2011
<table>
<thead>
<tr>
<th>Attribute / Key Data Element</th>
<th>Regulation</th>
</tr>
</thead>
</table>
5: appropriate labelling  
(b) Origin: Name of Member State/ third country  
Art. 5 (Reg. (EU) No 1337/2013) Labelling  
2: appropriate labelling  
(a) Origin: Name of Member State/ third country  
Art. 9 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
1: appropriate marking or labelling  
(i) Country of Origin or place of provenance  
Art. 26 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
2: appropriate marking or labelling  
(b) Country of Origin or place of provenance |
| **7** Country of Birth      | Art. 13 (Reg. (EC) No 1760/2000) Labelling  
5: appropriate labelling  
(a) Member State or third country of Birth  
Art. 26 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
9: appropriate marking or labelling  
(a) Place of Birth |
| **8** Country of Rearing/Fattening | Art. 13 (Reg. (EU) No 1760/2000) Labelling  
5: appropriate labelling  
(a) Member States or third countries where fattening took place  
Art. 26 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
2: appropriate marking or labelling  
(b) Place of rearing  
Art. 5 (Reg. (EU) No 1337/2013) Labelling  
1: appropriate labelling  
(a) Member States or third countries where rearing took place |
| **9** Country of Slaughtering | Art. 13 (Reg. (EU) No 1760/2000) Labelling  
5: appropriate labelling  
(a) Member States or third countries where slaughter took place  
Art. 26 (Reg. (EU) No 1169/2011) Mandatory Consumer Information  
9: appropriate marking or labelling  
(a) Place of Slaughter |
| **10** Approval number of the slaughterhouse | Art. 13 (Reg. (EU) No 1760/2000) Labelling  
2: appropriate labelling  
(b) Approval number of the slaughterhouse |
2: appropriate labelling  
(c) Member States or third countries where cutting/processing took place |
| **12** Approval number of the cutting hall | Art. 13 (Reg. (EU) No 1760/2000) Labelling  
2: appropriate labelling  
(c) Approval number of cutting hall |
| **13** Reference number or reference code ensuring the link between the meat and the animal or a group of animals | Art. 13 (Reg. (EU) No 1760/2000) Labelling  
2: appropriate labelling  
(a) A reference number or reference code ensuring the link between the meat and the animal or a group of animals |
| **14** Date of production | Annex (Reg. (EU) No 16/2012) Definition of the term “production”  
2: information for frozen food of animal origin intended for human consumption  
(a) Date of production |
| **15** Date of slaughtering | (Reg. (EU) No 853/2004) Hygiene during and after production  
Annex III, Section V, Chapter 3  
2: Regulation for the production of minced meat  
(b) Deadlines for production of minced meat |
| **16** Date of freezing | Annex (Reg. (EU) No 16/2012) Information availability  
2: information for frozen food of animal origin intended for human consumption  
(b) Date of freezing, if different from date of production |
| **17** Food business operator from which the food has been despatched | Art. 3 (Reg. (EU) No 931/2011) Traceability requirements  
1: traceability information  
(c) the name and address of the food business operator from which the food has been despatched |
For prepacked foods, allergen information must be emphasised in the ingredients list. Nutrition labelling will be required for most prepacked foods (excluding single-products) and Added protein of animal origin has to be declared in the name of food for meat products and a minimum font size for the mandatory information on food labels e.g. name of the food, ingredients lists, date marks etc. This also extends to voluntary front-of-pack (FOP) nutrition information.

- For prepacked foods, allergen information must be emphasised in the ingredients list.
- For non-prepacked foods (including catering), allergen information must be made available to consumers.
- Nutrition labelling will be required for most prepacked foods (excluding single-products) and this must be presented in a consistent format.
- A minimum font size for the mandatory information on food labels e.g. name of the food, ingredients lists, date marks etc. This also extends to voluntary front-of-pack (FOP) nutrition information.

Within the previously listed relevant regulations the legislative body refers to several definitions related to “food business operators”. There are different roles and responsibilities for companies to be respected depending on physically owning and / or sending (consignor) a product, being legally in charge / responsible, a receiver (consignee) or even the importer.

There are different Application Identifiers available (AI 410-415; see annex 11.3 / table 3) to be used depending on the role(s) of the respective food business operator.

### 2.3. Labelling Requirements

#### 2.3.1. General Labelling Elements

With the Food Information Regulation (EU) No 1169/2011 (FIC), it is the first time uniform labelling requirements have been applied across the EU. The majority of the requirements of the legislation apply to prepacked foods from 13th December 2014. In addition mandatory nutrition declarations for most prepacked foods are coming into force on 13th December 2016. According to the Implementing Regulation (EU) No 1337/2013 additional new rules on country of origin information for meat from sheep, pigs, goats and poultry applies from the 1st April 2015.

- For prepacked foods, allergen information must be emphasised in the ingredients list.
- For non-prepacked foods (including catering), allergen information must be made available to consumers.
- Nutrition labelling will be required for most prepacked foods (excluding single-products) and this must be presented in a consistent format.
- A minimum font size for the mandatory information on food labels e.g. name of the food, ingredients lists, date marks etc. This also extends to voluntary front-of-pack (FOP) nutrition information.

<table>
<thead>
<tr>
<th>Attribute / Key Data Element</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consignor (owner)/ Supplier Name Address</td>
<td>Art. 3 (Reg. (EU) No 931/2011) Traceability requirements 1: traceability information (d) the name and address of the consignor (owner), if different from the food business operator from which the food has been despatched. 2: traceability information (e) the name and address of the food business operator to whom the food is despatched.</td>
</tr>
<tr>
<td>Food business operator to whom the food is despatched Name Address</td>
<td>Art. 3 (Reg. (EU) No 931/2011) Traceability requirements 1: traceability information (e) the name and address of the food business operator to whom the food is despatched.</td>
</tr>
<tr>
<td>Consignee (owner) Name Address</td>
<td>Art. 3 (Reg. (EU) No 931/2011) Traceability requirements 1: traceability information (f) the name and address of the consignee (owner), if different from the food business operator to whom the food is despatched.</td>
</tr>
<tr>
<td>Date of Despatch</td>
<td>Art. 3 (Reg. (EU) No 931/2011) Traceability requirements 1: traceability information (h) the date of despatch</td>
</tr>
<tr>
<td>Ear tag Number</td>
<td>Art. 3 (Reg. (EU) No 1760/2000) (a) Ear tag 1: Identification code of the ear tag of an individual animal and the holding on which it was born 2: Traceability system (a) the link between the meat and the animal or group of animals from which it has been obtained, at the slaughter stage.</td>
</tr>
</tbody>
</table>

Within the previously listed relevant regulations the legislative body refers to several definitions related to “food business operators”. There are different roles and responsibilities for companies to be respected depending on physically owning and / or sending (consignor) a product, being legally in charge / responsible, a receiver (consignee) or even the importer.

There are different Application Identifiers available (AI 410-415; see annex 11.3 / table 3) to be used depending on the role(s) of the respective food business operator.
Mandatory labelling: Country of birth, rearing, slaughtering (alternatively “country of origin”) and country of disassembly as well as approval number of slaughterhouse and cutting hall.

