ECR Europe
Efficient Consumer Response

Blue Book

Using Traceability in the Supply Chain to meet Consumer' safety expectations

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Acknowledgments

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The list of the 81 companies, which contributed to this Blue Book through their participation in their national ECR working groups, is set out in Appendix 8.5.

They said...

Tesco Stores
(Being collected)

Danone is fully committed to make every effort to control and monitor all emerging and existing risks. Food safety is a prerequisite of our quality system. As a consequence, for many years we have been implementing targeted procedures and actions aiming at protecting consumer's safety and, in this field, we have been making steady progress. Traceability in the supply chain is a complementary tool to protect the consumer and the image of Danone if some of these procedures have failed to prevent one of the above risks.

Yves REY, Groupe Danone

Quality is our first priority. It is our daily duty. Product safety is not negotiable and under no circumstances will we compromise on our consumer's safety.

Saliha Barlatey, Nestlé Europe

Carrefour Group
(Being collected)

It is our company commitment to assure safe products that meet and exceed consumer and customer expectations, conform to company requirements and comply with government regulations.
Ronald Grube, Kraft Foods International

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(Being collected)

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1 Management Summary

Awareness of consumer and product safety has probably never been so high.
Significant food crises in Europe during the past five years have raised doubts in the consumer's mind and created a lack of trust and confidence in products put on the market. Previously, product safety was perceived and positioned as the voluntary responsibility of companies but the publication of EU Directive 2001/95/EC on General Product Safety in December 2001, and EU Regulation 178/2002 on Food Safety in January 2002 brought about a significant change. Today, European legislation constitutes a set of requirements that each company manufacturing, importing and/or exporting products to and from Europe must comply with.

Beyond the legal aspect, consumer safety is primarily a question of business ethics and responsibility. Good product quality and product safety contribute to build up consumer confidence and consequently strengthen the image of a company or a brand in the consumer's mind. Failure to respect consumer's needs and expectations may be interpreted as betraying this confidence and consequently may lead, in the long term and the worst case, to damage for a company and its brand image and in some case for the business partner's and the whole industry. This is what is at stake when quality and safety are compromised.

Fortunately, most companies already take product quality and customer safety very seriously. A lot of good practices have been developed and implemented on a voluntary basis. These practices ensure that product safety has never been as high as it is today. Companies continuously challenge their internal quality systems and work on continuous improvement thanks to new technologies and ways of working.

However, despite all the efforts deployed to ensure optimum product quality and all the precautions taken every day, incidents do occur where inappropriate products are put on sale and reach consumers. Once identified, such products must be rapidly located and removed from the market. This principle is linked to the ability of a company to trace products along the supply chain, to withdraw them from distribution channels whenever necessary and recall them from consumers whenever required.

In the area of product traceability, product withdrawal and recall, many good practices have been developed and implemented either on a voluntary basis or under the leadership of national organisations such as ECR emphasising the importance of the collaboration between manufacturers and retailers. However, often these practices are only applicable in a particular company or national context and show some divergences, discrepancies and limitations when international products crossing geographical boundaries are considered. Such divergences and limitations constitute barriers to effective product traceability at the European level.

This consideration is the main driver for developing this ECR Europe Blue Book, which describes the most efficient way to trace products irrespective of the fact whether they cross national borders. This ECR Blue Book describes best practice, which covers national and European markets.

In this ECR Blue Book, business best practice recommendations and European legal product safety requirements are taken as a basis for promoting the implementation of a product traceability process supported by EAN•UCC standards such as unique identification of products and locations, pallet labelling, information exchange on products despatched, etc. These recommendations are not compulsory from a legal point of view. However, they provide some guidance on the organisation required to support an effective product traceability process, product withdrawal or recall and incident / crisis management.

Throughout this book, the reader will find statements of key business principles and business rules and perhaps the most important of these is the need for collaboration along the supply chain. Practices where one trading partner imposes their views and proprietary technical solutions should no longer be supported.

Companies operating at a national level are different in sizes and their practices differ according to their activity sectors. This document is intended to be appropriate for all companies independent of their size. It contains alternatives and migration paths for companies, which are not yet using or are not familiar with EAN•UCC standards.

Implementing ECR best practices is a voluntary approach. This European Best Practice is the one to implement to build up a critical mass of players and align national practices at a European level.

These recommendations have been developed in the collaborative spirit of ECR by ECR companies for ECR companies with a common objective: "*Using product traceability in the supply chain to meet Consumer' safety expectations"*.

Signatures of ECR executive board co-chairmen

2 Introduction

On December 3rd, 2001 the EU directive 2001/95/CE concerning General Product Safety and on January 28th, 2002 the EU regulation 178/2002 concerning General Food Law were published and will enter into force on January 15th, 2004 and on January 1st, 2005 respectively.
The requirements of these laws are applicable to every company in every member state.

It is now more important than ever for manufacturers, importers, exporters, wholesalers and retailers to work together and implement consistent, best practice business standards and processes designed to meet the new legal requirements and deliver even better product quality and product safety standards for the consumer.

Good work has already begun in companies and through ECR Europe and EAN International. The procedures and recommendations described here were initially developed at a national level by ECR D-A-CH, ECR France and ECR Spain. The ECR project team has adapted them to meet the new European legal requirements. In addition, a validation team supported this process and you will find a full list of participants and their companies in Appendix 8.5.

The economic and legal framework in which we all work today offers a set of choices to companies operating at a European scale and these will be presented and analysed within the following chapters.

2.1 Working Together to Fulfil Consumer's Wishes Better, Faster and at Less Cost

ECR Europe, as the platform for collaboration between FMCG manufacturers and retailers, has to deal with product safety as the new consumer expectation. Close collaboration between business partners along the supply chain is the best way to ensure consumer safety and product traceability and to limit incidents impacting consumers through shared and efficient crisis management systems.

A key driving principle of Efficient Consumer Response is that through careful collaboration, suppliers and retailers can identify ways in which it is possible to work together and improve the efficiency of business processes and procedures, reduce waste and do things in new ways in the supply chain – so that benefits can be shared between suppliers, retailers and the consumer.

2.2 Matter of great importance

Within the last 5 years, media coverage of food and non-food crises has increased tremendously. Examples include:

- Food: dioxin, foot and mouth disease, pesticide contaminations, listeria
- Non-food: the recall of cleaning materials, toys, cars

Product safety becomes a daily preoccupation in such a complex environment with:

- On average one alert a day is registered for a typical large retailer and 200 products are removed from the market a year

Industry is more and more complex and vulnerable because of:

- Globalisation of trade
- Just in time supply chain
- Concentrated production and distribution

This new reality requires a fundamental reconsideration of the most effective way to deliver the right products to consumers at the right price. Operational practices that ignore global business standards and the rigid separation of the traditional roles of manufacturer and retailer threaten to clog the supply chain unnecessarily and fail to exploit the synergies that come from powerful new information technologies and planning tools.

It remains true that each company is solely responsible for initiating a withdrawal or recall of its products. But when goods have already left the boundaries of an enterprise and are beyond its reach there is no doubt that an efficient process – fast and thorough but managed at minimum cost - is only possible with the close collaboration of all supply chain partners involved.

This ECR Blue Book describes the procedures for product withdrawal and recall along the FMCG Supply Chain and the underlying mechanisms that support these procedures.

Traceability is now a clear legal requirement and companies have no choice but to implement appropriate systems to stay competitive.

But if you look at product traceability beyond the legal requirements, companies will see two additional types of benefit from implementing best practice:

- The first is that by implementing product traceability, companies will address the new heightened expectations of the consumer for product quality and safety
- The second is that companies can further improve consumer value whilst driving up business efficiency and effectiveness

Traceability gives you an opportunity for higher consumer value and the efficiency and effectiveness in the value chain.

2.3 ECR Europe's commitment to EAN International standards to enable Product Traceability

In this ECR Blue Book, the authors describe EAN International standards for the use of unique trade item and trading partner identities, data standards, bar code labelling and electronic data exchange as best practice for product traceability. The key reason for this is that EAN International standards are single, global, generic, voluntary standards suitable for use by all trading partners to facilitate the identification of companies and their products and to exchange information about them. They provide a shared business language. If properly used by each member of an extended supply chain, products and data, including information required to manage traceability and shelf life, can be exchanged through each link in the chain - facilitating the flow of information with the flow of goods.

3 Scope and purpose of the document

This document describes European best practice for product traceability along the supply chain from an ECR point of view to help ensure consumer safety. It describes product traceability as a supply chain end-to-end process from goods arriving at a manufacturer's factory (e.g. raw material, packaging material) to the finished product to be acquired by a consumer in an outlet and vice versa. It also includes a section on crisis management between manufacturers and retailers.

The scope of this document is food and non-food fast moving consumer goods and the best practice product traceability processes described here are developed based on business considerations and the European legal requirements.[1]

The best practice described here explains how to efficiently and effectively meet product traceability and withdrawal and recall requirements of the Directive 2001/95/EC and the Regulation (EC) 178/2002.

There may be other national and EU regulations that include additional requirements but these are not addressed by this document. However, the objective of these two laws is the same, namely the safety of consumers.

This document is addressed to the following audiences in companies irrespective of their size:

- Quality managers
- Supply Chain / logistics managers
- Factory and warehouse managers
- Customer and consumer services
- Legal departments
- Communication managers
- IT
- People in charge of implementation

The following subjects are excluded from the scope of this ECR Blue Book:

- Internal traceability systems
- Feed, allergenic and agricultural practices including the use of GMO's
- Preventing contamination (e.g. pesticides)
- Development and implementation of quality management within a company
- Implementing product and/or pallet labelling systems, etc.

However, excellent advice on these subjects is available elsewhere, e.g. from the EAN International General Specifications covering Bar Code and Auto ID.

Where appropriate the Blue Book provides an overview of possible solutions. Solutions may be based on different levels of technology, thus bridging the gap between partners of different size and technological ability.

One of the key aspects to consider is that the supply chain should speak one common language when trading partners communicate and manage material and information flows. Since its foundation in the 90's, ECR Europe has chosen to promote the EAN•UCC standards.

[1] Directive 2001/95/EC of the European parliament and of the council of 3 December 2001 on general product safety and Regulation (EC) No 178/2002 of the European parliament and of the council of 28th January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety

4 Business needs

Despite great results already achieved in terms of product quality and consumer safety, progress will never be synonymous with zero risk. Science and technology allow us to work on reduction of risks but not its complete elimination. Industry, despite of all improvements achieved, may have to face the threat of product quality failure.

This section outlines major business aspects to be considered when reviewing or assessing traceability and incident management at company level.

One of the aims of quality management systems is to produce safe products. Although all procedures may be managed according to established norms, standards and laws, it is not possible to give total assurance against a possible critical incident.

The first priority of product traceability and incident management processes is to protect the consumer and ensure a fast product withdrawal or recall. The second priority is to manage the economic aspects related to the company and this is best achieved through the precise identification and location of all non-conforming products.

Depending on the degree of implementation and the infrastructure selected by a company, product traceability processes may require significant investment. The benefits and savings are not obvious at first glance and the expenditure should be considered as a long-term strategic investment because it is linked to consumer's perception, the image of the company and the trust consumers display when buying a product.

Not everyone within FMCG chain understands better information as a value added to the product and many decisions rely on a physical inspection of quality. The cost of implementation of traceability systems is likely to vary enormously between businesses and sectors depending on the type of technology adopted, the amount of information required to be stored and the complexity of the supply chain. It is most likely that systems will be introduced rapidly where commensurate benefits exist in logistics and process control or where brand market share would be jeopardised without the introduction of such systems.

It is clear that product traceability comes at a cost. But the costs of not having it, or having inefficient systems in place may be severe for consumers, individual companies, the sector in which they trade and at a national and international level for Governments. The main added value, for a company, of having a sound traceability process and quality management is finally reflected using ECR best practices for implementing traceability. Using EAN•UCC standards to meet legal requirements and to improve the supply chain are the recommended road map to achieve the optimal trade off between cost and benefit.

Companies that implement collaborative best practices and EAN•UCC standards need their partners to do the same thing. The building of a critical mass of implementation among national and European trading partners is a clear business need.

Key business rules:

1. *Collaboration between trading partners should be promoted continuously. Practices where a trading partner imposes its own views and systems must come to an end by mutual consent.*
2. *Through the use of voluntary, global business standards each company involved in the supply chain can remain responsible for selecting the service provider to implement their system in an open, competitive market place.*
3. *The use of voluntary, global business standards improves efficiency and drives down total supply chain costs.*

5 Legal requirements

The requirements include:

- Product and consumer safety
- Product traceability and information flows as a tool to protect consumer safety
- Crisis management procedure including product withdrawal and recall.

This section sets out to establish a shared understanding of product traceability and withdrawal and recall requirements of the two main European laws.
The purpose of this section is to highlight the legal requirements that each company needs to comply with and ensure a shared understanding among the different trading partners involved along the whole supply chain.

5.1 The Directive 2001/95/EC on General Product Safety

This directive means that key aspects of product safety must be dealt with before January 15th, 2004. The complete text can be found at [http://www.europa.eu.int/].

- *Article 3: "Producers shall be obliged to place only **safe products** on the market"*

- *Article 5: Within the limits of their respective activities, producers shall adopt measures commensurate with the characteristics of the products which they supply, enabling them to:*
  *(a) be informed of **risks** which these products might pose;*
  *(b) choose to take appropriate action including, if necessary **to avoid these risks, withdrawal from the market,** adequately and effectively warning consumers or **recall from consumers**.*
  The measures referred to in the third subparagraph shall include, for example:
  *(a) an indication, by means of the product or its packaging, of the **identity and details of the producer and the product reference** or, where applicable, **the batch of products to which it belongs**, except where not to give such indication is justified and*
  (b) in all cases where appropriate, the carrying out of sample testing of marketed products, investigating and, if necessary, keeping a register of complaints and keeping distributors informed of such monitoring.

  ***Distributors** shall be required to act with due care to help to ensure compliance with the applicable **safety requirements**, in particular by not **supplying products which they know or should have presumed, on the basis of the information in their possession and as professionals, do not comply with those requirements**. Moreover, within the limits of their respective activities, they shall participate in monitoring the safety of products placed on the market, especially by passing on information on product risks, keeping and providing the documentation necessary **for tracing the origin of products**, and cooperating in the action taken by producers and competent authorities to avoid the risks. Within the limits of their respective activities they shall take measures enabling them to cooperate efficiently.*
  *Producers and distributors shall, within the limits of their respective activities, cooperate with the competent authorities, at the request of the latter, on action taken to avoid the risks posed by products which they supply or have supplied. The procedures for such cooperation**, including procedures for dialogue with the producers and distributors concerned on issues related to product safety,** shall be established by the competent authorities.*

5.2 The Regulation 178/2002 on Food Safety

The European General Food Law requirements have been taken as the main driver of this ECR best practice Blue Book since the regulation gives more accurate or complementary definitions (e.g. traceability) and represents the strictest requirements in terms of consumer safety.

This Regulation provides the basis for the assurance of a high level of protection of human health and consumers' interest in relation to food, taking into account in particular the diversity in the supply of food including traditional products, whilst ensuring the effective functioning of the internal market.

This Law defines traceability as: *"the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution"* and in summary, it:

- Gives principles on how food operators have to ensure traceability: the principle of tracking and tracing one step backward and one step forward
- Regulates that food and feed operators are responsible for the feed, food and products they put on the market
- Is applicable to products imported into and exported out of the EU Community
- Establishes the European Food Safety Authority, who may demand information from food operators
- Imposes 1st January 2005 as the deadline for conformance by all food operators

The Articles of the European "General Food Law" that deal with traceability are: Articles 13, 14, 17, 18 and 19. The statements set out in these articles represent the minimum requirements that each company needs to implement in order to comply with the law. Remember that some national and EU legislation or local commercial practices may require additional aspects to be covered. Such local considerations are not taken into account in this ECR Blue Book.

Here are some key extracts from the Regulation:

Article 13:
The legal text says: *"Without prejudice to their rights and obligations, the Community and the Member States shall:*
(a) contribute to the development of international technical standards for food and feed and sanitary and phytosanitary standards;
(b) promote the coordination of work on food and feed standards undertaken by international governmental and nongovernmental organisations;
(c) contribute, where relevant and appropriate, to the development of agreements on recognition of the equivalence of specific food and feed-related measures;
(d) give particular attention to the special development, financial and trade needs of developing countries, with a view to ensuring that international standards do not create unnecessary obstacles to exports from developing countries;
(e) promote consistency between international technical standards and food law while ensuring that the high level of protection adopted in the Community is not reduced."

Article 14: It says that food placed on the market should be safe. It also clearly states that a traceability system where batch or Lot traceability is not used will result in the withdrawal of all items produced of a specific product as a result of an incident or crisis. If the problem cannot be attributed to a specific product batch or Lot, then the entire production must be withdrawn. The level of traceability, measured through lot numbering and the defined size of lots is a decision to be taken by every individual business along the supply chain.

The legal text says: *"Food shall not be placed on the market if it is unsafe." "6. Where any food which is unsafe is part of a batch, lot or consignment of food of the same class or description, it shall be presumed that all the food in that batch, lot or consignment is also unsafe, unless following a detailed assessment there is no evidence that the rest of the batch, lot or consignment is unsafe."*

Article 17: relates to the *responsibility and ability* of food and feed business operators to *ensure* that foods and feeds *satisfy the European requirements* and verify that such requirements are met at *all* stages of production, processing and distribution under their control.

