EAN
INTERNATIONAL

TRACEABILITY OF BEEF

Application of EAN•UCC Standards in implementing
Regulation (EC) 1760/2000

Third revised edition

TABLE OF CONTENT

MANAGEMENT SUMMARY

The repeal and replacement of Regulation (EC) 820/97 by Regulation (EC) 1760/2000 (here called the 'Beef Labelling Regulation') has required further enhacement of the EAN•UCC System. The publication of the third edition 'Traceability of Beef Guidelines' fully replaces the previously published first and second editions.

The aim of these Guidelines is to provide a solution for the implementation of the Beef Labelling Regulation using an internationally accepted numbering and bar coding system – part of the EAN•UCC System. The use of common identification and communication standards significantly improves the accuracy and speed of information related to the origin and processing of beef, resulting in increased efficiency and cost reduction within the beef supply chain.

Adoption of the 'Traceability of Beef Guidelines' is voluntary. These Guidelines define the requirements needed to implement the Beef Labelling Regulation in order to trace beef products. Furthermore, these Guidelines provide a current best practice model for the efficient implementation of the Beef Labelling Regulation. The use of EAN•UCC System in the beef supply chain is based upon the 'General EAN•UCC Specifications'. They are recommended by the United Nations Economic Commission for Europe (UN/ECE)[1].

LIMITATIONS OF THE GUIDELINES

These Guidelines provide help, information and recommendations needed to understand and use the EAN•UCC System for traded units (packaged items) in the beef supply chain between the slaughterhouse and the retail point-of-sale. Effective traceability from the slaughterhouse back to an individual animal or group of animals (which is required by the Beef Labelling Regulation) is based upon the accuracy of the information about the animal held on the database belonging to the slaughterhouse. These Guidelines specifically address the EAN•UCC System of identification, numbering and bar coding for the purpose of tracking and tracing beef products. For standards relating to logistic items (pallets, cartons) please refer to the general EAN•UCC Specifications. The implementation of these Guidelines is recommended for those countries trading beef products with EU Member States, and refers to the application of Articles 11, 12, 13, 14, and 15 of the Beef Labelling Regulation.

These Guidelines do not address the use of EANCOM® Messages, which will be dealt with in future releases of these Guidelines. For general information on Tracking and Tracing, your national EAN Member Organisation should be contacted.

The third edition of the 'Traceability of Beef Guidelines' may be amended at any time, and republished as a new edition. These Guidelines are fully consistent with commercial and inter-governmental arrangements for the identification of beef applicable at the time of going to press.
All bar codes used in these guidelines are for illustration purpose only and should not be scanned.

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[1] Please see the UN/ECE section on meat at http://www.unece.org/trade/agr

INTRODUCTION

Food safety has become a critical priority for the meat supply chain. However, rather than just identifying a more generalised commodity group, an effective and cost-efficient traceability system should accurately pinpoint any problem in food safety related to a specific geographical origin, slaughtering or processing facility, down to a farm or even to the single animal.

The European Commission has recognised an urgent need to regain consumer confidence in beef products and therefore believes in fast tracing of beef products throughout the supply chain. Consequently on the basis of a proposal from the European Commission, the Euopean Parliament and Council have adapted a regulation on compulsory labelling of beef (EC) 1760/2000 (here called the Beef Labelling Regulation)[2]. This Regulation was effective in all EU Member States from January 2001.

The Beef Labelling Regulation aims to ensure a link between, on one hand, the identification of the carcass, quarter or pieces of beef and on the other hand, the individual animal or the group of animals from wihich they are derived. In particular, the beef label must contain the following 6 mandatory elements in human readable format:
- A reference number or reference code ensuring the link between the meat and the animal or a group of animals;
- Country of birth;[3]
- Country/countries of fattening;[4]
- Country of slaughter;
- Country/countries of cutting;
- Approval number of the slaughterhouse and cutting hall(s).

Adopting the EAN•UCC System, a unique identification numbering system together with the use of UCC/EAN-128 bar codes can help users to comply with the Beef Labelling Regulation. These Guidelines show how to implement this Regulation in an efficient manner using the EAN•UCC System. However, in this edition, the Guidelines do not contain Electronic Data Interchange (EDI)[4] solutions for Tracking and Tracing. EDI messages will be included in future releases of these Guidelines.

Chapter 1 gives a short description of the organisation behind the EAN•UCC System followed by an impact analysis of the Beef Labelling Regulation on the beef supply chain in chapter 2. The third chapter provides an explanation of the bar codes used. The main part of this document, chapter 4 onwards examines step by step the implications of implementation of these Guidelines for the meat supply chain.

These Guidelines contain links to other documents relating to the general implementation of the Beef Labelling Regulation and the EAN•UCC System. Trading partners in the beef supply chain are advised to contact the relevant national authority of

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[2] A copy of Regulation (EC) 1760/2000 can be found by visiting the EU's official web site at http://europe.eu.int
[3] Compulsory as of 1 January 2002; see Regulation (EC) 1760/2000 Article 13 (5a)
[4] EANCOM® is the EAN.UCC standard for EDI messages

the Member State in which they wish to trade to establish any differences in national implementation or interpretation of the legislation.