- According to Reg. (EU) No 853/2004 there is a maximum period between slaughtering and production for trimmings used for preparation of minced meat (poultry: max. 3 days after slaughtering, beef and veal: max. 15 days after slaughtering, other species: max. 6 days after slaughtering).
- In case where mechanically recovered meat has been used as ingredient for production, this has to be labelled on the product.

The regulation do not mandate to encode all this information in barcode symbols – for enabling the automated traceability, it should be encoded. GS1 helps you for solving these needs.

If products upstream have been protected against contamination by a cover (e.g. vacuumized), they have to be treated just as prepacked products and must carry a label according to Food Information Regulation.

Before Food Information Regulation came into force, labelling requirements mainly applied to prepacked products sold at POS. According to the Food Information Regulation labelling becomes mandatory for all distribution channels and includes distance selling.

### 2.3.2. Origin Labelling according to Food Information Regulation

**Within the framework of the Food Information Regulation and its Implementation Regulation for fresh meat, there are three different business cases, where the origin labelling will be mandatory.**

#### 2.3.2.1. Case 1: Avoiding Misleading Information on Country of Origin Labelling

Where failure to indicate the country of origin may mislead the consumer as to the true country of origin or place of provenance of the food, then the country name needs to be stated.

The place of origin of a packet of sliced chicken reads Great Britain on the label since the finished product was produced in Great Britain. Since the poultry was born and raised in Poland this country must also be stated on the label as origin of the animals.

#### 2.3.2.2. Case 2: Origin of Fresh Meat (Implementation Reg. (EU) No 1337/2013)

- Applies for pork (including wild boar), poultry, lamb and goat
- The statement on rearing is based on the “last rearing period” and varies depending on animal species, age at slaughtering and if so weight
- Out of scope: offal, bones, meat preparations and processed meat products

Mandatory for the statement on “origin” are:

- The “place of last rearing” (country name) or in case the last rearing period occurred in more than one country:
  - “several EU member states” or “list of member states”
  - “several non-EU countries” or “list of non-EU countries”
  - “several EU member states and non-EU countries” or “list of member states and non-EU countries”
- The “place of slaughtering” (country name)
- A reference number

In summary the following statements on “rearing” are possible:
- Statement on “origin”
- EU member state or non-EU country in which the animal was “born, reared, slaughtered”
- Statement “reared in”
  - a. Different member States of EU
  - b. In different non-EU countries
  - c. Different EU/non-EU countries/states
  - d. List of EU/non-EU states/countries

For animals which do not reach the minimum time period of the last rearing period in just one EU member state / third country, all EU member states / third countries where the rearing of the animal occurred must be declared.

#### Exception: minced meat and trimmings

Regarding minced meat and trimmings the regulation allows the declaration of the origin of fresh meat to just be stated as, “EU” or “non EU”:
- “origin EU” or
- “reared and slaughtered in EU”
- Reared and slaughtered outside EU
- Reared outside EU, slaughtered inside EU
- Reareded and slaughtered inside and outside EU

For the declaration of the “place of rearing” relevant time periods have to be respected, depending on the animal species. The time period always refers to the last rearing period. For poultry, sheep and goat the relevant rearing period is limited to the last month of rearing. For pigs the relevant rearing period differs depending on the age and weight at slaughtering.

For both regulations, Beef Labelling Regulation as well as Food Information Regulation, it is possible to declare “origin” instead of “raised in” and “slaughtered in”. In this case all events including birth” must take place in the same EU member state/third country.

#### Exception: wild boar

Statement on “origin” (country in which animal has been shot)

#### 2.3.2.3. Origin Labelling of Primary Ingredients

At the time of finalising this guideline the applicable Implementation Regulation for these products had not been published.

#### 2.3.2.4. Origin Labelling according to Beef Labelling Regulation

The requirements for origin labelling according to Beef Labelling Regulation (Reg. (EU) No 1760/2000) are largely similar to the requirements of FIC.
- Applies for meat falling within the Combined Nomenclature (‘CN’) codes listed in the regulation (including calf, water buffalo, bison/wisent)
- Out of scope: offal, bones, meat preparations and processed meat products

In difference to the latter case beef labelling requirements are mandatory for:
- the “place of birth”
- the “place / places of rearing”
- the “place of slaughtering” and the approval number of the slaughterhouse
- or alternatively “origin”
- the place / places of cutting and the approval number(s) of the cutting hall(s)
- a batch number / individual number for each animal
3. The GS1 System and Traceability

- Please read “GS1 Made Easy - Global Meat and Poultry Traceability Guideline Companion Document” for a detailed overview of the GS1 system.
- An overview of the options available to automate the traceability process in the entire supply chain is described in “GS1 Industry Guideline - Global Meat and Poultry Traceability, Part 1 The GS1 System”.

Below, you will find additional remarks to the Global Guidelines from the European perspective.

3.1. Additional Remarks to the Global Guidelines from the European Perspective

3.1.1. RCNs (Restricted Circulation Numbers)
RCNs are widely used throughout Europe for consumer units - especially for variable weight products. RCNs do not allow any traceability - neither manually nor automated. Therefore, we suggest to move to GTINs (Global Trade Item Numbers) on consumer units.

3.1.2. B2C communication by means of GS1 DataMatrix and GS1 QR Code
With the development of GS1’s Business-to-Consumer (B2C) standards, health and wellness data can be made available to consumers by scanning a product URL encoded in a GS1 QR Code or a GS1 DataMatrix symbol. Both symbologies allow for providing a means of linking to a company’s website to brand owner authorised information or applications (Trade Item Extended Packaging).

GTIN and URL AI 8200 are encoded as separate data elements in the barcode but once decoded they are processed in a standard fashion by concatenating the following three strings: the contents of AI (8200), followed by a slash (/) character, followed by the GTIN expressed as 14 numeric digits. For example, where a trade item’s GTIN expressed as 14 digits is 01234567890128, and the URL is http://example.com/01234567890128 this would be encoded in a GS1 QR Code or GS1 DataMatrix as 01012345678901288200http://example.com.

When processing the URL, a slash and the GTIN are combined to arrive at http://example.com/01234567890128. This is the URL for accessing the information on the brand owner’s website.

When scanning a GS1 QR Code or a GS1 DataMatrix in order to be routed to product information in the web, the scanning application must be able to process the data structures as described above.
3.1.3. RTIs (Returnable Transport Items)
RTIs are identified by the GRAI (Global Returnable Asset Identifier). The GRAI is encoded in a GS1-128 symbol, GS1 DataMatrix or GS1 QR Code. A typical use of either symbology in the meat sector is to encode a GRAI on a returnable meat box.

3.1.4. EPCIS – Visibility within the entire supply chain
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).

Each EPCIS event for sharing Visibility Data includes the following data:
- The What dimension identifies the product that is received; in this case, using the GTIN and serial number (or the lot/batch) of the product.
- The When dimension indicates when the receiving operation took place.
- The Where dimension says where the product was received, namely the goods output are 2 at distribution centre A.
- The Why dimension provides the business context. This includes identifying the step of the business process as “receiving,” indicating that the state of the product is that it is progressing normally through the forward supply chain, linking to business transaction documents such as the governing purchase order and invoice, and identifying the parties to the transfer of ownership (i.e., the manufacturer and the retailer).

The four dimensions that describe what is happening to an object in the physical or virtual world are captured in one of the following four “EPCIS event types” ObjectEvent, AggregationEvent, TransformationEvent and TransactionEvent, which is a generic base for all event types.