The legal text says: "*Food and feed business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods or feeds satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.*
Member States shall enforce food law, and monitor and verify that the relevant requirements of food law are fulfilled by food and feed business operators at all stages of production, processing and distribution.
For that purpose, they shall maintain a system of official controls and other activities as appropriate to the circumstances, including public communication on food and feed safety and risk, food and feed safety surveillance and other monitoring activities covering all stages of production, processing and distribution."

Article 18: relates to the responsibility and the permanent ability of each food and feed business operator *to trace one-step backward and one step forward*. The main requirements are that: each food and feed business operator must be able to identify at any time of the process who has supplied them (i.e. any person) with what (i.e. any food, any feed, any food-producing animal or any substance intended to be, or expected to be incorporated into a food or feed) and must be able to identify the businesses to which their products have been supplied.
A food and feed operator is responsible for making the *required information available* to the competent authorities on demand.

Food and feed placed on the Market must be adequately labelled or *identified* to facilitate its tracing.

The legal text says: "*The traceability of food, feed, food-producing animals, and any other substance intended to be, or expected to be, incorporated into a food or feed shall be established at all stages of production, processing and distribution.*
Food and feed business operators shall be able to identify any person from whom they have been supplied with a food, a feed, a food-producing animal, or any substance intended to be, or expected to be, incorporated into a food or feed. To this end, such operators shall have in place systems and procedures, which allow for this information to be made available to the competent authorities on demand.
Food and feed business operators shall have in place systems and procedures to identify the other businesses to which their products have been supplied. This information shall be made available to the competent authorities on demand.
Food or feed which is placed on the market or is likely to be placed on the market in the Community shall be adequately labelled or identified to facilitate its traceability, through relevant documentation or information in accordance with the relevant requirements of more specific provisions."

Article 19: relates to the necessity for each food and feed operator to have *proven withdrawal / recall and crisis management procedures*. The main requirements are that:

1. Each food operator must immediately initiate procedures to withdraw from the market any food (imported, produced, processed, manufactured or distributed), which is not in compliance with the European requirements, and inform the competent authorities. He must also inform consumers on the reason of the withdrawal, and if necessary recall the products from them.
2. Each business operator responsible for retail or distribution activities must initiate procedures to withdraw from the market products not in compliance with the European requirements and shall contribute to the safety of food by passing on relevant information necessary to trace a food, cooperating in the action taken by producers, processors, manufacturers and / or the competent authority. It must also immediately inform the competent authorities if it considers or has reason to believe that a food, which it has placed on the market, may be injurious to human health.

The legal text says: *"If a food business operator considers or has reason to believe that a food which it has imported, produced, processed, manufactured or distributed is not in compliance with the food safety requirements, it shall immediately initiate procedures to withdraw the food in question from the market where the food has left the immediate control of that initial food business operator and inform the competent authorities thereof. Where the product may have reached the consumer, the operator shall effectively and accurately inform the consumers of the reason for its withdrawal, and if necessary, recall from consumers products already supplied to them when other measures are not sufficient to achieve a high level of health protection.*
A food business operator responsible for retail or distribution activities which do not affect the packaging, labelling, safety or integrity of the food shall, within the limits of its respective activities, initiate procedures to withdraw from the market products not in compliance with the food-safety requirements and shall participate in contributing to the safety of the food by passing on relevant information necessary to trace a food, cooperating in the action taken by producers, processors, manufacturers and/or the competent authorities.
A food business operator shall immediately inform the competent authorities if it considers or has reason to believe that a food, which it has placed on the market may be injurious to human health. Operators shall inform the competent authorities of the action taken to prevent risks to the final consumer and shall not prevent or discourage any person from cooperating, in accordance with national law and legal practice, with the competent authorities, where this may prevent, reduce or eliminate a risk arising from a food.
Food business operators shall collaborate with the competent authorities on action taken to avoid or reduce risks posed by a food which they supply or have supplied."

Important note: The legal texts are about results the companies must achieve. However, they do not carry any obligation on the way and approach to consider for achieving these results.

6 Traceability and technology: process and solutions

Objective of this section

This section describes the processes and the organisation that each ECR company is recommended to put in place in order to meet the business and legal requirements documented in the previous sections.

Looking at the business and legal requirements, full traceability of goods needs to take place through the implementation of an end-to-end process, which extends from input industry (raw material, feeds, packaging, etc.) used by the manufacturer through to the finished consumer product and vice-versa. Each sub-process must be properly managed by the entity responsible for it and the interfaces between the different sub-processes must be managed in a way that allows the smooth exchange of data in both directions: one-step forward and one step backward.

To ensure the reliability of this process, the following questions need to be asked about every link in the supply chain:

- How can we deliver safe products to customers and consumers?
- What goods have been received and what goods have been despatched?
- From whom were goods received and to whom have they been delivered?
- What is the Lot Number / Serial Numbers of the goods received and despatched?

The answers to these questions must be available through:

- Quality management
- Product coding and traceability procedures
- Organisation put in place to ensure efficient daily operations
- Product recall and product withdrawal procedures
- Incident/Crisis Management Procedures

6.1 Quality management

Today, the use of a well-designed and correctly implemented quality management system already delivers a high level of consumer safety. Quality management is a key part of successful brand and private label product manufacture and directly impacts the sustainability of a company. The overall objective of all those involved must be the manufacture and distribution of safe products. Achieving a consistently high level of product safety requires continuous high quality assurance and control measures.

The ISO 9001-9004 series of standards[2] and the Hazard Analysis and Critical Control Points (HACCP) process – together with others – represent a recognised foundation for implementing such a quality management system appropriate for all types and size of company in FMCG markets.

[2] - ISO standards constitute an example of internationally recognised standards. However they are not compulsory.
- HACCP processes are compulsory for Food industry.

6.2 Product identification and traceability procedures

The purpose of the following section is to describe product traceability processes based on:

- Unique identification of the companies involved
- Unique identification of products (consumer units)
- Unique identification of logistics units (pallets, containers, etc)
- Information flows and data interchange

A collaborative approach is recommended including dialogue between supply chain partners and use of a shared business language.

The use of EAN•UCC standards for the identification of trading partners (Global Location Number), products (Global Trade Item Number) and logistics units (Serial Shipping Container Code) together with use of EDI electronic message standards for communication of information (EANCOM®) is the recommended solution.

This section emphasizes the need for fully integrated implementation of EAN•UCC standards and the EANCOM® language for electronic messages as a voluntary target for the future in all companies, large and small.

6.2.1 Definition of Traceability

The definition of traceability may differ from one operator to another depending on the business activity, sequential position in the supply chain (upstream or downstream) and applicable legislation.

In this European Best Practice Recommendation, preference is given to the definition established by the European General Food Law because it applies to all companies involved in the food supply chain and may be also relevant to non-food producers:

"Traceability is the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution"

According to this definition, we understand traceability to be an end-to-end supply chain process where different companies collaborate to optimise the interfaces determined by its different directions, areas and sub-processes. We therefore believe that it is the way to meet consumer's expectations in terms of product safety and quality.

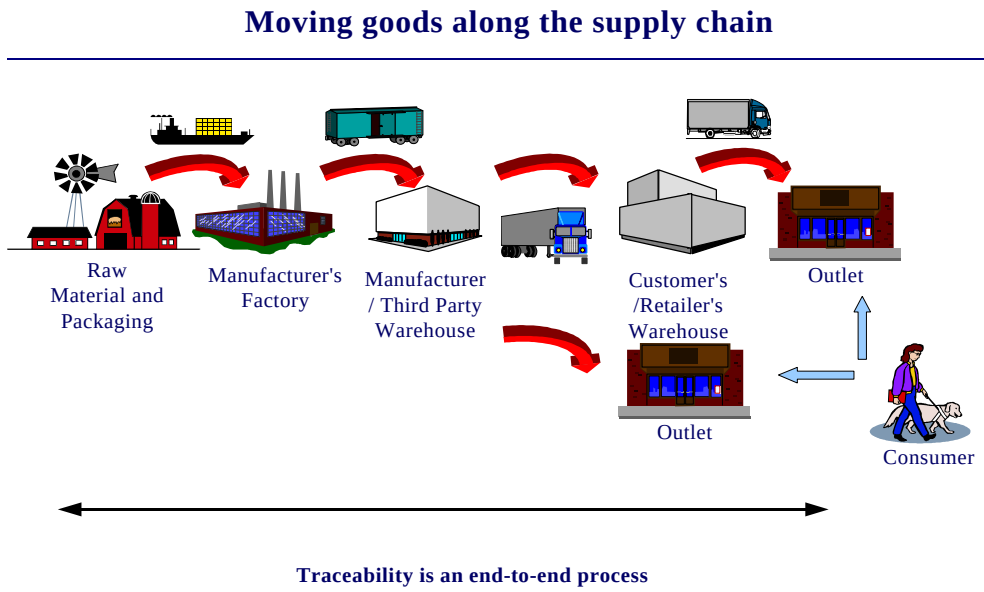


Figure 1: Moving goods along the supply chain: traceability is an end-to-end process

6.2.1.1 Traceability Process Directions and Areas

The traceability process can be divided into two distinct directions: a) tracking-forward or descending traceability, b) tracking back or ascending traceability. These two directions deal with three distinct areas: upstream, internal and downstream. Upstream and downstream may be perceived differently depending on the position of the operator in the supply chain.

- Tracking is the capability to locate a product based on specific criteria wherever it is at each point of the supply chain. This is the critical feature of any traceability system because companies must be able to identify and locate their products within the supply chain in order to withdraw or recall them whenever necessary (one-step forward legal principle).

- Tracing is the capability to identify the origin and characteristics of a product based on criteria determined at each point of the supply chain. This is the critical feature of a traceability system because companies must be able to determine the identity and source of products received in an accurate and fast manner whenever necessary (one-step backward legal principle).

- Upstream area covers the first part of a supply chain. It includes producers of raw materials (input industries), ingredients, packaging and all intermediate suppliers until the goods reach the company.

- Internal area covers every step under the control of each operator. Even if this aspect is not specifically covered in this document, it is fundamental that it is linked to the upstream and downstream processes.

- Downstream area covers the final part of a supply chain. It starts at the final product manufacturer (including co-packers), logistic service providers, distribution centre(s) and ending at the retail point-of-sale.

6.2.1.2 Traceability Sub-Processes

The traceability process consists of the implementation of three key sub-processes:

1. Unique identification and labelling of all products at source.
2. Data capture, recording and links management along the supply chain in such a way that any relevant information can be retrieved whenever necessary in a fast and accurate manner (e.g. bar code scanning and electronic data interchange).
3. Communicating pre-determined traceability data along the supply chain to facilitate accurate and fast product withdrawal and recall.

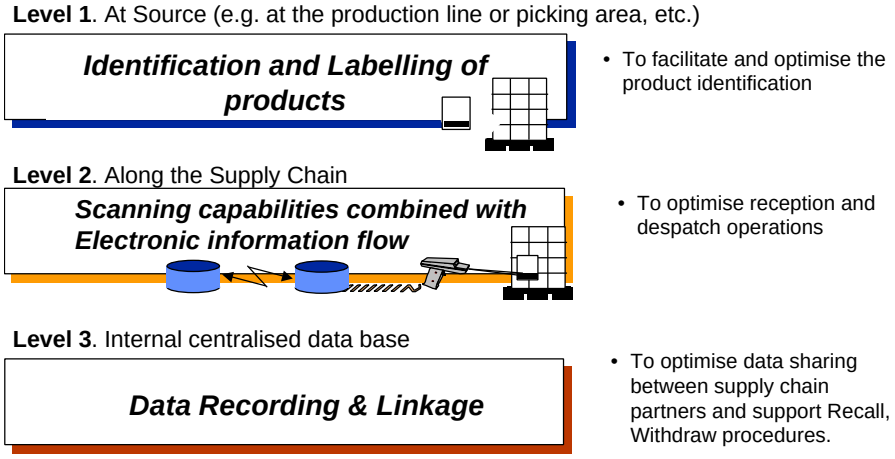


Figure 2: The different components of the Traceability Process

6.2.2 Guiding principles

These basic elements need to be considered as common guiding principles that each supply chain operator should apply:

- Traceability systems and procedures should serve the purpose of meeting legal requirements by giving access to relevant product traceability information and provide the ability to locate and withdraw products from the market when there is a risk to public health.

- Traceability management systems must be based on commonly agreed standards in order to ensure accurate and fast flow of information and optimise traceability data processing and communication. The EAN•UCC standards are recommended here as best practice.

- Each operator is free to decide on how to implement his internal traceability system as long as he is able to receive, process and communicate the necessary information and data to his upstream and downstream trading partners in an accurate and timely manner. This implies that documentation and the flow of information are not necessarily based upon EDI messaging. Manual procedures based on paper can provide the same solutions and results described within this chapter. The advantage of computer based data management is the potential for higher speed of reaction when looking up relevant information.

6.2.3 Traceability principles, enabling technologies and EAN•UCC standards

From an information management point of view, implementing a traceability system within a supply chain requires all parties involved to systematically associate the physical flow of materials, intermediate and finished products with the flow of information about them.

This requires a holistic view of the supply chain, which is best attained by deploying a common business language – the EAN•UCC standards. Their global reach and universal acceptance by consumers, businesses and governments make them uniquely positioned since they provide an appropriate response to traceability system requirements[3].

To assist material suppliers, manufacturers and retailers, EAN International has defined key traceability principles and produced an implementation grid which link them to enabling technologies and relevant EAN•UCC standards[4]. The four key traceability principles are:

1. Unique identification of products, logistic units and locations
2. Traceability data capture and recording
3. Links management and traceability data retrieval
4. Traceability data communication

TRACEABILITY PRINCIPLES	**ENABLING TECHNOLOGIES**	**EAN•UCC SYSTEM TOOLS**
UNIQUE IDENTIFICATION	AUTOMATED IDENTIFICATION	GTIN, SSCC, GLN, APPLICATION IDENTIFIERS
DATA CAPTURE AND RECORDING	AUTOMATED DATA CAPTURE	EAN/UPC, UCC/EAN-128
LINKS MANAGEMENT	ELECTRONIC DATA PROCESSING	**SOFTWARE APPLICATIONS[5]**
DATA COMMUNICATION	ELECTRONIC DATA INTERCHANGE	EANCOM®/ XML

Figure 3: EAN•UCC Traceability Implementation Grid

[3] More than 1.000.000 companies use EAN.UCC standards. EAN International has Member Organisations in over 100 countries and territories. For more information visit www.ean-int.org
[4] Published as the EAN.UCC Traceability Implementation Guideline in February 2003
[5] Hardware and software manufacturers and vendors are not affiliated with EAN International.

6.2.4 Unique Identification

Any trade item and / or location, which need to be traced or tracked, must have a unique identity. The EAN•UCC globally unique identifier is the key that enables access to all available data about its history, application or location. Globally unique EAN•UCC identifiers are the foundation for both automated and manual identification systems. The applicable EAN•UCC standards are described below.

6.2.4.1 Identification of Locations

The EAN•UCC Global Location Number (GLN) enables the unique and unambiguous identification of physical, functional or legal entities, such as warehouses, vehicle loading bays, company departments, etc. A trade relationship may involve several different companies, each of these involving several departments and functional entities. For traceability purposes, trade partners should identify all relevant locations and functional entities.

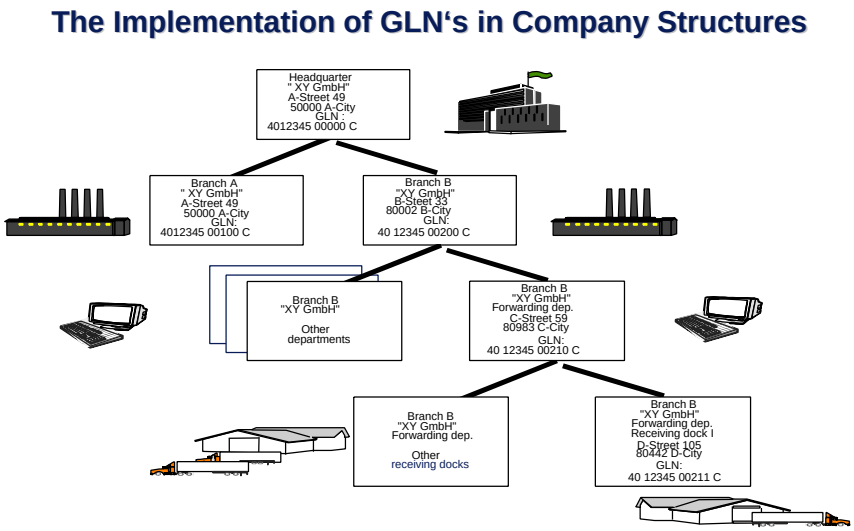


Figure 4: Identification of Locations

Key business rule

Unique identification of locations is ensured through the allocation of an EAN•UCC Global Location Number - GLN to each location and functional entity.

6.2.4.2 Identification of products (trade items)

A trade item is a product or service, upon which there is a need to retrieve pre-defined information and that may be priced or ordered or invoiced at any point in the supply chain. This includes

individual items and their different sales configurations, such as a bottle of water, a carton of 12 bottles, a pallet of 48 cartons. The normal rule for EAN•UCC numbering is that the brand owner of the product assigns the GTIN.