1 EAN•UCC

1.1 EAN INTERNATIONAL AND UCC

EAN International and the Uniform Code Council Inc. (UCC) are global, independent, not for profit organisations that jointly administer and maintain the EAN•UCC System. In the context of these Guidelines, reference will be made mainly to two complimentary sets of EAN•UCC standards for effective supply chain management: the EAN•UCC standards for Automatic Identification and Data Capture (AIDC), described in the General EAN•UCC specifications, and the EANCOM® standard for Electronic Data Interchange (EDI). Currently EAN International is developing EDI messages for the beef supply chain.

The fundamental principle of the EAN•UCC System is an unambiguous numbering schema used to identify goods or services throughout any supply chain. Using automatic data capture techniques, this numbering system can be applied successfully at every stage of production or transformation and distribution. Whilst the immediate and most visible application of the EAN•UCC System is a bar code (an UPC or EAN-13 symbol), it is important to remember that a bar code is just a machine-readable representation of its associated number. The use of the EAN•UCC System ensures the uniqueness of the associated number that identifies the item to which it is assigned.

The EAN•UCC System works towards global uniqueness and overcomes problems in confusion, duplications and misinterpretation, because all users of the EAN•UCC System follow the same coding rules. The EAN Member Organisations and UCC locally ensure the uniqueness of the numbers world wide via the use of specific agreed prefixes. An EAN•UCC number can be recognised by trading partners operating locally or worldwide. Furthermore, the EAN•UCC System allows an item to carry additional information, rather than just a unique identifying number, for example, a company or industry specific reference number or a batch number.

EAN is represented in 98 countries in the world. With its Head Office based in Brussels, EAN International co-ordinates all its 96 EAN Member Organisations, and provides written guidelines on the use of the EAN•UCC System[5]. EAN International is partner to the Uniform Code Council (UCC) in the USA and Canada to ensure worldwide consistency of the EAN•UCC System.

In late 2000, EMEG (European Meat Expert Group) was established within EAN International to examine the implications of the new Beef Labelling Regulation and how the EAN•UCC System could be applied to serve the meat supply chain.

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[5] For further information, please visit http://www.ean-int.org or the website of your local Member Organisation.

Because these Guidelines are focused on the Beef Labelling Regulation, they are primarily intended for:

- All EU Member States;
- Non-EU countries exporting to EU Member States;
- Countries that are non-EU Member States but which have decided to adopt the Beef Labelling Regulation as the primary means for Tracking and Tracing in the meat supply chain.

*(See figure 1 for all EU Member States)*
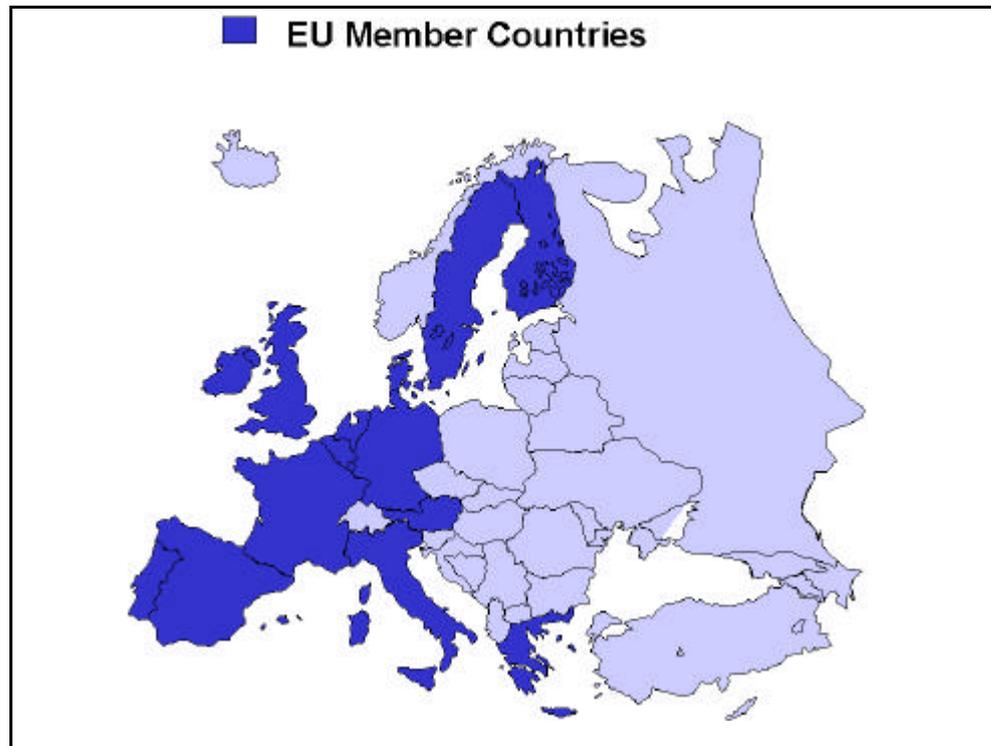
Figure 1: European Union (EU) Member States

Note:

Although not an EU Member State, the Norwegian government has decided to make the Beef Labelling Regulation mandatory in Norway.