GS1 in Europe recommends the exchange of additional product related and traceability data by use of EPCIS based networks to make them available to any own IT system and that of the respective partner in the supply chain.

Today, product information between food business operators is being submitted increasingly by electronic means. In addition to unstructured bilateral data formats food business operators have come to use standardised data interchange (one-to-one). For providing highest level of full chain visibility they are recommended to use EPCIS based networks.

3.1.5. GS1 EPCglobal – the GS1 standard for RFID tags
Radio-Frequency Identification (RFID) is another method for Automatic Identification and Data Capture (AIDC). EPC/RFID tags use Radio-Frequency Identification technology (wireless use of electromagnetic fields) to encode GS1 ID Keys in the GS1 Electronic Product Code (EPC). Unlike a barcode, the tag does not necessarily need to be within line of sight of the reader, and may be embedded in the tracked object.

Today the use of EPC/RFID in Europe is not very spread since there are very specific application environments in the meat business which are not sufficiently specified so far. Today RFID technology is being used in hooks and Returnable Transport Items (RTIs) as meat crates and big-boxes for efficient process management. Since most hooks and RTIs are used in open pool applications and do not get back appropriate equipment one to one, the use of RFID in day-to-day implementation in the meat business is mainly limited to internal use. Nevertheless RFID offers new opportunities for sharing information and trigger external communication.

3.1.6. Sharing master data via Global Data Synchronisation Network (GDSN)
The GS1 Global Data Synchronisation Network is an internet-based, interconnected network of interoperable data pools and a Global Registry, the GS1 Global Registry®, that enables companies around the world to exchange standardised and synchronised supply chain data with their trading partners (manufacturers, retailers, distributors, hospitals, wholesalers and group purchase organisations). This connection is made via a network of interoperable GDSN-certified data pools.

![Figure 4 – Example for a meat crate containing a GRAI encoded in a GS1 DataMatrix](image)

![Figure 5 – Interaction in the Global Data Synchronisation Network](image)

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GS1 certified data pools are electronic catalogues of standardised item data. They serve as a source and/or a recipient of master data. Data pools can be run by a GS1 Member Organisation or by a solution provider.

In order to identify the trade items – within this network – the GS1 Identification Keys come into play. Their role is to support the identification of items, services, locations, logistic units, returnable containers, etc.

Specific to GDSN are three ID keys. These keys are used to help identify the trade items: the Global Trade Item Numbers (GTIN), the Global Location Numbers (GLN) and the Global Product Classification (GPC).

Cut down administrative time and resources, strengthen data quality by reducing errors and, providing real-time master data (e.g. list of ingredients, allergen information …).

### 3.2. Attribute Implementation within GS1 System Components

This table lists all possible solutions to the information requirements of table 1 in the field of Automatic Identification and Data Capture (AIDC) and Data Sharing. To retrieve the most suitable solution for each data element please refer to the animal type related recommendations in chapter 8.

<table>
<thead>
<tr>
<th>Attribute / Key Data Element</th>
<th>AIDC</th>
<th>EANCOM® 2002 DESADV EANCOM® 2007</th>
<th>GS1 XML Despatch Advice 3.1</th>
<th>EPCIS 1.11</th>
<th>GDSN 2.8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLN Consignee</td>
<td>AI(42)</td>
<td>SHIP TO LOC</td>
<td>SG2_NAD 3035 = BY SG2_NAD 3039 = GLN</td>
<td>buy/gln</td>
<td>unapcsidglgn</td>
</tr>
<tr>
<td>GLN Consignor/supplier</td>
<td>AI(42)</td>
<td>PURCHASE FROM</td>
<td>SG2_NAD 3035 = By SG2_NAD 3039 = GLN</td>
<td>shipFrom/gln</td>
<td>unapcsidgln</td>
</tr>
<tr>
<td>Supplier Name</td>
<td>GLN master data</td>
<td>GlN/lot number or address/name</td>
<td>GLN master data</td>
<td>seller/address/name</td>
<td>GLN master data</td>
</tr>
<tr>
<td>Supplier Address</td>
<td>GLN master data</td>
<td>GLN</td>
<td>GLN master data</td>
<td>seller/address</td>
<td>GLN master data</td>
</tr>
<tr>
<td>Serial Shipping Container Code</td>
<td>AI(31)</td>
<td>MATERIAL</td>
<td>SG15_GIN DE 748:12B: GIN 742:255</td>
<td>TGLG</td>
<td>unapcsidsggn</td>
</tr>
<tr>
<td>GTIN</td>
<td>AI(62)</td>
<td>GTIN</td>
<td>SG17_7140 = ItemRefAndIndication</td>
<td>transactionalTradeItem/gln</td>
<td>unapcsidsgtin</td>
</tr>
<tr>
<td>Lot/Batch</td>
<td>AI(32)</td>
<td>B/LOT</td>
<td>SG17_7143 = MB (Batch Number)</td>
<td>transactionalItemData/batchNumber</td>
<td>-</td>
</tr>
<tr>
<td>Serial Number</td>
<td>AI(21)</td>
<td>SERIAL</td>
<td>SG17_7143 = SN (serial number)</td>
<td>transactionalItemData/serialNumber</td>
<td>-</td>
</tr>
<tr>
<td>Ear tag Number</td>
<td>AI(25)</td>
<td>REF TO SOURCE</td>
<td>SG17_7143 = X2 (ear tag number)</td>
<td>animalIdentification Number (TradingParty/TradingUnit Extension)</td>
<td>-</td>
</tr>
<tr>
<td>Quantity or Net Weight</td>
<td>AI (32) W/UNIT/1</td>
<td>KG</td>
<td>SG17 _ QTY</td>
<td>transactionalTradeItem/quantity</td>
<td>Quantity element/quantity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute / Key Data Element</th>
<th>AIDC</th>
<th>EANCOM® 2002 DESADV EANCOM® 2007</th>
<th>GS1 XML Despatch Advice 3.1</th>
<th>EPCIS 1.11</th>
<th>GDSN 2.8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Product</td>
<td>GTIN master data</td>
<td>SG17_7140 = ItemRefAndIndication</td>
<td>transactionalTradeItem/indication/approval</td>
<td>GTIN/transactionalTradeItem/indication/approval</td>
<td>GTIN/master data</td>
</tr>
<tr>
<td>Slaughterhouse Approval No.</td>
<td>AI (7030)</td>
<td>PROCESSOR</td>
<td>SG20_SCC 3277:1246 (Slaughterhouse)</td>
<td>meatProcessingParty/approval number</td>
<td>-</td>
</tr>
<tr>
<td>Slaughterhouse Name</td>
<td>GLN master data</td>
<td>GlN</td>
<td>GLN master data</td>
<td>seller/address</td>
<td>GLN master data</td>
</tr>
<tr>
<td>Deboning Plant Approval No.</td>
<td>AI (7031)</td>
<td>PROCESSOR</td>
<td>SG20_SCC 3277:19 (Factory/plant)</td>
<td>meatProcessingParty/approval number</td>
<td>-</td>
</tr>
<tr>
<td>Deboning Plant Name</td>
<td>GLN master data</td>
<td>GlN</td>
<td>GLN master data</td>
<td>seller/address</td>
<td>GLN master data</td>
</tr>
<tr>
<td>Processing Plant Approval No.</td>
<td>AI (7032)</td>
<td>PROCESSOR</td>
<td>SG20_SCC 3277:19 (Factory/Plant)</td>
<td>meatProcessingParty/approval number</td>
<td>-</td>
</tr>
</tbody>
</table>