The GTIN can be bar-coded with EAN/UPC symbols (on any item crossing the retail point of sale), UCC/EAN-128 symbol (on any item not crossing the retail point of sale), and/or used in EANCOM® and EAN•UCC XML messages. Traceability can not be achieved without the association of a Serial Number or Lot Code to the GTIN at consumer unit level.

Key business rule

Unique product identification is ensured through the allocation of an EAN•UCC Global Trade Item Number - GTIN to each product (consumer unit). For traceability purposes, the GTIN has to be combined with a Serial Number or Lot Code in order to identify the particular item. This information must be displayed at least in human readable form. Please keep in mind that unique identification can be in human readable form or in a combination between human readable and bar-coded form.

6.2.4.3 Identification of Series

Serial numbering offers the possibility to track or trace an individual product using a specific Serial Number. It must be unique for one product reference (GTIN). Relevant attributes of the particular product must be included in the identification definition.

The Serial Number is allocated by the producer, manufacturer or packager and must not be used twice during the life cycle of a trade item. In case of distributor brands, when several companies manufacture the same trade item (identification with the same GTIN), careful attention must be given to prevent ambiguity of the Serial Number.

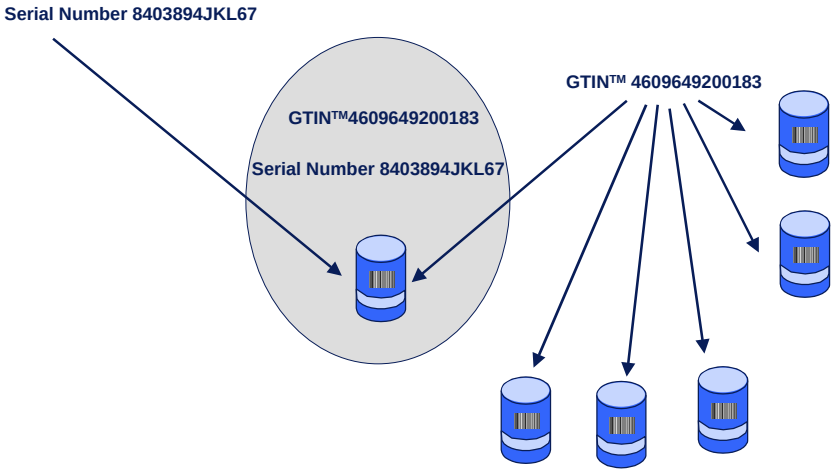


Figure 5: Identification of Series

Depending on risk assessment results, product serial numbering is **mostly** used for non-food products. A Serial Number may be considered to be a subset of a Lot Code. It allows for targeted withdrawals and recalls of specific units of a product rather than an entire production lot.

Key business rule:

Traceability of Series is ensured through the allocation of an EAN•UCC Global Trade Item Number - GTIN and Serial Number to each product (consumer unit).

6.2.4.4 Identification of Lots

A lot is comprised of products (trade items) that have undergone the same transformation processes. It is a quantity of a specified product manufactured, filled or packaged under identical conditions and associated with a separate release decision. A lot has uniform quality characteristics (e.g. sterilisation cycle).

The Lot Code[6] is the number assigned to a given production lot. It links the product (i.e. what) with all the relevant information related to its production (i.e. where, when, how). It is therefore a key element to effectively and efficiently achieve overall traceability (upstream, internal and downstream).

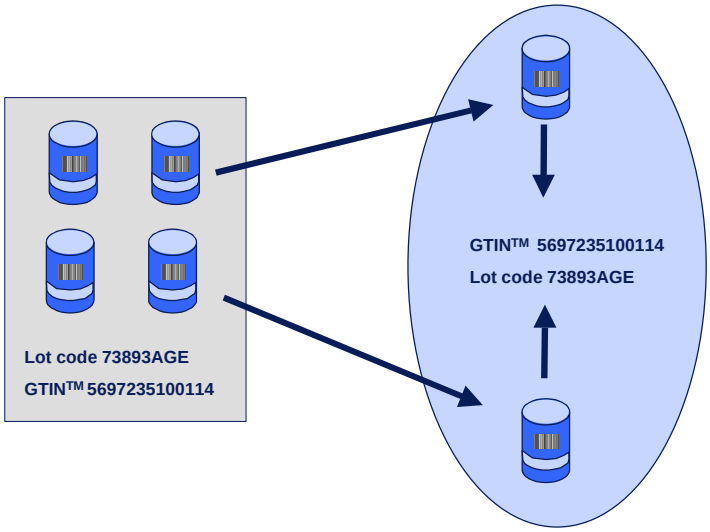


Figure 6: Identification of Lots

Lot identification is used for mass produced items, with the same Lot Code being given to an entire production run. Consequently, it should be unambiguous for the same trade item reference (GTIN) in all of the supplier's factories where several production sites exist. In case of own distributor brands, when several companies manufacture the same trade item (identified with the same GTIN), special attention must be given to prevent ambiguity of the Lot Code.
Each company is responsible for establishing their lot rules and standards: size, coding, storage, etc. Figure 7 illustrates the way that a Lot Code is assigned to a finished product during the production cycle (food industry).

[6] Many companies use the terminology "Batch Number" instead of Lot Code. Without interfering with internal manufacturing practices and for simplification reasons, Lot Code and Batch Number are considered as synonyms in this Blue Book. For consistency reasons, the terminology Lot Code is used throughout the present document.

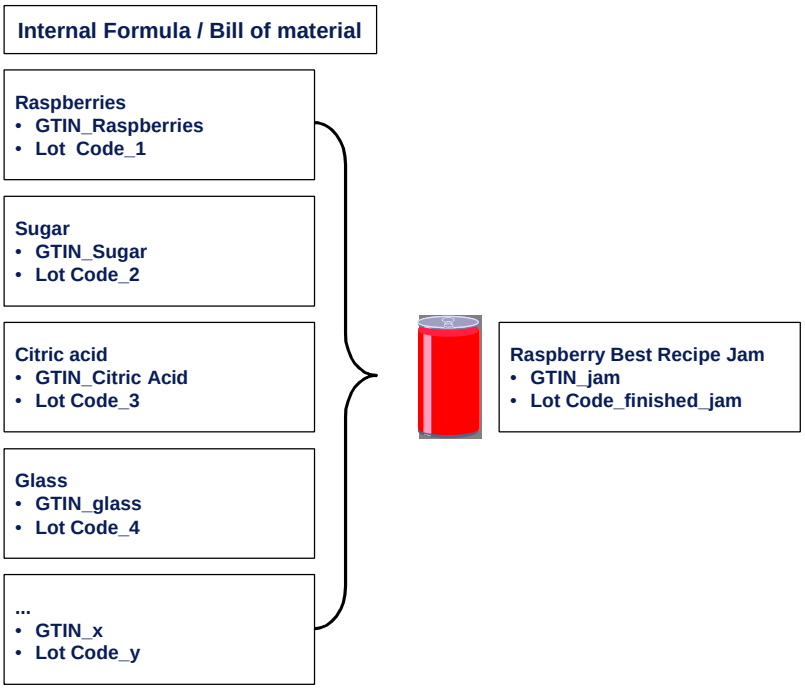


Figure 7: Illustration of the Lot Code Structure in the Food Industry

Key business rules:

1. *Traceability of Lots is ensured through the allocation of an EAN•UCC Global Trade Item Number - GTIN and Lot Number to each product (e.g. consumer unit)*
2. *At any point of the supply chain, a product needs to carry a Lot Code.*
3. *While EAN•UCC standards allow for a Lot Code length of up to 20 digits, for practical reasons a lot code with a maximum of 10 digits is recommended.*
4. *A Lot Code should never be interpreted. For a given product, it must remain the same along the supply chain and never be "manipulated" or changed in order to comply with internal rules or overcome legacy system constraints. A Lot Code is a key step of the manufacturing and packaging processes.*
5. *"Best Before Date" and "Use By Date" should normally not be used for traceability purposes since they may not carry the same information as the Lot Code.*

6.2.4.5 Identification across Product Hierarchies

In many business sectors and particularly in the FMCG industry, different levels of packaging are presented following a hierarchy, called "Product Hierarchy" - from the smallest packaged unit a consumer can buy to the largest unit, which is shipped (usually a pallet).

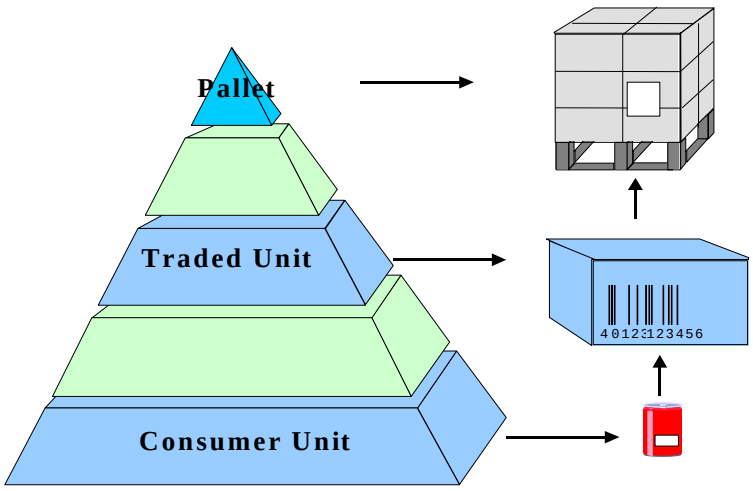


Figure 8: Product Hierarchy

Key business rules:

1. *A GTIN needs to be allocated to each of the three levels of the Product Hierarchy, namely: a consumer unit, traded unit and pallet – only if the latter is priced, ordered or invoiced at any point in the supply chain, in other words, if the pallet is also considered to be a traded unit.*

2. *When allocating a GTIN to any level of the product hierarchy, companies are recommended to do it in full respect of GCI[7] – EAN•UCC GTIN Allocation Rules.*

6.2.4.6 Identification of Logistic Units (Pallets)

A logistic unit is an item of any composition established for transport and/or storage, which needs to be managed throughout the supply chain. It is identified by a Serial Shipping Container Code (SSCC) and is comprised of trade items (identified by a GTIN), which are transported and/or stored together.

Key business rule:

Identification and traceability of Pallets is ensured through the allocation of an EAN•UCC Serial Shipping Container Code - SSCC.

Since the SSCC identifies a pallet globally without any ambiguity, it is very important to allocate it at source, namely when the pallet is physically created:

- At the end of the production line.
- In the picking area of a warehouse when preparing a delivery.

[7] GCI: Global Commerce Initiative

Key business rule:

Any pallet, independently of its type (mixed or uniform), needs to carry an SSCC allocated at source. A new SSCC must be allocated every time a new pallet (logistic unit) is created.

In line with the product identification across product hierarchies, it is important to distinguish between uniform and mixed pallets. We define them as follows:

- A uniform mono-lot pallet is composed of identical products originating from the same lot (identified with the same GTIN and Lot Code)
- A uniform multi-lots pallet is composed of identical products originating from at least two different lot codes (identified with the same GTIN but different lot codes). In this document a uniform multi-lots pallet is considered to be a mixed pallet.
- A mixed pallet is composed of one or more different products originating from different lots (identified with different GTINs and Lot Codes). The reason is that an UCC/EAN 128 label cannot display more than one bar-coded lot number.

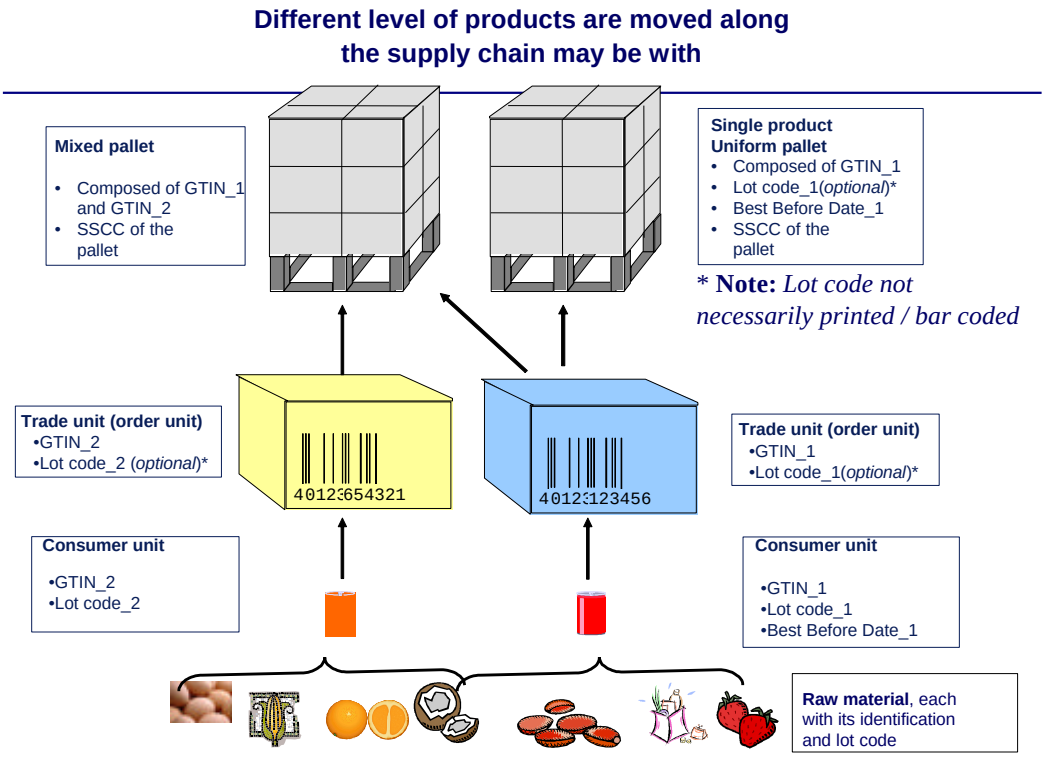


Figure 9: Different level of products are moved along the supply chain - Uniform and Mixed Pallets

Note:
Theoretically and ideally, the lot code should be printed on each level of the product hierarchy. However, in the practical environment such a practice depends on industry sector practices, and is not always feasible and realistic considering the complexity of the different systems to put in place or the cost and benefit analysis.

The above picture is just for illustration. It does **not** mandate to have the lot code printed / bar coded on each traded unit. However, for traceability purposes, it is recommended where relevant and applicable to keep track of lot codes in the traceability systems.

The SSCC is globally unique to each specific pallet (logistic unit), and is generally linked to the globally unique identification of products contained (trade items) via GTINs, their Lot Codes, and manufacturing and/or storage locations of their origin via GLNs. All parties in the supply chain can use it as a reference number to access relevant information held in computer files.

The SSCC of a Uniform mono lot pallet may be linked (in the traceability system) to:

- The GTIN of the product contained and quantity
- Lot Code of the pallet
- Date of shipment
- The site of origin (Ship From)
- The site of destination (Ship To), at the moment of despatch

The SSCC of a uniform multi-lots and mixed pallet, the SSCC may be linked (in the traceability system) to:

- The GTINs of the products contained on the pallet
- For each GTIN: Lot Code of the product and quantity
- Date of shipment
- The site of origin (Ship From)
- The site of destination (Ship To), at the moment of despatch

The EAN•UCC Logistics Label is used to identify pallets (logistics units) carrying trade items. It uniquely identifies the logistic unit for administration and logistics purposes and provides article identification for the unit, or its contents, together with additional attribute information in machine-readable form.

Attribute information is any variable information required over and above the trade unit (GTIN) or logistics unit (SSCC) identification. In the EAN•UCC System, this information is expressed by means of EAN•UCC Application Identifiers (AI). They are bar coded in UCC/EAN-128 bar codes.

Uniform mono-lot pallet

Uniform multi-lots pallet

Figure 10: Examples of EAN•UCC Logistics Labels: Uniform mono-lot pallet and uniform multi-lots pallet

1040

Mixed pallet

Figure 11: Example of an EAN•UCC Logistics Label of a Mixed Pallet

1045

Key business rules:

1. *Pallets should be identified with an SSCC and labelled with an EAN•UCC Logistics Label.*

2. *Ensuring product integrity: at each stage of the supply chain, all the traceability information originally printed on the packaging by the Manufacturer and relevant to the related supply chain process / operation should remain on the packaging until the end of this stage / process.*

6.2.5 Data capture and recording

Traceability requires pre-defined data to be captured and recorded throughout the supply chain.

It is important to keep in mind that the traceability information, such as the SSCC, has to be shared between partners and/or stored by each trading partner wherever relevant and applicable. For smaller companies with lower trading volumes and less complex business processes, data capture through manual documentation using traditional approaches (archives, folders) can be a viable and functional solution.

Nevertheless, for both large and small companies, the recommended enabling technology is automated data capture (ADC).

EAN•UCC bar codes carry all the EAN•UCC identification keys described in the previous section. At each step in the supply chain, bar codes may be scanned and traceability data can be stored and processed in real-time by software applications.
By using globally unique automated identification and data capture, it is possible to achieve the highest degree of accuracy and speed of data recording, storage and retrieval across the entire supply chain. The applicable EAN•UCC standards are:

- EAN/UPC bar codes
- UCC/EAN-128 bar code

Radio frequency identification (RFID) is a growing technology that utilises electronic tags to identify products (trade items), pallets (logistic units) and/or returnable assets throughout the supply chain. Recent EAN•UCC standardisation developments in the field of RFID are internationally known as the Electronic Product Code (EPC) Network[8].