For an overview of national appendixes as part of these Guidelines, please visit the EAN International website at http://www.ean-int.org.
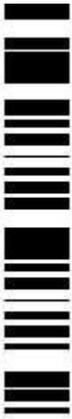
2 IMPACT OF REGULATION (EC) 1760/2000

Traceability of beef requires a verifiable method to identify bovine animals, carcasses and cuts in all their packaging and transport/storage configurations at any point in the supply chain. Unique identification numbers must be applied and recorded accurately to guarantee a link between each point of processing in the supply chain.

The system of identification and registration of bovine animals in the European Union is comprised of the following elements[6]:

- Ear-tags to identify animals individually;
- Computerised databases;
- Animal passports;
- Individual registers kept on each (farm) holding;

The data documenting an animal's history must be included in its passport or in a database.

Tracking and Tracing of beef has generated a significant amount of interest and debate. It is important to distinguish between the legal requirements, necessary technologies required to implement Tracking and Tracing, and the EAN•UCC System.

Legislators establish the legal requirements regarding food safety. The EAN•UCC System enables efficient food safety management. However, it is the responsibility of the trading partners in a supply chain to take advantage of the capabilities that the EAN•UCC System provides, to ensure ful compliance with Regulation (EC) 1760/2000 (here called the "Beef Labelling Regulation"). Recently, the United Nations decided to recommend use, officially, of the EAN•UCC System for Tracking and Tracing of beef[7]. The European beef supply chain intends to implement the Beef Labelling Regulation with the help of the EAN•UCC System.

'Tracking' is the retrieval of the actual status of a shipment, a package etc.
Tracking is the ability to follow the path of a specified unit and/or batch of a product downstream through the supply chain as it moves between trading partners. Products are tracked routinely for availability, inventory management and logistical purposes. In the context of these Guidelines, the focus is on tracking of beef products from the slaughterhouse to retail point of sale.

'Tracing' is the retrieval of information to reconstruct the history of a shipment, package etc
Tracing is the ability to identify the origin of a particular unit and/or batch of product located within the supply chain by reference to records held by trading partners upstream in the supply chain. Products are traced for purposes such as product recall and for the investigation of complaints. In the context of these Guidelines, the focus is on tracing of beef products from retail point of sale back to the slaughterhouse. These Guidelines do not trace the movement of live animals between (farm) holdings. Traceability back to the individual animal, including verification of the animal's countries of birth and fattening is dependent upon the accuracy of information that is required by

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the Beef Labelling Regulation. The data is held by the slaughterhouse.
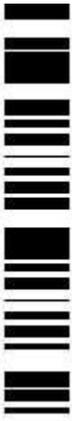
3   EAN•UCC BAR CODES

Bar codes carry data. The bar code is used in the EAN•UCC System to encode relevant data about the product or service for each stage in the supply chain. In simple terms, a bar code consists of a series of vertical parallel and adjacent (dark-coloured) bars and (light-coloured) spaces. Predetermined width patterns for bars and spaces are used to encode and represent actual data in the bar code. This data can be the Global Trade Item Number (GTIN) itself or any additional information attributed to the item. A bar code reader (scanner) decodes the width patterns of the bars and spaces. The combination of bar code labels and scanners allows real-time data capture.

3.1   IDENTIFYING BAR CODES

Generally speaking, each traded product (for example, a meat package intended for retail point of sale) or an aggregate of tradable products (for example, a crate of different meat packages transferred from the storage location to the retail outlet) is allocated a global unique EAN•UCC number. This is known as the Global Trade Item Number (GTIN). The GTIN contains no information at all about the product; it is just a world wide unique and unambiguous identification number.

The GTIN can be encoded into a bar code. The well-known EAN-13 bar code, which is often used for scanning at retail point of sale, is given in Figure 2 for illustration purposes.

1234567	= Company Prefix
001	= Item Reference
6	= Check Digit

8 7 1 2 3 4 5 6 7 0 0 1 6

Note: In this example 9 numeric digits are used for the Company Prefix. In case 7 or 8 numbers are numeric digits are used for the Company Prefix (according to the assignment rules of each EAN Member Organisation) the Item Reference will be respectively 5 or 4 numeric digits long.

- An EAN Member Organisation assigns the ***EAN•UCC Company Prefix*** to an EAN•UCC System user. It assures that the number is unique worldwide.
- The EAN•UCC System user who is also the ultimate product owner assigns the ***Item Reference***. Each different trade item is given a unique Item Reference.
- The ***Check Digit*** is the result of a known calculation of the figures in the preceding positions. Its use is for error detection and its verification is carried out automatically by the bar code reader to ensure that the number is correctly composed.