1. ILMD details: see list of EPCIS attributes in Annex A.4.
2. GDSN 3.1.5. GTIN is for data connected to one GTIN (GTIN in one standard hierarchy) and is called as static or product master data. Data connected to one batch/lot is called as dynamic or transactional data or traceability data. Master data should be exchanged between supplier and customer in advance.
3. B/Lot (Batch) in GDSN there is a yes/no attribute to indicate whether the product has a batch number or not.
4. Serial Number in GDSN position of serial number on the packaging can be communicated. For cattle AI 251 (Reference to Source Entity / Ear Tag Number) can be used likewise.
5. (Quantity or Net Weight) in GDSN fixed weight connected to a GTIN can be communicated.
In case of information on country of slaughtering is invariable, they can be depicted as well as part of GDSN master data instead of ilmd.

(Approval numbers) In case of information on companies approval numbers and origin is invariable, they can be depicted as well as part of GDSN master data.

As of May 2016 GDSN v3.x (actually GDSN v2.8.5) is going to be implemented which could have significant changes for environment. Companies concerned with this topic are recommended to inform themselves in advance of the upcoming changes.

<table>
<thead>
<tr>
<th>Attribute / Key Data Element</th>
<th>AIDC</th>
<th>EANCOM® 2002 SGLOC 3224</th>
<th>GS1 XML Dispatch Advice 3.1</th>
<th>EPCIS 1.11</th>
<th>GDSN 2.8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing Plant Name</td>
<td>GLN master data</td>
<td>meatProcessingParty/address/name (MeatDespatchAdvice LinenamExtension)</td>
<td>ilmd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Further Processing Plants/Slaughterhouses Approval No³</td>
<td>AI (703-709) PROCESSOR#s</td>
<td>SGLOC_3227=19 (Factory/plant)</td>
<td>meatProcessingParty/MeatProcessingParty/diagnosis/gp</td>
<td>imd</td>
<td></td>
</tr>
<tr>
<td>Date of Slaughtering</td>
<td>AI (7007) HARVEST DATE</td>
<td>SG17 DTM 2005=90 (Slaughtering date/time)</td>
<td>SlaughteringDetails/placeOfSlaughtering (MeatDespatchAdvice LinenamExtension)</td>
<td>eventTime</td>
<td>-</td>
</tr>
<tr>
<td>First Freeze Date</td>
<td>AI (7006) FIRST FREEZE DATE</td>
<td>SG17 DTM 2005=91</td>
<td>placeOfRearing</td>
<td>imd</td>
<td></td>
</tr>
<tr>
<td>Date of Production</td>
<td>AI (11) PROD DATE</td>
<td>SG17 DTM 2005=94</td>
<td>transactionalItemData/productionDate</td>
<td>eventTime or imd</td>
<td>-</td>
</tr>
<tr>
<td>Date of Packaging</td>
<td>AI (13) PACK DATE</td>
<td>SG17 DTM 2005=365</td>
<td>transactionalItemData/packagingDate</td>
<td>eventTime or imd</td>
<td>-</td>
</tr>
<tr>
<td>Country of Birth³</td>
<td>AI (422) ORIGIN</td>
<td>SG20 LOC 3227=241</td>
<td>countryOfActivity (MeatDespatchAdvice LinenamExtension)</td>
<td>imd</td>
<td>placeOfBirth</td>
</tr>
<tr>
<td>Country of Rearing/Fattening³</td>
<td>AI (423) COUNTRY - INITIAL PROCESS, +)</td>
<td>SG20 LOC 3227=242</td>
<td>countryOfActivity (MeatDespatchAdvice LinenamExtension)</td>
<td>imd</td>
<td>placeOfRearing</td>
</tr>
<tr>
<td>Country of Slaughtering³</td>
<td>AI (424) COUNTRY - PROCESS, +)</td>
<td>SG20 LOC 3227=243</td>
<td>countryOfActivity (MeatDespatchAdvice LinenamExtension)</td>
<td>imd</td>
<td>placeOfSlaughting</td>
</tr>
<tr>
<td>Country of Deboning³</td>
<td>AI (425) COUNTRY - DISASSEMBLY +)</td>
<td>SG20 LOC 3227=244</td>
<td>countryOfActivity (MeatDespatchAdvice LinenamExtension)</td>
<td>imd</td>
<td></td>
</tr>
<tr>
<td>Country Covering Full Process Chain</td>
<td>AI (426) COUNTRY - FULL PROCESS +)</td>
<td>SG20 LOC 3227=245</td>
<td>countryOfActivity (MeatDespatchAdvice LinenamExtension)</td>
<td>imd</td>
<td></td>
</tr>
<tr>
<td>Date of Despatch</td>
<td>---</td>
<td>DTM (header) 2006=11 (despatch date)</td>
<td>DTM (header) 2180 (value)</td>
<td>eventTime</td>
<td>-</td>
</tr>
</tbody>
</table>

³ (Approval numbers) In case of information on companies approval numbers and origin is invariable, they can be depicted as well as part of GDSN master data instead of ilmd. Given attributes might be populated using Basic Party Registration message.

³³ In case of information on country of birth is invariable, they can be depicted as well as part of GDSN master data instead of ilmd.

³⁴ In case of information on country of rearing/fattening is invariable, they can be depicted as well as part of GDSN master data instead of ilmd.

³⁵ In case of information on country of slaughtering is invariable, they can be depicted as well as part of GDSN master data instead of ilmd.
4. Sector Specific Implementation of GS1 Standards - From Slaughterhouse to Consumer

This chapter gives guidance on what pieces of information must be provided, depending on the position within the supply chain, starting from live animal transport to the slaughterhouse. The data requirements are independent of the technology used to communicate the data. The data required differs according to the meat type (beef, pig, poultry, lamb and goat). In terms of product labelling, companies should take note that space requirements for a barcode will increase the more data that is encoded within it.

As mentioned earlier in this guideline, information exchange based on EPCIS is considered as best practice for full chain visibility purposes. If EPCIS or DESADV are used, GTIN and serial number or GTIN and batch/lot number are minimum barcode requirements.

Companies should take note that space requirements for a barcode on the label increase the more data are encoded in barcode.

All companies are advised to ensure they know exactly what EU and local legislation applies in their local market and what they need to do to comply.

