

WHITE PAPER

## Product Traceability (FoodTrace)

Document: Food Traceability

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### Abstract

This document is intended as a guide only and on the specific issues of legislation it is recommended that manufacturers seek legal advice where appropriate.

Irrespective of the traceability system implemented, accurate consumer unit identification is essential and therefore an appropriate Package Coding Management invaluable.

This document is intended to provide an introduction to the European FoodTrace legislation and the relevance to this of accurate Package Coding Management systems such as those supplied by Claricom Limited.



## What is FoodTrace?

Traceability of raw materials used in the manufacture and processing of food products has become a focus in the Media and in our Legislative houses.

Foods scares, such as the BSE crisis and the Foot and Mouth epidemic have raised awareness as have issues related to being able to trace the use of Genetically Modified produce.

On a more positive note, there are commercial benefits to be gained from being able to demonstrate the “providence” of a food product, for example, providing that is as a manufacture you can say which ingredients, from which batch, from which supplier were used to produce the goods provided to which customer.

The exact detail of what constitutes a batch and where the line is drawn in terms of the level of detail required have yet to be finalised. As with any new regulation, interested parties need to work together to develop guidelines for best practice in the light of what is practical.

To this end FoodTrace has been launched. Food Trace is a “European Commission Concerted Action Project”. The aim of this project is, “to deliver a generic framework that ensure smooth and efficient transfer of information through ever stage of the food chain, with the ability to plan, model, validate and implement”.

Further information about FoodTrace can be found at [www.eufoodtrace.org](http://www.eufoodtrace.org).

For traceability to work all those involved in the food supply chain, from the farmer to the transportation companies through to processors and manufactures to the retailer, need to cooperate.

## What is the legislation?



The key pieces of legislation that concern this area are:

EU Food Regulation – Article and  
EC Directive 89/396/EEC

To quote Lawrence Hutter of Deloitte Consulting regarding EC Directive 89/396/EEC:

*“Established a common framework for a lot/batch identification system throughout the EU to facilitate tracing and identification of products through the food chain” and EU Food Regulations – Article 18 (which will be law from January 2005) which, “forces food companies to track where they bought raw materials and where they sent finished products“*

## The Practical issues of implementation...

100% tracing of every item used in the production of a food product is the ideal but in many instances will provide impractical; the amount of data this would generate would be huge. As a result people, such as Neville Craddock of Neville Craddock Associates, formerly Group Regulatory & Environmental Affairs Manager of Nestle UK, are suggesting that the level of risk for a given ingredient will need to be assessed and the size of batch set accordingly.

It is suggested that each ingredient is placed in a group high risk, such as meat products, medium risk such as milk derivatives and low risk, such as sugar. He did note that you could get surprises where what had been thought of as low risk product could change to a high-risk product and therefore as Mr Craddock explains. “Every company needs to define their own groups in the context of their local conditions. But.... Be prepared for the surprises!”

The Foodtrace forum is a place where these things can be discussed and raised with the legislators.

Traceability is not negotiable. It is a Mandatory requirement throughout the supply chain.

The design is optional (paper, electronic, bar code etc.), but functionality must be demonstrable.

No one piece of software or one single technology will provide a magic solution. Even if one supplier is providing a “turn-key” solution they will need to use partners. In various areas of life people talk about “Joined-up thinking”, where in any sphere of human endeavour those involved in each step of a process need to consider the needs to those before and after them. This is particularly true in this area of food traceability various suppliers to the food industry and the industry itself need to work together resulting in collaboration and cooperation.

### ***How does this affect my Package Coding Operations?***

Providing good traceability will affect all of a companies production operation, from goods inward, through production to goods out. One small but mission critical aspect of this process is the identification of each retail pack, traded unit and pallet.

Accurate product date and traceability coding is essential.

It must be possible to accurately identify the batch of the retail consumer unit.

#### A typical Use By Date is insufficient

For a large majority of food and beverage products the current traceability is dependent upon the Use By or Best Before End date printed on each product:

- This information is not always unique
- This information is not always accurate!



Typically, for food producers, product life is determined by the date of the manufacturing process, for example the cook date, mix date or kill date. In some circumstances the process date and packaging date can vary. It is also common to produce the same product on multiple production lines, or in multiple batches throughout the day, such as to ‘top up’ volumes based on orders received.

It is therefore possible for multiple batches to have the same Use By information.

Furthermore, the large majority of coding and labelling is currently configured manually; the line operative will type in to the printer the information required. Human error is inevitable and coding or packaging errors are all too common. Quality Assurance procedures may detect these issues prior to shipment but manufacturing and packaging traceability has already been lost at this point. In extreme case emergency product withdrawals (EPWs) or product recalls are required.

#### Package Coding Management Systems Ensure Accuracy

Providing good traceability will not mean that we print “War and Peace” onto each product shipped. However, some piece of information such as a batch code could provide the means to identify a product. The manufacturer would then store the information about what was used to produce that product. Where necessary some of this information could be sent to the next person in the supply chain using EDI or other high level communications. As long as each item can be identified to a batch then the data for that batch does not need to travel with the item.