Figure 2:Numeric Construction of the EAN-13 bar code

3.2   EAN•UCC BAR CODES WITH ADDITIONAL INFORMATION

As noted above, the GTIN does not contain any specific information about the product, it is simply an identification number that can be used as a key to access information,

stored into an organisation's database. However, additional product information may also be required, for example the product's batch number, weight, or use by date. Within the meat supply chain the UCC/EAN-128 bar code symbology may be used to encode data additional to the product identification (GTIN). Examples of these could be, 'slaughter date', 'ear-tag number' and 'approval number of the slaughterhouse'. The EAN•UCC Application Identifiers (AI's) are mandatory when using the UCC/EAN-128 symbology and they define the structure of the data encoded in the following Data Element:

Figure 3 shows an example of a UCC/EAN-128 bar code applied to a piece of beef at the slaughterhouse:
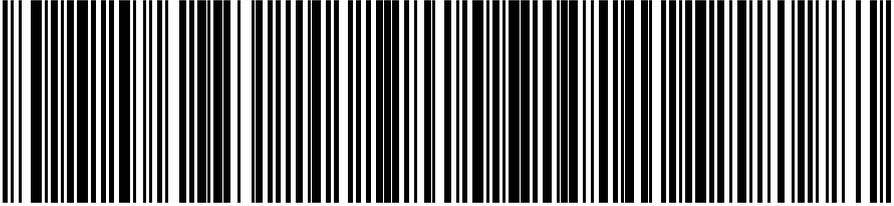
(01) 98712345670019(3102) 003725(251) NL21243857

(01)98712345670019 = GTIN
(3102)003725   = Net Weight
1243857   = Reference Number

- The AI **(01)** indicates that the following Data Element (98712345670019) is the GTIN.
- The slaughterhouse uses a specific GTIN for that specific piece of meat: **98712345670019**
- At the beginning of the Data Element there is a **9**, which indicates that a product has variable quantity (in this case weight).
- AI **(3102)** indicates the Net Weight of the product, in this example, **37.25** kilograms.
- AI **(251)** indicates the Reference Number of the original animal, in this example **NL21243857**

Figure 3: Use of UCC/EAN-128 bar code on beef product at slaughterhouse

EAN International, in conjunction with the UCC, predefines the meaning of any AI. For Tracking and Tracing of beef, EAN International has introduced new AI's, that can be used in the traceability of other food product.

4 RECOMMENDATIONS

This chapter will examine each step of the beef supply chain and explain how the EAN•UCC System is implemented in accordance with the Regulation. It will identify also any specific national interpretations of this legislation. All participants in the supply chain should take individual responsibility for providing the bar code with the right information, and must ensure that secure, accurate recording systems for that information are maintained.

The information contained in this chapter is based upon the figure below, an overview of information exchange in Beef Labelling (EC) 1760/2000 using the EAN•UCC System.
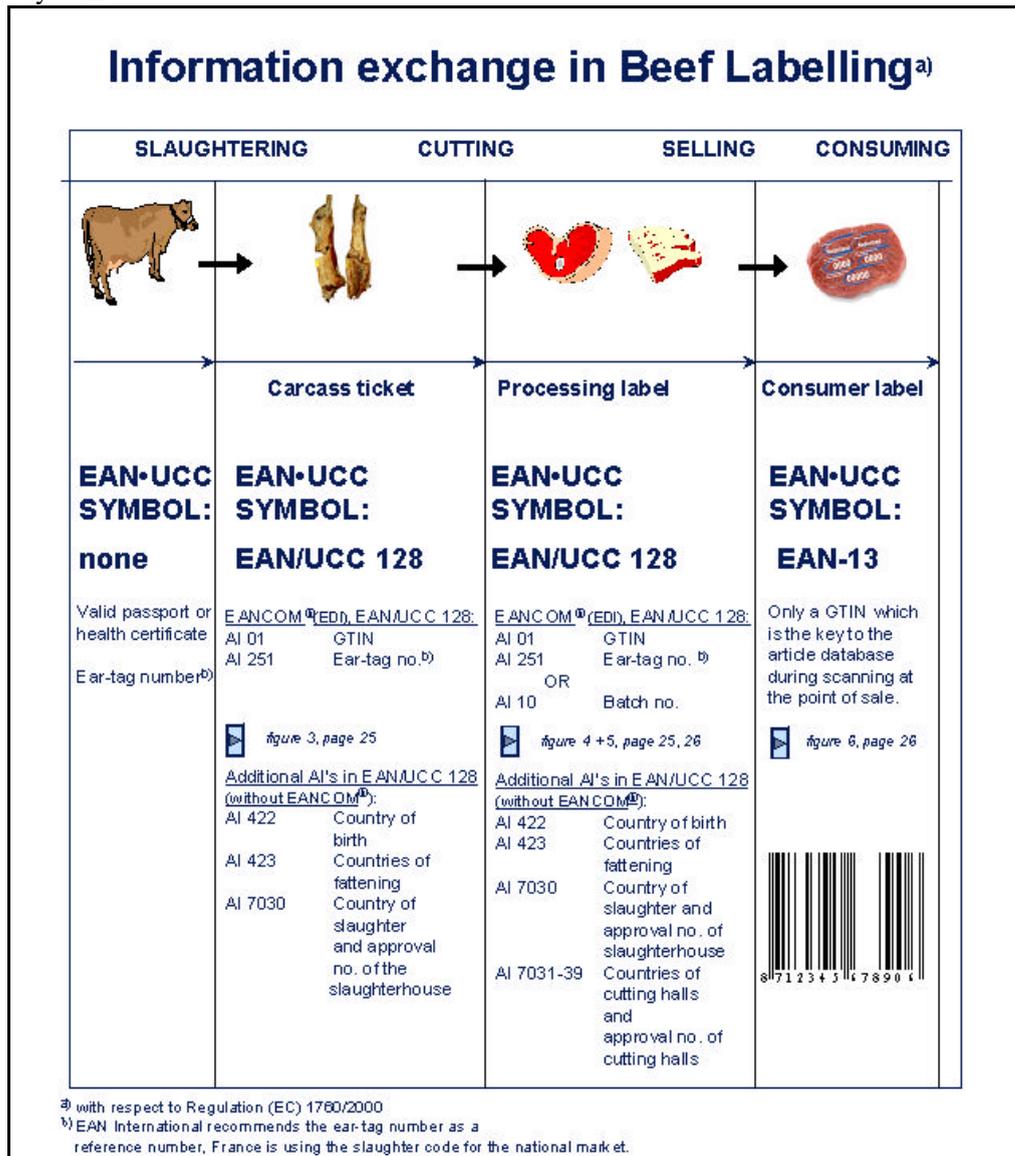
Figure4: Overview of information exchange Beef Labelling (EC) 1760/2000