4.1. Livestock

Scope: Food business operators delivering to a slaughterhouse (e.g. farmer, livestock dealer)

There are several regulations in EU law, as well as country specific regulations, with relevance to livestock that must be observed. The relevant information includes:

- Approval number of farmer
- Identification of a single live animal (e.g. ear tag number of beef) or group of animals depending on the animal type
- Age of animal (relevant for differentiation between calf and beef according to beef Labelling Regulation or to determine the place of rearing (last rearing period) in terms of Food Information Regulation)
- Statement on country of birth and rearing
- Health status of the animal
- The drug administered to the animal/group of animals or other treatments
- Presence of diseases that can bring out the animal in jeopardy
- If applicable: results of the analyses of the samples taken from the animals to diagnose diseases
- Knock number (pigs)
- Roaster: density (e.g. poultry)
- Name and address of the veterinarian
- Scheduled date of the cattle will be sent to the slaughterhouse
- Number of animals being sent to the slaughterhouse (at least 24 hours before the live animals arrive at the slaughterhouse).
- In case of export: names of third countries
- Name and address of the veterinarian

Information for implementation of origin labelling for pork, poultry, sheep and goat: slaughterhouses need to get appropriate origin information for each animal/group of animals from the farmer or other supplying food business operator in writing. Usually the documentation for animals intended for slaughter are already being supplemented with this origin information. In some countries, national trade associations have already made relevant recommendations for the provision of this information.

All companies are advised to ensure they know exactly what EU and local legislation applies in their local market and what they need to do to comply.

The allocation of GTIN for live animals has not been implemented in the livestock sector so far. However it is advisable to allocate GTINs to live animals. When combined with the batch number to animals belonging to the same rearing group or with the serial number EPCIS can be properly used. This also applies to the allocation of GLNs for locations relevant for traceability like knocks or pastures.

Companies which today are technical low equipped can also apply sole barcode based solution to encode additional product data in a GS1-128 or GS1 DataBar. However, companies should be aware, that they might have additional costs implementing this immediate step.

4.2. Meat Supply Chain

The Meat Supply Chain starts with slaughtering of animals and ends with selling of products by retailers or provision of food by mass caterer to the final consumer. According to Beef Information Regulation it is obligatory to place the relevant information directly on the product (e.g. label on the product or nearby on a crate or carton). In contrast, Food Information Regulation permits providing information on accompanying documents as well.

Mandatory within the meaning of food law in all cases just means clear-written information. However, GS1 recommends the use of GS1 identification and communication standards for most efficient capturing and sharing of relevant product and traceability data; electronically and seamlessly.

The following tables are showing the relevant product data to be provided by a food business operator downstream to a receiver on the process stage differentiated by animal types and relevant legislation based on Automatic Identification and Data Capture (AIDC). They are using the subsequent acronyms:

M Mandatory information to ensure product identification and traceability by use of GS1 standards

In case companies are sharing origin data by standardised electronic means (e.g. EDI, EPCIS), it is sufficient to encode GTIN /batch in a barcode printed on a label as access key to ensure traceability.

C Optional information; should be shared by use of GS1 standards due to legal “origin labelling requirement”

(C) Optional information; if GS1 DataBar is used instead of EAN-13 on consumer items

✓ Provision of the information mandatory by law (clear-written)

NA Not Applicable
1) Optional information; selection of AI 410 – AI 415 depending on the role of the food business operator
2) “Food business operators shall not place on the market a product of animal origin handled in an establishment subject to approval in accordance with Article 4(2) unless it has either a health mark ‘...’.” In addition for beef it is mandatory to bring a statement regarding the approval number of the slaughtering/cutting/processing plant in conjunction with the statement on the respective country on the label.
3) Optional information; should be shared by use of GS1 standards due to specific legal “origin labelling requirement” (e.g. 3+3 batch formation for prepacked beef) * Use of EAN-13, EAN-8 or country specific RCN at POS

4.2.1. Slaughterhouse
Scope: Food business operators delivering carcases to a cutting plant (e.g. slaughterhouse)

<table>
<thead>
<tr>
<th>GSI Attribute / Key Data Element</th>
<th>AIDC</th>
<th>Beef</th>
<th>Information mandatory by law (plain writing)</th>
<th>Pork</th>
<th>Poultry</th>
<th>Lamb</th>
<th>Goat</th>
<th>Information mandatory by law (plain writing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLN Consignor/ Supplier 1)</td>
<td>AI (412) PURCHASE FROM</td>
<td>C</td>
<td>C C C C C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier Name</td>
<td>GLN master data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier Address</td>
<td>GLN master data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) GLN Consignor 1) Consignees Address</td>
<td>AI (410) SHIP TO LOC</td>
<td>C</td>
<td>C C C C C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GTIN</td>
<td>AI (00) SSCC</td>
<td>C</td>
<td>C C C C C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Name of the Product</td>
<td>GTIN master data</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Product Category (e.g. calf, bull, heifer) instead of “beef”</td>
<td></td>
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<td>(plain writing)</td>
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<td>NA NA NA NA</td>
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<td>10) Cutting/Deboning Plant Approval No 2)</td>
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<td>NA NA NA NA</td>
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<td>Cutting/Deboning Plant Name</td>
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<td></td>
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<tr>
<td>Processing Plant Approval No 2)</td>
<td>AI (7032) PROCESSOR</td>
<td>NA</td>
<td>NA NA NA NA</td>
<td></td>
<td></td>
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<td>12) Further Processing Plants/ Slaughterhouses Approval No 3)</td>
<td>AI (7033-7039) PROCESSOR</td>
<td>NA</td>
<td>NA NA NA NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2.2. Cutting Plant(s)
Scope: Food business operators delivering meat cuts to a processor (e.g. mincing plant, butchery, disassembling and packaging plant, wholesaler)
4.2.3. Processors

Scope: Food business operators delivering logistic items/trade items to companies selling to final consumer and mass caterer (e.g. retailer, wholesaler, butchery, restaurants, canteens, catering industry).

4.2.4. Retail

Scope: Food business operators either selling centralised packed and labelled consumer items (by a processor) or decentralised prepacked and labelled consumer items (in-store) for direct sale to final consumer (e.g. supermarkets, cash and carry markets, butchery). The following mandatory labelling information just apply for ready case products, but not for the food service sector. Nevertheless, supplier of mass caterer (e.g. restaurants, canteens) are obligated to provide appropriate information on origin (according to Regulation (EC) 1169/2011) to their customer as well. Please notice, that

In case there is a GS1 DataBar instead of an EAN-13 placed on the label, the barcode can contain more information than just GTIN or a Restricted Circulation Number for variable weight products: e.g. Lot, Net Weight, Best Before Date. Thus, EPCIS based IT systems can be used up to the checkout at POS.
5. Special Challenges

5.1. Mixed Products (containing more than one animal species)

For prepacked fresh meat products such as minced meat or mixed grill plates containing meat originating from more than just one animal type it becomes mandatory to give a statement on “origin” for each type according Regulation (EC) No 1169/2011 resp. 1337/2013. As a consequence the country of slaughtering must be specified for each animal type on a label in human readable form. If in case a product contains other meat products than beef the label must comply with both Regulations (EC) No 1169/2011 resp. 1337/2013 and 1760/2000. Application identifiers (AI) are generic and, to guarantee information encoded in a barcode is unique and cannot be misinterpreted, each AI can only be used once on a label. For this reason it is recommended to encode GTIN (AI 01), batch number (AI 10), weight (AI 310x) and best before date / use-by date (AI 15 / 17) on the package in combination with human readable origin information as listed above.

Best practice for the communication of prepacked fresh mixed products data is to use EPCIS (see 7.3.2) or the electronic despatch advice DESADV in EANCOM® or GS1 XML format. This requires at least GTIN and Serial number or lot resp. the SSCC on the label. Other relevant information is applied in human readable format on the physical item. In case a partner within the supply chain is not capable of using EPCIS or GS1 eCom messages it is possible to use Application Identifiers (91 to 99) assigned for company internal or bilaterally agreed information.