This approach relies upon the fact that the information printed on the packaging is accurate, and the use of a Package Coding Management System will eliminate human error from this process. Claricom supplies Package Coding Management software that removes the human error and maximizes efficiency in date and traceability coding operations.

The software comprises modules, which automate each aspect of coding management:

- Origination of coding information;
- Design of the look and feel of the codes on the packaging;
- Planning coding information on a production batch basis;

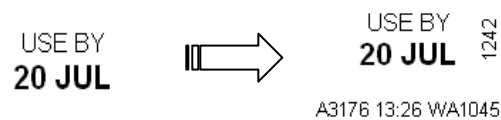
- Automatic communication of coding information to on-line coding and labelling equipment;
- Automatic packaging / barcode validation; and
- Feedback of essential production information, enterprise-wide.

Today, in very many cases the information printed is selected and modified manually on the packaging floor. Package coding is often the archetypal “island of automation”. A Package Coding Management System removes manual operations, removes human error, eliminates risk and ensures accuracy, flexibility and efficiency.

Developments in technologies such as Radio Frequency Tagging and 2D barcode symbology may increase our ability to send data along with the product. However, particularly in the case of Radio Frequency Tags the cost of the tags is likely to limit their use to pallets or in some case traded units or reusable trays.

By using appropriate systems the means of delivery of information onto products should become transparent, be it inkjet coding, thermal transfer printing and/or RF tagging etc. As traceability becomes more and more important the need to ensure that information is correctly printed or tagged becomes more and more essential.

**Package Coding Management Systems** not only remove the human error but can also transform the practical implementations of date and traceability coding:



### Manual coding control



- Traceability is lost when the Use By Date is incorrect.
- Coding errors are a proven problem
  - It is not always apparent that traceability has been lost.
- A coder ‘time-stamp’ is no protection
  - How often are the coder’s internal time and date synchronised?

### PCMS Controlled Coding



- PCMS Control removes the Human Error.
- Traceability is maintained.
- Full on-pack traceability is practical, automatically controlled
  - *time, year, day, time*
  - *manufacturing order, user ID etc...*
- Automatic set-up of information
- Audit log of production and coding information



## Batch Specific Coding Control

Where the overprinted information is determined by something other than the time and day of packaging, such as the date of the manufacturing process, for example the cook date, there is a need for batch-by-batch planning, in order to determine the correct date codes to be printed on the products and their packaging.

Claricom's CLARiFY provides efficient and straight-forward management and control of date coding rules, to ensure that accurate and appropriate date codes are printed on every production run. CLARiFY provides the flexibility for manufacturers to deal with the many variables that can influence the Sell By, Display Until or Best Before End dates that are printed on product packaging. These variations include: concessions; promotions; and distribution logistics

*"It [CLARiFY] provides a carefully controlled system to enable us to avoid the potential for error by taking responsibility for the integrity of the pack information out of the hands of the operators and transferring it to Technical and Quality Assurance.*

*"In this way, all the operator needs to do is key in the batch number and the coders will automatically print the details which have been signed off centrally. Any coding equipment which is connected to the system, including different machines installed in the future, will operate in this way, providing consistency across the production lines."*

*"The Claricom system is more sophisticated than alternative systems with, for example, an in-built calendar programmed with production dates and changes and even when Bank Holidays occur, all of which makes Package Coding Management more accurate and efficient.*

*"The Claricom system therefore restricts the user to logical product life relevant to our business."*

**Northern Foods**

In an integrated Package Coding Management System, where PCMS software is used from the planning of coding information right through a coder network to automatically communicate this information to the coding equipment, this enables unique manufacturing order specific information to be printed on to each individual pack, and recorded within the PCMS audit file.

## Integration to other Manufacturing Systems

Just as there are numerous enterprise I.T. systems (ERP, MRP-II, MES and SCADA), there are also numerous makes, models and technologies used for package coding and labelling. There is no standard means of sending design information and data to these devices. Protocols vary from manufacturer to manufacturer and often from coder to coder, even when the devices are made by the same manufacturer.

Independent specialist suppliers of PCM Software (such as Claricom) provide the ability to integrate the myriad coding and labelling equipment in to a common operating solution, and to integrate this with other enterprise I.T. systems:

- ❑ Coder independent message software, providing the mechanism for a single product specification
- ❑ Open Database Connectivity (ODBC) to obtain product specific data from other sources
  - This can include unique batch or component information for traceability
- ❑ Standard 'driver' connections to the multiple makes and models of coding equipment
- ❑ A standard software API – a program-to-program interface (COM) which allows CLARiNET to link to other factory software such as SCADA and MES, to transfer control, coding data and performance information.

A Package Coding Management system can provide clear lines of control for what is coded onto your retail packs, traded units or pallets, and remove human error. The same systems can then be used to bridge to other systems introduced to provide the IT infrastructure needed to provide one-forward, one-back traceability.