RFID may contribute to improve the traceability process in the medium and long term when Industry Standards are fully developed and implemented.

Key business rule:

Products, Standard Trade Item Groupings and Pallets identified with applicable EAN•UCC standards (GTIN, SSCC, AI) must be bar coded in relevant EAN•UCC bar code symbols.

6.2.6 Traceability links management and retrieval

In a majority of supply chains, products are tracked and traced by their production lot, which has undergone the same transformation (production process) and by their transport/storage path (distribution process).

[8] EAN International and UCC have established EPCglobal Inc., a not-for-profit organisation that will develop and oversee commercial and technical standards for the Electronic Product Code (EPC) Network.

Figure 12 shows the use of EAN•UCC standards for identifying locations (GLN), logistic units (SSCC), manufacturing lots (AI 10) and consumer units (GTIN) in a production environment.

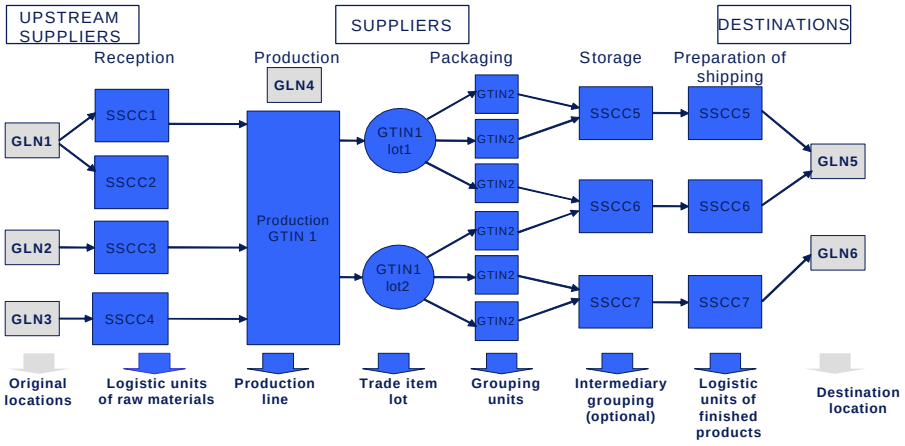


Figure 12: Traceability data management in production

Identification management in a production environment is characterised by:

a) Several supplier locations (GLN 1-3), which send pallets of materials (SSCC 1-4).
b) At reception, materials are stored and/or ordered for the production process.
c) At the production site (GLN 4), consumer units (GTIN 1) are produced in separate lots (each identified with a distinct lot code).
d) In the packaging step, consumer units (GTIN 1 and its lot codes) are packed into standard grouping units (GTIN 2).
e) In the next two steps - storage and preparation for shipping, pallets are created (SSCC 5-7) and dispatched to customer destinations (GLN 5-6).

Key business rules – Production environment:

1. *Reception: the SSCC of an incoming pallet is recorded and linked to the GLN of the supplier. Each time the pallet is moved, its SSCC is recorded and linked to the GLN of its new location (e.g. to storage or production).*

2. *Production: Under ideal conditions the SSCC of the pallet and/or GTIN + Lot Code of materials used in the production process are recorded and linked to the GTIN of the product made and its production lot. At the end of the production process, standard trade item groupings are made from individual products. A new GTIN is assigned and linked to the production lot code.*

3. *Packaging, storage and expedition: The GTIN of a standard trade item grouping is linked to the SSCC of the pallet onto which it is packed. The SSCC of an outbound pallet is linked via scanning to the GLN of its destination. The GLN of its destination must not necessarily be displayed on the label.*

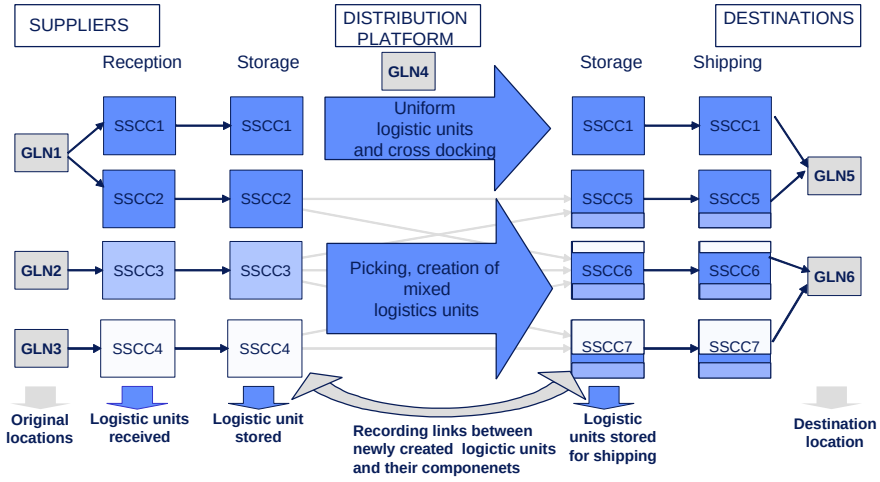


Figure 13: Traceability data management in distribution

Figure 13 shows the use of EAN•UCC standards for identifying locations (GLN) and logistic units (SSCC) in a distribution environment, which is characterised by:

a) Several supplier locations (identified with GLN 1-3), which send pallets of finished products (identified with SSCC 1-4).
b) At distribution centre (GLN 4) reception, pallets are stored and sent to the order picking process.
c) In the order-picking step, orders are fulfilled either by shipping uniform pallets, cross docking or creation of mixed pallets. They are either carried forward unchanged (uniform pallet identified with SSCC 1) or newly created (mixed pallets identified with SSCC 5-7) with products originating from different pallets (SSCC 2-4).
d) In the last two steps - storage and preparation for shipping, both uniform (SSCC 1) and mixed pallets (SSCC 5-7) are dispatched to customer/point-of-sale destinations (identified with GLN 5-6).

Key business rules – Distribution environment:

1. *Reception: The SSCC of an incoming pallet is recorded and linked to the GLN of the supplier. Each time the pallet is moved, its SSCC is recorded and linked to the GLN of its new location (e.g. to storage, order-picking or distribution).*

2. *Order-picking and distribution:*

a) The SSCC of an unmodified pallet picked for distribution from the storage area or cross-docked without any storage is recorded and linked to the GLN of its destination.

b) A newly created pallet contains standard trade item groupings originating from different pallets. In this case, a new SSCC is assigned to it and linked to SSCC numbers of all other pallets used in its creation and/or, if applicable, the GTIN and Lot Code of each standard trade item grouping, which was used. This can create the need for an enormous effort and can be solved through the application of a "time window", to be defined by each company, when a

product is packed. Newly created pallets during this time window can be linked to pallets used up within the same time frame. The SSCC is recorded and linked to the GLN of its destination.

The ability to retrieve traceability data in a fast and accurate manner along of a supply chain is critical. This requires the management of successive links between what is received, produced, packed, stored and shipped across the entire supply chain.

If one of the partners, in the supply chain, fails to manage these links, this will result in the rupture of the information chain and in the subsequent loss of traceability. It is impossible to attain full product traceability without correctly identifying products in all their configurations at each different point of the supply chain

Key business rule:

To facilitate traceability data linkage at the different points of the supply chain, it is recommended to identify a:

- *Consumer unit with its GTIN, Lot Code, and if applicable, Best Before Date or Use By Date*
- *Standard trade item grouping[9] with its GTIN, Lot Code, and if applicable, Best Before Date or Use By Date.*
- *Pallet with EAN•UCC Logistic Label, where the following information is bar-coded in UCC/EAN-128 symbols with EAN•UCC Application Identifiers (AI):*

Uniform mono lot Pallet	Uniform multi-lots pallet	Mixed pallet
• SSCC (AI 00) • GTIN of the pallet (AI 01) or GTIN of the Traded Unit contained (AI 02) and its Quantity (AI 37) • Lot Code (AI 10) • Best Before Date (AI 15) or Use By Date (AI 17)	• SSCC (AI 00) • GTIN of the pallet (AI 01) or GTIN of the Traded Unit contained (AI 02) and its Quantity (AI 37) • Best Before Date (AI 15) or Use By Date (AI 17) if it is the **same** for the whole pallet	• SSCC (AI 00)

6.2.7 Data communication

An essential feature of any traceability system is the exchange of information. Traceability requires associating the physical flow of products with the flow of information about them.

To ensure the continuity of the information flow, each supply chain actor must communicate pre-defined traceability data to the next one, enabling the latter to apply traceability principles. This can be achieved through traditional means (delivery note) in combination with the identifiers (such as UCC/EAN128 logistics label) described above. Thus in this chapter, all sections referring to EDI messaging such as Despatch Advice (DESADV), can be read also as paper based communication such as delivery note.

The enabling technology recommended by ECR organisations is Electronic Data Interchange (EDI) where accuracy and speed are classified important by the company concerned, depending again on its size, trading volume and complexity of business.

[9] Standard composition for a trade item(s) that is not intended for Point-of-Sale scanning

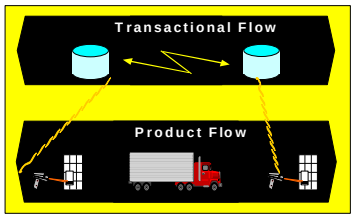


Figure 14: Linking the physical flow of products to a flow of information

The use of the EAN•UCC Logistics Label is recommended to all supply chain partners wishing to communicate traceability information associated with a Pallet (logistic unit) without relying on technology-driven factors. The EAN•UCC Logistics Label also provides a link between the physical flow of products and electronic flow of information about them. The applicable EAN•UCC standards are:

- EANCOM®

EANCOM® is a subset of the United Nations EDIFACT (Electronic Data Interchange For Administration, Commerce and Transport) language. Some EANCOM® messages are particularly relevant to traceability, for example, Despatch Advice (DESADV), Receiving Advice (RECADV), Transportation Status (IFTSTA), and Forwarding and Consolidation Summary (IFTSUM).

- EAN•UCC XML

The EAN•UCC System comprises a suite of global B2B standards, which are based on a core set of XML schemas, which are shared across all industries and can be extended to meet the needs of a specific industry. EAN•UCC XML schemas are based on business requirements, which are documented as UML (Unified Modelling Language) business process models.

Key business rule:

The use of EDI is recommended for fast, accurate, and cost effective communication of traceability data. Applicable EAN•UCC standards are EANCOM® and EAN•UCC XML messages.

6.2.7.1 Supporting the physical flow of products by a reliable information flow using EDI

When a product is moved from one location to another, there is a need to keep track of the history of such movements and the following information should be permanently recorded:

- Identification of the product
- Lot Code
- Original location
- New / Current location
- Day (and if necessary time) of movement

The way that a product is moved and its related information is processed and handled by a company is part of the internal organisation, environment and infrastructure of each company and may differ from one company to another.

Products are mostly moved on pallets. The recommended best practice is that when a pallet is moved / shipped from one point to another, the information describing the products moved is transmitted from the original point (identified as the Ship From) to the destination point (identified as Ship To) as shown on figure 15.

The information concerning the product is extracted from the internal information management system of the location of origin and shared with the location of destination.

The recommended best practice is to use EAN•UCC standards at supply chain interfaces where failures are often observed because of a lack of data alignment between the parties involved (e.g. between a factory and a warehouse).

Key business rule:

The EANCOM® Despatch Advice EDI message is the recommended means for enabling efficient flow of products and their traceability.

The data elements described in Table 1 and Table 2 are the minimum data that needs to be shared between the different parties (one step forward, one step backward) to ensure product traceability.

Table 1: Uniform mono-lot pallet

Information	Required for traceability	Required for other purposes
Unique identification of the Despatch Advice Message	Yes	
GLN of the Ship From	Yes	
GLN of the Ship To	Yes	
Date of shipment / movement	Yes	
SSCC of the pallet	Yes	
Identification of the product on the pallet: • It can be the GTIN of the uniform pallet • It can be the GTIN of the traded unit put on the pallet	Yes	
Lot code of the pallet (if mono lot)	Recommended for industry sectors where it is an agreed practice between trading partners	
Quantity (linked to the GTIN)	Yes	
Best Before Date or Use By Date of the pallet	No[10]	Stock rotation

[10] Please, refer to key business rule documented in section 6.2.4.4

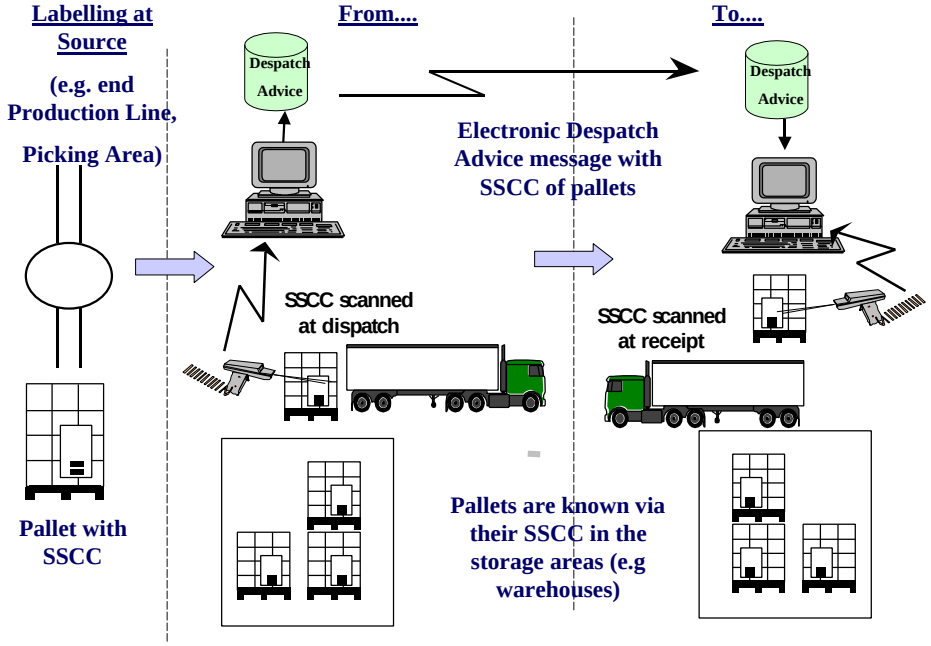
Table 2: Mixed pallet (also includes uniform multi-lot pallets)

Information	Required for Traceability	Required for other purposes
Unique identification of the Despatch Advice Message	Yes	
GLN of the Ship From	Yes	
GLN of the Ship To	Yes	
Date of shipment / movement	Yes	
SSCC of the pallet	Yes	
For each traded unit on the pallet:		
GTIN of the Traded Unit	Yes	
Lot Code	Recommended for industry sectors where it is an agreed practice between trading partners	
Quantity	Yes	
Best Before / Use By Date	No[11]	Stock rotation

6.2.7.2 Pallet identification and traceability data communication

When despatching goods, the procedure to implement between the despatch location (Ship From) and the destination location (Ship to) is illustrated in figure 15.

Figure 15: Scanning of SSCC & Electronic Despatch Advice message



[11] Please, refer to key business rule documented in section 6.2.4.4

Best practice for combining the capabilities of an EAN•UCC Logistic Label with a Dispatch Advice EDI message is outlined in the nine steps explained in the table below.

Table 3: Combining capabilities

Step	Procedure to implement	Brief description
1.	Labelling pallets at source	As soon as a pallet is created, it is identified with an EAN•UCC Logistics Label. The readability of UCC/EAN-128 bar code is checked before the pallet is moved to its storage location.
2.	Storing pallet information in internal systems	For each pallet identified with an SSCC, all the relevant information, including its quality status and storage location, is correctly and timely recorded in the internal system.
3.	Scanning each label when moving a pallet and recording its information	When moving a pallet from a location to another or preparing a delivery (shipment), this movement should be recorded. This could be done for example by scanning and capturing its SSCC in a file, which will be the basis of the Despatch Advice EDI message.
4.	Creating a Despatch Advice EDI message at source	The Despatch Advice EDI message is created by the location of origin of the pallets. Scanning the pallet's SSCC generates the message details. It is imperative that the content of a Despatch Advice EDI message describes exactly the physical shipment / delivery / movement.
5.	Sending the Despatch Advice EDI message to the location of destination	The Despatch Advice EDI message is sent at the end of the operation, which consists of preparing a shipment / delivery / movement. Ideally, it should be created at the time where the products leave the location of origin.
6.	Receiving and processing a Despatch Advice EDI message	Ideally, a Despatch Advice EDI message should be processed as soon it is received and the information it carries adequately stored in the information management system at the location of destination.
7.	Checking received products against the Despatch Advice EDI message	When the products arrive at destination, pallets are scanned one by one and the scanned information is checked against the information communicated through the Despatch Advice. If no error is detected, the scanned information is linked to the corresponding detailed line of the Despatch Advice EDI message in the internal system.
8.	Recording the new location of the pallet at the site of reception	Each pallet checked is moved to its new location / storage area and the identification of the location is stored in the local system where it is linked to the relevant SSCC.
9.	Changing the location of a pallet	If the pallet is moved again, steps 1 to 8 need to be repeated.