5.2. Origin Statement EU / Non-EU

In some cases it is possible to apply the origin statement “EU” or “non-EU” instead of stating a specific country of origin. Since there are no 3 digit numerical codes for these two statements available according to the ISO-3166-1-code list, the numeric codes 900 to 999 might be used under bilateral agreement.

5.3. Labelling of multiple origins

According to EU Beef Labelling Regulation and Food Information Regulations on some products require a statement on “reared in” for more than just one EU/Non-EU member state / non-EU country (or combination of both). This applies for instance in case the rearing of a homogeneous batch of animals (after birth) initially took place in Belgium and the animals were then sold to a farmer in the Netherlands for the finishing period. This is covered by Application Identifier 423 “Country of Initial Processing” which is associated with country/countries of rearing in the meat business and allow up to 5 different countries to be encoded in a single barcode.

<table>
<thead>
<tr>
<th>GSI Attribute / Key Data Element</th>
<th>ADC</th>
<th>Beef Information mandatory by law (plain writing)</th>
<th>Pork</th>
<th>Poultry</th>
<th>Lamb</th>
<th>Goat Information mandatory by law (plain writing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLN Consignor/ Supplier 1)</td>
<td>AI (442) PURCHASE FROM</td>
<td>NA</td>
<td>NA</td>
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<td>NA</td>
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<td>Supplier Address</td>
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<td>GLN Consignee 1)</td>
<td>AI (443) SHIP TO LOC</td>
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<td>NA</td>
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<td>Quantity or Net Weight</td>
<td>AI (310) NET WEIGHT (kg)</td>
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<td>Best Before Date or Expiration Date</td>
<td>AI (12) BEST BEFORE DATE AI (12) USE BY OR EXPIRY</td>
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<td>Date of Production</td>
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<td>Country Covering Full Process Chain (where applicable)</td>
<td>AI (4148) COUNTRY – FULL PROCESS (*)</td>
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<td>AI (420) COUNTRY – DISASSEMBLY (*)</td>
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</tbody>
</table>

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Further Requirements for the Meat Business (not related to traceability)
There are various additional legal requirements for the meat sector based on present EU food law. These requirements are not related to traceability, however the use of GS1 Standards can support them from the perspective of supply chain efficiency.

6.1. EU Regulation 1169 / 2011 on Food Information to Consumers

6.1.2. Distance Selling
The following product data must be shown on the labels of pre-packaged foods since 13th December 2014:
1. the name of the food;
2. the list of its ingredients;
3. any ingredient or processing aid causing allergies or intolerances used in the manufacture or preparation of a food and still present in the finished product, even if in an altered form (A list of allergens that must be declared is given in an annex to the regulations);
4. the quantity of certain ingredients or categories of ingredients;
5. the net quantity of the food;
6. the date of minimum durability or the “use by” date;
7. any special storage conditions and/or conditions of use;
8. the name and address of the food business operator under whose name the food is marketed (or the importer’s name if the food business operator is outside the EU);
9. the country of origin or place of provenance where provided for in Article 26;
10. instructions for use where it would be difficult to make appropriate use of the food without such instructions;
11. with respect to beverages containing more than 1.2 % by volume of alcohol, the actual alcoholic strength by volume;
12. a nutrition declaration

Many products in the meat sector, either further up the retail supply chain or being supplied to food service companies, are not consumer trade items designated for sale but are provided with transit packaging to protect them against contamination. These items are liable to the same labelling requirements as prepacked goods.

6.1.3. Managing product changes
A difficulty arises when a food is changed in such a way as to require a change to the mandatory information on the label. In these circumstances there will be a period of time when the old version of the product and the new version coexist in the supply chain. During this period it is not possible for the retailer to know whether the version of the product ordered on a website will be available at the time and place the order is picked.

Significant changes to a product require allocation of a new GTIN, which increases the possibility that the correct variant can be made available for picking and, even if it is not, the retailer can recognise automatically whether the version being picked is different from the version that was ordered and notify the consumer.

However some minor changes in the mandatory product data in the regulation do not require a new GTIN to be given to the changed item. In this situation it is not possible for the retailer to use the GTIN to distinguish between the two versions at the pick point. In these cases the consensus in the meat industry is that the GTIN allocation rules should still be followed. Process controls and/or manual intervention could be used to minimise instances of mismatches between variants ordered and delivered and some enforcement agencies might show some tolerance, even though this might result in deviation from a strict interpretation of the regulation, during temporary transitions from one variant to another. If new GTINs were to be allocated to every minor variant the result was costs, errors and inefficiencies, many of which would damage consumers’ interests. It is important to emphasise that not changing the GTIN is restricted to minor variations and if there is a chance that mistaking one variant for another could have health risks then the new variant must have a new GTIN to distinguish it.

GS1 is developing new ways of working so that in future it will be possible to distinguish product variants without disrupting the supply chain.
In difference e.g. to the list of ingredients origin information are almost always not related to instant lot master data. The origin for a single product might vary from one to another shipping or even one shipping contains more than just one homogenous origin information. Therefore they are not relevant for GDSN. Nevertheless in some cases where origin information for a product are static they can be declared within the scope of GDSN.

In difference e.g. to the list of ingredients origin information are almost always not related to instant lot master data. The origin for a single product might vary from one delivery to another, or one delivery may contain product from more than one origin. Therefore they are not relevant for GDSN. Nevertheless in some cases where origin information for a product is static, it can be declared within the scope of GDSN.

According to the regulation, the statement of origin for distance selling has to be available before the customer places the order. According to the FAQ List of the EU Parliament it is possible to declare a specific range of countries. This statement has to be verifiable and a disclaimer is mandatory.

GS1 has published an advisory table showing how the GTIN allocation rules relate to the mandatory information in EU 1169/2011 and suggested interpretations of the rules. The brand owner is responsible for deciding whether or not to change the GTIN.

### 6.1.4. Allergen Labelling

Since 13th December 2014 any ingredient or processing aid listed in Annex II or derived from a substance or product listed in Annex II causing allergies or intolerances used in the manufacture or preparation of a food and still present in the finished product, even if in an altered form, has to be listed in the list of ingredients. The allergen has to be specified directly following the particular ingredient. Unlike other requirements food allergens in non prepacked products sold over a counter must be declared.

Substances or products causing allergies or intolerances in the meaning of Food Information Regulation are:

1. Cereals containing gluten*, namely: wheat, rye, barley, oats, spelt, kamut or their hybridised strains, and products thereof;
2. Crustaceans and products thereof;
3. Eggs and products thereof;
4. Fish and products thereof*;
5. Peanuts and products thereof;
6. Soybeans and products thereof;
7. Milk and products thereof (including lactose)*;
8. Nuts, namely: almonds (Amygdalus communis L.), hazelnuts (Corylus avellana), walnuts (Juglans regia), cashews (Anacardium occidentale), pecan nuts (Carya illinoinensis (Wangenh.) K. Koch), Brazil nuts (Bertholletia excelsa), pistachio nuts (Pistacia vera), macadamia or Queensland nuts (Macadamia ternifolia), and products thereof*;
9. Celery and products thereof;
10. Mustard and products thereof;
11. Sesame seeds and products thereof;
12. Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/litre in terms of the total SO2 which are to be calculated for products as proposed ready for consumption or as reconstituted according to the instructions of the manufacturers:
13. Lupin and products thereof;

Many meat products and meat preparations contain further ingredients such as spices, food additives or processing aids and require comprehensive product labelling including allergens in the upstream supply chain.