It should be noted that national governments and companies could require additional business bar coded information to appear on their labels. Any such voluntary information should be submitted for approval to the competent authority of the Member State involved, in accordance with procedure forseen in article 16 of Regulation (EC) 1760/2000. We advise users to check with their competent national authority the legal status of any additional information they may wish to provide. In the

UK, for example, 'best before' or 'use by' dates do not need approval, whilst 'method of slaughter', for example by Halal or Kosher methods does.

4.1 AI'S IN THE BEEF SUPPLY CHAIN

In this chapter you will find the AI's recommended by EAN International in implementing Regulation (EC) 1760/2000[8].

AI	Full Title	Data Title	Format AI	Format data field	Use of the AI in the Beef Supply Chain
01	Global Trade Item Number	GTIN	n2	n14	EAN•UCC Global Trade Item Number
10	Batch/Lot number	BATCH/LOT	n2	an..20	Batch number
251	Reference of Source entity	REFERENCE TO SOURCE ENTITY	n3	an..30	Ear-tag number [9]
422	Country of origin	ORIGIN[10]	n3	n3	Country of birth expressed by ISO 3166[11]
423	Country of initial process	COUNTRY-INITIAL PROCESS	n3	n..15	Possibility for 5 ISO country-codes for identifying a maximum of 5 countries of fattening
426	Country of Processing	COUNTRY-FULL PROCESS	n3	n3	All preceding steps in the supply chain have taken place within the same country
7030 up to 7039	Approval Number of Processor	PROCESSOR #	n4	n3+ an..27	ISO country code plus the approval numbers of a maximum 10 succeeding processors in the chain. 7030 is always for the slaughterhouse. 7031 until 7039 for the cutting halls.
nx : numeric (n) field with fixed length as indicated (x).					
n..x : numeric (n) field with variable length. Maximum length as indicated (x)					
an..x : alpha numeric (an) field with variable length. Maximum length as indicated (x)					

Table 1: AIs recommended by EAN International in implementing Regulation (EC) 1760/2000

Extra information concerning the AI 423 and the AI 7030-7039:
n..15   : 5 times 3 numbers to fill in the ISO country code
an..27   : to fill in the approval numbers

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[8] A full list of Application Identifiers is available in the General EAN.UCC Specifications at http://www.ean-int.org.

[9] Or another reference code that relates to the animal of which the cut meat is derived

[10] 'Origin' here does not have the same meaning as stated in the Regulation. Here it means only country of birth!

[11] Refer to www.iso.ch for current list of ISO country codes.

4.2 SLAUGHTERING

The slaughterhouse is the first stage in the beef supply chain which uses the EAN•UCC System. Traceability back to the individual animal relies on the accuracy of information that is required by the Beef Labelling Regulation and held by the slaughterhouse.

4.2.1 REGULATION (EC) 1760/2000
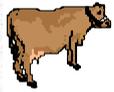
The living animals are required to have the following papers when they arrive at the slaughterhouse:

- Either, an accompanying document (animal passport) or a certificate of good health, and
- Ear-tags within a lawful reference number to identify the animals individually.

