



**“How to follow your products to give security to your clients”**

### Traceability technologies available

**In former issues we analyzed the need of implementing a traceability system and how to do it. We will now analyze which are the available tools. We will offer a brief description of bar codes and inform why this is the most appropriate for this application. We will introduce alternatives to identify products and equipment for data collection.**

### Coding and Data Collection

**A traceability system requires identification, data collection, components and production process of the product and its record in a data base, all this must be made in an economic, quick and reliable way.**

The automatization of product identification process and data collection are the mechanisms to implement a modern traceability system. You must select the technology that allows printing the variable information to identify each product, reading and recording of this information by a data processing system.

**The bar code is the most appropriate tool to achieve** this because it allows identifying the products and later reading the information automatically.

There is no doubt that this is not the only method but it is the best known. New technologies appear every day to apply in traceability system, for example radio frequency labels.

### Why use bar code for product identification and data collection?

**There are several options for data collection**, among them you will find paper and pencil, keyboard digitation, mark sensors, optical character recognition (OCR), magnetic card readers, voice recognition, RF labels, bar codes. **The bar code used for automatic data collection is no doubt the most popular, with more than 30 years success worldwide.**

**The selection must be based on the following:**

- ? . Cost
- ? . Implantation time
- ? . Investment return time
- ? . Friendly user
- ? . Accuracy
- ? . Equipment size
- ? . Information availability speed
- ? . Similarity with old systems

? . **Compatibility with data processing system**

**The acceptance of the bar code worldwide is due to its accuracy, precision and reliability collecting automatically printed data and establishing links to interchange information between suppliers, distribution chain and the customer.**

**Some bar code advantages:**

- ? . **Relatively low investment**
- ? . **Product identification low cost**
- ? . **Friendly user**
- ? . **High accuracy (low error rate)**
- ? . **Size of equipment from medium to small**
- ? . **High reading speed**
- ? . **It is the best known system worldwide**

**Product's coding**

Each piece or raw material batch, semi-manufactured or final product must be identified correctly. This identification must be *legible and lasting*, and must contain at least the following information:

- ? . **Product code**
- ? . **Product description**
- ? . **Supplier or origin**
- ? . **Manufacturing date**
- ? . **Serial number or batch**
- ? . **Quantity**

From a wide point of view **we can classify the available technologies to print bar codes into two big groups according to the time that pass from the moment the code is printed to when it is used.**

**If several hours pass since printing and until it is used it is considered off-line or pre-printed.** This time period allows the use of almost any technology to print bar codes. Generally this type of printing is made at a printing shop and not by the manufacturer of the product. An example of this option is incorporation of EAN-13 in massive consumption products.

**When the time between printing and the use of the bar code is short it is considered on demand or on-line.** In many cases the need to print on demand happens because the information is variable and different for each product or batch. An example is the identification of products with variable weight or batch printing, serial number or manufacturing date and expiry date of the products. We will focus on the technologies to print on demand as these are the ones used for the traceability implementation system.

The photo shows as example where the two type of printings are combined off-line and on-line. The green code is already printed while the black codes are printed during production.