### 6.1.5. First Freeze Date

For frozen meat and frozen meat preparations the Regulation requires a statement of the date of freezing or the date of first freezing in cases where the product has been frozen more than once. The requirement applies as well for meat which has been thawed subsequently and is being sold unfrozen.

The date of freezing or the date of first freezing shall be indicated as follows:

- It shall be preceded by the words ‘Frozen on …’;
- The words referred to in point (a) shall be accompanied by:
  - a reference to where the date is given on the labelling;
  - a reference to where the date is given on the labelling.
- The date shall consist of the day, the month and the year, in that order and in uncoded form.

For many products it is not determined at the beginning of the process chain, whether they will eventually be sold to the consumer, or into the food service sector, or will be used for processing. Hence companies are recommended to give a corresponding statement in case of “previous freezing” for all products.

### 6.1.6. Declaration of Added Water

With regard to meat products and meat preparations which have the appearance of a cut, joint, slice, portion or carcass of meat, the name of the food shall include an indication of the presence of added water if the added water makes up more than 5 % of the weight of the finished product (e.g. cooked ham).

In terms of this regulation the rule does not apply to products with added water for technological reasons (e.g. ice added to sausage meat for cooked sausages).

### 6.1.7. Protein of different animal origin

In the case of meat products and meat preparations containing added proteins as such, including hydrolysed proteins, of a different animal origin, the name of the food shall bear an indication of the presence of those proteins and of their origin.

Added foreign animal protein shall be stated in the list of ingredients and additionally to the name under which a foodstuff is sold. Furthermore the indication on animal protein has to be stated correspondingly as part of the master data.

### 6.1.8. Definition of the relevant rearing section

To food originating from animals born in a country differing from the country of rearing / slaughtering the countries of rearing must be stated as follows:
- pig
  - slaughter age > 6 months: last 6 months
  - slaughter age < 6 months
    - and live weight > 80 kg: rearing time as of 30 kg live weight
    - and live weight ≤ 80 kg: entire rearing time
- sheep and goat
  - slaughter age > 6 months: last 6 months
  - slaughter age < 6 months: entire rearing time
- poultry
  - slaughter age > 1 months: last month
  - slaughter age < 1 months: rearing time from beginning of rearing

- beef and cattle
  - slaughter age > 6 months: last 6 months
  - slaughter age < 6 months: entire rearing time

Certain foodstuffs may cause specific hazards to human health, requiring the setting of specific hygiene rules. This is particularly the case for food of animal origin, in which microbiological and chemical hazards have frequently been reported. With regard to public health, these rules contain common principles, in particular in relation to the manufacturers’ and competent authorities’ responsibilities, structural, operational and hygiene requirements for establishments, procedures for the approval of establishments, requirements for storage and transport and health marks.

Amongst others this regulation defines the rules for the production of minced meat and meat preparations. When prepared from chilled meat, minced meat must be prepared:

a. in the case of poultry, within no more than 3 days from slaughter date;

b. in the case of animals other than poultry, within no more than 6 days from slaughter date;

or in the case of boned, vacuum-packed beef and veal within no more than 15 days from the slaughter date of the animals.

In this context the use of AI (7007) “date of slaughtering” enables companies to produce minced meat monitoring and documentation of compliance with this requirement in an appropriate way.

6.3. Glossary and Definitions

You will find the complete GS1 glossary under the following link:
http://apps.gs1.org/GDD/glssary/Pages/Home.aspx

Table: Glossary and Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Description and definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>An actor is a role that a user plays with respect to a system</td>
</tr>
<tr>
<td>Agreements</td>
<td>Arrangements undertaken by and legally binding on parties</td>
</tr>
<tr>
<td>Application Identifier (AI)</td>
<td>The field of two or more characters at the beginning of an Element String that defines its format and meaning</td>
</tr>
<tr>
<td>Approval number</td>
<td>Registration number by local authority for the establishment where these operations take place</td>
</tr>
<tr>
<td>Batch / Lot</td>
<td>The batch or lot number associates a trade item with the manufacturer considered relevant for traceability of the item. The data may refer to the trade item itself or to items contained in it.</td>
</tr>
<tr>
<td>GDD Implementation Notes:</td>
<td>A typical batch / lot code might include a plant location, production line, date of production and shift. The format and structure will vary by organisation.</td>
</tr>
<tr>
<td>Business requirement</td>
<td>A statement of need concerning the business area or business process under study. It is something that the system must do or a quality that the system must have. A requirement exists either because the type of product demands certain functions or qualities, or the client wants the requirement to be part of the delivered product.</td>
</tr>
<tr>
<td>Buyer</td>
<td>An entity that purchases the product from the Brand Owner or its agent</td>
</tr>
<tr>
<td>Extension digit, GS1 Company Prefix, Serial Reference and Check Digit.</td>
<td></td>
</tr>
<tr>
<td>Business requirement</td>
<td>A statement of need concerning the business area or business process under study. It is something that the system must do or a quality that the system must have. A requirement exists either because the type of product demands certain functions or qualities, or the client wants the requirement to be part of the delivered product.</td>
</tr>
<tr>
<td>Minced Meat</td>
<td>Boned meat but into small fragments and contains less than 1 % salt. (Reg. E535/2004 Bilage I, art. 1.13)</td>
</tr>
<tr>
<td>Meat Preparation</td>
<td>Fresh meat, including meat that has been minced into fragments, which has had food-stuffs, seasonings or additives added to it or which has undergone processes that is not sufficient to modify the internal muscle fibre structure of the meat. (For example: ham, skewers, etc.). According to the AFSCA governs all types of preparations that contain more than 50 % meat (Reg. E535/2004).</td>
</tr>
<tr>
<td>Meat Product</td>
<td>Processed products resulting from the processing of meat or from the further processing of such processed products, so that the cut surface shows that the product no longer has the characteristics of fresh meat.</td>
</tr>
<tr>
<td>Origin (place of)</td>
<td>In the meaning of GS1 Application Identifier the date of origin in general is defined as a country in which the trade item has been produced or manufactured. According to Reg. (EC) No 1760/2000 and Reg. 1357/2013 the Origin means, that the birth, rearing/raising and slaughtering took place in the same country.</td>
</tr>
<tr>
<td>Serialised Global Trade Item Number (SGTN)</td>
<td>The Serialised Global Trade Item Number EPC scheme is used to assign a unique identifier to an instance of a trade item, such as a specific instance of a product or SKU.</td>
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<tr>
<td>Slaughter date</td>
<td>The date on which the slaughter of the animal took place.</td>
</tr>
<tr>
<td>RTI</td>
<td>Returnable Transport Items (RTI) are used for moving or transporting goods. RTIs are often managed as exchangeable items rather than as individual assets.</td>
</tr>
<tr>
<td>SSCC</td>
<td>The GS1 Identification Key used to identify logistics units. The key comprises an Extension digit, GS1 Company Prefix, Serial Reference and Check Digit.</td>
</tr>
</tbody>
</table>
### 6.4. GS1 Application Identifier