The Slaughterhouse must record and make accessible the following information:

Regulation (EU) 1760/2000 Requirement	*Article number*
- A reference number or reference code ensuring the link between the meat and the animal or a group of animals [12]	*13 (2a)*
- Approval number of the slaughterhouse	*13 (2b)*
- Country of birth	*13 (5a.-i)*
- Country / countries of fattening	*13 (5a.-ii)*
- Country of slaughter	*13 (5a.-iii)*

The Beef Labelling Regulation states that "the compulsory labelling system shall ensure a link between, on one hand, the identification of the carcass, quarter or pieces of meat and, on the other hand, the individual animal or, where this is sufficient to enable the accuracy of the information on the label to be checked, the group of animals concerned".[13]

It is important to note that if animals are born, raised and slaughtered in the same country, then the information can be combined on the label to read 'Origin'.[14]

4.2.2 EAN•UCC RECOMMENDATION

The carcass must be identified with a reference number EAN International recommends the ear-tag number to identify the carcass.

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[12] EAN International recommends the use of the ear-tag number
[13] Text taken from Regulation (EC) 1760/2000: article 13.1
[14] Text taken from Regulation (EC) 1760/2000: article 13 (5b)

UCC/EAN-128 bar code symbol on the carcass ticket

The data shown in the table below can be encoded in the UCC/EAN-128 bar code:

Data	UCC/ EAN-128	
- Country of birth;	AI 422	⎫ AI 426[*]
- Country/countries of fattening;	AI 423	⎭
- Country of slaughter and approval number of the slaughterhouse;	AI 7030	
- Ear-tag number;	AI 251	
- EAN•UCC Global Trade Item Number.	AI 01	

When EANCOM® (EDI) messages are used, only two out of the five AIs listed above are needed on the label; AI 251 (Ear-tag number) and AI 01 (GTIN of the product). It should be noted that all the AIs listed above are maintained in EANCOM® messages when they are used.

Note:
- [*] Where the countries of birth, fattening and slaughtering are the same, AI 426 (Country of full processing) can be used, instead of AI 422 (country of birth) and AI 423 (country/countries of fattening). The AI 7030 is still needed for encoding the approval number of the slaughterhouse.
- The EANCOM® (EDI) messages are in the process of development, and therefore a full solution will be provided for in future releases of these Guidelines.

Example: Appendix 'Examples of Labels'; figure 5, page 21

4.3 CUTTING

The slaughterhouse should forward all relevant information about the animal and the carcass to the first cutting hall in accordance with regulatory and business requirements. The cutting hall is understood to cover all meat processing, from the carcass-half, through cutting, to the retail package.

Using the EAN•UCC System it is possible to encode a maximum of nine cutting halls in the supply chain. Each cutting hall should forward all relevant information about the animal and carcass to the next cutting hall in the supply chain in human readable text in accordance with regulatory and business requirements.
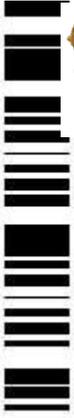
4.3.1 REGULATION (EC) 1760/2000

Each cutting hall must record and make accessible the following information during the cutting process to meet the requirements of the Beef Labelling Regulation.

Regulation (EC) 1760/2000 Requirement	*Article number*
- A reference number or reference code ensuring the link between the meat and the animal or a group of animals [15]	*13 (2a)*
- Approval number of the slaughterhouse	*13 (2b)*
- Approval number(s) of the cutting hall(s)	*13 (2c)*
- Country of birth	*13 (5a.-i)*
- Country / countries of fattening	*13 (5a.-ii)*
- Country of slaughter	*13 (2b)*
- Country / countries of cutting	*13 (2c)*

4.3.2 EAN•UCC RECOMMENDATION

Any batch made up by the cutting hall may comprise at most one day's production in the processing plant, and must only contain beef slaughtered in the same slaughterhouse (and if relevant, processed in the same plant). Often only information relating to the entire batch might be written on the cutting hall label. Every individual piece of meat or package of chopped meat must have a label.

UCC/EAN-128 bar code symbol on the processing label
The data shown in the table below can be recorded in the UCC/EAN-128 bar code:

Data	UCC/ EAN-128	
- Country of birth;	AI 422	} AI 426[*]
- Country/countries of fattening;	AI 423	
- Country of slaughter and approval number of the slaughterhouse;	AI 7030	
- Country and approval number of the 1st cutting hall;	AI 7031	
- Country and approval number of 2nd cutting hall;	AI 7032	
- Country and approval number of the 3rd cutting hall..- ..until the 9th cutting hall;	AI 7033-39	
- Either ear-tag number for individual cutting, or batch number of cutting group	AI 251 or AI 10	
- EAN•UCC Global Trade Item Number	AI 01	

When EANCOM® (EDI) messages are used, only two of the AIs listed above are needed on the label; either AI 251 (Ear-tag number) or AI 10 (batch number of the cutting group), and AI 01 (GTIN of the product). It should be noted that all the AIs listed above are maintained in EANCOM® messages when they are used.