Key business rules:

1. *EAN•UCC Logistic Labels and electronic flow of information (EDI message) describing pallet movements are the key elements for traceability.*
2. *Each physical movement of products is linked to a transactional flow between the location of origin and the location of destination.*
3. *The transactional flow reflects exactly the physical movement.*
4. *The transactional flow is transmitted to the location of destination where it is processed prior to the physical arrival of the products at destination.*

5. *The information printed on EAN•UCC Logistic Labels must reflect correctly the physical content of the pallet.*
6. *The quality of the EAN•UCC Logistic Labels is such that the UCC/EAN-128 bar code is successfully scanned at the first time.*
7. *Each time a pallet is moved, the relevant information, which describes this pallet is ideally recorded in a file, which gives the history of the movements of this pallet.*

The traceability process and the information to be shared between two trading partners when withdrawing or recalling a product is explained in the following two scenarios:

Scenario 1: "Ship From" knows the SSCC

Step	"Ship From"	"Ship To"
1.	Communicate to the Ship To: • The SSCC • The GTIN of the product and quantity • Lot Code of the product • Date of shipment • The site of origin (Ship From) GLN • The site of destination (Ship To) GLN	
2.		Based on the SSCC and on the date of shipment, "Ship To" can retrieve from its internal data base the information concerning this pallet: • If not dispatched to another party, the current location • If dispatched to another location, the information as the one described in step 1.

Scenario 2: "Ship To" knows the Product (GTIN of the traded Unit) and the Lot Code

Step	"Ship From"	"Ship To"
1.		Communicate the GTIN of the traded unit and the lot code to "Ship From"
2.	With the combination: GTIN + Lot Code + GLN of Destination, Ship From retrieves from its database all the SSCCs of pallets delivered to "Ship To".	
3.	Communicate the SSCCs to "Ship To"	
4.		Ship To retrieves the information from its internal database as described in Scenario 1, step 2.

6.2.7.3 Recording, storing and retrieving traded unit data when traded units are dispatched

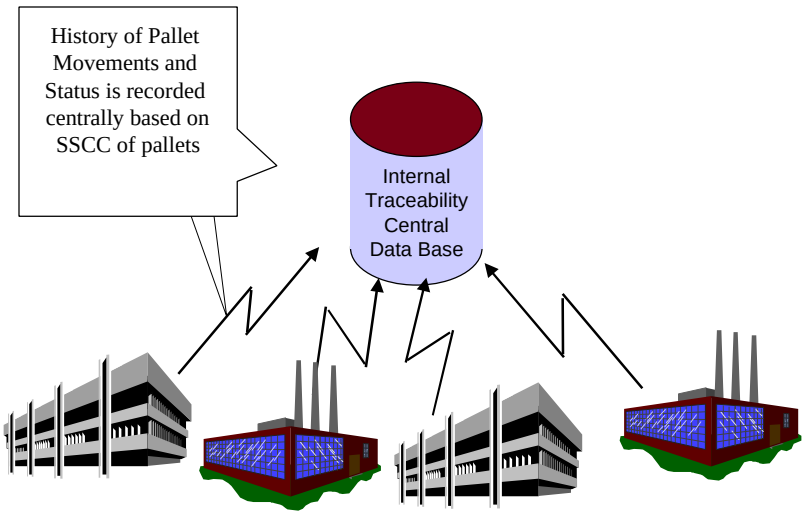
For this process, the EAN 128 Label displaying the SSCC should be used on every unit and therefore tracked. The GTIN of the case in combination with the lot code linked to the case displayed and tracked also is a valid alternative. Examples of traded units are boxes, big bags (for flavourings), etc.

6.2.7.4 Recording, storing and retrieving pallet movement data

Depending on the size of a company, the number of sites (factories, warehouses), the number of trading partners (co-packers, logistics service providers, customers, etc.) and the complexity of its business, it may be difficult to keep track of the history of product movements efficiently when operational sites are managed in a decentralised way. To facilitate the product traceability, it is recommended to consolidate internally in one place (internal centralised logfile, internal centralised data base) all the history of movements for each pallet.

It is up to each company to decide how to organise traceability of pallet movements (centralized or decentralized). The use of EAN•UCC standards for product, pallet and location identification, bar coding / scanning and EDI messaging are powerful tools and enablers for efficiently keeping track of the information and the reliability of the overall traceability process.

Figure 16: Efficient tracking of pallet movements within a company



Decentralised sites with decentralised data bases

Note:
The best practices, as laid out in this section, promote the use of central information systems and exchanges of information by electronic means (EDI). Although highly desirable, these forms of systems and communication between business partners should not preclude the use of any other structured methods of information system and of sharing information between parties. The lack of e.g. EDI capability should never be a deterrent towards applying the Best Practices put forward in this manual.

6.2.7.5 Fresh product traceability

Fresh products, such as meat, fish, fruit and vegetables are shipped from manufacturers to retailers on pallets identified with EAN/UCC Logistic Labels. The SSCC is the basis for their traceability. Standard trade item groupings of fresh products should also carry the GTIN and Lot Code in EAN•UCC -128 bar codes, which form the basis for their traceability. In response to legal and business requirements, EAN International has published Traceability Guidelines for Beef, Fish and Fresh Produce[12].

However when split into bulk sales display or cut into portions, fresh products may be at risk of losing the traceability link with the standard trade item grouping(s) from which they originate and consequently the pallet on which they were delivered. Where it is not possible to create such a link, the entire quantity of a product would have to be withdrawn or recalled in the event of defect.

To counter this eventuality, fresh products divided into bulk sales display or cut into portions may have individual identifiers, which when associated to their respective GTINs form the basis for traceability when linked via cutting, processing and/or packing records to the standard trade item groupings and pallets of origin.

It is therefore recommended for the retail trade to design and deploy traceability systems linking fresh products in bulk sales displays or cut into portions to their standard trade item groupings and pallets of origin. In some supply chains, specific legal provisions exist, such as the Council Regulation 1760/2000 for beef products, which requires each carcass, intermediary cut, and portion cut sold at retail point-of-sale to be labelled with country of origin and slaughter and processing establishment "approval numbers" information.

6.3 Quality of Master Data and Master Data Synchronisation

The business cases developed either by ECR Europe, local EAN organisations or the Global Commerce Initiative have all shown the direct impact of the quality of the master data on the reliability of any supply chain process.

The implementation of a master data synchronisation process[13] between all the partners, which may be involved in the traceability, withdrawal and recall processes, is crucial and highly recommended considering the sensitivity aspect of these processes linked to consumer' safety and the absolute need for accurate and fast procedures.

6.4 Implementing ECR Europe Best Practice

6.4.1 Migration plan: efficient traceability reengineering

In a supply chain where many trading partners are involved it is important to invest in technology that supports properly aligned product identification and traceability processes to ensure that the full potential benefits of the investment can be achieved. Manufacturers and retailers, large and small companies can participate.

[12] May be downloaded from www.ean-int.org
[13] Please, refer to the GCI documents and EAN•UCC GSMP work on Global Data Synchronisation

Achieving proper alignment is the main driver for recommending companies to assess their current position and to consider implementing best practice as described in EAN•UCC standards and this ECR Blue Book.

Throughout this process a collaborative approach is recommended including dialogue between all supply chain partners. This dialogue will lead to the identification of all essential supply chain information and material flows to be received, handled and generated within a company's boundaries and at interfaces between the company and its trading partners, e.g. at receiving and despatch of materials and finished goods.

The important information that must be properly recorded and exchanged includes:

- Identification of all supply chain partners through unambiguous coding using the Global Location Number (GLN)
- Identification of all unique products using the Global Trade Identification Number (GTIN)
- Identification of logistic units using the Serial Shipping Container Code (SSCC)
- Precise and cost efficient electronic data interchange using standard electronic message formats (EANCOM® language)

A clear analysis should be completed to identify and describe the current status of your company organisation, IT systems and business processes (AS IS Status) and an analysis should be prepared to describe the desired future status (WILL BE Status). The analysis of the current practices of the sector of industry to which the company belongs and their expected future development are to be taken into account in order to assess the timeframe needed to reach a critical mass of players for implementation. This will help identify and document the steps required to implement a change programme and achieve a successful implementation of standards including:

- Organisational changes
- Investment in technology
- Integrating new technology process design

The final key step in the migration plan is to find the best sequence in which to implement the solution, starting with organisational change and driving into technological implementation whilst preserving the benefits achieved through each step of the process improvements.

All steps developed should be documented including investment, impact and expected improvements and results. An established timeline taking account of legislation, coupled with sound economic analysis are the backbone of the plan.

Note: Refer to Appendix 8.1 for further information.

6.4.2 Self assessment scorecard

A self-assessment scorecard should be developed to measure the degree of compliance and implementation of best practice. This self-assessment can be presented as a checklist with a score that indicates the degree of implementation achieved.

In this section an example of a self-assessment scorecard is proposed based on the three levels presented in figure 2 and some key considerations from chapter 6. This example can be further expanded or reduced depending on the company's objective.

Product Traceability Process	
Level 1: Identification and labelling of products	Score*
a. Products are identified as appropriate using EAN•UCC bar code standards at each level of product hierarchy and step in the supply chain, e.g. Consumer unit, inner pack, traded unit.	
b. Pallets are labelled using EAN•UCC bar code standards in factories and warehouses	
c. Clear information profiles are exchanged upstream and downstream to supply chain partners to ensure end-to-end traceability of products including raw material, ingredients, packaging materials, etc.	
d. Risk Assessments have been completed to identify and minimise risk within production and supply chain processes.	
Level 2: Scanning Capabilities combined with Electronic Information Flow.	Score
a. Bar Code Scanning capabilities are implemented in factories and warehouses to ensure accurate data capture and improved material and information handling (e.g. scanning of incoming pallets)	
b. A flow of information, which describes the goods dispatched / received, is exchanged with all trading partners (i.e. electronic flow of information supported by EANCOM® Despatch Advice message).	
c. The flow of information on dispatched / received goods contains all the relevant information for traceability.	
d. The flow of information on despatched / received goods is processed 'just in time' to achieve accurate data integration this principle also applies to paper based information processing.	
Level 3: Data Recording	Score
a. All stock movements are recorded electronically and in an internal centralised database in such a way that the information can be accessed easily and rapidly by all the people who need it to help manage an incident / crisis. Paper based solutions must comply with the same conditions as described for electronic data recording.	

A suitable score can be based on the following suggestion:

- 0: No action taken
- 1: Plans have been established but the work has not started
- 2: Implementation has started with a limited scope (e.g. some product categories)
- 3: Roll-out of the full implementation has started
- 4: Plans fully implemented

7 Incident, crisis management, withdrawal and recall processes

7.1 Introduction

Each company should have an internal Product Safety Policy where the requirement to comply with internal quality standards and external legislation is clearly stated without any ambiguity. However, despite the best intentions of a company, products not appropriate for use or consumption may be distributed in error and reach consumers. As soon as this situation is detected, a crisis management plan should be initiated promptly in order to stop further distribution of the products concerned and when necessary inform consumers.

It is the responsibility of each company to decide on the structure of a crisis management organisation to be put in place. The purpose of this section is to complete the recommendations for this ECR Blue Book by giving some guidance on how to address product withdrawal and recall because this is also covered in the European Legislation.

7.2 Definitions

7.2.1 Definition of incident

An incident is any situation, that might imply a real, presumed or perceived product safety or serious quality deviation from legal requirements and / or internal quality norms and which presents one or a combination of the following elements:

- A real risk that has already caused human or animal health problems irrespective of whether it is public knowledge.
- A potential risk that has not yet caused human or animal health problems, but which is in the market, irrespective of whether it is public knowledge.
- A potential risk of which the capacity to cause problems is unknown, irrespective of whether it is public knowledge.
- Information received about a potential risk situation (also called an alert)

7.2.2 Definition of crisis

"It is any "incident situation" where there is reason to believe that a product distributed in the supply chain or placed on the market may be injurious to human or animal health and / or to environment protection, and / or have serious negative impact on the business organisation and / or image of the company."

Basically, there are two types of crises:

a. A situation with a wide impact that is mainly managed by Government administration (e.g. foot and mouth disease in cattle and sheep)
b. A situation generated by a failure within the supply chain involving a manufacturer, a distributor / retailer and / or a consumer.

In crisis situations, a reliable product traceability process is essential to limit damage and to prevent loss of control. Often, a crisis situation only involves one specific production batch. A

complete product withdrawal / recall can be avoided if a faulty production batch can be identified, traced and removed from the market.
It is in the interest of all parties concerned to ensure that only the products affected by the incident / crisis are actually removed from the supply chain because this minimises disruption, maintains safe supply for the consumer and reduces all unnecessary costs for all trading partners.

7.2.3 Definition of withdrawal and recall

The legal European definitions are as follows:

- **Withdrawal:**
  "Shall mean any measure aimed at preventing the distribution, display and offer of a product dangerous to the consumer » (2001/95/EC)".

- **Recall:**
  «Shall mean any measure aimed at achieving the return of a dangerous product that has already been supplied or made available to consumers by the producer or distributor» (2001/95/EC)

  The withdrawal procedure concerns every business operator who has reason to believe that the product he has imported, produced, processed, manufactured or distributed is not compliant with the safety requirements. Recall is the procedure implemented when the product may have already reached the consumer.

Section 7.5 Incident / Crisis Management describes how and when to deal with a product withdrawal or a product recall.

7.3 Ethical code to follow in the event of a crisis

As stated in the introduction to this chapter, companies already deploy a lot of resources to ensure product safety. However, despite all the precautions taken inappropriate products are occasionally put on the market and do reach consumers.

In this situation, a company has an obligation to manage this problem with speed, precision and sensitivity.

This section describes an Ethical Code that companies, irrespective of their size, are highly recommended to adopt. It is based on four major business principles:

1) Cooperate and coordinate your actions:
   Companies must commit to cooperate and coordinate their actions with all the parties involved with the utmost speed.

2) Provide competent resources:
   Companies must commit to provide suitable resources, including people who have a global vision of the supply chain and respect the priority given to product safety.

3) Do not take competitive advantage:
   Companies commit not to use a crisis situation as an opportunity to take competitive advantage at a time when such activity may have negative impact on the crisis situation and may make it worse.

4) Communicate correctly and adequately:
In crisis situations that involve many trading partners all the parties commit to coordinate their communication prior to any public announcement and to make responsible use of the information related to the crisis. Companies should always assess the benefit of working together with their partners instead of acting independently and at the risk of making matters worse.

7.4 Organisation, documentation and training

Key business rule:

*Successful management of an incident or crisis will be achieved if the company has put in place a well thought out Crisis Management Plan and an appropriate Crisis Management Team. This will enable the company to work quickly and successfully to minimise risk***.**

Companies are recommended to implement and prepare a plan and appoint members of a team who will take charge of product traceability and crisis management, supported by clear instructions and guidelines. The size of the crisis management team depends on the company's internal strategy and structure. Continuous training of the people involved in this organisation will raise their awareness of the importance of their role and re-enforce their performance and efficiency in the face of a crisis.

This section gives guidance on the key aspects to consider when planning and implementing an internal structure for traceability and incident management.

7.4.1 Internal procedure guide and documentation

It is important to prepare the plan and business procedures to be adopted in the event of a crisis and this should be documented to include:

- Scope, objective and target audience
- Corporate values of the company on product safety
- Definition of an incident and a crisis
- Description of the Incident / Crisis Management Team with roles and responsibilities clearly defined for each member of the team
- Checklist or sequence of actions to take in the event of an incident / crisis
- Timetable for each step of the plan
- A list of key contacts
- When to trigger a product withdrawal
- When to trigger a recall
- How to organise internal communication
- How to organise external communication
- Business cases and examples of incident / crisis management, including information flow
- Templates for internal and external communication and records of events

This document should be updated regularly and distributed to the network of people involved.

7.4.2 Organisation, Roles and Responsibilities

7.4.2.1 Responsibilities at each organisational level

Based on the company plan, a Crisis Management Team must be appointed and led from a central coordination point. The Team may be one physical team or a virtual team with members in several locations depending on the structure and the size of the company. This team is the first entity to contact if an incident is detected. It is responsible for deciding on the actions to be taken. No action should be taken without the formal agreement of the Crisis Management Team.

The overall responsibility of this team is to organise, control and lead:

- Development, implementation and update of the internal instructions to be followed in the event of an incident / crisis
- Continuous training of people involved in product traceability for crisis management
- Development of internal requirements for IT systems
- Regular self-assessments and internal testing of the plan
- Management of each incident / crisis
- Evaluation of the incident reported to identify learning and make recommendations to prevent a recurrence
- Development of internal and external communication plans to be used to help manage an incident / crisis

The Crisis Management Team is a permanent, standing work group, usually composed of:

- Team leader
- Factory manager
- Category manager
- Quality manager
- Supply chain manager
- Customer service manager
- IT manager

The Team Leader must co-ordinate action and takes responsibility when a crisis occurs, acting as the channel for internal and external communication. Where an incident requires additional expertise the team could be expanded to include:

- Consumer service teams
- Public affairs
- Legal officer
- Sales organisation

The existence of the Crisis Management Team and its members needs to be known at all levels of the company. The members of this permanent group should be contactable at any time and when necessary, appropriate substitutes must be available to cover every role.

7.4.2.2 Contact lists

For speed of communication a predetermined list of people, together with their contact details (phone, email address and postal address) must be prepared to include the Crisis Management Team itself, their potential deputies, external advisors, government authorities, trade association contacts, customers and the media.