Your will find the complete list of GS1 application identifiers under the following link:


<table>
<thead>
<tr>
<th>AI</th>
<th>Data Content</th>
<th>Format*</th>
<th>FNC1 Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>SSCC (Serial Shipping Container Code)</td>
<td>n2+n18</td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Global Trade Item Number (GTIN)</td>
<td>n2+n14</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>GTIN of Contained Trade Items (in combination with AI 37 and 00)</td>
<td>n2+n14</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Batch or Lot Number</td>
<td>n2+x+20 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Production Date (YYMMDD)</td>
<td>n2+n6</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Packaging Date (YYMMDD)</td>
<td>n2+n6</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Best Before Date (YYMMDD)</td>
<td>n2+n6</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Expiration Date (YYMMDD)</td>
<td>n2+n6</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Serial Number</td>
<td>n2+x+20 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>Reference to Source Entity (e.g. No. of Ear-Tag)</td>
<td>n3+x+30 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>GLN Extension Component</td>
<td>n3+x+20 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Count of Items (Variable Measure Trade Item)</td>
<td>n2+n.8  (FNC1)</td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Count of Trade Items (in combination with AI 02 and 00)</td>
<td>n2+n.8  (FNC1)</td>
<td></td>
</tr>
<tr>
<td>310</td>
<td>Net weight, kilograms (Variable Measure Trade Item)</td>
<td>n4+n6</td>
<td></td>
</tr>
<tr>
<td>320 (**)</td>
<td>Net weight, pounds (Variable Measure Trade Item)</td>
<td>n4+n6</td>
<td></td>
</tr>
<tr>
<td>330 (**)</td>
<td>Logistic weight, kilograms</td>
<td>n4+n6</td>
<td></td>
</tr>
<tr>
<td>392 (**)</td>
<td>Applicable amount Payable, single monetary area (Variable Measure Trade Item)</td>
<td>n4+n.15 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>410</td>
<td>Ship to – Deliver to Global Location Number</td>
<td>n3+n13</td>
<td></td>
</tr>
<tr>
<td>411</td>
<td>Bill to – Invoice to Global Location Number</td>
<td>n3+n13</td>
<td></td>
</tr>
<tr>
<td>412</td>
<td>Purchased from Global Location Number</td>
<td>n3+n13</td>
<td></td>
</tr>
<tr>
<td>413</td>
<td>Ship for – Deliver for – Forward to Global Location Number</td>
<td>n3+n13</td>
<td></td>
</tr>
<tr>
<td>414</td>
<td>Identification of a Physical Location – Global Location Number</td>
<td>n3+n13</td>
<td></td>
</tr>
<tr>
<td>415</td>
<td>Global Location Number of the Invoicing Party</td>
<td>n3+n13</td>
<td></td>
</tr>
<tr>
<td>422</td>
<td>Country of Origin of a Trade Item (associated with country of birth)</td>
<td>n3+n3   (FNC1)</td>
<td></td>
</tr>
<tr>
<td>423</td>
<td>Country of Initial Processing (associated with country/countries of rearing)</td>
<td>n3+n3+n..12 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>424</td>
<td>Country of Processing (associated with country of slaughtering)</td>
<td>n3+n3   (FNC1)</td>
<td></td>
</tr>
<tr>
<td>425</td>
<td>Country of Disassembly</td>
<td>n3+n3   (FNC1)</td>
<td></td>
</tr>
<tr>
<td>426</td>
<td>Country Covering full Process Chain (alternative to AI 422-424)</td>
<td>n3+n3   (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7002</td>
<td>UN/ECE Meat Carcasses and Cuts Classification</td>
<td>N4+x+30 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7006</td>
<td>First Freeze Date</td>
<td>N4+N8   (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7007</td>
<td>Harvest Date (for the Meat Business: Date of Slaughtering)</td>
<td>N4+N6+12 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7030</td>
<td>Approval Number of Processor with ISO Country Code (Slaughthouse)</td>
<td>N4+N3+x.+27 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7031</td>
<td>Approval Number of Processor with ISO Country Code (first deboning/cutting hall)</td>
<td>N4+N3+x.+27 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7032-7037</td>
<td>Approval Number of Processor with ISO Country Code (second through seventh processing location (cutting hall))</td>
<td>N4+N3+x.+27 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7038</td>
<td>Approval Number of Processor with ISO Country Code (slaughterhouse)</td>
<td>N4+N3+x.+27 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>7039</td>
<td>Approval Number of Processor with ISO Country Code (slaughterhouse)</td>
<td>N4+N3+x.+27 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>8003</td>
<td>Global Returnable Asset Identifier (GRAI)</td>
<td>N4+N3+x+18 (FNC1)</td>
<td></td>
</tr>
<tr>
<td>8200</td>
<td>Extended Packaging URL</td>
<td>N4+x+70 (FNC1)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

(*) The first position indicates the length (number of digits) of the GS1 Application Identifier. The following value refers to the format of the data content. The following convention is applied:

- **N** numeric digit
- **X** any character
- **N..3** 3 numeric digits, fixed length
- **N..3** up to 3 numeric digits
- **X..3** up to 3 characters in Figure 7.11-1

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

(****) 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. The delimiter shall be a Function 1 Symbol Character in GS1-128 Symbology, GS1 DataBar Expanded Versions and GS1 Composite Symbology and should be a Function 1 Symbol Character in GS1 DataMatrix and GS1 QR Code Symbology.

Example:

- $110$ Net weight in kg without a decimal point
- $1102$ Net weight in kg with two decimal points
6.5. EPCIS attributes

<table>
<thead>
<tr>
<th>Dim</th>
<th>Data Element/Product category</th>
<th>Meat raw</th>
<th>Meat processed</th>
<th>Intermediate Perishables (Generic)</th>
<th>Finish Perishables (Generic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Manufacturing raw product (slaughtering)</td>
<td>Manufacturing processed product (e.g. cutting, mincing, preparing)</td>
<td>Manufacturing intermediate product (e.g. gutting, splitting, preserving)</td>
<td>Manufacturing final product (e.g. creating consumer item)</td>
<td></td>
</tr>
<tr>
<td>Event Type</td>
<td>Object Event</td>
<td>Object Event</td>
<td>Transformation Event</td>
<td>Transformation Event</td>
<td></td>
</tr>
<tr>
<td>Action</td>
<td>ADD</td>
<td>ADD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Quantity List</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Quantity List</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When</td>
<td>Event Time</td>
<td>M: slaughteringStart Date M: slaughteringStart Date</td>
<td>M: processingStart Date M: processingEnd Date</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.6. Labelling examples

**Figure 6** – Label for pre-packed variable/fixed weight product sold at PoS with RCN

**Figure 7** – Label for pre-packed variable/fixed weight product sold at PoS with GS1 DataBar
Figure 8 – carton/crate label with GS1-128-barcode

Figure 9 – product label with GS1-128-barcode

Figure 10 – Label for beef carcass
7. References

- GS1 Industry Guideline - Global Meat and Poultry Traceability, Part 1. The GS1 System
- GS1 made easy – Global Meat and Poultry Traceability Guideline Companion Document
- GS1 Industry Guideline - Global Meat and Poultry Traceability, Part 5. Poultry Supply Chain
- GS1 Industry Guideline – Meat and Poultry Glossary
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