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[15] EAN International recommends the use of the ear-tag number

- The Application Identifier (426) indicates that the data field contains the ISO country code of the country where all the processing of the trade item took place. If this AI is used, the full processing of a trade item must have taken place in a single country. This is particularly important in certain applications, such as livestock (where it would cover things such as the animal's birth, fattening, and slaughter), where processing could take place in different countries. In situations like this, AI (426) may not be used. It is the responsibility of the supplier to allocate the correct country code. The AI 7030 – 7039 are still needed for encoding the approval number of the slaughterhouse and the cuttinghall(s).

Example: Appendix 'Examples of Labels'; figure 6, page 21 and figure 7, page 22

4.4 SELLING

The final cutting hall or processor should forward all relevant information about the animal, carcass and previous processes to the next operational operation process in the supply chain in accordance with all regulatory and business requirements. This could be to a wholesaler, cold storage warehouse, or directly to a retail outlet.

It is important to make the distinction in these Guidelines between beef products sold 'pre-packed' and 'non pre-packed' at the retail point of sale. These Guidelines only address how pre-packed beef products should be labelled in accordance with the Beef Labelling Regulation and the EAN•UCC System at the retail point of sale. The Guidelines *do not address* how information about non-prepacked beef products should be provided to consumers since EU Member States have set down different national implementation requirements concerning the information flow of unpacked beef behind the counter.

4.4.1 REGULATION (EC) 1760/2000

At the retail point of sale, the final consumer must be informed of the origin of the beef as the European Commission has established that the information on a consumer label on a packaged beef product must be in human readable format or provided in another way in case it concerns unpacked beef. The consumer label must therefore contain the following information, in human readable format:

Regulation (EC) 1760/2000 Requirement	*Article number*
- A reference number or reference code ensuring the link between the meat and the animal or a group of animals; [16]	*13 (2a)*
- Approval number of the slaughterhouse;	*13 (2b)*
- Approval number(s) of the cutting hall(s);	*13 (2c)*
- Country of birth;	*13 (5a.-i)*
- Country / countries of fattening;	*13 (5a.-ii)*
- Country of slaughter;	*13 (2b)*
- Country / countries of cutting;	*13 (2c)*

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[16] EAN International recommends the use of the ear-tag number
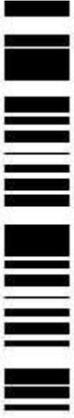
4.4.2 EAN•UCC RECOMMENDATION

A trader should contact the competent national authority to establish the (consumer) beef labelling requirements for non pre-packed beef at the retail point of sale.

The information bar coded as an UCC/EAN-128 bar code onto the Processing Label can be used to generate the final consumer label.
Similarly to any other retail consumer product, a GTIN shall be present on the final trade unit, intended for automatic scanning at the retail point of sale checkout system.

Example: Appendix 'Examples of Labels'; figure 8, page 21

You can find National supplements on the regulation (EC) 1760/2000 you can find at the EAN International website www.ean-int.org

5 GETTING STARTED

The first step to introduce the EAN•UCC System in your company in order to fulfill the compulsory Beef Labelling Regulation, is to be able to construct and use your own GTINs.

To construct a GTIN an EAN•UCC Company Prefix is always needed. In order to obtain an EAN•UCC company prefix, please contact your EAN Member Organisation and register as a member.

The national EAN Member Organisation is completely at your disposal. For any questions related to the introduction of the EAN•UCC System and/or related to the Traceability of Beef Guidelines or meat supply chain, the EAN Member Organisation will be pleased to assist you.

Addresses and telephone numbers of all EAN Member Organisations can be found at the website of EAN International: www.ean-int.org

6 DEVELOPMENTS

The EAN•UCC System is used globally throughout a large number of industries. As technology evolves, the EAN•UCC System is updated accordingly. This chapter explains how the existing EAN•UCC System is being applied in the context of the traceability of beef products. It also considers how new technologies represent opportunities to improve current best practice.

6.1 ELECTRONIC COMMUNICATION

Besides using bar codes to exchange on data between trading partners, Electronic Data Interchange (EDI) is also used. EDI offers a more efficient and reliable way of communicating large amounts of data through the supply chain. EANCOM® is the EAN•UCC standard for EDI , and is applied to UN/EDIFACT messages. This standard is widely used by more than 50,000 users worldwide. EAN will develop user guidelines for the use of EANCOM® messages in the traceability of beef products in the near future.

Further more, in August 2001 EAN and UCC published version 1.0 of the Global Voluntary Standards for the Exchange of Electronic Business Standards using 'eXtensible Markup Language' (XML). The EAN•UCC XML standards are now an integral part of the EAN•UCC System. The relevant Business Message Standards and XML Schemas can be downloaded from the EAN International website, http://www.ean-int.org, or via your EAN Member Organisation.

6.2 AUTOMATIC DATA CAPTURE

These Guidelines describe how UCC/EAN-128 bar codes can be applied to implement the Beef Labelling Regulation. EAN•UCC is developing on new automatic data capture technologies. The EAN/UCC Reduced Space Symbology (RSS) and Composite Symbologies offer enhanced possibilities to print more information on bar codes of smaller dimensions. The first Guidelines are being developed in the context of Variable Measure Item applications.