There are two types of list:

a. Internal contact list:

This includes the people, who can provide expertise and support and the contact list should include:

- Warehouse manager
- Product manager
- Sales manager
- IT experts in product traceability processes,
- Public Relation Experts
- Etc.

This list needs to be complete, up-to-date and available to *all* people concerned within the company.
The people on the contact list need to be contactable at any time by telephone and email and be prepared to come together as a team to manage a crisis.

b. External contact list:

Each company has an external environment with which it interacts everyday: Suppliers, customers, logistics and solution providers, consumers, doctors, public authorities, etc. This forms an external network of people to contact in the event of an incident / crisis.

While a proper internal communication is very important, external communication must be even more structured and controlled.

The external contacts must be kept informed as appropriate:

- To inform them about the incident and request their expertise (e.g. raw material suppliers, co-packers, suppliers, etc.)
- To inform them and involve them in the action to be taken (e.g. Logistics Service Providers, Purchasing Managers of Customers, Sales Managers of Suppliers, etc.)
- To give them information to use, e.g. Government Authorities
- To request support for information to be put into the public domain

The Crisis Management Team should manage the external contact list. It needs to be complete, up-to-date and made available to key managers and staff.
Key contacts at important suppliers and customers should be aware of the list and agree the personnel they nominate as key contacts to support the Team.

Specific consideration: Consumers are part of a company network. When feasible and realistic, it is recommended to print on consumer unit packaging a telephone number (usually the consumer service number) that a consumer can use to question or inform the company about a product fault or complaint.

As stated already in section 7.4.1, all activities, which take place in connection with incident / crisis management, product withdrawal / recall, need to be adequately documented. To facilitate communication within the company and ensure a continuous readiness to deal with an incident or crisis, a complete process of documentation needs to be established and the material made available throughout the company as Traceability, Incident / Crisis Management package, which is composed of:

- The internal guideline on incident / crisis management, including checklists of actions to take in the event of an incident / crisis, when an incident becomes a crisis , when an incident / crisis is terminated, etc.
- Internal / external contact lists
- Description of product traceability processes based on the best practice documented in chapter 6 of the present blue book

- Template for notifying incident
- Template for notifying that an incident / crisis is terminated
- Template, business cases for incident evaluation
- Templates for information forms and communication
- Checklists, self assessment and internal exercises
- Etc.

Some parts of this package:

- Should be shared with suppliers and customers in order to ensure good coordination in case of an incident / crisis
- Need to be shared with external partners with whom some activities linked to traceability are managed (e.g. co-manufacturers, co-packers, logistics providers, solution providers, etc).

Key business rule:

The end of an incident / crisis needs to be established through a formal conclusion.

7.4.3 Developing internal competences and skills

Regular training should be given to all the people, who may be involved in product traceability, incident and crisis management. The scope of this training includes:

- Traceability processes implemented by the company, based on the best practice documented in chapter 6: EAN•UCC standards used, IT solutions, how to access the data required, etc.
- Instruction on incident / crisis management
- Role of the Incident / Crisis Management Team
- Role of the person being trained
- Who to contact
- The importance of coordinated actions and communication within the company
- What to do and what to avoid taking
- How to use the documentation
- How to use the product traceability and record systems

The training should also include simulated exercises on:

- Product Traceability
- Crisis Management
- Product withdrawal
- Product recall
- Management of quarantined stock

Such exercises should be:

- Timely
- Documented with a clear explanation of the context, the results, the gaps identified and the corrective actions
- Based on templates, which reflect the internal technical and organisational instructions
- Done with supply chain partners

Key business rule:

Incident / crisis management exercises must be run on a regular basis to improve readiness and awareness of the Crisis Management Team, key staff and external contacts. This should be done in collaboration with key trading partners.

7.4.4 Self Assessment Scorecard

A self-assessment scorecard should be developed in order to measure the degree of compliance and implementation of best practice regarding product withdrawal and recall. In this section an example of self-assessment is proposed based on key considerations of chapter 7. This example can be further expanded or reduced depending on each company's objective.

Incident / Crisis Management	
Requirements / Actions	Score
a. Incident / Crisis Management Team has been appointed with clear definition of roles and responsibilities	
b. Internal guideline on incident / Crisis management with clear definition of withdrawal and recall procedures, incident evaluation, etc. has been fully documented	
c. Contact lists have been documented and distributed	
d. Contact lists have been made available to key trading partners	
e. Each person involved in incident / crisis management, product withdrawal / recall procedures understands their role and scope of actions	
f. Training material has been developed	
g. Training of people is performed regularly	
h. Regular exercises are run to test the Crisis Management Team, incident and crisis management plans, checklists and to update the self assessment scorecard	
i. Regular exercises are run with key trading partners	

A suitable score can be based on the following example:

- 0: No action taken
- 1: Plans have been established but the work has not started
- 2: Implementation has started with a limited scope (e.g. some product categories)
- 3: Roll-out of full implementation has started
- 4: Plans fully implemented

7.5 Incident, crisis management

As soon as an incident is detected, the Internal Crisis Management Team must be informed. An incident may be linked to the quality of the product with no safety impact or might carry a safety aspect. The Crisis Management Team must evaluate the incident, establish the potential risk, manage the incident and establish and control the communication related to the incident.

The Team members will also decide which experts to call on depending on the scope of the incident and the result of their evaluation. As soon as an incident is detected, it needs to be effectively managed and controlled in order to avoid the incident from developing into a crisis. Generally companies handle incidents. However, it must be recognised that major crises have been experienced in Europe during past years.

7.5.1 Assessment

In the event of an incident, the first action to take is to evaluate the situation using questions such as:

- How was the incident discovered?
- Who raised the alert?
- What is the origin of the incident?
- What is its current scope?
- What are its potential effects on the consumer?
- What are the financial risks?
- What are the legal considerations?
- Who is aware of the incident?
- What are the internal procedures to be followed?
- Who must be contacted to coordinate and manage the overall incident effectively?
- Has the company already faced similar incidents in the past? What were the actions taken and how was the incident addressed (learning from previous situations or established business cases)?

During the evaluation phase, it is very important to collect as much information as possible on the issue in order to identify the type of situation faced and the fundamental actions to be taken rapidly. The information collected needs to be recorded properly because it will be used for any further analysis required.

7.5.1.1 Risk analysis

A risk analysis will help to evaluate the possible legal and economic effect of the incident. The criteria and variables to consider depend on the internal strategy and structure of each company.

However consumer safety and the fact that each company is linked to multiple business partners means that legal and economic impacts of the incident must be assessed beyond the company boundaries taking into account the external environment.

The results of the risk analysis need to be recorded in a file so that the results can be used for making the decisions required. The assessment should cover the type and degree of risk, the mitigating effects of different action available, the methods of communication used and the potential consequences.

7.5.2 Withdrawal or recall a product

As stated in section 2.2, it is generally the responsibility of each company, taking account of the legal framework in which they operate, to define when to initiate a withdrawal or a recall of a product. This decision should be taken following an internal risk management analysis. However, if the internal evaluation and risk analysis reveal that a regulatory violation has occurred, the company must initiate a product withdrawal or recall.

Note: All decisions for product withdrawal / recall not linked to legal obligations must be carefully coordinated with the concerned trading partners from the beginning.

Withdrawing or recalling a product is an organisational procedure that:

- Relies on accurate information extracted from the internal traceability system / database
- Requires close collaboration between all the parties involved.

Common objectives and approach need to be clearly stated and agreed in order to act effectively. It is in the interest of all the parties to coordinate their effort and ensure a successful management of the situation.

It is recommended that all the parties share the same information. Appendix 8.3 gives an example of an Information Form which has been already used successfully between partners in case of withdrawal / recall. A retailer can also use it within its distribution centres and shops. Using such an Information Form can help to rapidly gather and record the information needed and pass the same information to all parties and contribute to limit damage to the companies concerned.

Key business rule:

A template prepared in advance on which to record the initial information is essential for an efficient product withdrawal / recall.

The template can be designed as a questionnaire or a checklist, which includes questions such as:

- Who has made the complaint and what are their contact details?
- What product is involved?
- What is the complaint?
- What are the potential effects?
- When and where did the complaint first occur?
- Where is the sample of the faulty product?
- What is the Lot number shown on the product?
- Who must be informed within the company?
- Have Third Parties (e.g. authorities) already been notified?
- Etc.

It is important to quickly identify the production batch or Lot involved in the crisis.
It is in the interests of all concerned to ensure that only the product subject to the quality fault is actually removed from the supply chain.

7.5.3 The reverse logistics process

When products are withdrawn or recalled from the market it is essential to separate faulty stock, to account for it correctly and arrange for its safe disposal or destruction.

"Article 8 of the Directive 2001/95/CE
For the purposes of this Directive, and in particular of Article 6 thereof, the competent authorities of the Member States shall be entitled to take, inter alia, the measures below, where appropriate:

- *For any dangerous product already on the market:*
- *To order or organise its actual and immediate withdrawal, and alert consumers to the risks it presents;*
- *To order or coordinate or, if appropriate, to organise together with producers and distributors its recall from consumers and its destruction in suitable conditions."*

The illustration given below shows the reverse logistic chain based on the location of the products (point of sale or distribution centre) and the logistics organisation used for delivery (DC or direct store delivery).

The organisation used to stop further distribution and sale and to identify the location and stock quantities to be returned will depend on the extent to which automation has been introduced to manage the supply chain. The practical options for reverse logistics may include:

- Collection by the supplier
- Collection by the third party logistics provider
- Collaboration between supplier and retailer to return stock from shops to retail DC for collection
- Collection by sales force

It may be appropriate to destroy spit cases of stock at the store and accept an administrative claim for losses – and to collect only unopened, full cases of unsold stock.

Proper measurement of quantity produced and distributed versus quantity quarantined and returned from customers will help with a risk assessment about the volumes purchased and in the hands of consumers.

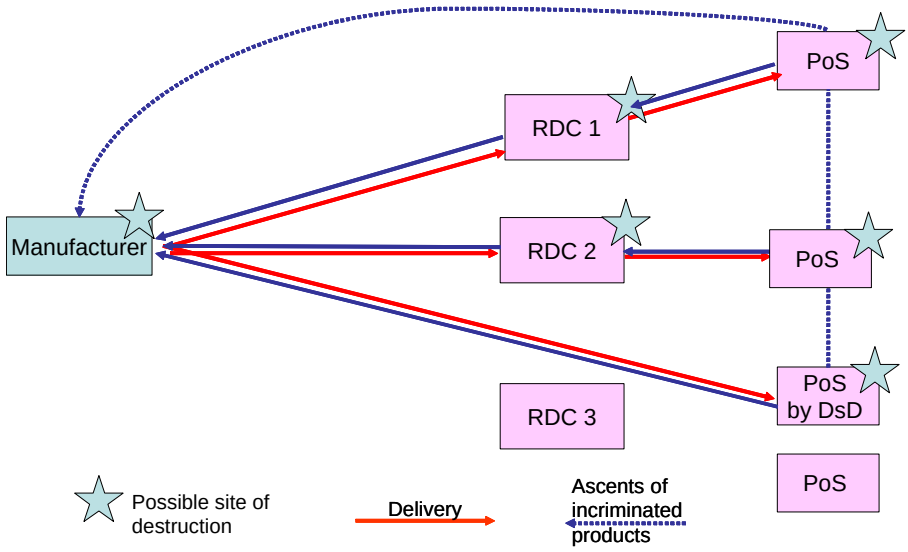


Figure 17: Products "reverse logistics"

The nature of the manufacturing fault will determine what the next action must be. If the product is unsafe and must be destroyed, this must be done in compliance with environmental regulations for waste management and recycling of packaging materials.

7.5.4 Communication in the event of an incident or crisis

The success of handling a sensitive situation rests with the quality of the communication to the parties involved and the information shared amongst those parties. There are different levels of communication and the information required at each level will be different:

- Internal communication to all the business divisions, factories, warehouses, IT department
- External communication to all the business partners (customers, logistics Service providers, co-packers.)
- Communication to Authorities
- Communication to media

Depending on the scope of the incident / crisis, the communication levels to initiate and the information required are different. The correct procedure to follow is the internal company plan, which establishes the steps to take, the people to contact, the person in charge of communication, the scenarios to consider, the level of information and communication and the timeframe for action.

The next section gives guidance to companies wishing to create a communications plan.

7.5.4.1 Information to be gathered and communication steps to be taken in the event of an incident or crisis

a. Collect all the information required and ensure its accuracy

- Involve all the people who can provide expertise on the issue and contribute accurate information. In this step, it is important to remain pragmatic and ensure that the issue is handled confidentially.
- Activate the internal system and keep records of complaints from customers and consumers
- Assess the current situation and the risks of an incident or crisis

b. Establish the list of the audiences, who will need to be informed

- Trading partners
- Trade Associations
- Government Authorities
- External support such as laboratories, scientists, technical assessors, communication assessors, legal assessors, etc.

c. Activate the internal communication system

The internal communication system is normally based on the organisation and corporate plan, which shows:

- The internal units / departments to involve in order to handle the crisis effectively
- The necessity to handle the situation at this stage with a strict level of confidentiality and to direct any relevant information, questions, etc. to the "Internal Crisis Management Team".

d. Allocate resources and make available all material

- Allocate the necessary resources to the management of the crisis and direct them to the "Internal Crisis Management Team".
- Prepare all the material necessary to support the work of the "Internal Crisis Management Team" (e.g. results of the evaluation, list of external partners impacted, etc.)

e. Structure the information and communication

1. The Internal Crisis Management Team must approve internal and external communication that is used. If a communication to Consumers is necessary, answers to the following questions should be included:

    - What is wrong?
    - How can a non-conforming product be identified?
    - Is the product safe? (This is critical in the food industry. Consumers want to know what they buy and what they eat)
    - Who is responsible?
    - What is being done to control the situation?
    - What is intended to prevent the crisis to happen again in the future

2. The communication needs to be simple, adapted to the audience (internal, trading partners, authorities, consumers, media, etc). However, it should carry the same message and should be consistent and based on accurate and established facts and information. This communication needs thorough preparation and it is recommended to use the following checklist and prepared documents / examples:

    - Description of the incident / crisis
    - Anticipated responses to questions
    - Example / template for an official statement
    - Example / template of a press release
    - Example / template of an interview by a member of the media
    - Example / template of a letter to selected audiences (e.g. authorities)

7.5.4.2 Golden Rules for an effective Communication

Key business rules:

Since part of the success of crisis management is in the quality of the communication, the following Golden Rules for communication are recommended:

1. *Protect the company's most valuable asset, namely the consumers, in order to preserve the credibility and reputation of the company.*
2. *Centralise the information and the decision process (Internal Crisis Management Team)*
3. *Appoint a spokesperson, who will be the official information channel. Limit the number of people involved in the communication.*
4. *Obtain all the information, documentation, data and facts in the shortest time possible and act as quickly as possible.*
5. *Establish how, what, when and to whom to communicate.*
6. *Define a single message, adapting it to each audience based on uniform, accurate and confirmed information.*
7. *Ensure that the company communication reaches all the audiences accurately, especially in the mass media.*

8. *Be aware that the employees are one of the main audiences.*
9. *Quickly establish call capture and information request systems. Make use of the 0 800 line (or equivalent) or consumer channel if they exist.*
10. *Control the development of the crisis and ensure that a local crisis does not become regional.*
11. *Inform and instruct the employees, who are in contact with consumers and customers.*
12. *Get external support if required.*
13. *Deal with the media in an open, professional and accurate way.*
14. *Be aware of the possibilities provided by the Internet as a communication tool.*

8 Appendices

8.1 Migration Path for implementation

This ECR Blue Book describes best practice recommendations on how to effectively apply traceability solutions and procedures using EAN•UCC standards.

The objective of this chapter is to describe some basic guidelines on how to migrate from your current business organisation to implement best practice if applicable and economically feasible. This will require some effort and the allocation of resources, which is why it is recommended that you use a strong project management approach.

8.1.1 Define Objectives

Your Project Team should set clear objectives. This requires research, collection of data and a clear understanding of existing recommendations and literature on EAN standards. At the end of this section, the reader will find a list of documents and sources required to start your project.

The objectives of "migration" are linked to the planned scope of the project. Migration plans can be applied to a single department, a single site (e.g. warehouse, factory, etc.) or a single product line. Nevertheless, it is best to use an "end-to-end" approach integrating all trading partners, products and relevant traceability information received, handled and distributed or forwarded. This includes any 3rd party service provider and other business partners in the supply chain.

Objectives of "migration" also determine the depth of analysis required. Risk analysis is an acknowledged pre-requisite in order to evaluate possible impacts of an incident or crisis. The result of risk analysis will determine a company's ability and speed to implement traceability solutions (in a given time frame), balancing daily operational costs versus the probability of an incident or crisis and its possible impact on the company and the supply chain.

Having obtained the overview of existing traceability solutions and procedures and having defined the objectives (scope and depth) of the project "migration", the next steps will bring a company closer to bridging the gaps discovered.

Here is a list of recommended literature to get you started:

EAN•UCC publications and further reading

- EANCOM® 1997, CD-ROM, Brussels, 2001 version, EAN International?
- EANCOM® 2002, CD Rom, Brussels, EAN international
- EAN•UCC Logistics Label and the SSCC, Brussels, EAN International
- Fresh Produce Traceability Guidelines, Brussels, 2001, EAN International
- General EAN•UCC Specifications, Brussels, 2003, Version 4.0 EAN•UCC
- Introduction to EANCOM® in Trade and Transport, Brussels, 2001, third edition, EAN International
- RFID and the EAN•UCC System, GTAG Project Team, 2000, EAN International and UCC
- Introduction to the Serial Shipping Container Code, Brussels, 1998, EAN International
- Solutions for Supply Chain Management: Application Identifiers and the UCC/EAN-128 Symbology, Brussels, EAN International
- The Unit Load Identification and Tracking Report, Brussels, 2000, ECR Europe
- Trace – I, Traceability Implementation, Brussels, 2003, EAN International

- Traceability of Beef, Application of EAN•UCC Standards in Implementing Regulation (EC) 1760/2000, Brussels, 2001, third edition, EAN International

Online

- www.ean-int.org
- www.uc-council.org
- www.ecrnet.org

For further publications and information, please contact your regional EAN Member Organisation.

8.1.2 Assess and document processes currently in place

When you begin your work, current flows of information need to be carefully documented. This can be achieved by collecting existing documents and checking through site visits and audits to see what your company actually does today.
The focus during assessment should be structured according to the unique identification of locations and items, data capture and links management as explained earlier in this document. The handling of uniform mono-lot and multi-lot as well as mixed units must be carefully analysed to identify the different combinations of traceability information linked to them.

In addition to this update of documentation on procedures and solutions it is important to check that the project does not overlap or endanger other ongoing projects and vice versa.

8.1.3 Assess your current situation

The use of assessment tools has been described earlier in this document. Each procedure and solution must be evaluated with regard to unique identification, data capture, data communication and links management.

In order to capture item related data in an unambiguous way along the supply chain products must be labelled / bar-coded as recommended. Technological solutions like infrastructure and software applications and scanning devices must be able to rely on a proper bar coding in order to capture data automatically. The IT- infrastructure must also be able to link information like Lot, GLN, SSCC and GTIN in a way that enables traceability.
If there are gaps encountered during this assessment, they should be documented and their impact evaluated. Mainly, the alternatives between "not changing" and "migration" must be assessed. Scorecards can be of use when visualizing the actual state of procedures and solutions and the progress during migration. This can be seen in the chapter "Warehouse Assessment" in Appendix No 8.2.

During evaluation, you should remember that implementation of traceability solutions can help to improve existing processes when using ECR Recommendations and automatic data capture (ADC) based on EAN•UCC standards. It can improve both speed of data availability as well as process safety eliminating errors. In addition, EDI can be expected to improve information exchange with supply chain partners regarding traceability data.

8.1.4 Develop an implementation plan

This section explains the steps needed to prepare implementation of ECR Best Practice solutions regarding traceability.

It is recommended that a project management plan be created to define the different phases, milestones, responsibilities, actions and expected results.
The framework of migration should be based on a collaborative dialogue between supply chain partners and implementation of standard solutions. During the dialogue, which should be based on ECR Recommendations, the aim is to collaboratively define the information to be used, for example, on an UCC/EAN- 128 pallet label and in EDI messages.

Entering the world of EAN•UCC standards and their implementation requires an EAN•UCC Company Prefix from your local EAN Member Organisation (See: www.ean-int.org, contact us). The EAN•UCC Company Prefix is the part of the EAN International and Uniform Code Council data structures and gives access to all the applications using EAN•UCC System identification standards (e.g. SSCC, GLN, GTIN, ...). This way, the first important layer of traceability, unique identification of the trading party, is achieved when labelling has been introduced successfully. For logistic units, the UCC/EAN- 128 symbology is the recommended labelling solution.

Labelling requires planning of where to install printers and label applicators and which processes need to be adapted. Equipment must be linked to the IT- infrastructure in order to receive and send required traceability data during printing and scanning.

While information on EAN•UCC standards can be obtained directly from local EAN•UCC Member Organisations, the search for adequate hard- and software solutions should be addressed with the help of a specialised service provider.

8.1.5 Implementation

Once objectives, project plan and the migration team are set up, the implementation can start. The first step should be to inform all supply chain partners about the project, so that they can include the results of your plans in their own traceability related projects. It is important to stress that migration will most probably change the way products are labelled and information is shared between trading partners, the interfaces to name it, and thus it concerns the entire supply chain.

It might be of advantage to first select a pilot project involving one partner in order to test live of procedures and technological solutions. This learning can help to improve the plan. Migration is a continuous process of improvement.

Then, the final roll-out can begin.

The skills learned through the work of the project team must not be lost when the first phases of change have been implemented. The people involved should participate in future work and project evaluation in such a way as to retain and spread skill and best practice. Traceability, crisis management and the supply chain itself are subject to dynamic developments and should be followed closely. "Migration" should be classified as day-to-day business and not as a one-time investment in assessment of logistics or quality related issues.

8.2 Example of a Self Assessment document

Example of self-assessment tool for warehouses. This example is based on a Manufacturer's view. However, it might be applied, to a certain extend, to a Retailer's context.

Approach 2: Assessing traceability standards in a Warehouse

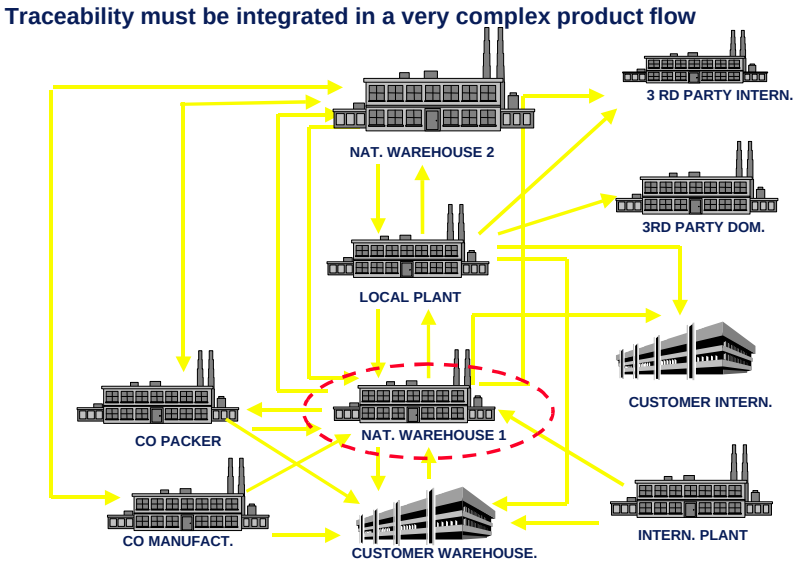
This approach will be covered in full length on the following pages. The presented stepwise structure might encourage companies to follow a similar way of identifying and solving traceability issues regarding warehousing.

Get to know your warehouse!

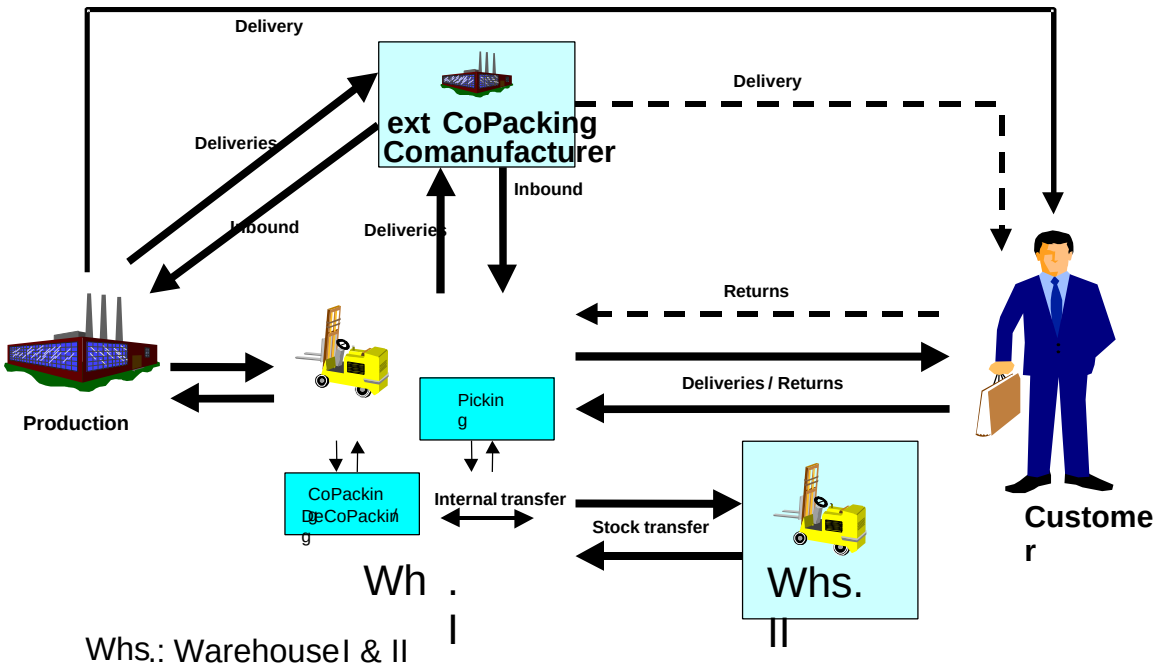
Step 1: Process oriented product flows

Before considering the implementation of traceability solutions developed outside of a specific warehouse, a thorough analysis „on site" of material flows and information flows focus on the warehouse is definitely a must.

- First, draw a map of all product flows and concerned entities and companies tied to operations originating from the warehouse. The result could look like the following graph:



- To describe product flow and internal processes for a specific warehouse process in a more specific way draw a detailed picture. The result could look like the following graph:



The result should be an overview of the complexity of product flows within a specific warehouse with a link to all inbound/outbound product flow. At the same time, the graphs can be used as a checklist for designing action lists and can serve as final wrap up at the end of successful implementation of traceability process solutions.

Step 2: Assess the real setting of your warehouse

Based on the previous identification of players and processes a structured overview will help to visualise and compare different warehouses. The overview can be enriched by some of the results generated using the questionnaire. For this example, information on the technological level in use has been added.

- Visualise the previous findings in a matrix indicating the material flows between entities and the state they are in (e.g. green for identified). The result could look like the following graph:

Warehouse	*Interface*		*Inbound deliveries*		*Outbound deliveries*		*Returns*	*Co-packing*	*De-co-packing*
	WMS	*PC*	*Uniform p.*	*Mixed p.*	*Uniform p.*	*Mixed pallets*			
Location A									
Co-manufacturer B									
Co-packer C									

Other information declared typical for the company should be added, for example regarding the type of pallets moved and created. Mixed pallets, co-packing and customer returns add a significant degree of complexity to the processes.

Plan your next steps!

Step 3: Use a management scorecard to follow up changes

Based upon the „as is" analysis described in the first two steps, a scorecard can help to keep track of due and realised changes. Scorecards are easy to read and the information within can be shared quickly with all people affected by the implementation of traceability solutions.

The scorecard should reflect the 3-level-approach presented with the document. It should serve to focus on „hot"processes and expected gaps concerning traceability issues. Questions to be asked and answered are for example:

Inbound Flows:

- Is the pallet label readable? (printing quality→ bar code with wrong data structure)
- Do you receive shipments without pallet label?
- Can you print an EAN/UCC standard pallet label?
- Are you scanning the EAN/UCC 128 pallet label of returned goods?
- As a manufacturer, are you tracking mixed pallets on the basis of a lot charge?
- What data is actually tracked (Examples: EAN code, SSCC, Best Before Date, Lot Code, etc.?

Outbound Flows:

- Can you trace back (de-) co-packing procedures?
- Are you tracking mixed pallets based on SSCC as key identifier for logistics units?
- Have you defined the data necessary for traceability, within your company and together with your supply chain partners?
- Can you automatically retrieve in short-term necessary traceability data?
- Do you have a clear identification of mixed units to avoid wrong combinations?
- Can you allocate different lot charges of different items to a co-packed unit?

Again, questions may vary according to the type of business (manufacturer, retailer, third party provider) and its complexity. This means, that questions must be chosen adequately and carefully. Not all may applicable to your specific business needs. Also, the directions of different flows (e.g. inbound, outbound) can be a useful entry point into discovering potential gaps.

- Design a scorecard! The result could look like the following graph series:

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TRACEABILITY ASSESSMENT

PROCESS: INBOUND

Warehouse	Scannen INBOUND	Label printing capabilities	Returns refering to ORIGINAL shipments	
			Uniform pallets	Mixed pallet
Warehouse A	↑	↑	→	↓
Warehouse B	↑	↑	↗	↓
Warehouse C	↑	↑	↗	↘
Warehouse D	→	↓	→	→
Warehouse E	↑	↑		
Warehouse F	↑	↑		
Warehouse G	↑	↑		
Warehouse H	↑	↑	→	↓
Warehouse I	↓	↓		
Warehouse J	↑	↓		
Warehouse K	↓	↓	↓	↓

Ranking	
↑	satisfactory
↗	needs less refinement
→	needs more refinement
↘	needs improvement
↓	not satisfactory

TRACEABILITY ASSESSMENT

PROCESS: OUTBOUND

Lager	Scannen Outbound	Printing transpor label	Picking	Recall report available
Warehouse A	↑	↑	↑	↑
Warehouse B	↑	↑	↑	↑
Warehouse C	↑	↑	↑	→
Warehouse D	↑	↓	→	↑
Warehouse E	↑	↓		↑
Warehouse F	↑	↓		↑
Warehouse G	↑	↑		→
Warehouse H	↑	↑	↑	↑
Warehouse I	↑	↓		↑
Warehouse J	↑	↓		↑
Warehouse K	↓	↓		↓

Ranking	
↑	satisfactory
↗	needs less refinement
→	needs more refinement
↘	needs improvement
↓	not satisfactory

TRACEABILITY ASSESSMENT

PROCESS: INHOUSE RELOCATION

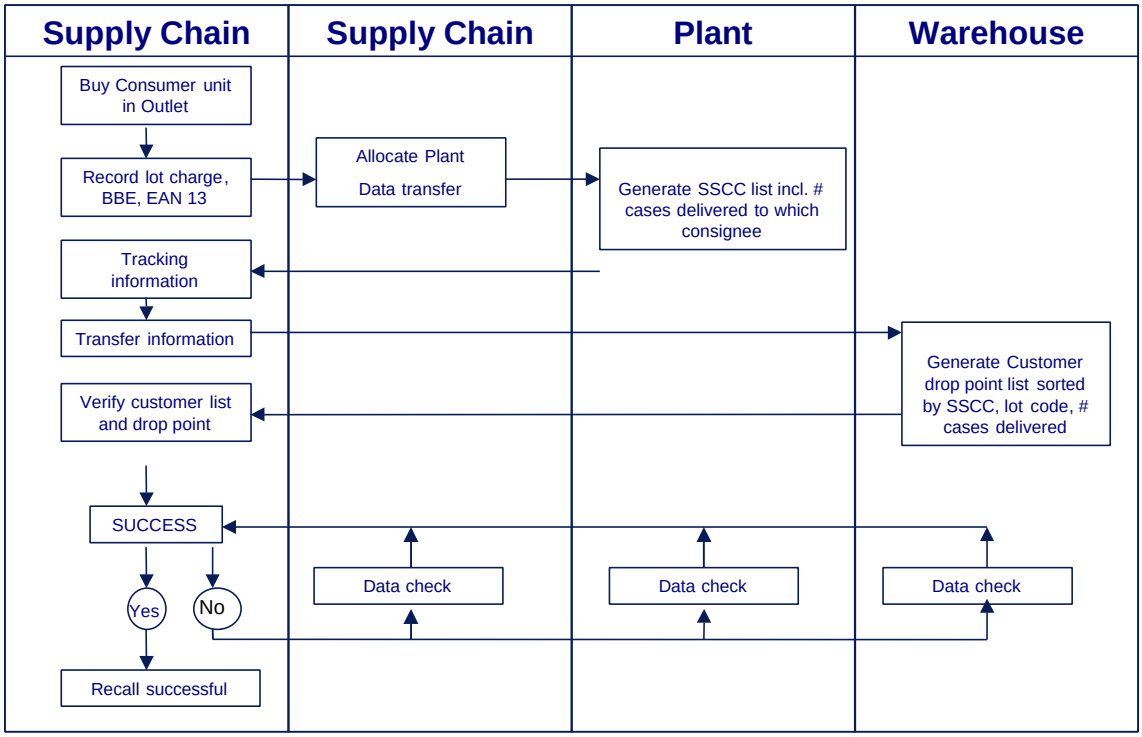
Warehouse	CoPacking	DeCoPacking	internal storage	
Warehouse A	→	↓	↑	
Warehouse B	↗	↓	↑	
Warehouse C	↘	↓	↑	
Warehouse D	→	↓	↑	
Warehouse E			↑	
Warehouse F			↑	
Warehouse G	→		↑	
Warehouse H			↑	
Warehouse I	↓	↓	↑	
Warehouse J			→	
Warehouse K			↓	

Ranking	
↑	satisfactory
↗	needs less refinement
→	needs more refinement
↘	needs improvement
↓	not satisfactory

Test your solutions!