EAN•UCC is also a leading organisation in the standardisation of Radio Frequency Identification technology (RFID). It is working closely with the ISO[17] standard body, the national administrations in charge of radio spectrum regulation, with CEPT (European Conference of Post and Telecommunications) and ETSI (European Telecommunications Standardisation Institute). In addition, the EAN•UCC GTAG project is finalising the technology specifications and setting up 'proof of concept' pilot projects to test and evaluate RFID technology for logistic supply chain applications.

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[17] International Organization for Standardization

APPENDIX I: EXAMPLES OF LABELS

The labels below are examples, the form, size and human readable contents of the labels can deviate from country to country. Only the recommended AIs are included in the bar code, every country is free to encode additional AI's in the bar code and comply with additional regulations where required. For national specifications, please contact your EAN Member Organisation.

CARCASS TICKET

Viande Belgique S.A.
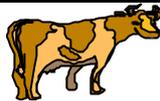
**CARCASS Young bull R round 3-
Weight: 523,8 Kg**

Article Number, GTIN: 5487722000252   Reference number: DK09999902002
Born in: Denmark   Fattened in: Germany, Austria
Slaughtered in: Belgium   Approval number slaughterhouse: UD1098H
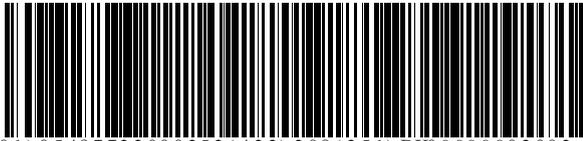
(0 1) 0 5 4 8 7 7 2 2 0 0 0 2 5 2 (4 2 2) 2 0 8 (2 5 1) DK 0 9 9 9 9 9 0 2 0 0 2
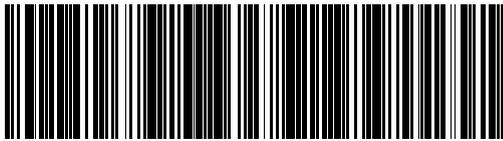
(4 2 3) 2 7 6 0 4 0 (7 0 3 0) 0 5 6 UD1 0 9 8 H

*Figure 5: Carcass Ticket*

**FIRST PROCESSING LABEL**

Holland Vlees B.V.
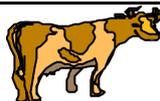
**HIND QUARTER WITH FLANK 5 ribs, U quality
Weight: 237,6 Kg**

Article Number, GTIN: 8712345000967   Reference number: DK09999902002
Born in: Denmark   Fattened in: Germany, Austria
Slaughtered in: Belgium   Approval number slaughterhouse: UD1098H
Cutted in: Netherlands   Approval number cutting hall: 9638

(0 1) 0 8 7 1 2 3 4 5 0 0 0 9 6 7 (4 2 2) 2 0 8 (2 5 1) DK 0 9 9 9 9 9 0 2 0 0 2
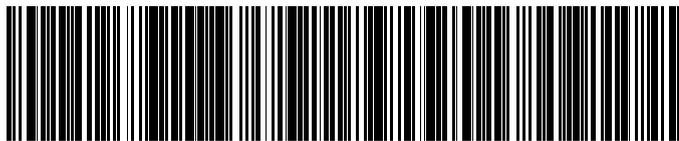
(4 2 3) 2 7 6 0 4 0 (7 0 3 0) 0 5 6 UD1 0 9 8 H (7 0 3 1) 5 2 8 9 6 3 8

Figure 6: Processing Label (1st cutting hall)
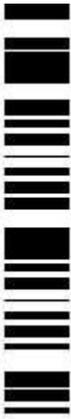
SECOND PROCESSING LABEL

El Torro S.L.

STRIP LOIN bone-inn 5 ribs
Weight: 12,9 Kg

Article Number, GTIN: 8499910000996   Reference number: 01070110
Born in: Denmark   Fattened in: Germany, Austria
Slaughtered in: Belgium   Approval number slaughterhouse: UD1098H
Cutted in: Netherlands   Approval number cutting hall: 9638
Cutted in: Spain   Approval number cutting hall: 6373M

(01)0849910000996(422)208(10)01070110(423)276040

(7030)056UD1098H(7031)5289638(7032)7246373M

Figure 7: Processing Label (2nd cutting hall)

CONSUMER LABEL

Flanksteak PAD

Reference number: 02070105
Born in: Denmark   Fattened in: Germany, Austria
Slaughtered in: Belgium   Approval number slaughterhouse:UD1098H
Cutted in: Netherlands   Approval number cutting hall: 9638
Cutted in: Spain   Approval number cutting hall: 6373M

El Butcher
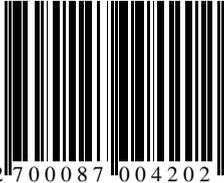
Best Before:

19.09.2001

Packed:

16.09.2001

2 700087 004202

16,79   0,250

Price Euro/Kg   Weight /Kg   4,20
Price/Euro

Figure 8: Consumer label

Note:

Bar codes symbols are for illustration only and not printed for scale