Step 4: Traceability mock-recall for the entire supply chain (Simulation)

After all the work is done, a through test should prove if the implemented solutions are robust and work out as desired especially with different partners involved. The test must be carefully designed, and could look as follows:



Step 5: Traceability mock-recall for dedicated warehouse

Take a sample of a product from the market that means: go and buy it in a randomly chosen store. If this is not possible, choose a sample from the warehouse picking area (at best a product, from which some units have already been dispatched).

- The overall aim of the exercise is, that your warehouse management can tell you exactly the following:

  - How much of this particular product was delivered to the warehouse and when
  - How much is still remaining in the warehouse (go out on the floor and verify this)
  - How much has been dispatched and to which customer has it been dispatched.

The outcome of this simulation must be the documented trace and track of all units of the product in question: The number of all units received must be equal to the summed up number of units located within the warehouse plus the number of units tracked to the next

steps of the supply chain, which could be for example a co-packer, another warehouse, a production site or a retailer.

Only in case of a perfect fit of these two sums the traceability system in place seems to be stable and robust enough to protect your company in case of a crisis.

Make sure to repeat these simulations in regular intervals of time in order to maintain the awareness of people involved and to prevent once established efficient procedures from deterioration.

8.3 Crisis Management – Example of an Information Form

From ? manufacturer or ? retailer ? owner or ? non owner of the brand	**EMERGENCY-WARNING**	File n° …… Update on :…….. N° …… for …… concerned EAN N°……. for …… concerned points of delivery

Departement or category of product: ..... Brand : ..... *(1 quick information form per product)*

? **Quarantine of the product** (without any instructions of de-freezing, withdrawal of the product from : dd/mm/yy hh:mm)

? **Withdrawal of the product** (without any re-sale possible)

? **Recall of the product**

Samples to keep: ? yes, quantities : ..... ? No

From :	To :	Concerned point of delivery
Company : Name of the interlocutory : Job title : Telephone : Mobile : Fax : Email : Global Location Number (GLN) :	Company : Name of the interlocutory : Job title : Telephone : Mobile : Fax : Email : Global Location Number (GLN) :	

EAN Code of consumer unit	Brand	Denomination	Size	Flavour, shade, …	Lot numbers concerned	Expiry date	SSCC	Quantities (CU)
Transport reference			Delivery order reference			Delivery date		

Reasons of the alert and potential risks:	Is there any message for consumers? ? Yes (see enclosures) ? No
Alert source : ? Manufacturer ? Retailer ? Consumer ? Administration ? Other :	
If withdrawal or recall : way of destruction or return :	Quantities ascent / evaluation

Comments : .....

.....

Receipt advice : ..... Point of sale / delivery centre informed on : .....

8.4 Glossary

Terms	Explanations
ADC	Automatic Data Capture
Application Identifier (AI)	Application Identifier: two or more characters that indicate the meaning and format of a data element in the UCC/EAN-128 symbology. It defines uniquely the meaning and format of the data element.
Batch	A batch unites products/ items that have undergone the same transformation processes. For simplification reasons, Lot Code and Batch Number are considered as synonyms in this Blue Book.
Batch number	The batch number is the number assigned to a unique batch of products. Many companies use the terminology Lot Code instead of "Batch Number". Without interfering with internal manufacturing practices and for simplification reasons, Lot Code and Batch Number are considered as synonyms in this Blue Book.
Best before date	Recommended time limit for a consumer unit to be consumed.
Business Process	A sequence of interlinked steps that provide the mechanism for delivering value to customers. A business process can transfer both physical products and information. It may extend beyond a single business and include activities in other companies, across the supply chain.
Consumer Unit	Any item which crosses the retail point of sale.
Crisis	A crisis is any "incident situation" where there is reason to believe that a product distributed in the supply chain or placed on the market may be injurious to human or animal health and / or to environment protection, and / or have serious negative impact on the business organisation and / or image of the company.
DESADV	Despatch Advice Shipping Notice: EANCOM® message that gives information about the expedition of goods (quantities, delivery schedule, etc.) in the conditions accepted between the partners.
Downstream	The Downstream area covers the final part of a supply chain starting at the final product manufacturer, including co-packers, logistic service providers, distribution centre(s) and ending at the Retail point-of-sale.
EAN International	EAN International, based in Brussels, Belgium, is an organisation of EAN Member Organisations that jointly manages the EAN•UCC System with the Uniform Code Council (UCC). UCC is a Member Organisation of EAN International
EAN/ UCC	EAN and UCC co-manage the EAN·UCC system – the global language of business.
EAN•UCC Logistic Label	EAN•UCC standard for labelling of pallets with a unique serial number – the Serial Shipping Container Code – and other standardised information using UCC/EAN-128 bar code symbology.
EAN•UCC System	The EAN•UCC system, the Global language of Business, is a series of standards designed to improve supply chain management. The EAN•UCC system is jointly managed by EAN International and the Uniform Code Council.
EANCOM®	The international EDI standard provided by EAN International, conforming to the UN/EDIFACT standard.
ECR	Efficient Consumer Response (ECR): Initiative between retailers and suppliers to reduce existing barriers by focusing on processes, methods, and techniques to optimise the supply chain. Currently, ECR has three primary focus areas: supply side (e.g., efficient replenishment), demand side (e.g., efficient assortment, efficient

Terms	Explanations
	promotion, efficient product introduction), and enabling technologies (e.g., common data and communication standards, cost/profit and value measurement). The overall goal of ECR is to fulfil consumer wishes better, faster, and at less cost.
ECR Europe	An organisation representing both retailers and manufacturers that aims to encourage companies to work together to integrate their operations and eliminate barriers that reduce their efficiency and effectiveness, and impact on their ability to satisfy consumers. Details of how to join ECR Europe can be found in the acknowledgements at the front of this report.
EDI	Electronic Data Interchange (EDI) is the exchange of structured data in standardised message formats via electronic means between computer applications of trading partners.
EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT): A set of internationally agreed standards, directories and guidelines issued by the United Nations (UN/EDIFACT) for electronic interchange of structured data.
UCC/EAN-128	International EAN•UCC standard for barcoding data.
EPC	Electronic Product Code: a unique identification number that is used by the EPC network. This network is managed by EPCglobal, Inc, a joint venture company being set up by EAN International and the Uniform Code Council, Inc. (UCC).
EPC network	The Electronic Product Code (EPC) Network uses radio frequency identification (RFID) and Internet technologies to enable companies to have true visibility of their supply chains in real time, in any industry, anywhere in the world.
FMCG	The Fast Moving Consumer Goods Sector. Retailers and their suppliers who provide a range of goods sold primarily through supermarkets, hypermarkets and smaller retail stores. The core of their business is providing 'essentials' such as various fresh and processed foodstuffs, but they also stock a wide selection of other goods as well including health and beauty products, tobacco, alcohol, clothing, some electrical items, baby products and more general household items. Some retailers may stock more than 20,000 different product lines.
Food Business	Food business means any undertaking, whether for profit or not and whether public or private, carrying out any of the activities related to any stage of production, processing and distribution of food.
Food Business Operator	Food business operator means the natural or legal persons responsible for ensuring that the requirements of food law are met within the food business under their control.
Food Operator	Terminus used synonymously for Food Business Operator
GCI	The Global Commerce Initiative (GCI) is a voluntary body created in October 1999 to improve the performance of the international supply chain for consumer goods through the collaborative development and endorsement of recommended Standards and key business processes.
GLN	Global Location Number: A number that uses the EAN/UCC-13 Data Structure to identify physical, functional, or legal units.
GTIN	Global Trade Identification Number: Numbering structure applied for all EAN/UCC trade items identifiers. A GTIN may use the EAN/UCC-8, UCC-12, EAN/UCC-13 or EAN/UCC-14 standard numbering structure.
HACCP	The hazard analysis critical control point system (HACCP) is a scientific and systematic way of enhancing the safety of foods from primary production to final consumption through the identification and evaluation of specific hazards and measures for their control to ensure

Terms	Explanations
	the safety of food. HACCP is a tool to assess hazards and establish control systems that focus on prevention rather than relying mainly on end-product testing.
IFSUM	Forwarding and Consolidation Summary: An EANCOM®-message from the party issuing either an instruction or a booking regarding forwarding/transport services for multiple consignments (the equivalent of multiple Transport Instruction messages) under conditions agreed, to the party arranging the forwarding and/or transport services.
IFTSTA	Transport Status. An EANCOM®-message to report the transport status and/or a change in the transport status (i.e. event) between agreed parties.
Incident	An incident is any situation, which might imply a real, presumed or perceived product safety or serious quality deviation from legal requirements and / or internal quality norms.
ISO	The International Standards Organisation (ISO) is a world-wide federation of national standards bodies from some 130 countries, one from each country. The mission of ISO is to promote the development of standardisation.
Logistic Unit	An item of any composition established for transport and/or storage that needs to be managed through the supply chain.
Lot	A lot unites products/ items that have undergone the same transformation processes. Many companies use the terminology "Batch Number" instead of Lot Code. Without interfering with internal manufacturing practices and for simplification reasons, Lot Code and Batch Number are considered as synonyms in this Blue Book.
Lot Code	The Lot Code is the number assigned to a given production lot. It links the product (i.e. what) with all the relevant information related to its production. Many companies use the terminology "Batch Number" instead of Lot Code. Without interfering with internal manufacturing practices and for simplification reasons, Lot Code and Batch Number are considered as synonyms in this Blue Book.
Master Data	Master Data is a data set describing the specifications and structures of each Item and Party involved in Supply Chain Processes. Each set of data is uniquely identified by a Global Trade Item Number (GTIN) for items and a Global Location Number (GLN) for Party details.
Master Data Alignment	See "Master Data Synchronisation".
Master Data Synchronisation	It is the timely and "auditable" distribution of certified standardised Master Data from a data source to a final data recipient of this information. The synchronisation process is as well known as "Master Data Alignment" process. The Master Data Synchronisation process is a pre-requisite to the Simple e-business concept. Successful Master Data Synchronisation is achieved via the use of EAN/UCC coding specifications throughout the supply chain.
Mixed Pallet	Mixed Pallet: is composed of one or more different products originating from different lots (identified with different GTINs and Lot Codes).
POS	Point-of-sale. Refers to the retail type checkout where EAN/UPC bar code symbols are normally scanned.
RECADV	Receiving Advice. EANCOM®-message specifying details for the goods received under conditions agreed between the buyer and the seller, with the function of advising the consignor of the received contents of a consignment.
Recall	A recall means any measure aimed at achieving the return of a dangerous product that has already been supplied or made available to

Terms	Explanations
	consumers by the producer or distributor. (2001/95/EC)
RFID	Radio Frequency Identification: Wireless electronic communication using radio frequency allowing electronic memory to be read and written.
Scanner	An electronic device to read bar code symbols and convert them into electrical signals understandable by a computer device.
Scorecard	A technique for structuring performance measurement that considers internal processes and the creation of future value.
Standard	A specification for hardware, software, or data that is either widely used and accepted (de facto) or is sanctioned by a standards organisation (de jure).
Standard Trade Item Grouping	Standard composition for a trade item(s) that is not intended for Point-of-Sale scanning.
SSCC	Serial Shipping Container Code The EAN·UCC number comprising 18 digits for identifying uniquely a logistic unit (licence plate concept) It is depicted in a EAN•UCC-128 bar code symbology, and is widely used together with an EDI advance shipping notice.
Traceability	"Traceability is the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution" (definition by regulation (EC) 178/2002) ISO definition: traceability is the ability to trace the history, application or location of an entity by means of recorded identifications" (ISO 8402).
Tracing	Tracing is the capability to identify the origin and characteristics of a product based on criteria determined at each point of the supply chain. This is a critical feature of a traceability system because companies must be able to determine the identity and source of products received in an accurate and fast manner whenever necessary (one-step backwards legal principle).
Tracking	Tracking is the capability to localise a product based on specific criteria while it is handled along each point of the supply chain. This is a critical feature of any traceability system because companies must be able to identify and locate their products within the supply chain in order to withdraw or recall them whenever necessary (one-step forwards legal principle).
Trade Unit / Trade Item	Any unit (product or service) upon which there is a need to retrieve pre-defined information and that may be priced or ordered or invoiced at any point in any supply chain.
UCC	The Uniform Code Council (UCC) is the Numbering Organisation in the USA to administer and manage the EAN·UCC system standards in the USA and Canada
UML	Unified Modelling Language: UML is a standard notation for the modelling of real-world objects as a first step in developing an object orientated program.
Uniform mono lot pallet	Is composed of identical products originating from the same lot (identified with the same GTIN and Lot Code)
Uniform multi-lots pallet	is composed of identical products originating from at least two different lot codes (identified with the same GTIN but different lot codes). In this document a uniform multi-lot pallet is considered a mixed pallet for convention.

Terms	Explanations
Upstream	Upstream area covers the first part of a supply chain, including producers of raw materials, ingredients, packaging and all intermediate suppliers until the goods reach the manufacturing company.
Use by Date	A "Use-By" date is the last date recommended for the use of the product while at peak quality. The product manufacturer determines this date.
Withdrawal	A withdrawal means any measure aimed at preventing the distribution, display and offer of a product dangerous to the consumer » (2001/95/EC)".
XML	XML is a mark-up language defining, validating and sharing documents containing structured information. XML provides a file format for representing data, a schema for distinguishing and describing data structures and a mechanism for extending and annotating HTML. Unlike HTML, with XML, tags can be designed for specific purposes.

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8.5 List of Companies, which have contributed to the development of traceability documents at local and European levels

AHOLD (Europe)
ALCAMPO (Spain)
ALLIED DOMECQ (Europe)
AUCHAN (France)
BONGRAIN (France)
BRASSERIES KRONENBOURG (France)
CAMPINA GmbH, (D-A-CH)
CAMPOFRÍO (Spain)
CAPRABO (Spain)
CARREFOUR (Spain)
CARREFOUR (France)
CASINO (France)
COCA COLA (Spain)
COCA COLA (D-A-CH)
COCA COLA (France)
COCA COLA (Europe)
COGESAL MIKO (France)
COLGATE PALMOLIVE (France)
CORA (France)
DANONE (Spain)
DANONE (D-A-CH)
DANONE (France)
DECATHLON (France)
DIA (Spain)
Dr. OETKER (D-A-CH)
DUCROS S.A (France)
EDEKA ZENTRALE AG (D-A-CH)
EL ARBOL (Spain)
EL CORTE INGLES (Spain)
ELVIR (France)
FREY & KISSEL / WILHELM SCHACHERE (D-A-CH)
FROMAGERIES BEL (France)
GALLETAS SIRO (Spain)
GEORGIA-PACIFIC (France),
GEORGIA-PACIFIC (Europe),
Gilbert LEMELLE (France)
GLAXOSMITHKLINE CONSUMER (D-A-CH)
GRUPO EROSKI (Spain)
GRUPO IFA (Spain)
GRUPO LECHE PASCUAL (Spain)
HASSIA & LUISEN (D-A-CH)
HARZER KASEREI RUCKSACK (D-A-CH)
HENKEL (Europe)
JEALSA (Spain)
KELLOGG'S (France)
KELLOGG'S (Europe)
KRAFT FOODS (Spain)
KRAFT FOODS (D-A-CH)
KRAFT FOODS (France)
KRAFT FOODS (Europe)
LACTALIS (France)
LANGNESE IGLO (D-A-CH)
LEVER FABERGE (France)
L'OREAL (France)
L'OREAL (Europe)
MARKANT (D-A-CH)
MAST JAGERMEISTER (D-A-CH)
MERCADONA (Spain))
METRO (D-A-CH)
METRO (France)
NESTLE (Spain)
NESTLE (France)
NESTLE (D-A-CH)
NESTLE (Europe)
PANZANI (France)
PEPSICO (France)
PROCTER & GAMBLE (France)
PULEVA (Spain)
RAISIO GROUP (Europe)
RECKITT BENKISER (France)
REWE Zentral AG (D-A-CH)
SABECO (Spain)
SCA HYGIENE PRODUCT (Europe)
SOLINEST (France)
SPAR Osterreich (D-A-CH)
SYMRISE (Europe)
SYSTEME U (France)
UNILEVER BESTFOODS (Spain)
UNILEVER (France)
UNILEVER (Europe)
WALTER RAU (D-A-CH)
YOPLAIT (France)

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9 Reference documents

- Unit load identification and tracking, ECR Europe
- Traceability and efficient recall of goods, ECR D-A-CH
- L'étiquette logistique et l'avis d'expédition, ECR France
- Global Food Safety Initiative Guidance document, CIES
- Guide de gestion des alertes alimentaires, ANIA-FCD
- Joint crisis management guide, ECR Spain
- Guía para entregas eficientes y trazabilidad de envasos, ECR Spain
- Sécurité consommateur : qualité, traçabilité, gestion de crise - Vers une nouvelle approche industriels-distributeurs, ECR France
- Traceability Implementation & Traceability strategy, EAN international
- La traçabilité dans les chaînes d'approvisionnement, Gencod EAN France
- DIRECTIVE 2001/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 3 December 2001 on general product safety
- REGULATION (EC) No 178/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food safety authority and laying down procedures in matters of food safety

DISCLAIMER

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This blue book gives information on the smartest and most efficient way to address the traceability process. .

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Companies or organisations using this ECR Blue Book are advised to seek professional advice addressing their possible specific requirements. Each individual company is responsible for their compliance with the European Legislation and their potential complementary national regulations.